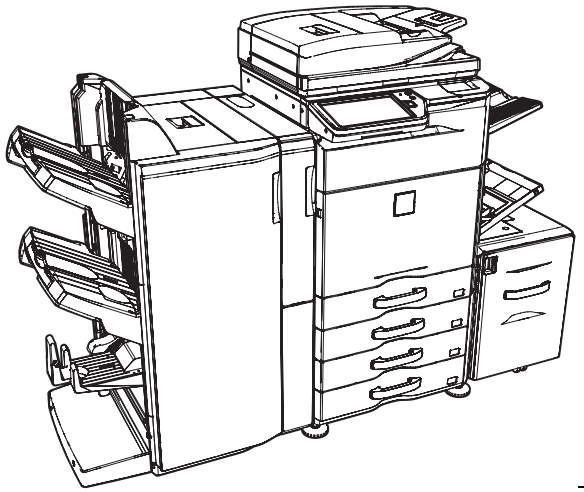
1 : '14/Jun 2 : '16/Jan

SHARP SERVICE MANUAL

CODE: 00ZMXM565/S3E



DIGITAL MULTIFUNCTIONAL SYSTEM

MX-M365N/M364N
MX-M465N/M464N
MX-M565N/M564N
MX-M465N A/M565N A 1
MX-M564N A
AR-M460N/M560N 2

MODEL **AR-M460N X**

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

SHARP CORPORATION

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

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NOTE FOR SERVICING

1. Precautions for servicing

1) When servicing, disconnect the power plug, the printer cable, the network cable, and the telephone line from the machine, except when performing the communication test, etc.

   It may cause an injury or an electric shock.

2) There is a high temperature area inside the machine. Use an extreme care when servicing.

   It may cause a burn.

3) There is a high voltage section inside the machine which may cause an electric shock. Be careful when servicing.

4) Do not disassemble the laser unit. Do not insert a reflective material such as a screwdriver in the laser beam path.

   It may damage eyes by reflection of laser beams.

5) When servicing with the machine operating, be careful not to squeeze you hands by the chain, the belt, the gear, and other driving sections.

6) Do not leave the machine with the cabinet disassembled.

   Do not allow any person other than a serviceman to touch inside the machine. It may cause an electric shock, a burn, or an injury.

7) When servicing, do not breathe toner, developer, and ink excessively. Do not get them in the eyes.

   If toner, developer, or ink enters your eyes, wash it away with water immediately, and consult a doctor if necessary.

8) The machine has got sharp edges inside. Be careful not to damage fingers when servicing.

9) Do not throw toner or a toner cartridge in a fire. Otherwise, toner may explode and burn you.

10) When replacing the lithium battery on the PWB, used the specified battery only.

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

11) When carrying a unit with PWB or electronic parts installed on it, be sure to put it in an anti-static-electricity bag.

    It may cause a breakdown or malfunctions.

CAUTION
DOUBLE POLE/NEUTRAL FUSING

(200V series only)

2. Warning for servicing

1) Be sure to connect the power cord only to a power outlet that meets the specified voltage and current requirements.

   Avoid complex wiring, which may lead to a fire or an electric shock.

   It may cause a fire or an electric shock.

2) If there is any abnormality such as smoke or an abnormal smell, interrupt the job and disconnect the power plug.

   It may cause a fire or an electric shock.

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

   To protect the machine and the power unit from lightening, grounding must be made.

4) When connecting the grounding wire, never connect it to the following points.

   It may cause an explosion, a fire or an electric shock.

   * Gas tube
   * Lightning conductor
   * A water pipe or a water faucet, which is not recognized as a grounding object by the authorities.
   * Grounding wire for telephone line

5) Do not damage, break, or stress the power cord.

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

   It may cause a fire or an electric shock.

6) Keep the power cable away from a heat source.

   Do not insert the power plug with dust on it into a power outlet.

   It may cause a fire or an electric shock.

7) Do not put a metallic object or a container with water in it inside the machine.

   It may cause a fire or an electric shock.

8) Do not perform servicing, touch the power plug, insert a telephone jack, or operate the machine with wet or only hands.

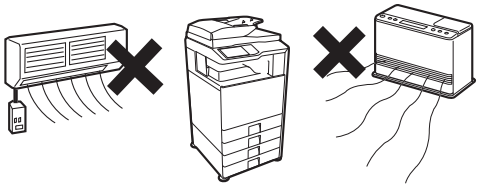
3. Note for installing site

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.**

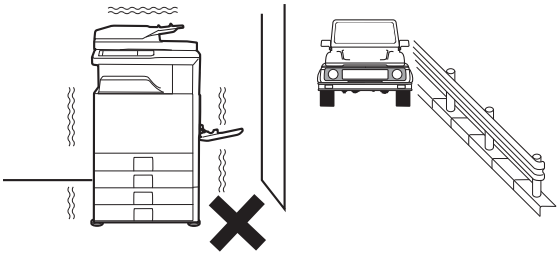
   Paper may get damp and form moisture inside the machine, causing paper jam or copy dirt.

   For operating and storing conditions, refer to the specifications described future in the Service Manual.



2) **Place of much vibration**

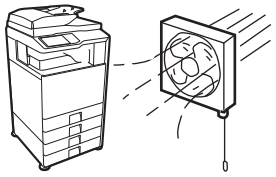
   It may cause a breakdown.



3) **Poorly ventilated place**

   An electrostatic type copier will produce ozone inside it.

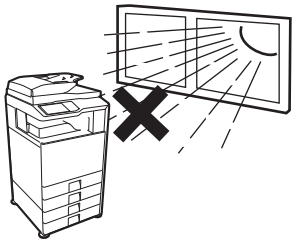
   The quantity of ozone produced is designed to a low level so as not to affect human bodies. However, continuous use of such a machine may produce an odor of ozone. Install the machine in a well ventilated place strike, and ventilate occasionally.



4) **Place of direct sunlight.**

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

It may cause a breakdown or copy quality issues.



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

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

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



6) **Place of much dust**

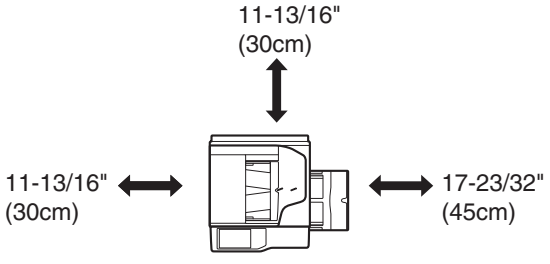
When dusts enter the machine, it may cause a breakdown or copy quality issues.



7) **Place near a wall**

Some machines require intake and exhaust of air.

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



8) **Unstable or slant surface**

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

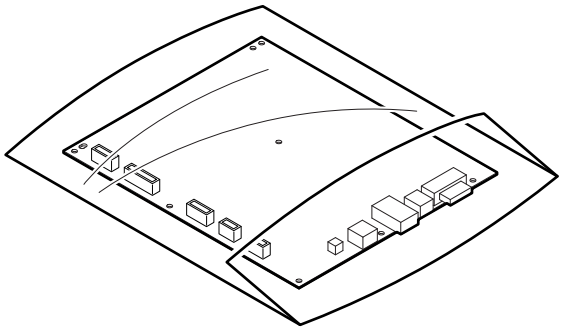
If there are optional paper desks and the copier desks specified, it is recommendable to use them.

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

4. Note for handling PWB and electronic parts

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

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

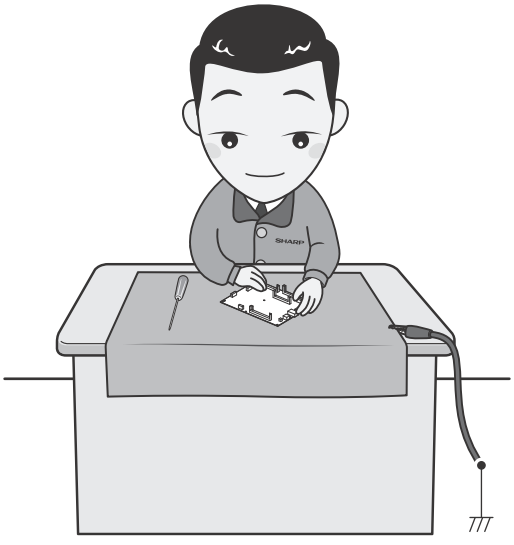


2) When and after removing the parts from an anti-static bag (case), use an earth band as shown below:

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



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



5. Note for repairing/replacing the LSU

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

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

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

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

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

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

(Drum unit)

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

(Transfer unit)

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

(Developing unit)

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

(Fusing unit)

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

7. Screw tightening torque

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

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

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

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

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

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

Screw kinds and tightening torques

Normal screws, set screws (including step screws)

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

Tapping screws (for iron)

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

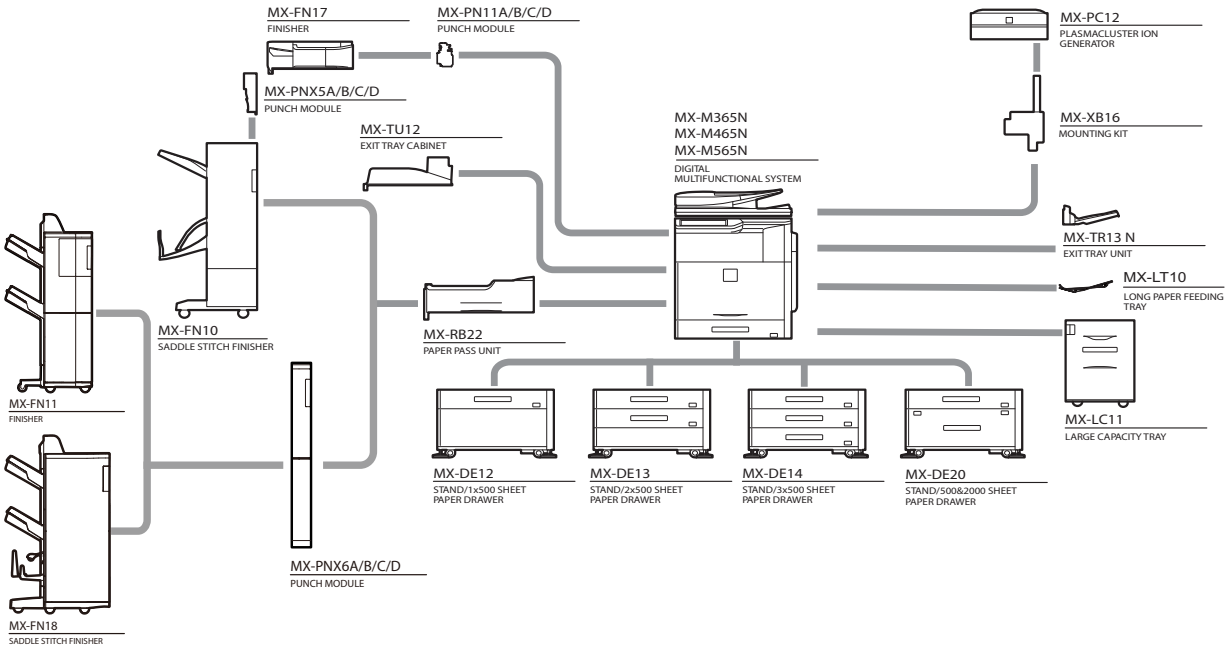
Tapping screw (for plastic)

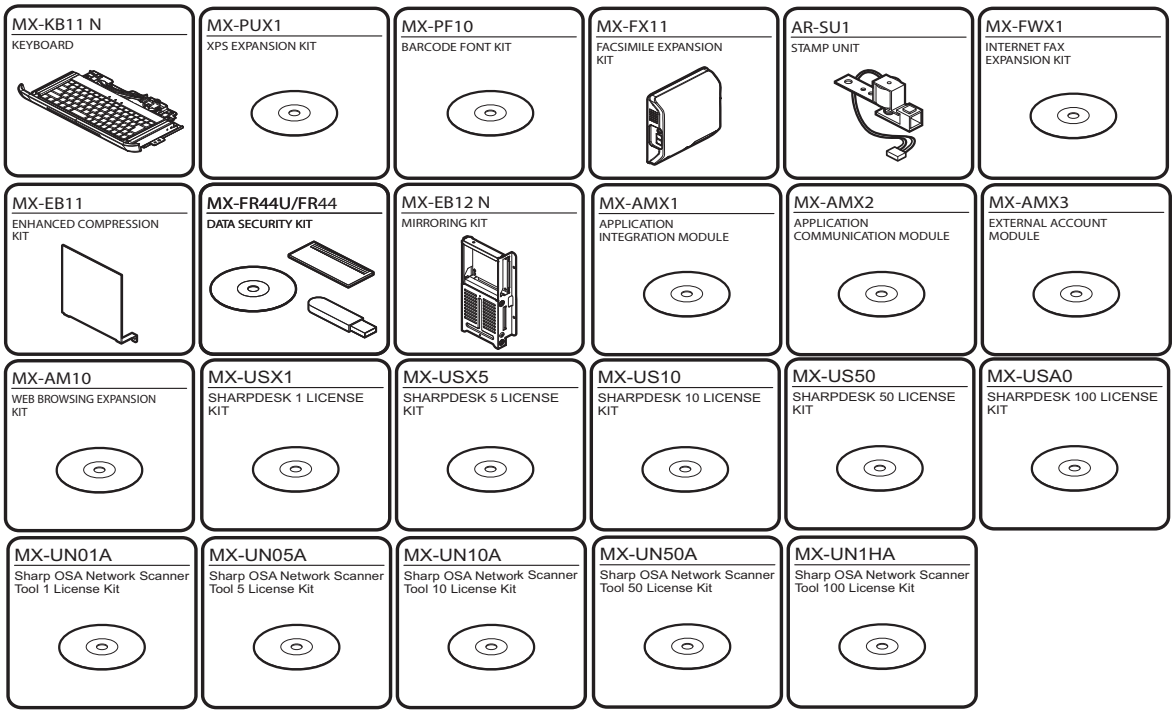
Screw diameter	Material to be fixed	Tightening torque (N·m)	Tightening torque (kgf·cm)	Tightening torque (lbft)
M3	Plastic resin	0.6 - 0.8	6 - 8	0.4 - 0.6
M4	Plastic resin	1.0 - 1.2	10 - 12	0.7 - 0.9

[1] PRODUCT OUTLINE

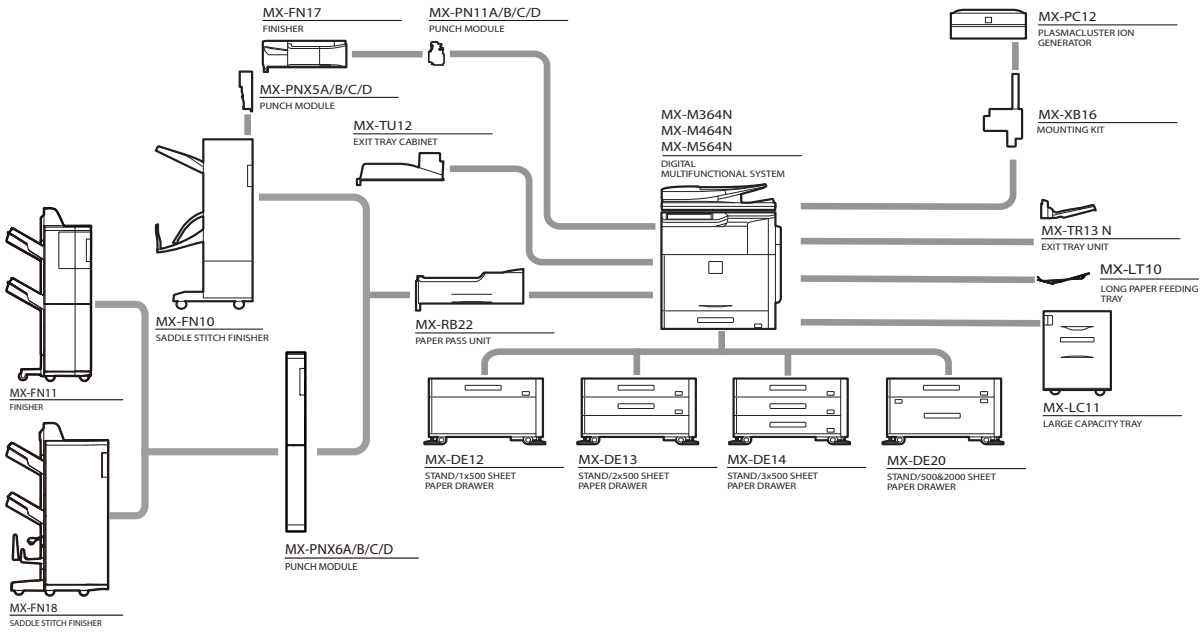
1. System diagram

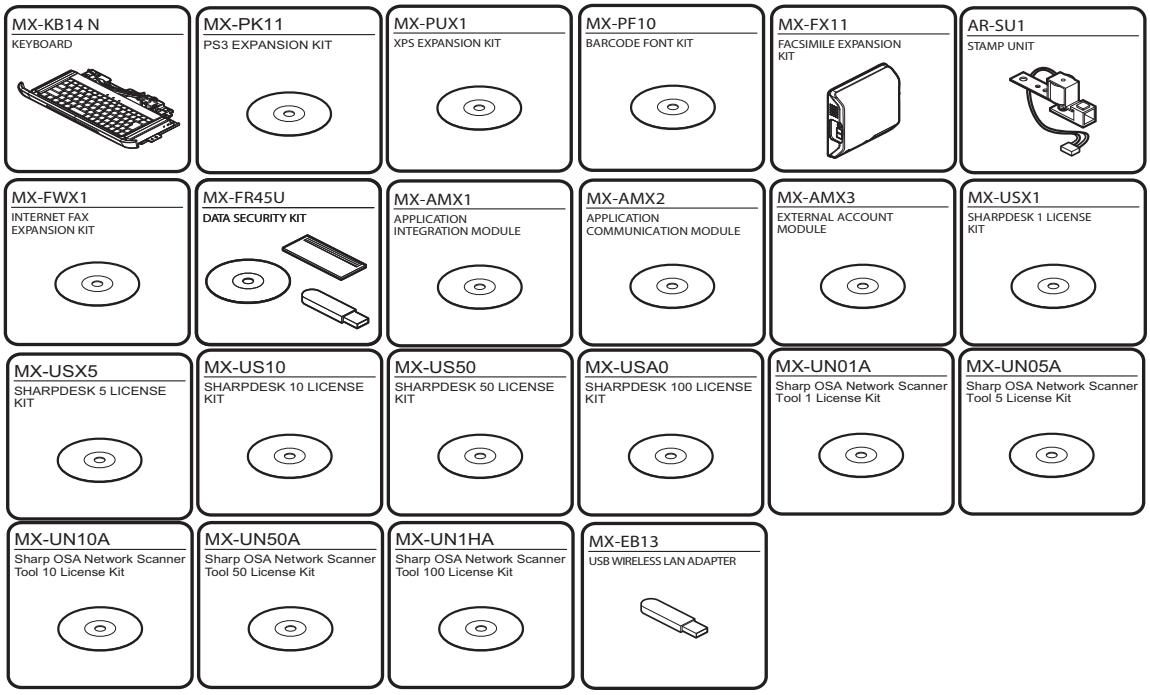
A. MX-M365N/M465N/M565N series





B. MX-M364N/M464N/M564N series

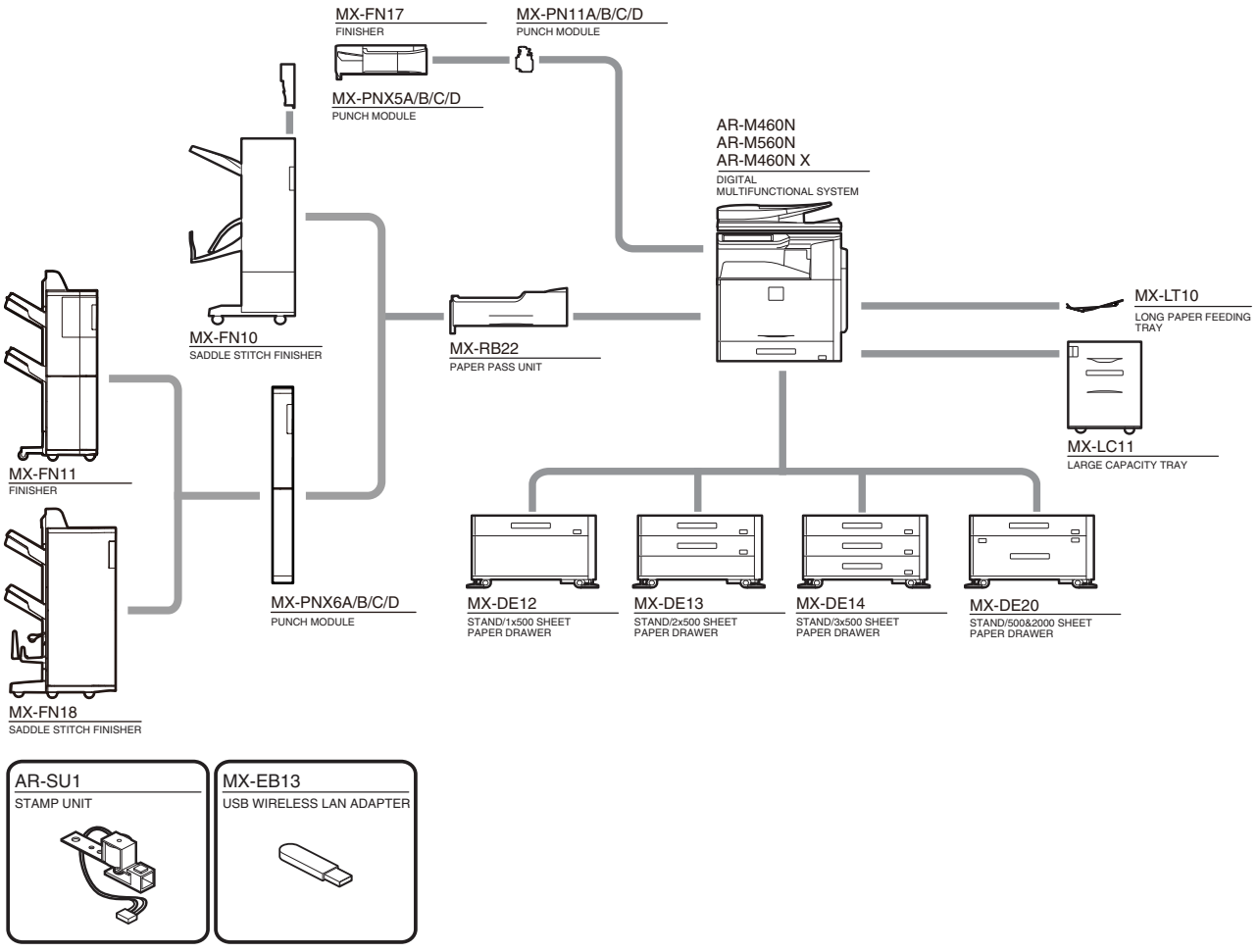




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C. AR-M460N/M560N series

2



2. Machine configuration

	MX-M365N / M465N MX-M465N A / M565N A	MX-M565N	MX-M364N/M464N/M564N MX-M564N A	AR-M460N/M560N AR-M460N X
Copy	STD			
PCL printer	STD			
PS printer	STD		OPT	N / A
Main body LCD	COLOR WSVGA 10.1"		COLOR WSVGA 7.0"	
FAX	OPT*1			N / A
Scan	STD			
Document Feeder	STD DSPF		STD RSPF	
Exit Tray Cabinet	STD/OPT *2			STD
Sharp OSA	STD		OPT	N / A
Key Board	STD / OPT*2		OPT	N / A
Web Browsing	OPT	STD / OPT*2	N / A	N / A
Wireless LAN	STD*1		OPT*1	
HDD (GB)	320			N / A

STD: Standard provision. OPT: Option. N/A: Not available. *1: No support in some region. *2: Option in some region.

1 : '14/Jun 2 : '16/Jan

3. Combination of options

Section	Name	Model name	MX-M365N MX-M465N MX-M465N A MX-M565N A	MX-M565N	MX-M364N MX-M464N MX-M564N MX-M564N A	AR-M460N AR-M560N AR-M460N X	Remarks
Document Feed System	DUPLEX SINGLE PASS FEEDER	—	STD	STD	—	—	
	REVERSING SINGLE PASS FEEDER	—	—	—	STD	STD	
Paper Feed System	STAND/1 x 500 SHEET PAPER DRAWER	MX-DE12	OPT	OPT	OPT	OPT	
	STAND/2 x 500 SHEET PAPER DRAWER	MX-DE13	OPT	OPT	OPT	OPT	
	STAND/3 x 500 SHEET PAPER DRAWER	MX-DE14	OPT	OPT	OPT	OPT	
	STAND/500 & 2000 SHEET PAPER DRAWER	MX-DE20	OPT	OPT	OPT	OPT	
	LARGE CAPACITY TRAY	MX-LC11	OPT	OPT	OPT	OPT	
	LONG PAPER FEEDING TRAY	MX-LT10	OPT	OPT	OPT	OPT	
Paper Exit System	EXIT TRAY UNIT	MX-TR13 N	OPT	OPT	OPT	—	
	EXIT TRAY CABINET	MX-TU12	STD/OPT	STD/OPT	STD/OPT	STD	*1
	FINISHER	MX-FN17	OPT	OPT	OPT	OPT	
	PUNCH MODULE	MX-PN11 A/B/C/D	OPT	OPT	OPT	OPT	For MX-FN17
	PAPER PASS UNIT	MX-RB22	OPT	OPT	OPT	OPT	
	SADDLE STITCH FINISHER	MX-FN10	OPT	OPT	OPT	OPT	
	FINISHER (4K)	MX-FN11	OPT	OPT	OPT	OPT	
	SADDLE STITCH FINISHER	MX-FN18	OPT	OPT	OPT	OPT	
	PUNCH MODULE	MX-PNX5 A/B/C/D	OPT	OPT	OPT	OPT	For MX-FN10
	PUNCH MODULE	MX-PNX6 A/B/C/D	OPT	OPT	OPT	OPT	For MX-FN11/ FN18
Printer Expansion	PS3 EXPANSION	MX-PK11	STD	STD	OPT	—	
	BARCODE FONT KIT	MX-PF10	OPT	OPT	OPT	—	
	XPS EXPANSION KIT	MX-PUX1	OPT	OPT	OPT	—	
Image send expansion	FACSIMILE EXPANSION KIT	MX-FX11	OPT	OPT	OPT	—	*2
	STAMP UNIT	AR-SU1	OPT	OPT	OPT	OPT	
	INTERNET FAX EXPANSION KIT	MX-FWX	OPT	OPT	OPT	—	
	ENHANCED COMPRESSION KIT	MX-EB11	OPT	OPT	—	—	
Authentication / Security	DATA SECURITY KIT	MX-FR44U	OPT	OPT	—	—	
	DATA SECURITY KIT	MX-FR45U	—	—	OPT	—	
	CARD COLUTION KIT	MX-EC50	OPT	OPT	—	—	*2
	MIRRORING KIT	MX-EB12 N	OPT	OPT	—	—	
Application / Solution	SHARPDESK 1 LICENSE KIT	MX-USX1	OPT	OPT	OPT	—	
	SHARPDESK 5 LICENSE KIT	MX-USX5	OPT	OPT	OPT	—	
	SHARPDESK 10 LICENSE KIT	MX-US10	OPT	OPT	OPT	—	
	SHARPDESK 50 LICENSE KIT	MX-US50	OPT	OPT	OPT	—	
	SHARPDESK 100 LICENSE KIT	MX-USA0	OPT	OPT	OPT	—	
	SHARP OSA NETWORK SCANNER TOOL 1 LICENSE KIT	MX-UN01A	OPT	OPT	OPT	—	
	SHARP OSA NETWORK SCANNER TOOL 5 LICENSE KIT	MX-UN05A	OPT	OPT	OPT	—	
	SHARP OSA NETWORK SCANNER TOOL 10 LICENSE KIT	MX-UN10A	OPT	OPT	OPT	—	
	SHARP OSA NETWORK SCANNER TOOL 50 LICENSE KIT	MX-UN50A	OPT	OPT	OPT	—	
	SHARP OSA NETWORK SCANNER TOOL 100 LICENSE KIT	MX-UN1HA	OPT	OPT	OPT	—	
	APPLICATION INTEGRATION MODULE	MX-AMX1	OPT	OPT	OPT	—	
	APPLICATION COMMUNICATION MODULE	MX-AMX2	STD/OPT	STD/OPT	OPT	—	*1
	EXTERNAL ACCOUNT MODULE	MX-AMX3	STD/OPT	STD/OPT	OPT	—	*1
	WEB BROWSING EXPANSION KIT	MX-AM10	OPT	STD/OPT	—	—	*1
OTHER	KEYBOARD	MX-KB11 N	STD/OPT	STD/OPT	—	—	*1
	KEYBOARD	MX-KB14 N	—	—	OPT	—	
	USB WIRELESS LAN ADAPTER	MX-EB13	—	—	OPT	OPT	*2
	PLASMACLUSTER ION GENARATOR	MX-PC12	OPT	OPT	OPT	—	*2
	PLASMACLUSTER ION GENERATOR MOUNTING KIT	MX-XB16	OPT	OPT	OPT	—	*2

STD: Standard provision. OPT: Installable. —: Cannot be connected.

*1: Option in some region.

*2: No support in some region

[2] CONSUMABLE PARTS

1. Supply system table

A. USA/Canada/South and Central America

No.	Item	Content	Life	Model Name	Quantity in collective package	Remarks
1	Toner Cartridge (Black)	Toner Cartridge x 1	40K	MX-560NT	10	Life: A4/Letter 6% document
2	Developer (Black)	Developer x 1	600K	MX-560NV	10	
3	Drum	OPC Drum x 1	300K	MX-560DR	10	

B. Europe/Australia/New Zealand/Korea

No.	Item	Content	Life	Model Name	Quantity in collective package	Remarks
1	Toner Cartridge (Black)	Toner Cartridge x 1	40K	MX-560GT	10	Life: A4/Letter 6% document
2	Developer (Black)	Developer x 1	600K	MX-560GV	10	
3	Drum	OPC Drum x 1	300K	MX-560DR	10	

C. Asia/Hong Kong

No.	Item	Content	Life	Model Name	Quantity in collective package	Remarks
1	Toner Cartridge (Black)	Toner Cartridge x 1	40K	MX-560AT	10	Life: A4/Letter 6% document
2	Developer (Black)	Developer x 1	600K	MX-560AV	10	
3	Drum	OPC Drum x 1	300K	MX-560DR	10	

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

No.	Item	Content	Life	Model Name	Quantity in collective package	Remarks
1	Toner Cartridge (Black)	Toner Cartridge x 1	40K	MX-560FT	10	Life: A4/Letter 6% document
2	Developer (Black)	Developer x 1	600K	MX-560FV	10	
3	Drum	OPC Drum x 1	300K	MX-560DR	10	

E. China

No.	Item	Content	Life	Model Name	Quantity in collective package	Remarks
1	Toner Cartridge (Black)	Toner Cartridge x 1	40K	MX-560CT	10	Life: A4/Letter 6% document
2	Developer (Black)	Developer x 1	600K	MX-560CV	10	
3	Drum	OPC Drum x 1	300K	MX-560DR	10	

2. Maintenance parts list

A. USA/Canada/South and Central America

No.	Item	Model name	Content	Quantity	Life	Package	Remarks
1-1	Upper Heat Roller Kit	MX-560UH	Upper heat roller	1	300K	10	For 46 / 56 cpm machine
			Upper separation pawl / pawl spring	6			
1-2	Upper Heat Roller Kit	MX-362UH	Upper heat roller	1	300K	10	For 36 cpm machine
			Upper separation pawl / pawl spring	4			
2-1	Lower Heat Roller Kit	MX-560LH	Lower heat roller	1	300K	10	For 46 / 56 cpm machine
			Lower separation pawl / pawl spring	4			
2-2	Lower Heat Roller Kit	MX-362LH	Lower heat roller	1	300K	10	For 36 cpm machine
			Lower separation pawl / pawl spring	2			
3-1	Web cleaning kit	MX-560WC	Web pressure roller bearing	2	300K	10	For 46 / 56 cpm machine
			Web pressure roller	1			
			Web roller	1			
3-2	Web cleaning kit	MX-362WC	Web pressure roller bearing	2	300K	10	For 36 cpm machine
			Web pressure roller	1			
			Web roller	1			
4	Transfer kit	MX-560TU	Transfer roller	1	300K	10	
			Discharge plate	1			
5	DV filter kit	MX-560DS	DV filter UN	1	600K	10	
6	Main charger kit	MX-560MK	Drum cleaning blade	1	300K	10	
			Molt cushion for side seal F/R	1			
			Drum separation pawl unit	4			
			Main charger unit	1			
			Side sheet F/R for toner reception seal	1			
7	Toner collection box	MX-560HB	Toner collection box	1	100K	10	6% coverage of A4 size paper
8	Filter kit	MX-361FL	Ozone Filter	1	300K	10	
9	Staple cartridge	AR-SC2	Staple cartridge	3	5000 times x 3	20	For MX-FN11/FN18
10	Staple cartridge	AR-SC3	Staple cartridge	3	2000 times x 3	40	For MX-FN10/FN18
11	Staple cartridge	MX-SCX1	Staple cartridge	3	5000 times x 3	20	For MX-FN17/FN10
12	Finish stamp cartridge	AR-SV1	Finish stamp cartridge	2	—	20	

B. Europe/Australia/New Zealand

No.	Item	Model name	Content	Quantity	Life	Package	Remarks
1-1	Upper heat roller kit	MX-560UH	Upper heat roller	1	300K	10	For 46 / 56 cpm machine
			Upper separation pawl / pawl spring	6			
1-2	Upper heat roller kit	MX-362UH	Upper heat roller	1	300K	10	For 36 cpm machine
			Upper separation pawl / pawl spring	4			
2-1	Lower heat roller kit	MX-560LH	Lower heat roller	1	300K	10	For 46 / 56 cpm machine
			Lower separation pawl / pawl spring	2			
2-2	Lower heat roller kit	MX-362LH	Lower heat roller	1	300K	10	For 36 cpm machine
			Lower separation pawl / pawl spring	2			
3-1	Web cleaning kit	MX-560WC	Web pressure roller bearing	2	300K	10	For 46 / 56 cpm machine
			Web pressure roller	1			
			Web roller	1			
3-2	Web cleaning kit	MX-362WC	Web pressure roller bearing	2	300K	10	For 36 cpm machine
			Web pressure roller	1			
			Web roller	1			
4	Transfer kit	MX-560TU	Transfer roller	1	300K	10	
			Discharge plate	1			
5	DV filter kit	MX-560DS	DV filter unit	1	600K	10	
6	Main charger kit	MX-560MK	Drum cleaning blade	1	300K	10	
			Molt cushion for side seal F/R	1			
			Drum separation pawl unit	4			
			Main charger unit	1			
			Side sheet F/R for toner reception seal	1			
7	Toner collection box	MX-560HB	Toner collection box	1	100K	10	6% coverage of A4 size paper
8	Filter kit	MX-361FL	Ozone filter	1	300K	10	
9	Staple cartridge	AR-SC2	Staple cartridge	3	5000 times x 3	20	For MX-FN11/FN18
10	Staple cartridge	AR-SC3	Staple cartridge	3	2000 times x 3	40	For MX-FN10/FN18
11	Staple cartridge	MX-SCX1	Staple cartridge	3	5000 times x 3	20	For MX-FN17/FN10
12	Finish stamp cartridge	AR-SV1	Finish stamp cartridge	2	—	20	

C. Asia/Middle East/Agency

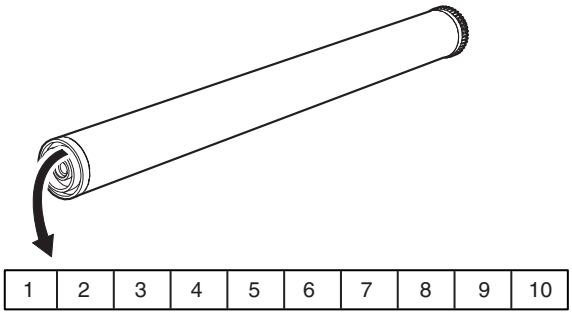
No.	Item	Model name	Content	Quantity	Life	Package	Remarks
1-1	Upper Heat Roller Kit	MX-560UH	Upper heat roller	1	300K	10	For 46 / 56 cpm machine
			Upper separation pawl / pawl spring	6			
1-2	Upper Heat Roller Kit	MX-362UH	Upper heat roller	1	300K	10	For 36 cpm machine
			Upper separation pawl / pawl spring	4			
2-1	Lower Heat Roller Kit	MX-560LH	Lower heat roller	1	300K	10	For 46 / 56 cpm machine
			Lower separation pawl / pawl spring	4			
2-2	Lower Heat Roller Kit	MX-362LH	Lower heat roller	1	300K	10	For 36 cpm machine
			Lower separation pawl / pawl spring	2			
3-1	Web cleaning kit	MX-560WC	Web pressure roller bearing	2	300K	10	For 46 / 56 cpm machine
			Web pressure roller	1			
			Web roller	1			
3-2	Web cleaning kit	MX-362WC	Web pressure roller bearing	2	300K	10	For 36 cpm machine
			Web pressure roller	1			
			Web roller	1			
4	Transfer kit	MX-560TU	Transfer roller	1	300K	10	
			Discharge plate	1			
5	DV filter kit	MX-560DS	DV filter UN	1	600K	10	
6	Main charger kit	MX-560MK	Drum cleaning blade	1	300K	10	
			Molt cushion for side seal F/R	1			
			Drum separation pawl unit	4			
			Main charger unit	1			
			Side sheet F/R for toner reception seal	1			
7	Toner collection box	MX-560HB	Toner collection box	1	100K	10	6% coverage of A4 size paper
8	Filter kit	MX-361FL	Ozone Filter	1	300K	10	
9	Staple cartridge	AR-SC2	Staple cartridge	3	5000 times x 3	20	For MX-FN11/FN18
10	Staple cartridge	AR-SC3	Staple cartridge	3	2000 times x 3	40	For MX-FN10/FN18
11	Staple cartridge	MX-SCX1	Staple cartridge	3	5000 times x 3	20	For MX-FN17/FN10
12	Finish stamp cartridge	AR-SV1	Finish stamp cartridge	2	—	20	

D. Hong Kong

No.	Item	Model name	Content	Quantity	Life	Package	Remarks
1-1	Upper Heat Roller Kit	MX-560UH	Upper heat roller	1	300K	10	For 46 / 56 cpm machine
			Upper separation pawl / pawl spring	6			
1-2	Upper Heat Roller Kit	MX-362UH	Upper heat roller	1	300K	10	For 36 cpm machine
			Upper separation pawl / pawl spring	4			
2-1	Lower Heat Roller Kit	MX-560LH	Lower heat roller	1	300K	10	For 46 / 56 cpm machine
			Lower separation pawl / pawl spring	4			
2-2	Lower Heat Roller Kit	MX-362LH	Lower heat roller	1	300K	10	For 36 cpm machine
			Lower separation pawl / pawl spring	2			
3-1	Web cleaning kit	MX-560WC	Web pressure roller bearing	2	300K	10	For 46 / 56 cpm machine
			Web pressure roller	1			
			Web roller	1			
3-2	Web cleaning kit	MX-362WC	Web pressure roller bearing	2	300K	10	For 36 cpm machine
			Web pressure roller	1			
			Web roller	1			
4	Transfer kit	MX-560TU	Transfer roller	1	300K	10	
			Discharge plate	1			
5	DV filter kit	MX-560DS	DV filter UN	1	600K	10	
6	Main charger kit	MX-560MK	Drum cleaning blade	1	300K	10	
			Molt cushion for side seal F/R	1			
			Drum separation pawl unit	4			
			Main charger unit	1			
			Side sheet F/R for toner reception seal	1			
7	Toner collection box	MX-560HB	Toner collection box	1	100K	10	6% coverage of A4 size paper
8	Filter kit	MX-361FL	Ozone Filter	1	300K	10	
9	Staple cartridge	AR-SC2	Staple cartridge	3	5000 times x 3	20	For MX-FN11/FN18
10	Staple cartridge	AR-SC3	Staple cartridge	3	2000 times x 3	40	For MX-FN10/FN18
11	Staple cartridge	MX-SCX1	Staple cartridge	3	5000 times x 3	20	For MX-FN17/FN10
12	Finish stamp cartridge	AR-SV1	Finish stamp cartridge	2	—	20	

3. Production number identification

A. Drum cartridge



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

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

1: Number
For this model, this digit is 2.

2: Alphabet
Indicates the model conformity code.

3: Number
Indicates the end digit of the production year.

4: Number or X, Y, Z
Indicates the production month.
X stands for October, Y November, and Z December.

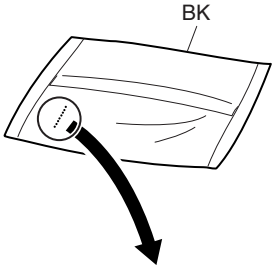
5/6: Number
Indicates the day of the production date.

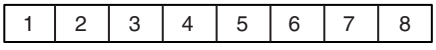
7: Number
Indicates the day of the month of packing.
X stands for October, Y November, and Z December.

8/9: Number
Indicates the day of the packing date.

10: Alphabet
Indicates the production factory.

B. Developer





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

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

1: Alphabet
Indicates the production factory.

2: Number
Indicates the production year.

3/4: Number
Indicates the production month.

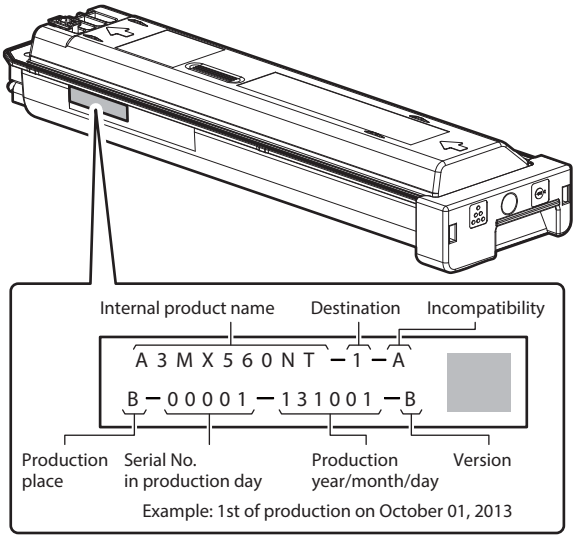
5/6: Number
Indicates the production day.

7: Hyphen

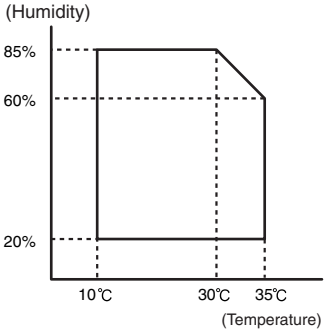
8: Number
Indicates the production lot.

C. Toner cartridge

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



D. Environmental conditions

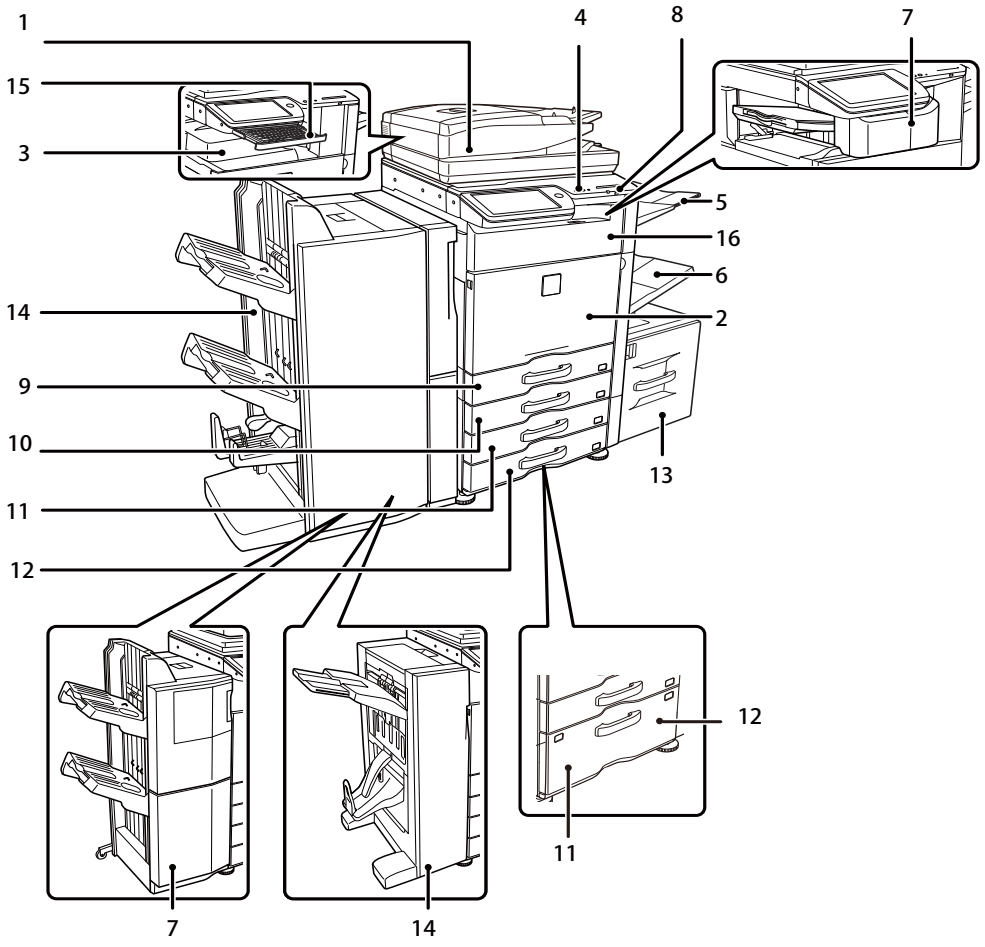


Standard environmental conditions	Temperature	20 – 25 °C
	Humidity	65 ± 5 %RH
Usage environmental conditions	Temperature	10 – 35 °C
	Humidity	20 – 85 %RH
Storage period	Toner/Developer: 24 months from the manufactured month (Production lot) under unsealed state Drum: 36 months from the manufactured month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

[3] EXTERNAL VIEW AND INTERNAL STRUCTURE

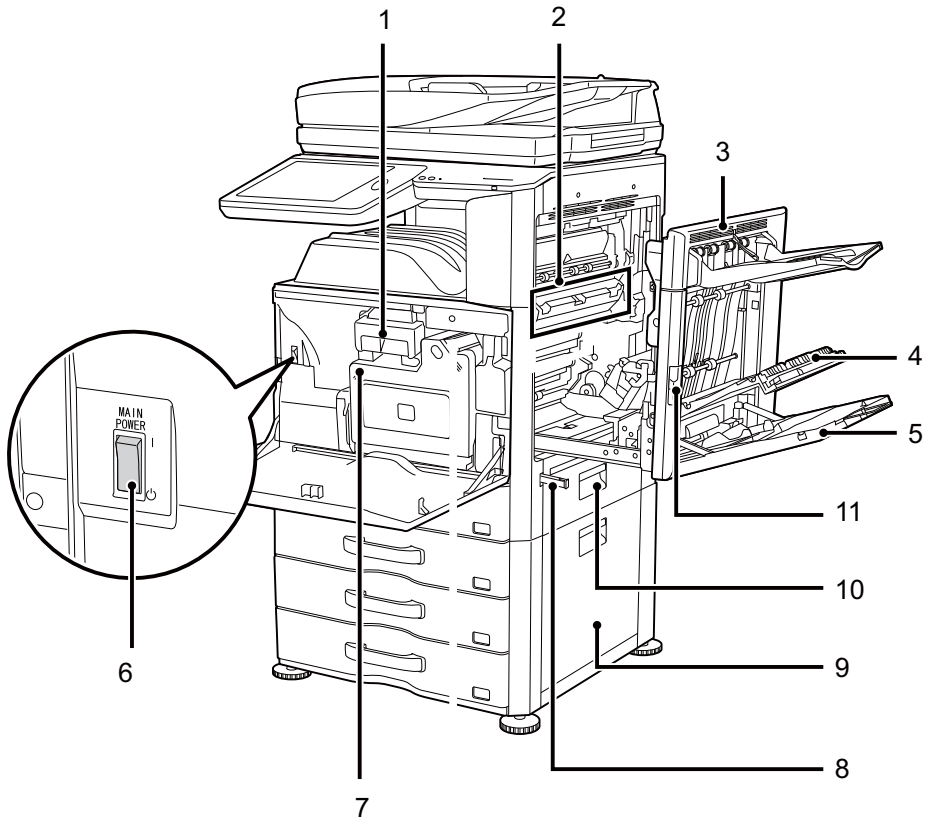
1. Identification of each section and functions

A. External view



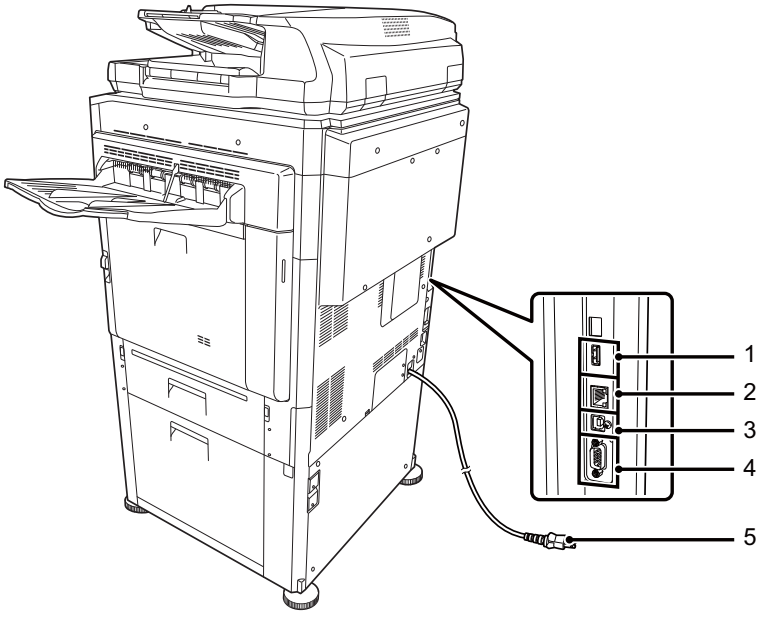
No.	Name	Function/Operation
1	Automatic document feeder	This automatically feeds and scans multiple originals. Both sides of 2-sided originals can be automatically scanned.
2	Front cover	Open this cover to switch the main power switch to "On" or "Off" or to replace a toner cartridge.
3	Output tray (center tray)	Output is delivered to this tray.
4	Operation panel	This is used to select functions and enter the number of copies.
5	Exit tray unit (right exit tray)	When installed, output can be delivered to this tray.
6	Bypass tray	Use this tray to feed paper manually. When loading a large sheet of paper, be sure to pull out the bypass tray extension.
7	Finisher	This can be used to staple output. A punch module can also be installed to punch holes in output.
8	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.
9	Tray 1	Paper holding cassette.
10	Tray 2 (when a paper feed tray is installed or when the Stand/500&2000 sheet paper drawer is installed)	Paper holding cassette
11	Tray 3 (when a paper feed tray is installed or when the Stand/500&2000 sheet paper drawer is installed)	Paper holding cassette.
12	Tray 4 (when a paper feed tray is installed or when the Stand/500&2000 sheet paper drawer is installed)	Paper holding cassette.
13	Tray 5 (when a large capacity tray is installed)	Large capacity paper holding tray.
14	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.
15	Keyboard	This is a keyboard that is incorporated into the machine. When not used, it can be stored under the operation panel.
16	Paper pass unit	Transports paper to the finisher.

B. Internal operation parts



No.	Name	Function/Operation
1	Toner cartridge	The toner cartridge contains toner for the developed image in the copy/print processes. when toner completely runs out of the cartridge, the cartridge must be replaced.
2	Fusing unit	Heat and pressure are applied to fuse the transferred image into the paper.
3	Right side cover	Open this cover to remove a paper mis-feed.
4	Paper reversing section cover	This is used when 2-sided copying/printing is performed. Open this cover to remove a paper mis-feed.
5	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.
6	Main power switch	Used to power on the machine. When using the fax or Internet fax functions, keep this switch in the "on" position.
7	Waste toner box	A container that collects waste toner which has not been transferred to paper during the copy/print process.
8	Handle	Pull handle out and grasp it when moving the machine.
9	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 cover to remove a mis-feed from tray 3 or tray 4.
10	Paper tray right side cover	Open cover to remove a paper mis-feed in tray 1 or tray 2.
11	Right side cover release lever	To remove a paper mis-feed, pull and hold this lever up to open the right side cover.

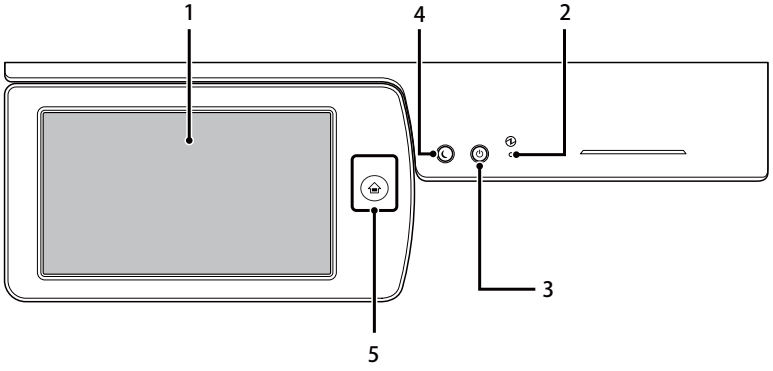
C. Connectors



No.	Name	Function/Operation	NOTE
1	USB connector (A type)	Supports USB 2.0. This is used to connect a USB device such as USB memory to the machine. This connector cannot be used under the factory setting. The connector on the front section can be used under the factory setting. When the keyboard is installed to the machine, an exclusive connection is enabled. (Simultaneous connection is disabled.)	When using the USB port, be careful of the total current consumption not to exceed 500mA.
2	LAN connector	Connect the LAN cable to this connector when the machine is used on a network. For the LAN cable, use a shielded type cable.	
3	USB connector (B type)	Supports USB 2.0. A computer can be connected to this connector to use the machine as a printer. For the USB cable, use a shielded cable.	
4	Service-only connector	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.	
5	Power plug		

D. Operation panel

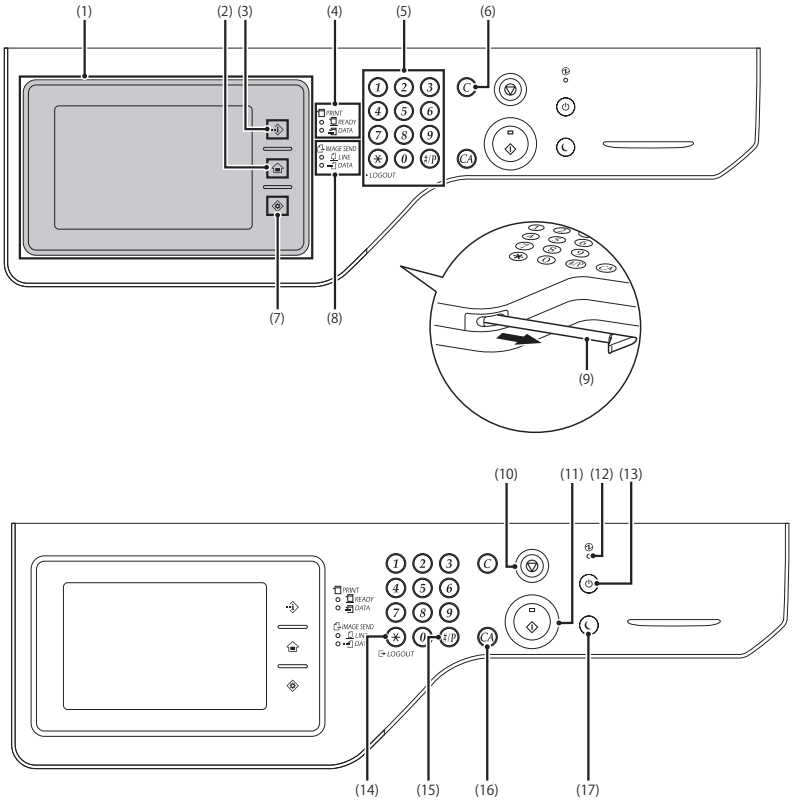
(1) MX-M365N/M465N/M565N series



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

2 : '16/Jan

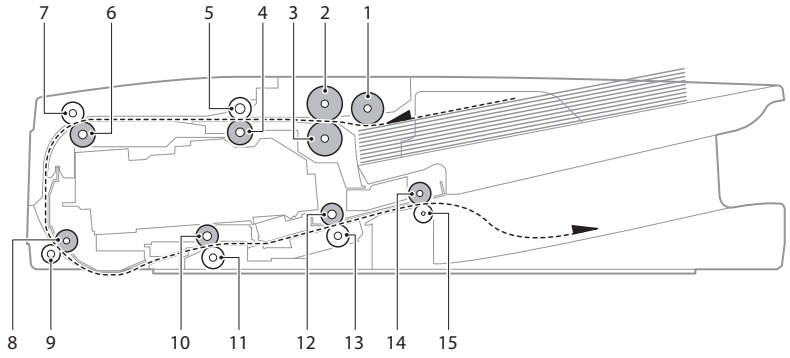
(2) MX-M364N/M454N/M564N series
2 **AR-M460N/M560N series**



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. The [HOME], [JOB STATUS] and [SYSTEM SETTINGS] keys are also available here. When a key is touched, a beep sounds and the selected item is highlighted. This provides confirmation as you perform an operation.
2	[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.
3	[JOB STATUS] key	Touch 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	* READY indicator Print jobs can be received when this indicator is lit. * DATA indicator 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	[SYSTEM SETTINGS] key	Touch 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.
8	IMAGE SEND mode indicators	* LINE indicator This lights up during transmission or reception of a fax or Internet fax. This also lights during transmission of an image in scan mode. * DATA indicator This blinks when a received fax or Internet fax cannot be printed because of a problem such as out of paper. This lights up when there is a transmission job that has not been sent.
9	Stylus pen	This can be used to touch a key displayed on the touch panel.
10	[STOP] key	Press this key to copy job or scanning of an original.
11	[START] key	Press this key to copy or scan an original in monochrome. This key is also used to send a fax in fax mode.
12	Main power indicator	This lights up when the machine's main power switch is in the on position.
13	[POWER] key	Use this key to turn the machine power on and off.
14	[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
15	[#/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.
16	[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.
17	[POWER SAVE] key	Use this key to put the machine into auto power shut-off mode to save energy.

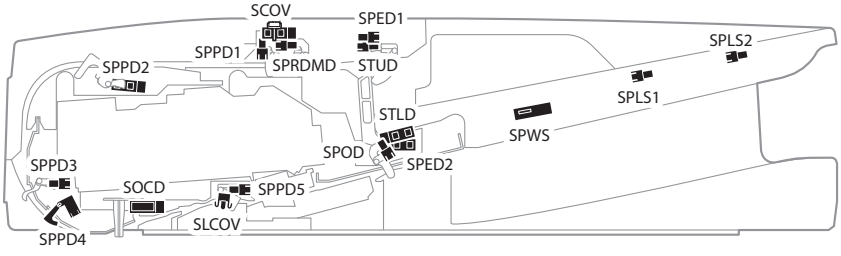
E. DSPF

(1) Roller



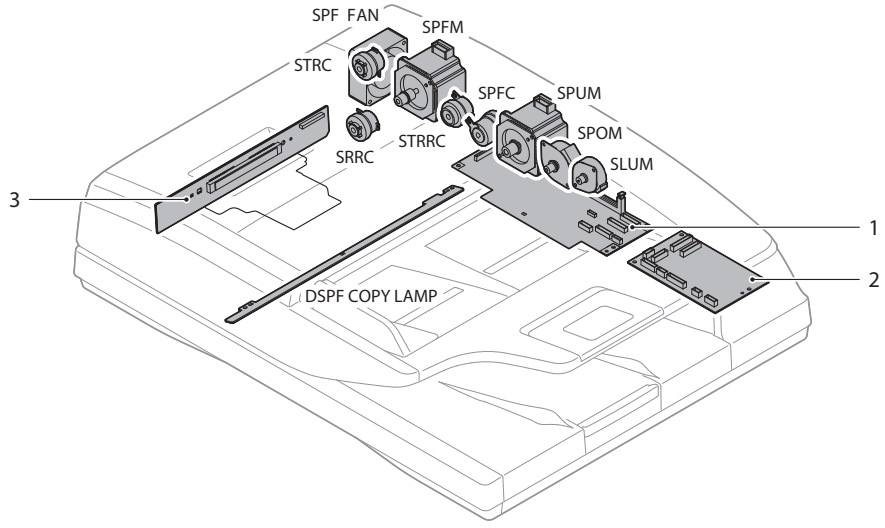
No.	Name	Function/ Operation
1	Pickup roller	Picks up a document and feeds it to the document feed roller.
2	Document feed roller	Performs the document feed operation of documents.
3	Separation roller	Separates document pages to prevent against a double-feed.
4	No. 1 registration roller (Drive)	Controls paper transport timing and creates buckle to eliminate possible paper skew.
5	No. 1 registration roller (Idle)	Applies pressure to document page and the registration roller, and provides transport power of the registration roller to document.
6	Transport roller 1 (Drive)	Transports document from No. 1 registration roller to No. 2 registration roller.
7	Transport roller 1 (Idle)	Applied pressure to document and the transport roller, and provides the transport power of the transport roller to document.
8	No. 2 registration roller (Drive)	Synchronizes timing between the lead edge of a document and the scan start position.
9	No. 2 registration roller (Idle)	Applies pressure to document and the registration roller, and provides transport power of the registration roller to document.
10	Transport roller 2 (Drive)	Transports document from the No. 1 scan section to the transport roller 3.
11	Transport roller 2 (Idle)	Applies pressure to document and the transport roller and provides transport power of the transport roller to document.
12	Transport roller 3 (Drive)	Transports document from the transport roller 2 to the document exit roller.
13	Transport roller 3 (Idle)	Applies pressure to document and the transport roller and provides transport power of the transport roller to document.
14	Document exit roller (Drive)	Discharges document.
15	Document exit roller (Idle)	Applies pressure to document and the document exit roller and provides transport power of the document exit roller to document.

(2) Sensors and Switches



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

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

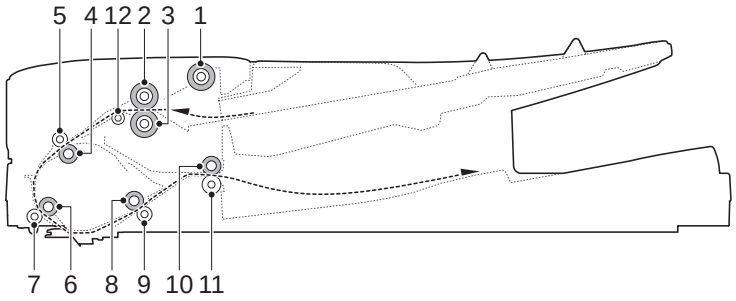


Signal name	Name	Type	Function/Operation
DSPF COPY LAMP	DSPF copy lamp	LED lamp	Radiates light onto a document to allow the CCD to scan document images.
SLUM	DSPF lift-up motor	PM step motor	Lifts up or moves down the document feed tray.
SPFC	DSPF document feed clutch	Electromagnetic clutch	Controls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

No.	Name	Function/Operation
1	DSPF control PWB	Control PWB for DSPF
2	DSPF driver PWB	Driver PWB for DSPF
3	DSPF CCD PWB	Scans document images.

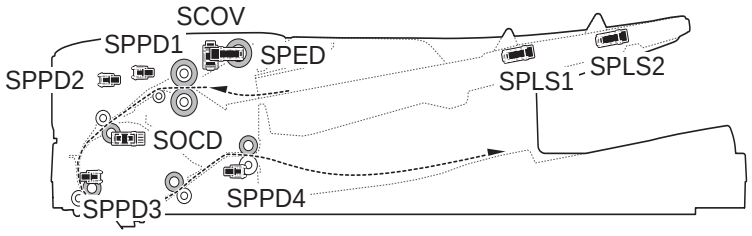
F. RSPF

(1) Roller



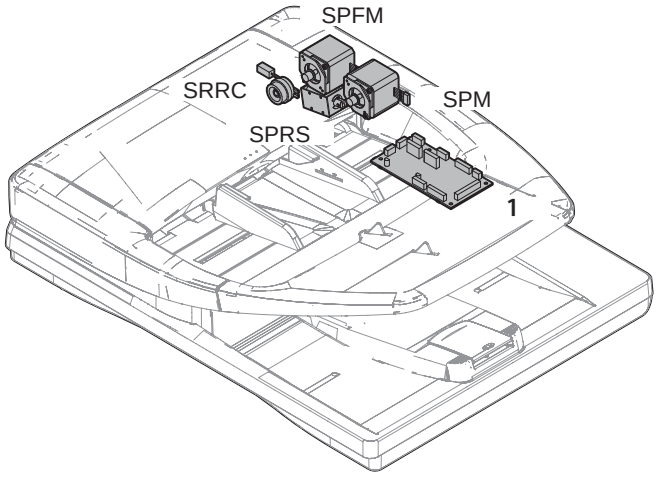
No.	Name	Function/Operation
1	Pickup roller	Picks up a document and feeds it to the paper feed roller.
2	Paper feed roller	Performs the paper feed operation of documents.
3	Separation roller	Separates document page to prevent against a double-feed.
4	Resist roller (Drive)	Controls paper transport timing and creates buckle to eliminate possible paper skew.
5	Resist roller (Idle)	Applied pressure to document and the resist roller, and provides transport power of the resist roller to document.
6	Transport roller 1 (Drive)	Transports document from resist roller to transport roller 2.
7	Transport roller 1 (Idle)	Applied pressure to document and the transport roller, and provides the transport power of the transport roller to document.
8	Transport roller 2 (Drive)	Transports document to the transport 3 roller.
9	Transport roller 2 (Idle)	Applied pressure to document and the transport roller, and provides the transport power of the transport roller to document.
10	Transport roller 3 (Drive)	Transports document from the transport roller 2 to the paper exit roller. / Transports document to the resist roller when reversing the document.
11	Transport roller 3 (Idle)	Applied pressure to document and the transport roller, and provides the transport power of the transport roller to document.
12	Transport auxiliary roller	Helps to transport document smoothly.

(2) Sensors and Switches



Signal name	Name	Type	Function/Operation
SCOV	RSPF upper cover open/close sensor	Micro switch	Detects open/close of the RSPF upper cover.
SOCD	RSPF open/close sensor	Transmission type	Detects open/close of the RSPF unit.
SPED	RSPF document sensor	Transmission type	Detects document empty in the RSPF paper feed tray.
SPLS1	RSPF document length sensor (short)	Transmission type	Detects the document length in the RSPF paper feed tray.
SPLS2	RSPF document length sensor (long)	Transmission type	Detects the document length in the RSPF paper feed tray.
SPPD1	RSPF document pass sensor 1	Transmission type	Detects pass of the document.
SPPD2	RSPF document pass sensor 2	Transmission type	Detects pass of the document.
SPPD3	RSPF document pass sensor 3	Transmission type	Detects pass of the document.
SPPD4	RSPF document pass sensor 5	Transmission type	Detects pass of the document.

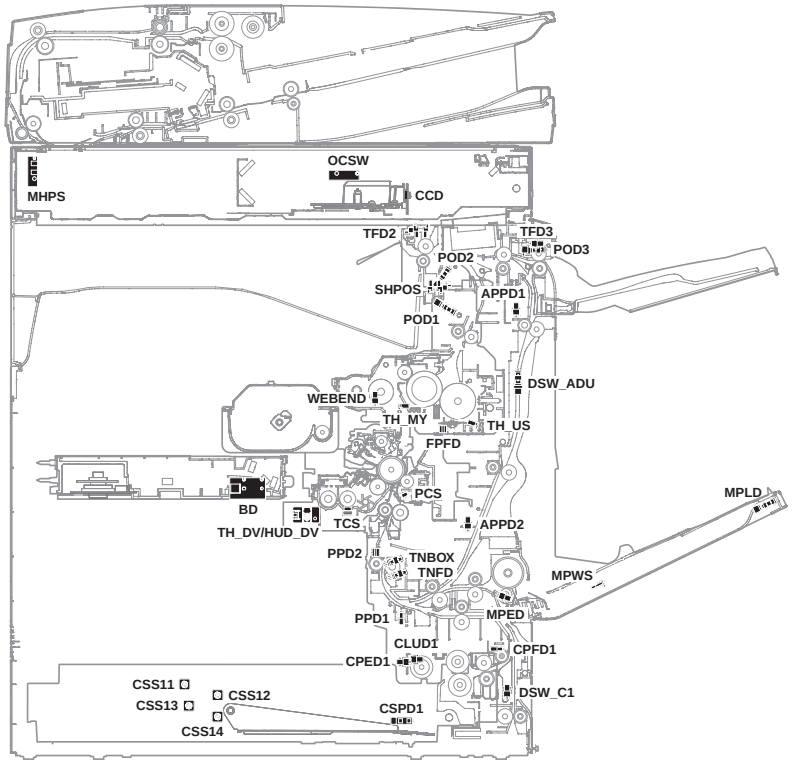
(3) Motors, clutches, solenoids, PWB



Signal name	Name	Type	Function/Operation
SPFM	Transport motor	Stepping motor	Drives the transport roller.
SPM	Paper feed motor	Stepping motor	Drives the roller in the paper feed section.
SPRS	Pressure release solenoid	Electromagnetic solenoid	Releases the pressure of the transport roller 3 when reversing a document and transporting it to the resist roller.
SRRC	PS clutch	Electromagnetic clutch	Controls ON/OFF of resist roller.

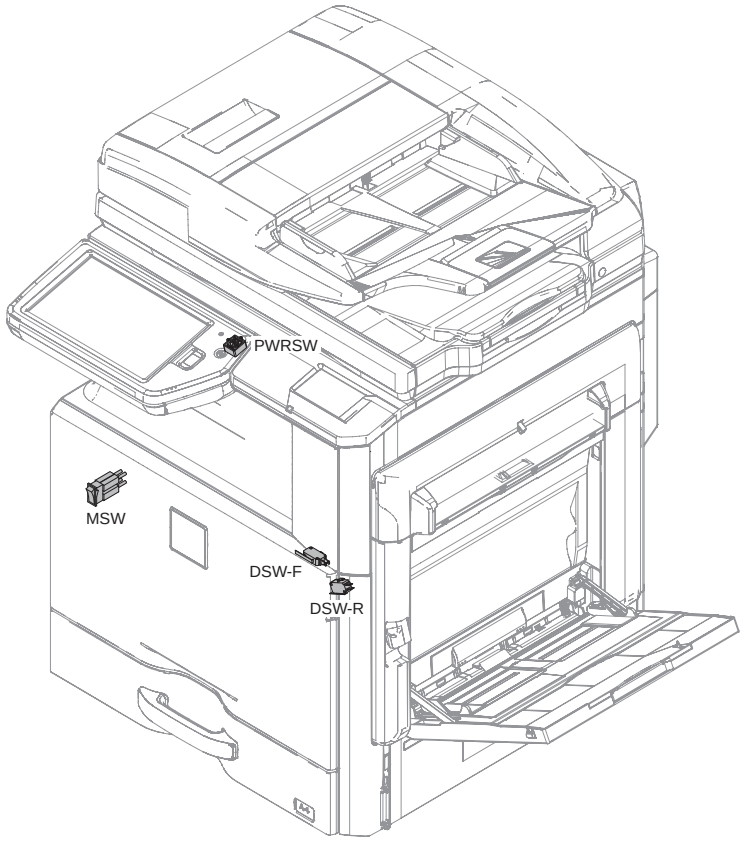
No.	Name	Function/Operation
1	RSPF driver PWB	Drives the motor and the clutch in the RSPF section.

G. Sensors



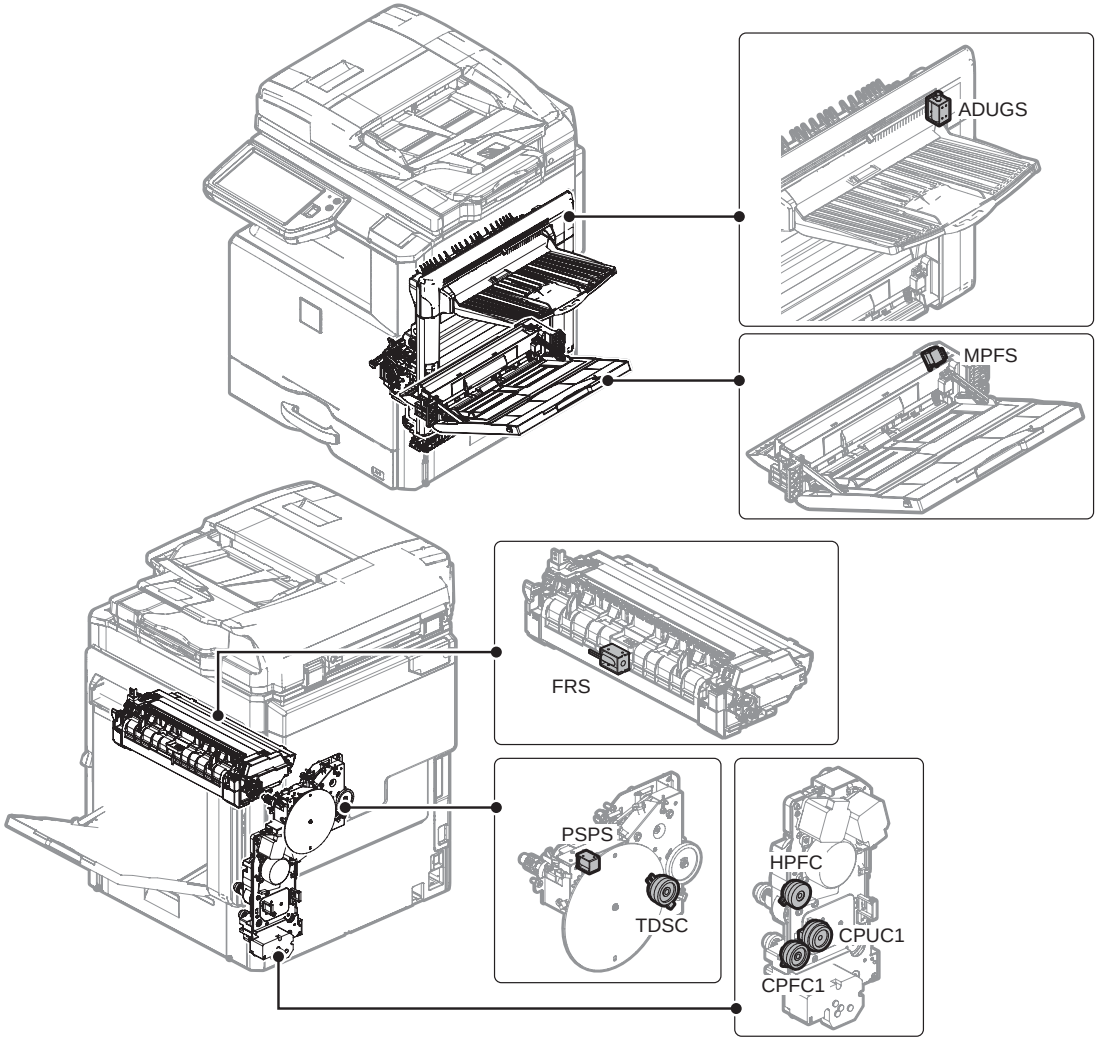
Signal name	Name	Function/Operation	Type
APPD1	ADU transport path detection 1	Detects the duplex (ADU) upstream paper pass.	Transmission type
APPD2	ADU transport path detection 2	Detects the duplex (ADU) midstream paper pass.	Transmission type
BD	Laser beam detection	Detects the laser scan start timing.	
CCD	CCD unit	Converts document images (optical signals) into electrical signals.	
CLUD1	Tray 1 upper limit detection (Lift HP detection)	Detects the tray 1 upper limit.	Transmission type
CPED1	Tray 1 paper empty detection	Detects the tray 1 paper empty.	Transmission type
CPFD1	Tray 1 transport detection (Paper entry detection)	Detects tray 1 paper pass.	Transmission type
CSPD1	Tray 1 paper remaining quantity detection	Detects the tray 1 paper remaining quantity.	
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.	Tact switch
CSS12	Tray 1 rear edge detection 2		
CSS13	Tray 1 rear edge detection 3		
CSS14	Tray 1 rear edge detection 4		
DSW_ADU	ADU transport open/close detection	Detects the duplex (ADU) cover open/close	Transmission type
DSW_C1	Tray 1 transport cover open/close detection	Detects the tray 1 transport cover open/close.	
FPFD	Fusing front paper pass detector	Detects paper pass in front of the fusing section.	Reflection type
HUD_DV/ TH_DV	Temperature/humidity sensor	Detects the temperature and humidity	
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
MPLD	Manual feed paper length detector	Detects the manual paper feed tray paper length.	Transmission type
MPWS	Manual paper feed tray paper width detector	Detects the manual paper feed tray paper width.	Volume resistor
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.	Reflection type
PCS	Image density sensor	Detects toner patch density.	Reflection type
SHPOS	Shifter home position detection	Detects the shifter home position	
TCS	Toner density sensor	Detects the toner density (K).	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_MY(TH_UM)	Main thermistor	Fusing temperature detection (main)	Thermistor
TH_US	Sub thermistor	Fusing temperature detection (sub)	Thermistor
TNFD	Waste toner box remaining quantity detection	Detects installation of the waste toner box. Detects the waste toner near end and the waste toner full.	Transmission type
TNBOX	Waste toner box remaining quantity detection	Detects installation of the waste toner box. Detects the waste toner near end and the waste toner full.	Transmission type
WEBEND	Web end detection	Detects life end of the web cleaner.	Transmission type

H. Switches



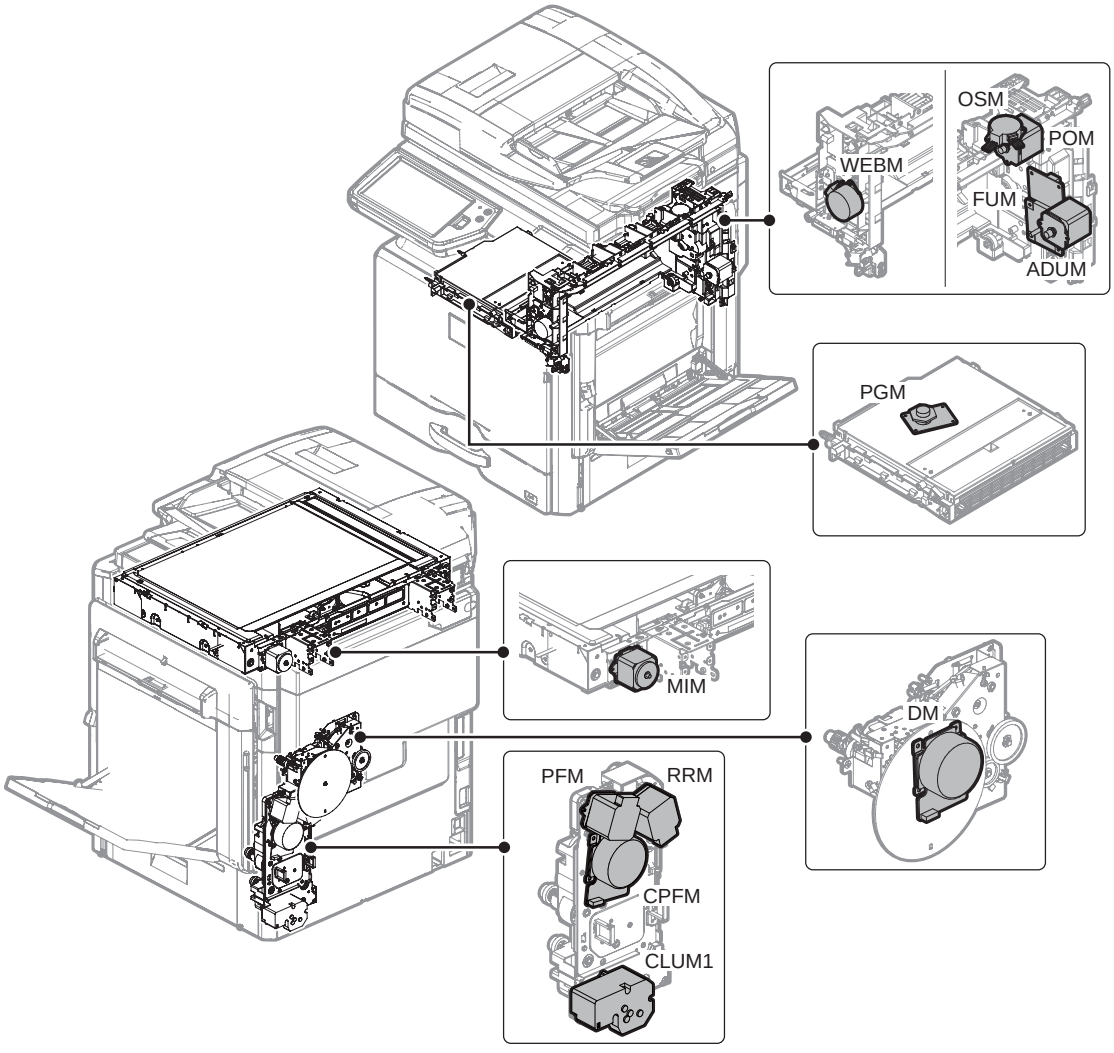
Signal name	Name	Type	Function/Operation
DSW-F	Front door open/close switch	Micro switch	Detects open/close of the front door, and turns ON/OFF the power line of the fusing, motor and the LSU laser.
DSW-R	Right door open/close switch	Micro switch	Detects open/close of the right door, and turns ON/OFF the power line of the fusing, motor and the LSU laser.
MSW	Main switch	Seesaw switch	Turns ON/OFF the AC power source.
PWRSW	Operation panel power switch	Push switch	Controls ON/OFF of the DC power source.

I. Clutches and solenoids



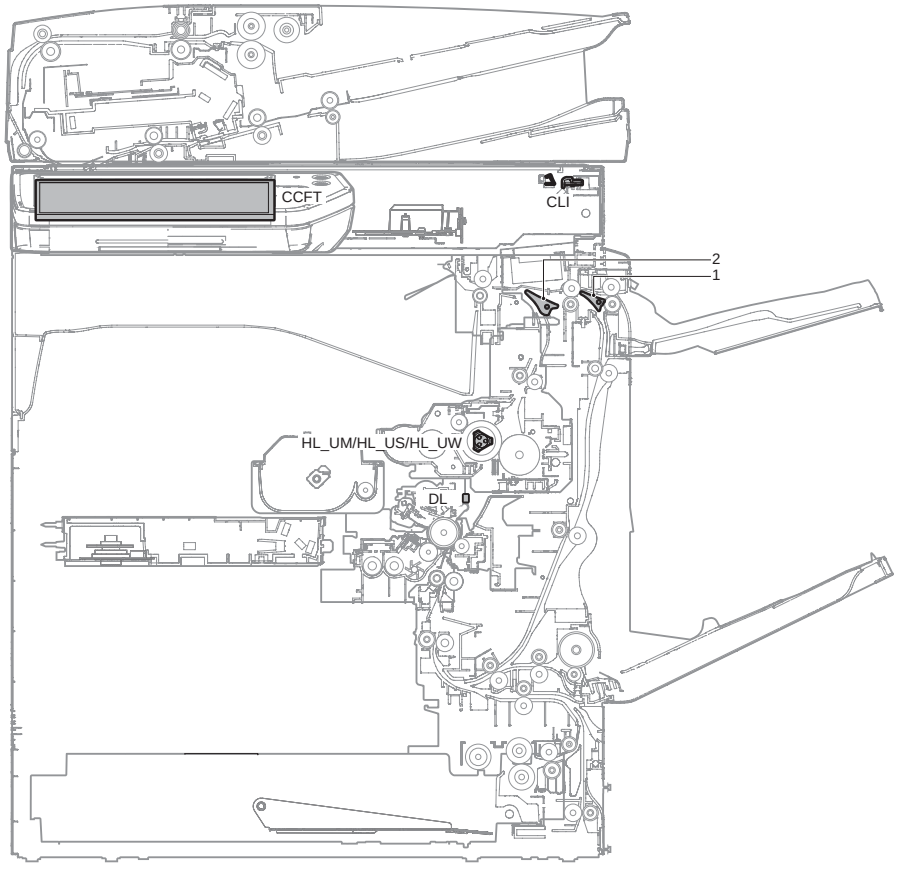
Signal name	Name	Type	Function/Operation
ADUGS	ADU gate solenoid	Electromagnetic solenoid	Controls the ADU gate.
CPFC1	Paper transport clutch 1	Electromagnetic clutch	Controls ON/OFF of the paper transport roller.
CPFC2	Paper transport clutch 2	Electromagnetic clutch	Controls ON/OFF of the paper transport roller in the paper transport section of 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.
FRS	Lower pawl separation solenoid	Electromagnetic clutch	Controls the lower pawl separation solenoid
HPFC	Transport roller clutch	Electromagnetic clutch	Controls the transport roller
MPFS	Paper pickup solenoid (Manual paper feed)	Electromagnetic solenoid	Paper pickup solenoid (Manual paper feed)
PSPS	Separation solenoid	Electromagnetic solenoid	Separates paper from the OPC drum.
TDSC	Toner supply clutch	Electromagnetic clutch	Controls ON/OFF of toner supply.

J. Drive motor



Signal name	Name	Type	Function/Operation
ADUM	ADU motor upper	Stepping motor	Drives the transport roller
CLUM1	Paper tray lift-up motor (Paper feed tray 1)	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	Drum motor	Brush-less motor	Drives the OPC drum and the developing unit.
FUM	Fusing drive motor	Brush-less motor	Drives the fusing unit.
MIM	Scanner motor	Stepping motor	Drives the scanner (reading) unit.
OSM	Shifter motor	Stepping motor	Performs offset of paper.
PFM	Transport motor	Stepping motor	Drives the transport roller which is between the resist roller and the paper feed section. Drives the transport roller which is 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.
RRM	Resist motor	Stepping motor	Drives the resist roller and controls ON/OFF.
WEBM	Fusing web cleaning motor	Stepping motor	Drives the fusing web cleaning paper.

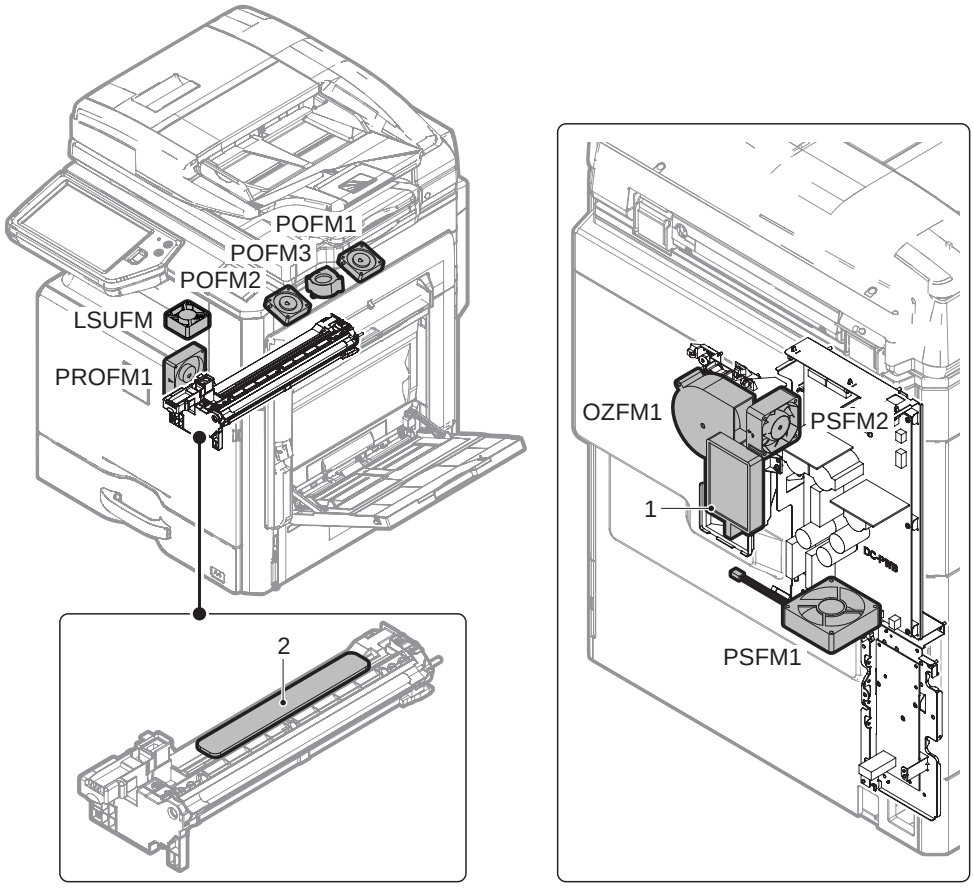
K. Lamps and gates



Signal name	Name	Type	Function/Operation
CCFT	LED back-light	Cold Cathode Fluorescent Tube	Back-light for LED
CLI	Scanner lamp	LED	Radiates lights onto a document for the CCD to scan the document image.
DL	Discharge lamp	LED	Discharges electric charges on the OPC drum
HL_UM	Heater lamp (main)	Halogen lamp	Heats the heat roller (main).
HL_US	Heater lamp (sub)	Halogen lamp	Heats the heat roller (sub).
HL_UW	Heater lamp (for warm-up)	Halogen lamp	Heats up supplementarily when warming-up.(For 46/56com machine)

No.	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 of paper to the duplex (ADU) section.

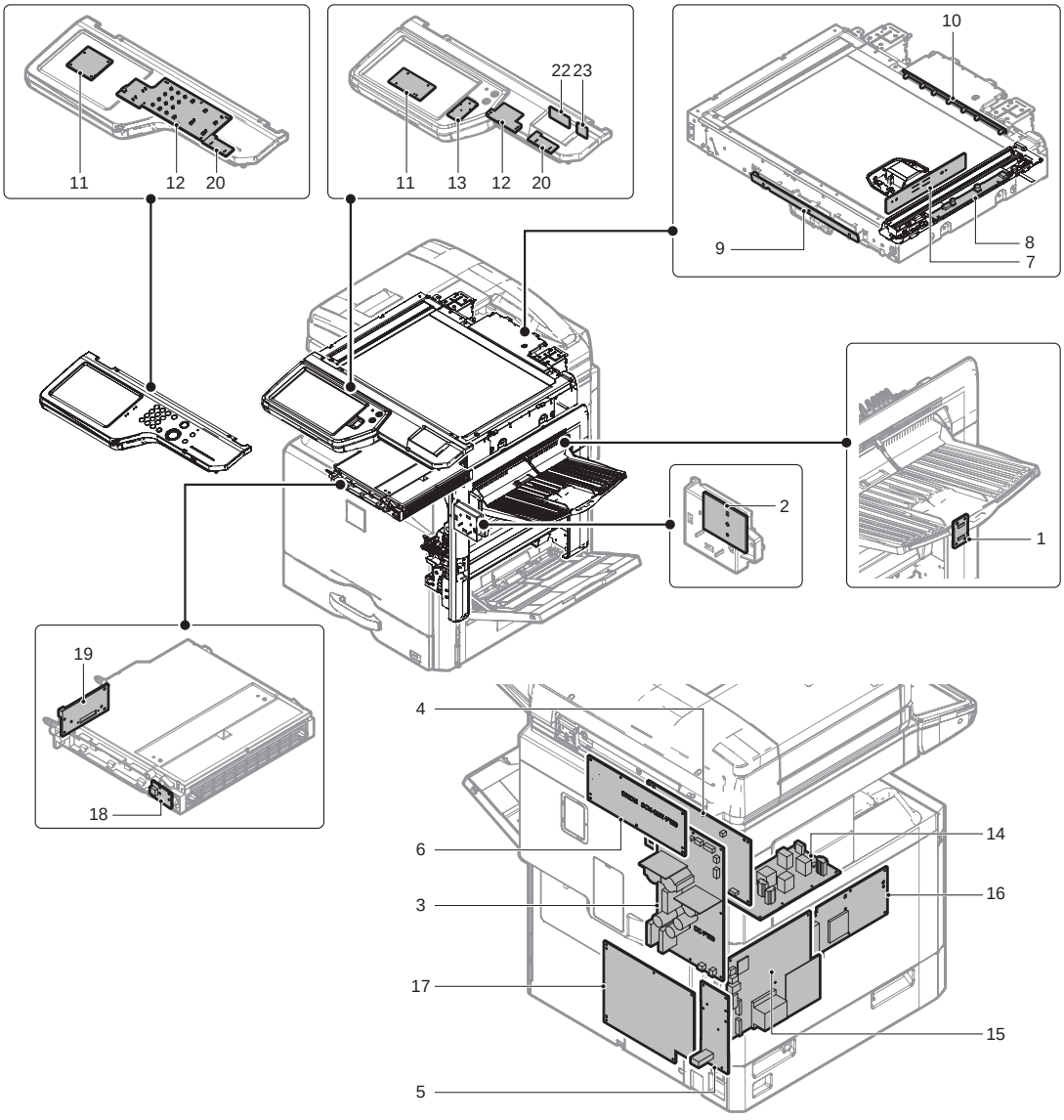
L. Fans and filters



Signal name	Name	Function/Operation
LSUCFM	LSU cooling fan	Cools the LSU section.
OZFM1	Ozone fan	Exhausts ozone.
PSFM1	Power cooling fan 1	Cools the power unit.
PSFM2	Power cooling fan 2	Cools the power unit.
POFM1	Paper exit cooling fan 1	Cools the fusing and the paper exit section.
POFM2	Paper exit cooling fan 2	Cools the fusing and the paper exit section.
POFM3	Paper exit cooling fan 3	Cools the paper.
PROFM1	Process fan	Cools process section.

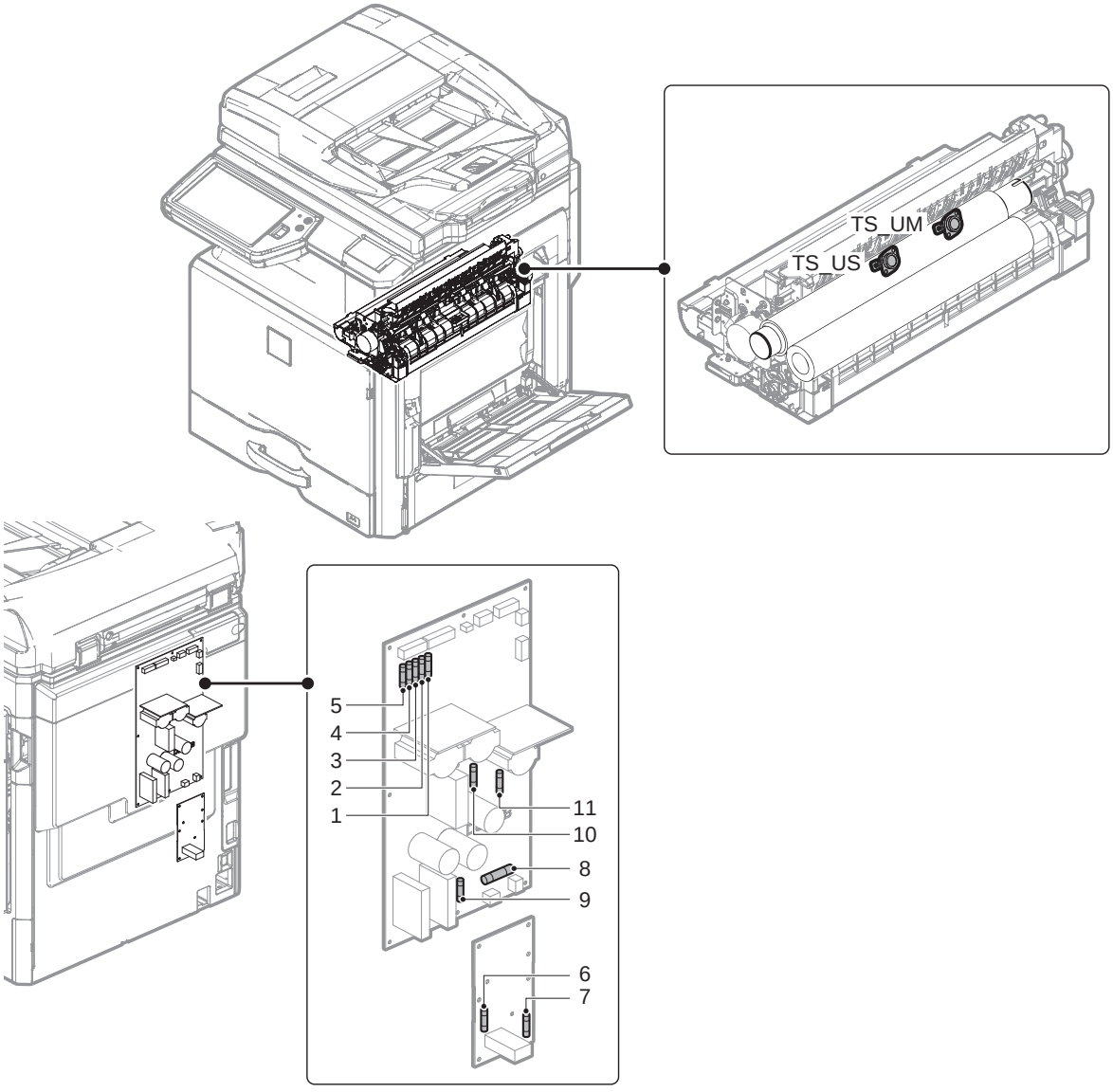
No.	Name	Function/Operation
1	Ozone filter	Absorbs ozone generated in the image process section.
2	Toner filter	Prevents dispersing of toner.

M. PWB



No.	Name	Function/Operation
1	RD I/F PWB	Interfaces each sensor signal in the right door unit section.
2	Paper size detection PWB	Detects the paper size in the paper feed tray.
3	DC power PWB	Generates a DC voltage.
4	HV PWB	Generates the main charger voltage, the developing bias voltage, and the transfer voltage.
5	AC power PWB	Controls the power source and noise filter function.
6	Scanner control PWB	Controls the scanner and the operation panel section.
7	CCD PWB	Scans document images.
8	LED drive PWB	Drives the scanner lamp.
9	Document detection light collector PWB	Outputs the document size detection signal.
10	Document detection light emitting PWB	Drives the document size detection LED.
11	LVDS PWB	Converts display signals into LCD display signals.
12	PW-KEY PWB	Turns ON/OFF the power on the secondary side.
13	HW-KEY-PWB	Outputs the key operation signal.
14	HL PWB	Controls the heater lamp.
15	MFP PWB	Controls data related to images, and controls the whole machine.
16	LSU-Mother PWB	Interfaces signals of the MFP PWB and another PWB.
17	PCU PWB	Controls the engine section.
18	BD PWB	Detects laser and outputs the synchronous signal.
19	LD PWB	Controls laser lighting.
20	USB I/F PWB	USB I/F
21	KEY PWB	Outputs the key operation signal
22	Wireless LAN PWB	Connects the network with the wireless LAN
23	USB CONV PWB	Converts to the USB connection

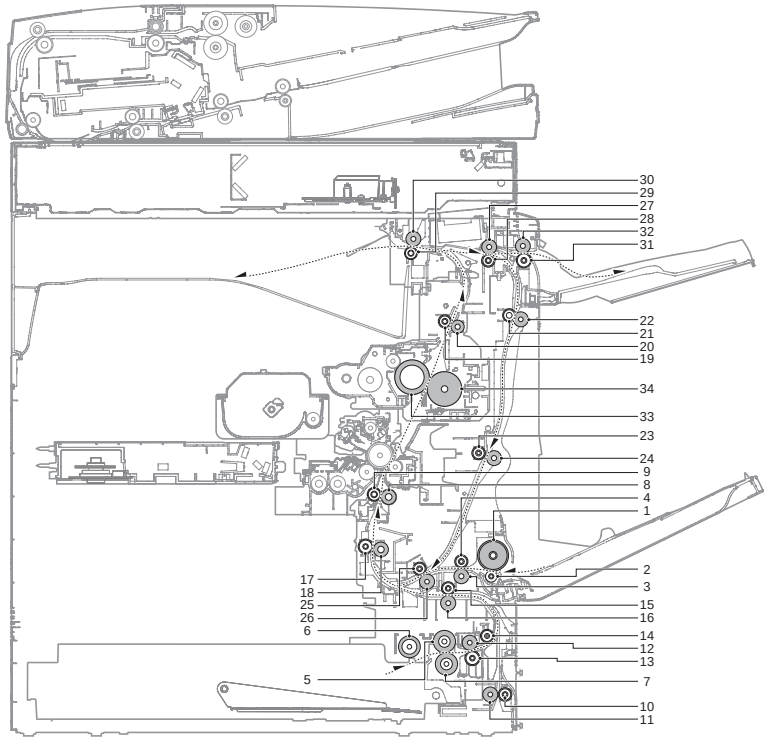
N. Fuses/Thermostats



Signal name	Name	Specifications	Section
TS UM	Thermostat	Fusing roller overheat protection (For HL_UM)	Fusing unit
TS US	Thermostat	Fusing roller overheat protection (For HL_US/HL_UW)	Fusing unit

NO	Signal name	Name	Specifications	Section
1	F401	Fuse	T6.3AH 250V	DC power PWB
2	F402	Fuse	T6.3AH 250V	DC power PWB
3	F403	Fuse	T6.3AH 250V	DC power PWB
4	F404	Fuse	T6.3AH 250V	DC power PWB
5	F405	Fuse	T6.3AH 250V	DC power PWB
6	F1	Fuse	20A 250V (100V) / T10AH 250V(200V)	AC power PWB
7	F2	Fuse	T10AH250V (200V only)	AC power PWB
8	F001	Fuse	15A 250V (100V) / T10.AH 250V (200V)	DC power PWB
9	F051	Fuse	T2AH 250V	DC power PWB
10	F201	Fuse	T10AH 250V (100V) / T6.3AH 250V (200V)	DC power PWB
11	F301	Fuse	T4AH 250V	DC power PWB

O. Rollers



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	Transport roller 10 (Drive)	Transports paper from manual paper feed section to the transport roller 9.
4	Transport roller 10 (Idle)	Applies pressure to paper and the transport roller to provide the transport power of the transport roller to paper.
5	Paper feed roller (Paper feed tray)	Feeds paper to the paper transport section
6	Paper pickup roller (Paper feed tray)	Feeds paper to the paper feed roller.
7	Separation roller (Paper feed tray)	Separates paper to prevent double feeding
8	Registration roller (Drive)	Transports paper to the transfer section / controls the transport timing of paper and adjusts relative relations between the image and paper.
9	Registration roller (Idle)	Applies pressure to paper and the registration roller to provide the transport power of the transport roller to paper.
10	Transport roller 1 (Idle)	Applies pressure to paper and the transport roller to provide the transport power of the transport roller to paper.
11	Transport roller 1 (Drive)	Transports paper fed from the paper feed desk tray to the transport roller 4.
12	Transport roller 2 (Drive)	Transports paper fed from the paper feed tray to the transport roller 3.
13	Transport roller 2 (Idle)	Applies a pressure to paper and the transport roller to provide the transport power of the transport roller to paper.
14	Transport roller 3	Transports paper from the transport roller 2 to the transport roller 4.
15	Transport roller 4 (Idle)	Applies 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 3 to the transport roller 5.
17	Transport roller 5 (Idle)	Applies a pressure to paper and the transport roller to provide the transport power of the transport roller to paper.
18	Transport roller 5 (Drive)	Transports paper to the registration roller. Paper is buckled between the registration roller and this roller to correct the paper skew and set timing relation between images and paper.
19	Transport roller 6 (Idle)	Applies pressure to paper and the transport roller to give the transport power of the transport roller to the paper
20	Transport roller 6 (Drive)	Transports paper transported from the fusing section to the paper exit section and the switchback section.
21	Transport roller 7 (Idle)	Applies pressure to paper and the transport roller to provide the transport power of the transport roller to paper.
22	Transport roller 7 (Drive)	Transports paper transported from the switchback section to the transport roller 8.
23	Transport roller 8 (Idle)	Applies pressure to paper and the transport roller to provide the transport power of the transport roller to paper.
24	Transport roller 8 (Drive)	Transports paper transported from the transport roller 7 to the transport roller 9.
25	Transport roller 9 (Idle)	Applies pressure to paper and the transport roller to provide the transport power of the transport roller to paper.
26	Transport roller 9 (Drive)	Transports paper transported from the transport roller 8 to the transport roller 5.
27	Paper exit roller 3 (Drive)	Transports paper to paper exit roller 2 or transport roller 7.
28	Paper exit roller 3 (Idle)	Applies pressure to paper and the paper exit roller to provide the transport power of the paper exit roller to paper.
29	Paper exit roller 1 (Idle)	Applies pressure to paper and paper exit roller to provide the transport power of the paper exit roller to paper.
30	Paper exit roller 1 (Drive)	Transports paper to the left paper exit section.
31	Paper exit roller 2 (Idle)	Applies pressure to paper and the paper exit roller to provide the transport power of the paper exit roller to paper.
32	Paper exit roller 2 (Drive)	Discharges paper to the right paper exit tray.
33	Fusing roller (Heating)	Heat and press toner onto paper to fuse images.
34	Fusing roller (Pressing)	Applies pressure to the fusing roller.

[4] ADJUSTMENTS AND SETTINGS

1. General

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

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

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

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

2. Adjustment item list

Job No	Adjustment item list					Simulation
ADJ 1	Adjust the developing unit	1A	Adjust the developing doctor gap			
		1B	Adjust the developing roller main pole position			
		1C	Toner density control reference value setting			25-2
ADJ 2	Adjusting high voltage values	2A	Adjust the main charger grid voltage			8-2
		2B	Adjust the developing bias voltage			8-1
		2C	Transfer current and voltage adjustment			8-6
		2D	Transfer separation bias voltage adjustment			8-17
ADJ 3	Print engine image skew, image position, image magnification ratio, void area adjustments (Manual adjustments)	3A	Print engine image skew adjustment (LSU parallelism adjustment)			64-2
		3B	Print engine image magnification ratio adjustment (Main scanning direction)			50-10
		3C	Print engine print area (void area) adjustment			50-10/50-1
		3D	Print engine image off-center adjustment			50-10
ADJ 4	Scan image distortion adjustment (OC mode)	4A	Scanner (reading) unit parallelism adjustment			
		4B	Scan image sub scanning direction distortion adjustment			
		4C	Scan image main scanning direction distortion adjustment			
		4D	Scan image distortion adjustment (Whole scanner unit)			
ADJ 5	Scanner image skew adjustment (DSPF/RSPF mode)	5A	DSPF/RSPF parallelism adjustment			
		5B	DSPF/RSPF skew adjustment (Front surface mode)			64-2
		5C	DSPF skew adjustment (Back surface mode)			64-2
ADJ 6	Scan image focus adjustment	6A	Image focus adjustment (Document table mode/DSPF/RSPF front surface mode)			48-1
		6B	Image focus adjustment (DSPF back surface mode)			
ADJ 7	Scan image magnification ratio adjustment (Manual adjustment)	7A	Main scanning direction image magnification ratio adjustment (Document table mode)			48-1
		7B	Sub scanning direction image magnification ratio adjustment (Document table mode)			48-1/48-5
		7C	Main scanning direction image magnification ratio adjustment (DSPF/RSPF mode)			48-1
		7D	Sub scanning direction image magnification ratio adjustment (DSPF/RSPF mode)			48-1
ADJ 8	Scan image off-center adjustment (Manual adjustment)	8A	Scan image off-center adjustment (Document table mode)			50-12
		8B	Scan image off-center adjustment (DSPF/RSPF mode)			50-12/50-6
ADJ 9	Print lead edge image position, void area adjustment (Printer mode)					50-5
ADJ 10	Copy image position, image loss, and void area adjustment (Manual adjustment)	10A	Copy image position, image loss, void area adjustment (Document table mode)			50-1
		10B	Document scan position adjustment (DSPF mode scanner scan position adjustment)			53-8
		10C	Copy mode image loss adjustment (DSPF/RSPF mode)			50-6
ADJ 11	Gray balance/density adjustment		Note before execution of the image quality adjustment			
			Copy image quality check			
			Printer image quality check			
		11A	Scanner calibration (CCD calibration)	11A (1)	CCD gamma adjustment (CCD calibration) (Document table mode)	63-3 (63-5)
				11A (2)	Shading adjustment (Calibration) (DSPF mode)	63-2
				11A (3)	CCD gamma adjustment (CCD calibration) (DSPF mode)	63-3
		11B	Copy/Printer gray balance and density adjustment (Automatic adjustment) (Basic adjustmen)			46-74
		11C	Copy quality adjustment (Basic adjustment)	11C (1)	Copy gray balance and density adjustment (Automatic adjustment)	46-24
				11C (2)	Copy gray balance and density adjustment (Manual adjustment)	46-21
		11D	Copy/Image send/FAX image quality adjustment (Individual adjustment)	11D (1)	Monochrome copy density adjustment (for each monochrome copy mode) (separately for the low density area and high density area)) (No need to adjust normally)	46-2
				11D (2)	Copy gray balance, gamma adjustment (No need to adjust normally)	46-10
				11D (3)	Monochrome copy density, gamma adjustment (for each monochrome copy mode)	46-16
				11D (4)	Automatic monochrome (Copy/Scan/FAX) mode document density scanning operation (exposure operation) conditions setting (Normally no need to set)	46-19

Job No	Adjustment item list					Simulation
ADJ 11	Gray balance/density adjustment	11D	Copy/Image send/FAX image quality adjustment (Individual adjustment)	11D (5)	Document low density image density reproduction adjustment in the automatic monochrome (Copy/Scan/FAX) mode (No need to adjust normally) (Background density adjustment in the scanning section)	46-32
				11D (6)	Copy/Scan low density image density adjustment)for each mode) (No need to adjust normally)	46-63
				11D (7)	Monochrome (Copy/Scan/FAX) mode color document reproduction adjustment (No need to adjust normally)	46-37
				11D (8)	Monochrome copy/color scan mode sharpness adjustment (No need to adjust normally)	46-30
				11D (9)	Copy high density image density reproduction setting (Normally unnecessary the setting change)	46-23
				11D (10)	DSPF mode (Copy/Scan/FAX) density adjustment (No need to adjust normally)	46-9
				11D (11)	Automatic gray balance adjustment by the user (Copy gray balance automatic adjustment ENABLE setting and adjustment)	26-53
				11D (12)	Copy gamma, gray balance adjustment for each dither (Automatic adjustment)	46-54
				11D (13)	Dropout color adjustment (Normally not required)	46-55
				11D (14)	Watermark adjustment (Normally not required)	46-66
		11E	Printer image quality adjustment (Basic adjustment)	11E (1)	Printer gray balance adjustment (Automatic adjustment)	67-24
				11E (2)	Printer gray balance adjustment (Manual adjustment)	67-25
		11F	Printer image quality adjustment (Individual adjustment)	11F (1)	Printer density adjustment (Low density section density adjustment) (No need to adjust normally)	67-36
				11F (2)	Printer high density image density reproduction setting (Supporting the high density section tone gap) (No need to adjust normally)	67-34
				11F (3)	Printer gamma adjustment for each dither (Automatic adjustment) (No need to adjust normally)	67-54
				11F (4)	Automatic gray balance adjustment by the user (Printer gray balance automatic adjustment ENABLE) setting and adjustment) (Normally unnecessary to the setting change)	26-53
ADJ 12	Image send, FAX send mode, image quality adjustment	12A	Color image send mode, image density and gradation adjustment (by each mode)			46-4
		12B	Monochrome image send mode, image density and gradation adjustment (by each mode)			46-5
		12C	Image send mode, image color balance adjustment			46-8
		12D	FAX send mode, image sharpness adjustment			46-39
ADJ 13	FAX send mode image quality adjustment	13A	Image density and gradation adjustment in the FAX send mode (Collective adjustment of all the FAX mode)			46-40
		13B	Image density and gradation adjustment in the FAX send mode (Normal mode)			46-41
		13C	Image density and gradation adjustment in the FAX send mode (Fine mode)			46-42
		13D	Image density and gradation adjustment in the FAX send mode (Super fine mode)			46-43
		13E	Image density and gradation adjustment in the FAX send mode (Ultra fine mode)			46-44
		13F	Image density and gradation adjustment in the in the iFAX send mode (600dpi mode)			46-45
ADJ 14	Setting of the auto exposure mode operating conditions in copy, scan and FAX					46-19
ADJ 15	Paper size detection adjustment	15A	Manual paper feed tray paper width sensor adjustment			40-2
		15B	DSPF/RSPF paper feed tray paper width sensor adjustment			53-6
ADJ 16	Document size detection adjustment (Document table mode)	16A	Document size sensor detection point adjustment			41-1
		16B	Adjust the sensitivity of the original size sensor			41-2
ADJ 17	Touch panel coordinate setting					65-1
ADJ 18	Image lead edge position, image off-center, image magnification ratio adjustment (Automatic adjustment)	18A	Print image main scanning direction image magnification ratio automatic adjustment (Document table mode)			50-28
		18B	Image off-center automatic adjustment (Each paper feed tray)			50-28
		18C	Copy lead edge image reference position adjustment, image off-center, sub scanning direction image magnification ratio automatic adjustment (Document table mode)			50-28
		18D	Copy image off-center, image lead edge position, sub scanning direction image magnification ratio automatic adjustment (DSPF/RSPF mode)			50-28
ADJ 19	Fusing paper guide position adjustment					

3. Details of adjustment

ADJ 1 Adjust the developing unit

1-A Adjust the developing doctor gap

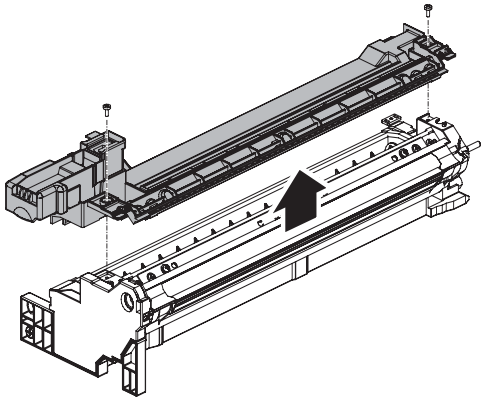
This adjustment is needed in the following situations:

* 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.

NOTE: Be careful not to put fingerprints, oil, grease, or foreign materials on the roller during the work.

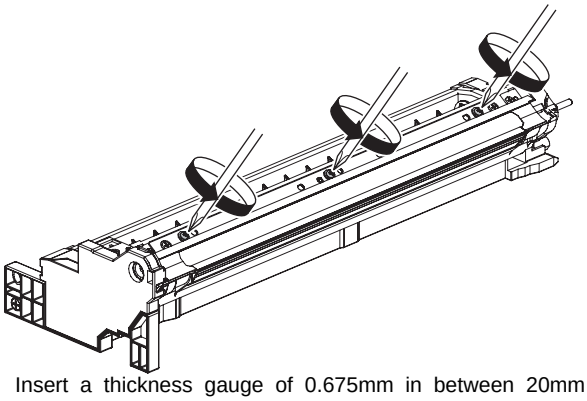
NOTE: Do not hold the adjacent section of the MG roller strongly.

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



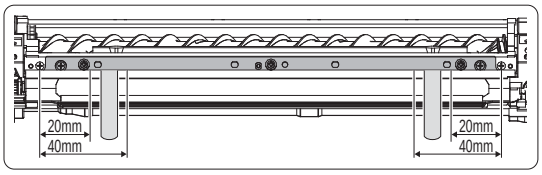
NOTE: All DV material must be removed before beginning step 2.

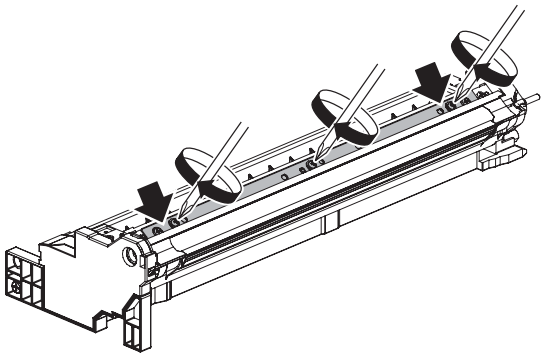
2) Loosen the developing doctor fixing screw.



3) Insert a thickness gauge of 0.675mm in between 20mm - 40mm 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 20mm - 40mm from the both sides of the developing doctor are in the range of 0.675 □0.025mm.

* 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.

1-B Adjust the developing roller main pole position

This adjustment is needed in the following situations:

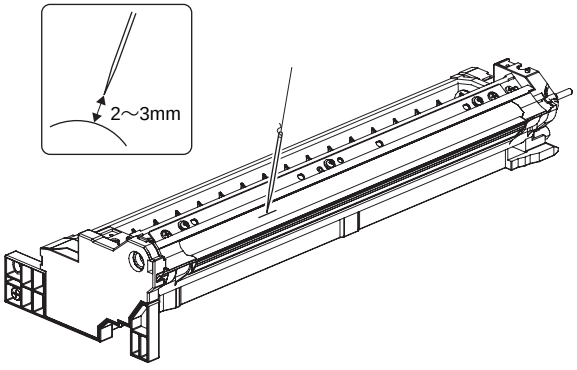
* The developing unit has been disassembled.
* When the print image density is low.
* When there is a blur on the print image.
* When there is unevenness in the print image density.
* The toner is excessively dispersed.

NOTE: Be careful not to put fingerprints, oil, grease, or foreign materials on the roller during the work.

1) Remove the developing doctor cover, and place the developing unit on a flat surface.

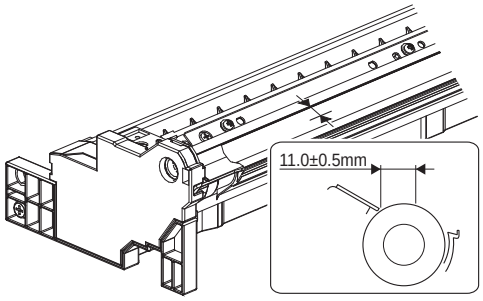
NOTE: All DV material must be removed before beginning step 2.

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.)

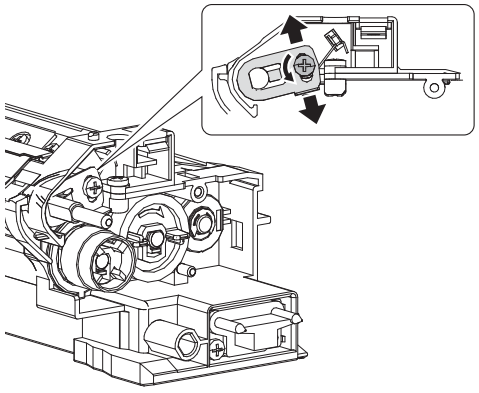


5) Measure the distance between the marking position and the doctor tip of the developing unit, and check that it is 11.0 □ 0.5mm.

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.

1-C Toner density control reference value setting

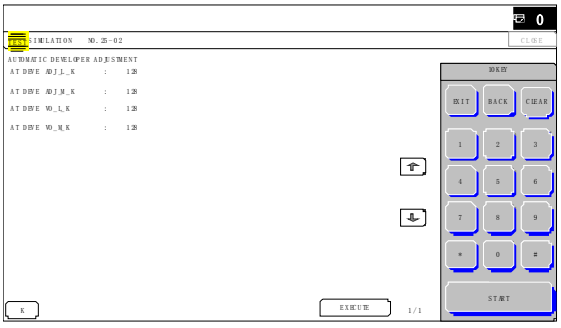
This adjustment is needed in the following situations:

* When developer is replaced.

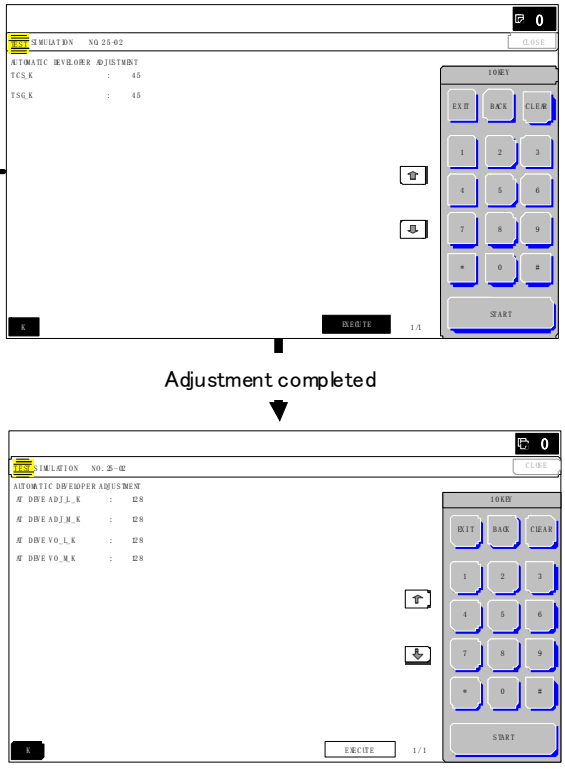
NOTE: Be sure to execute this adjustment only when developer is replaced. Never execute it in the other cases.

1) With the front cabinet open, enter SIM 25-2.

When setting the toner density control reference value, pull out the toner cartridge in advance.



2) Close the front cabinet and press [EXECUTE] button.



3) After completion of the adjustment of the toner density control reference value, insert the toner cartridge.

4) Close the front cabinet.

5) 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 2 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.

NOTE:
If the operation is interrupted within 2 minutes, the adjustment result is not reflected. When [EXECUTE] key is pressed during rotation, the operation is stopped and [EXECUTE] key returns to the normal display. If [EE-EU], [EE-EL] or [EE-EC] is displayed, setting of the reference toner density control value is not completed normally.

Error display	Content	Details of content
EE-EL	EL abnormality	Sensor output level less than 77, or sensor control voltage level over 207
EE-EU	EU abnormality	Sensor output level over 177, or sensor control voltage level less than 52
EE-EC	EC abnormality	Sensor output level less than 125, or sensor control voltage level over 131

NOTE: When not replacing the developer, do not execute SIM25-2.

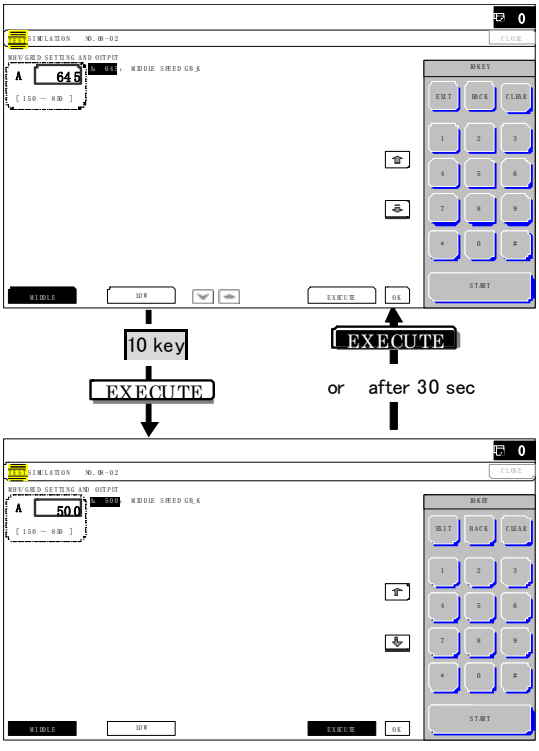
ADJ 2 Adjusting high voltage values

2-A Adjust the main charger grid voltage

This adjustment is needed in the following situations:

* When the high voltage PWB is replaced.
* U2 trouble has occurred.
* The PCU PWB has been replaced.
* The EEPROM of the PCU PWB has been replaced.

1) Enter the SIM 8-2 mode.



2) Select an output mode and an item to be adjusted.

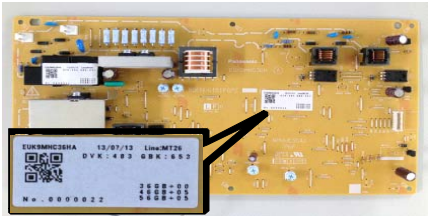
Item/Display			Content	Setting range	Actual voltage		
					36	46	56
MIDDLE	A	MIDDLE SPEED GB_K	Charging/grid bias set value	150 - 850	-665V ±5V	-670V ±5V	-670V ±5V
LOW	A	LOW SPEED GB_K	Charging/grid bias set value	150 - 850	-665V ±5V	-665V ±5V	-665V ±5V

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

Enter the adjustment value of each mode which is specified on the label attached on the high voltage power PWB.

GBK: XXX

The default value s specified for each model must be changed as follows. 46cpm/56cpm machine: +5



Important

Note that the adjustment value may differ depending on the high voltage power PWB. Since the adjustment value label is attached on the high voltage PWB, the PWB must be removed in order to check the adjustment value. This is a troublesome procedure. Therefore, it is advisable to put down the adjustment value in advance. When the adjustment value (specified value) of the middle speed mode is set, the adjustment values of the other modes are automatically set according to the middle speed mode setting in a certain relationship.

Important

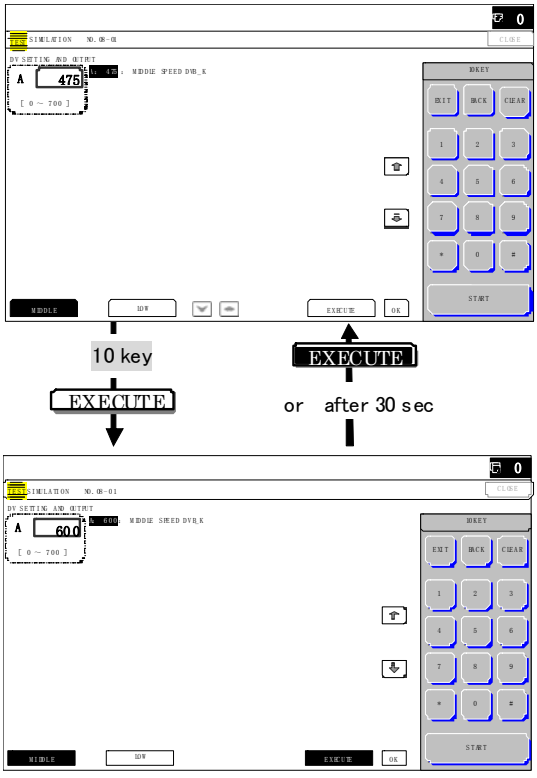
Since the high voltage output cannot be checked with a digital multi meter in this model, a judgment of the output must be made by checking the print image quality.

2-B Adjust the developing bias voltage

This adjustment is needed in the following situations:

* When the high voltage PWB is replaced.
* U2 trouble has occurred.
* The PCU PWB has been replaced.
* The EEPROM of the PCU PWB has been replaced.

1) Enter the SIM 8-1 mode.



2) Select an output mode and an item to be adjusted.

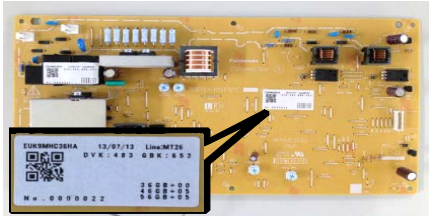
Item/Display			Content	Setting range	Default value		
					36	46	56
MIDDLE	A	MIDDLE SPEED DVB_K	Developing bias set value	0 - 700	-475V±5V		
LOW	A	LOW SPEED DVB_K	Developing bias set value	0 - 700	-475V±5V		

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

Enter the adjustment value of each mode which is specified on the high voltage power PWB.

GBK: XXX

The default value s specified for each model must be changed as follows. 46cpm/56cpm machine: +5



Important

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

Important

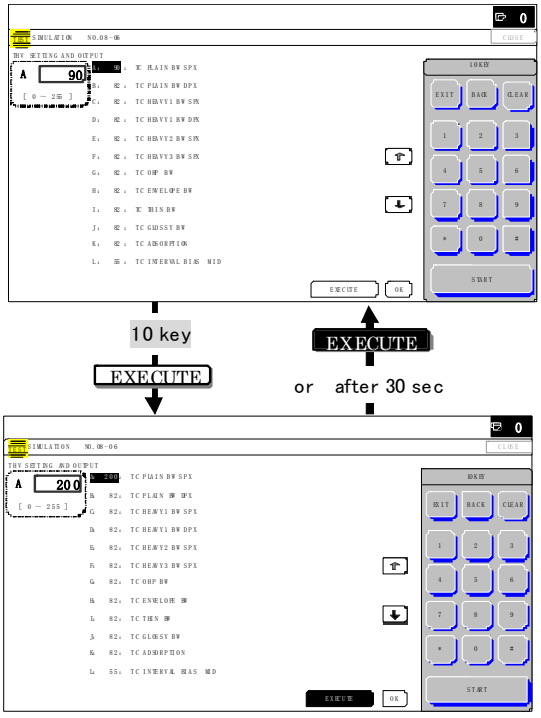
Since the high voltage output cannot be checked with a digital multi meter in this model, a judgment of the output must be made by checking the print image quality.

2-C Transfer current and voltage adjustment

This adjustment is needed in the following situations:

* When the high voltage PWB is replaced.
* U2 trouble has occurred.
* The PCU PWB has been replaced.
* The EEPROM of the PCU PWB has been replaced.

1) Enter the SIM 8-6 mode.



2) Select a mode to be adjusted with scroll key.

3) Enter the adjustment value (specified value) and press [OK] key. By setting the default value the specified voltage is outputted.

Item/Display		Content	Setting range	Default value		
				36 cpm	46 cpm	56 cpm
A	TC PLAIN BW SPX	Transfer current standard paper front surface	0 - 255	90	107	111
B	TC PLAIN BW DPX	Transfer current standard paper back surface	0 - 255	82	94	99
C	TC HEAVY1 BW SPX	Transfer current heavy paper front surface	0 - 255	82	82	82
D	TC HEAVY1 BW DPX	Transfer current heavy paper back surface	0 - 255	82	82	82
E	TC HEAVY2 BW SPX	Transfer current heavy paper2	0 - 255	82	82	82

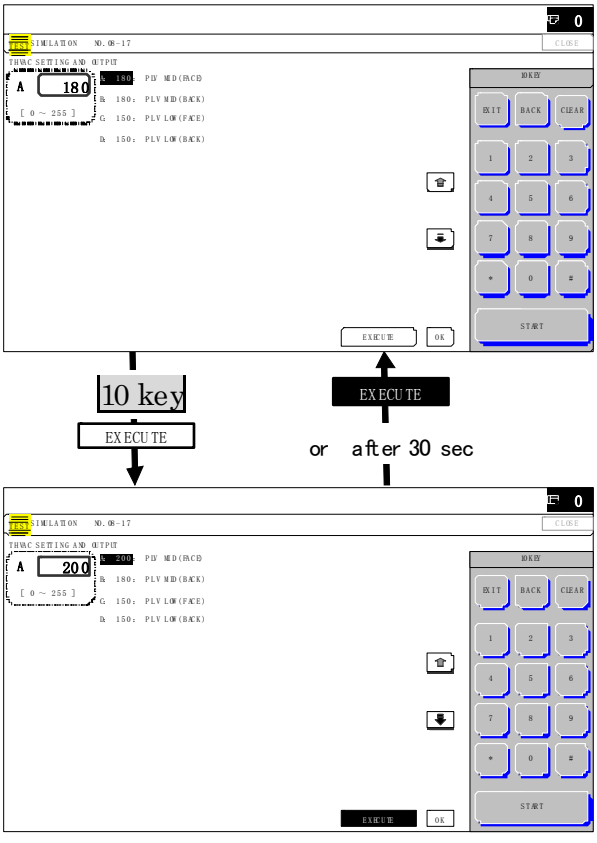
Item/Display		Content	Setting range	Default value		
				36 cpm	46 cpm	56 cpm
F	TC HEAVY3 BW SPX	Transfer current heavy paper3	0 - 255	82	82	82
G	TC OHP BW	Transfer current OHP	0 - 255	82	82	82
H	TC ENVE-LOPE BW	Transfer current envelope	0 - 255	82	82	82
I	TC THIN BW	Transfer current thin paper	0 - 255	82	82	82
J	TC GLOSSY BW	Transfer current glossy paper	0 - 255	82	82	82
K	TC ADSORP-TION BW	Transfer current adsorption process	0 - 255	82	94	99
L	TC INTERVAL BIAS MID	Transfer current between paper middle speed	0 - 255	55	55	55
M	TC INTERVAL BIAS LOW	Transfer current between paper low speed	0 - 255	55	55	55
N	TC BACKEND	Transfer bias backend	0 - 255	73	77	82
O	TCCLEAN-ING	Transfer cleaning bias	0 - 255	160	160	160
P	TC CLEAN-ING PRO-CON	Transfer cleaning bias procon	0 - 255	160	160	160

2-D Transfer separation bias voltage adjustment

This adjustment is needed in the following situations:

* When the high voltage PWB is replaced.
* U2 trouble has occurred.
* The PCU PWB has been replaced.
* The EEPROM of the PCU PWB has been replaced.

1) Enter the SIM 8-17 mode.



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, the specified voltage is outputted.

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

Item/Display		Content	Setting range	Default value
A	PLV MID (FACE)	Separation bias output (Front surface)	0 - 255	180
B	PLV MID (BACK)	Separation bias output (Back surface)	0 - 255	180
C	PLV LOW (FACE)	Separation bias output (Front surface)	0 - 255	150
D	PLV LOW (BACK)	Separation bias output (Back surface)	0 - 255	150

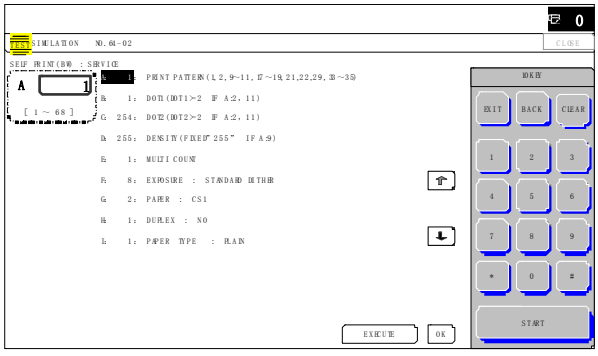
ADJ 3 Print engine image skew, image position, image magnification ratio, void area adjustments (Manual adjustments)

3-A Print engine image skew adjustment (LSU parallelism adjustment)

This adjustment is needed in the following situations:

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

1) Enter the SIM 64-2 mode.



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

Item	Setting value
A	1
B	1
C	254
D	255

3) Select the paper feed tray with A3 (11" x 17") paper in it by changing the value of G.
4) Press [EXECUTE] key.

   The check pattern is printed out.
5) Check the printed image for any skew.

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

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

   Method 1:

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

   Method 2:

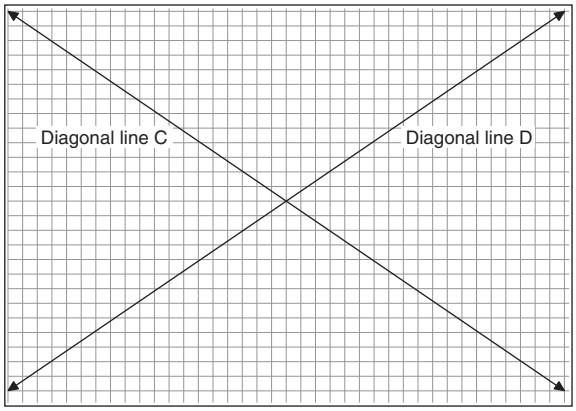
Compare the right angle of vertical side and the horizontal side of the rectangle print pattern with the right angle of A3 or 11" x 8.5" paper for judgment of good or no good.

(NOTE)

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

(Method 1)

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



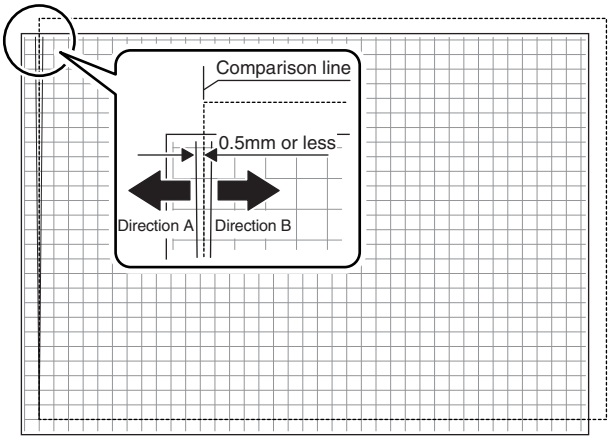
b) Calculate the difference between the measured lengths C and D of the diagonal lines.

c) Check to insure that the difference between C and D is in the following range. C - D = ±0.8mm

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

(Method 2)

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



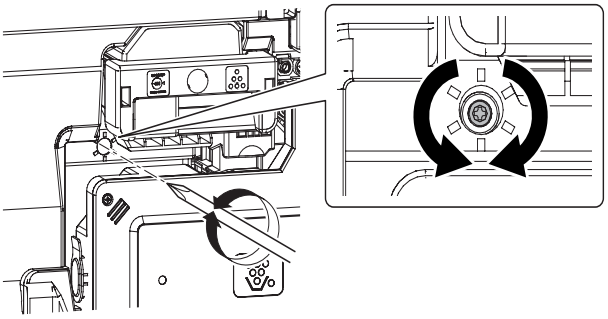
b) Measure the shift distance between vertical side of paper and side of the rectangle print pattern.

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

If not, execute the following procedures.

6) Open the front cover.

7) Adjust the print image distortion adjustment screw to set the print image distortion to the minimum.



8) Execute procedures 4) and 5).

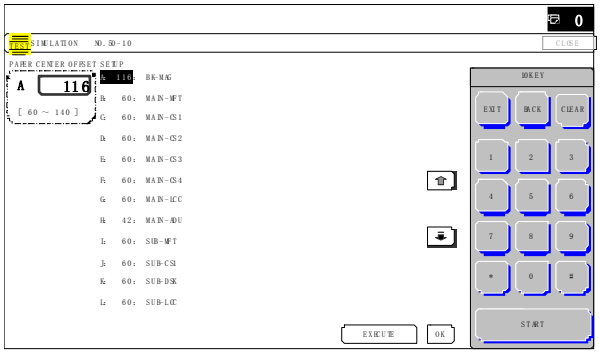
(Repeat procedures 4), 5) and 7) until a satisfactory result is obtained.)

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

This adjustment is needed in the following situations:

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

1) Enter the SIM 50-10 mode.



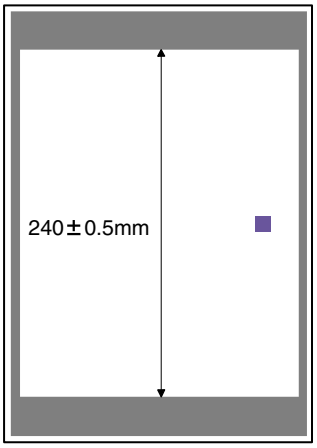
2) Set A4 (11" x 8.5") paper in the paper feed tray.

3) Select the paper feed tray set in procedure 2) with the scroll key.

4) Press [EXECUTE] key.

The check pattern is printed out.

5) Check that the inside dimension of the printed half tone is 240 □0.5mm.



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.

3-C Print engine print area (void area) adjustment

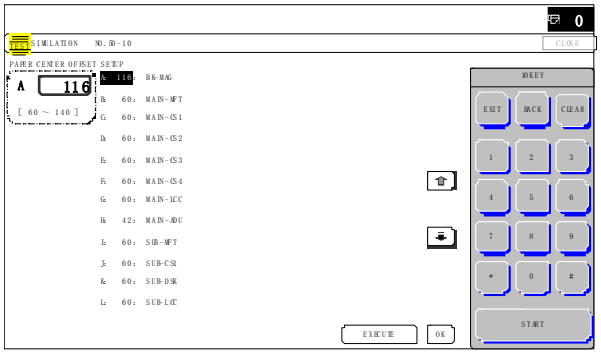
This adjustment is needed in the following situations:

* When the LSU is replaced or removed.
* When a paper tray is replaced.
* When the paper tray section is disassembled.
* When the manual feed tray is replaced.
* When the manual feed tray is disassembled.
* When the duplex section is disassembled.
* When the duplex section is installed or replaced.
* When the large capacity 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 3B print engine image magnification ratio adjustment (Main scanning direction) in advance.

1) Enter the SIM 50-10 mode.



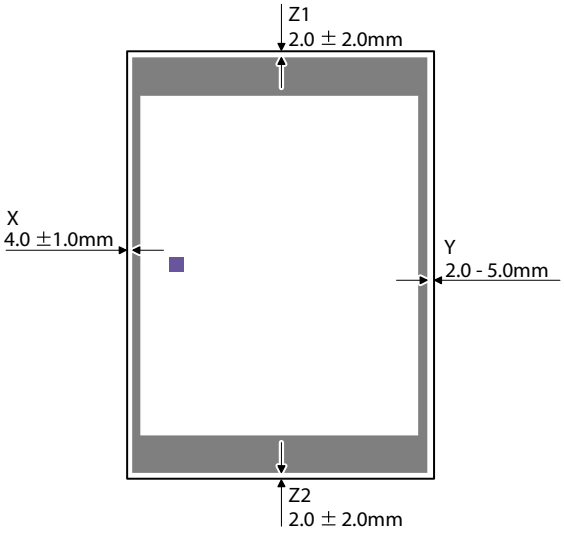
2) Set A4 (11" x 8.5") paper to all the trays, and select the set item J with the scroll key. Enter the value corresponding to the adjustment target paper feed tray.

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.

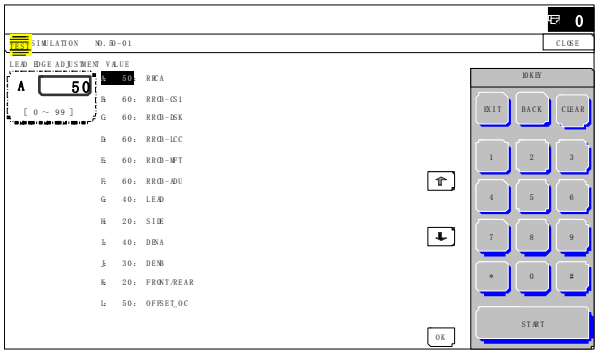
	Content	Standard adjustment value
X	Lead edge void area	4.0 ± 1.0mm
Y	Rear edge void area	2.0 - 5.0mm
Z1/Z2	FRONT/REAR void area	2.0 ± 2.0mm



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

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

5) Enter the SIM 50-1 mode.



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

	Item/Display		Content		Setting range	Default value
A	Lead edge adjustment value	RRCA	Document lead edge reference position (OC)		0 - 99	50
B		RRCB-CS1	Resist motor ON timing adjustment	Standard Tray	1 - 99	60
C		RRCB-DSK		Desk	1 - 99	60
D		RRCB-LCC		LCC	1 - 99	60
E		RRCB-MFT		Manual paper feed	1 - 99	60
F		RRCB-ADU		ADU	1 - 99	60
G	Image loss area setting value	LEAD	Lead edge image loss area setting		0 - 99	40
H		SIDE	Side image loss area adjustment		0 - 99	20
I	Void area adjustment	DENA	Lead edge void area adjustment		1 - 99	40
J		DENB	Rear edge void area adjustment		1 - 99	30
K		FRONT/REAR	FRONT/REAR void area adjustment		1 - 99	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

Item/Display			Content	Setting range	Default value
N	Sub scanning direction print area correction value	DENB-MFT	Manual feed correction value	1 - 99	50
O		DENB-CS1	Tray 1 correction value	1 - 99	50
P		DENB-CS2	Tray 2 correction value	1 - 99	50
Q		DENB-CS3	Tray 3 correction value	1 - 99	50
R		DENB-CS4	Tray 4 correction value	1 - 99	50
S		DENB-LCC	LCC correction value	1 - 99	50
T		DENB-ADU	ADU correction value	1 - 99	50
U		DENB-HV	Heavy paper correction value	1 - 99	50

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:

Adjustment value/10 = 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.

3-D Print engine image off-center adjustment

This adjustment is needed in the following situations:

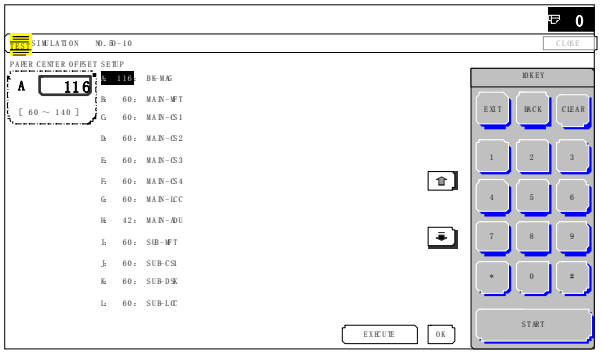
* When the LSU is replaced or removed.
* When a paper tray is replaced.
* When the paper tray section is disassembled.
* When ADJ 3B Print engine image magnification ratio adjustment (Main scanning direction) is performed.
* When the manual feed tray is replaced.
* When the manual feed tray is disassembled.
* When the duplex section is disassembled.
* When the duplex section is installed or replaced.
* When the large capacity 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 execution of this adjustment, check to insure the following item.

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

1) Enter SIM 50-10 mode.



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

Item/Display			Content		Setting range		Default value
A	BK-MAG		Main scan print magnification ratio BK		60 - 140		116
B	MAIN-MFT		Print off center adjustment value (Manual paper feed)		1 - 99		60
C	MAIN-CS1		Print off center adjustment value (Tray 1)		1 - 99		60
D	MAIN-CS2		Print off center adjustment value (Tray 2)		1 - 99		60
E	MAIN-CS3		Print off center adjustment value (Tray 3)		1 - 99		60
F	MAIN-CS4		Print off center adjustment value (Tray 4)		1 - 99		60
G	MAIN-LCC		Print off center adjustment value (LCC)		1 - 99		60
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-CS1			Standard tray	1 - 99		50
K	SUB-DSK			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	

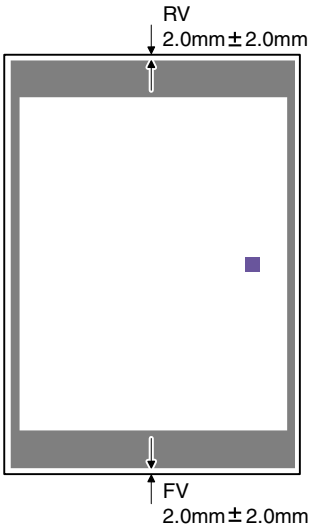
3) Set A4 (11" x 8.5") paper in the paper feed tray selected in procedure 2).

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 □4.0mm

RV = 2.0 ±2.0mm

FV = 2.0 ±2.0mm

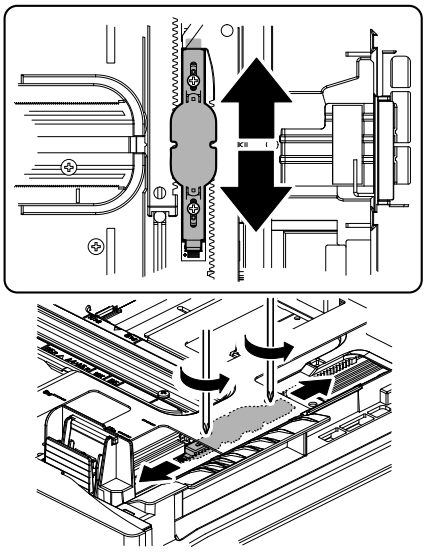
If the above requirement is not met, do the following steps.

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

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



ADJ 4 Scan image distortion adjustment (OC mode)

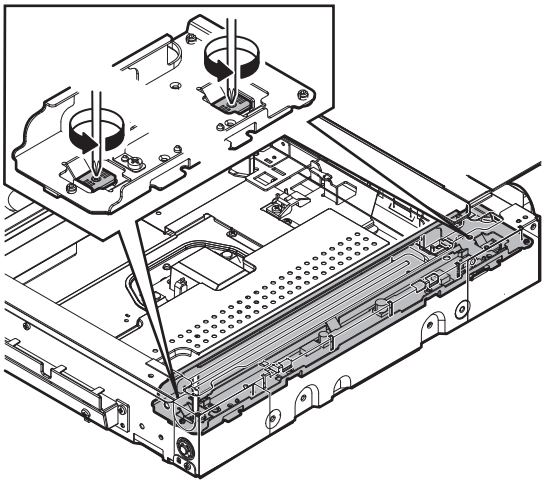
This adjustment is needed in the following situations:

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

4-A Scanner (reading) unit parallelism adjustment

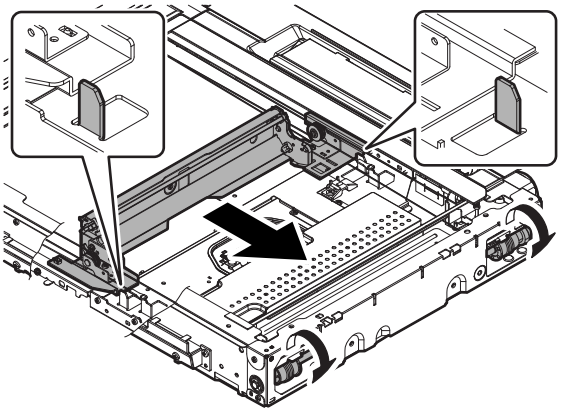
Before execution of this adjustment, remove the document table glass.

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



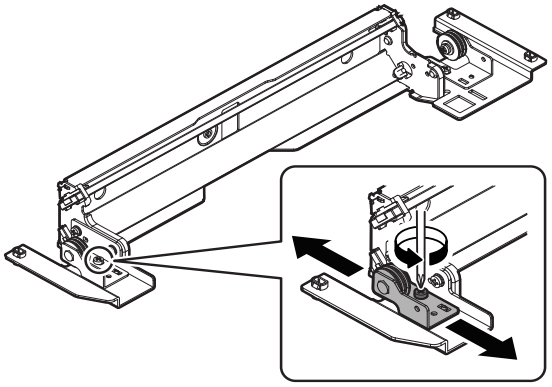
2) Turn the scanner drive pulley manually and shift the scanner unit B to bring it into contact with the stopper.

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



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

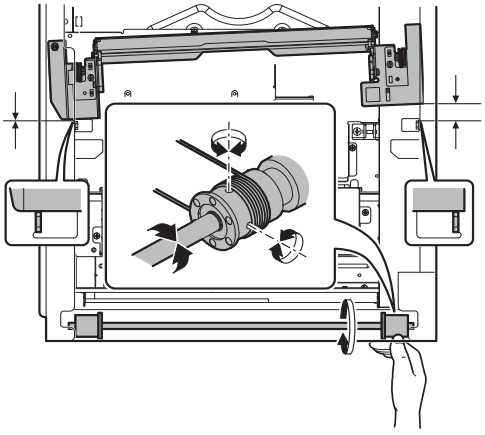
3) Loosen the fixing screw of the pulley angle on the front frame side of the scanner unit B.



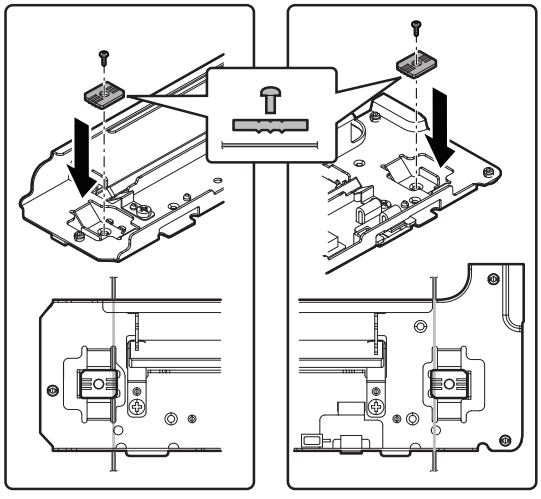
4) Adjust the position of the pulley angle on the front frame side of the scanner unit B so that it is in contact with two stoppers on the front and the rear frames simultaneously.

5) Fix the pulley angle on the front frame side of the scanner unit B. If a satisfactory result is not obtained from the above procedures, perform the following procedures. Loosen the fixing screw of the scanner unit drive pulley which is not in contact.

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

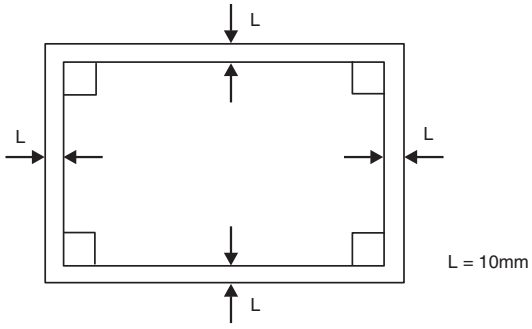


6) With the scanner unit B in contact with both stoppers, fit the edge of the scanner unit A with the right edge of the frame, and fix the scanner unit A with the fixing screw.

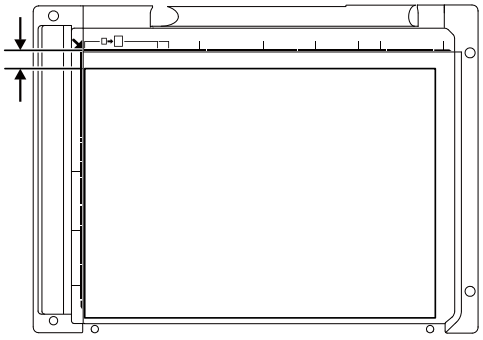


4-B Scan image sub scanning direction distortion adjustment

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

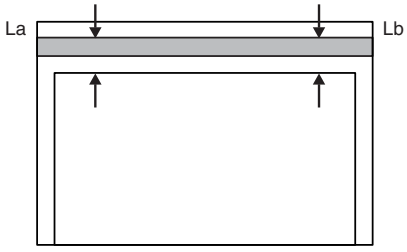


2) Set the test chart prepared in the procedure 1) on the document table. (Shift the test chart edge 30mm from the reference position as shown below.) With the document cover open, make a copy on A3 (11" x 17") paper.



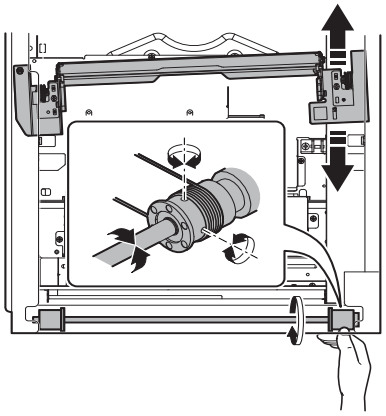
3) Check for distortion in the sub scanning direction.

   If La = Lb, there is no distortion.



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

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



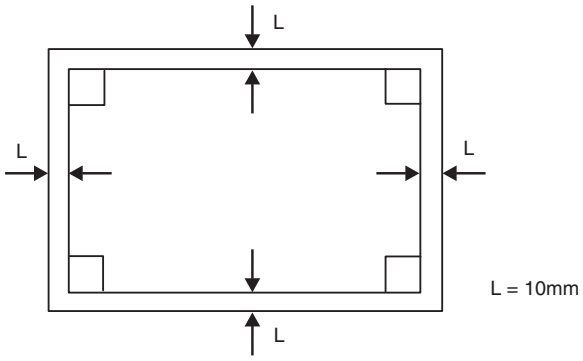
5) Without moving the scanner unit drive shaft, manually turn the scanner unit drive pulley to change the parallelism of the scanner unit A and B. (Change the relative position of the scanner unit drive pulley and the drive shaft.)

6) Tighten the scanner unit drive pulley fixing screw.

Repeat the procedures 2) - 6) until the condition of the procedure 3) is satisfied. If the distortion in the sub scanning direction cannot be deleted with the above procedures, perform ADJ 4D Scan image distortion adjustment (Whole scanner unit).

4-C Scan image main scanning direction distortion adjustment

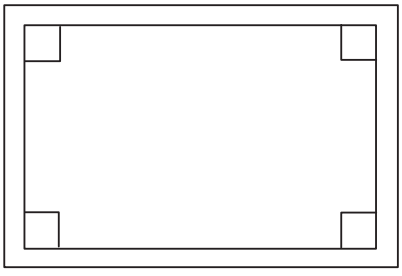
1) Make a test chart on A3 (11" x 17") paper as shown below. (Draw a rectangular with four right angles.)



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

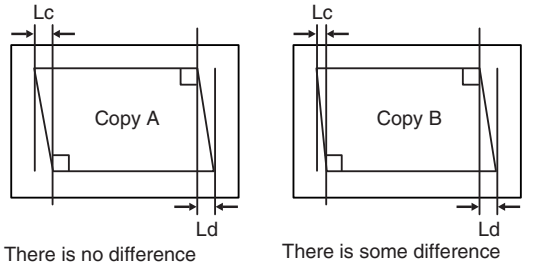
3) Check for distortion in the main scanning direction.

If the four angles of the rectangle of the copy image are right angles, it is judged that there is no distortion. (The work is completed.)



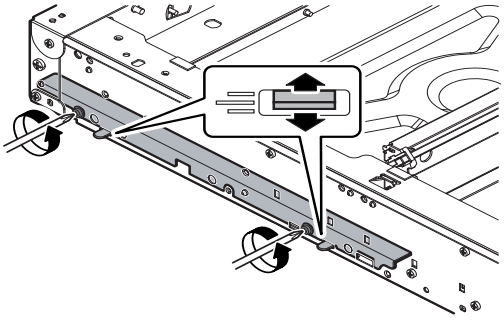
If there is any distortion in the main scanning direction, perform the following procedure.

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



If Lc = Ld, the distortion on the left is equal to that on the right. (The distortions are balanced.) If the above condition is satisfied, go to the procedure 6). If not, perform the following procedures.

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



Remove the 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 4D Scan image distortion adjustment (whole scanner unit).

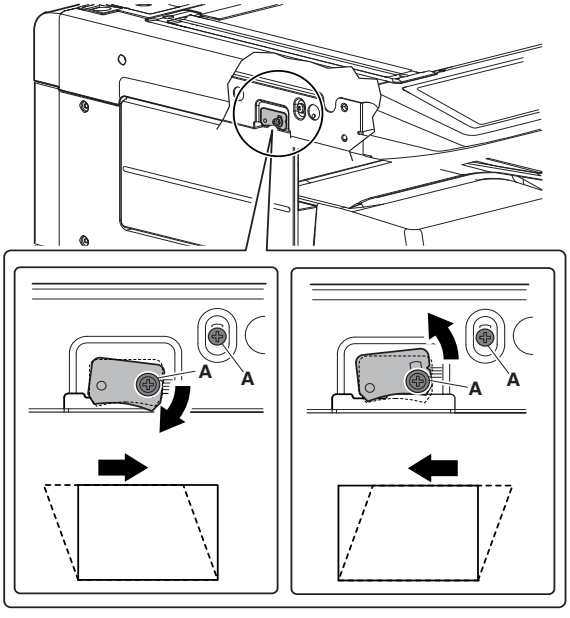
4-D Scan image distortion adjustment (Whole scanner unit)

This adjustment is executed when scan image distortion cannot be adjusted with ADJ 4A, ADJ 4B, and ADJ 4C 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 5 Scanner image skew adjustment (DSPF model)

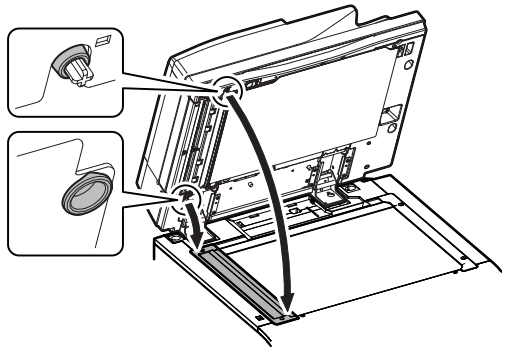
5-A DSPF parallelism adjustment

This adjustment must be performed in the following cases:

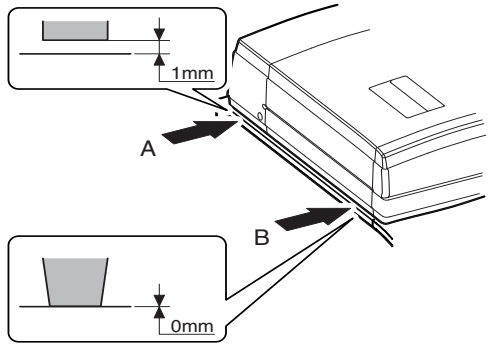
* The DSPF section has been disassembled.
* The DSPF unit has been replaced.
* When a DSPF JAM is generated.
* When a skew is generated in the document feed operation.
* When there is a distortion (skew) in the scan image in the DSPF unit.

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

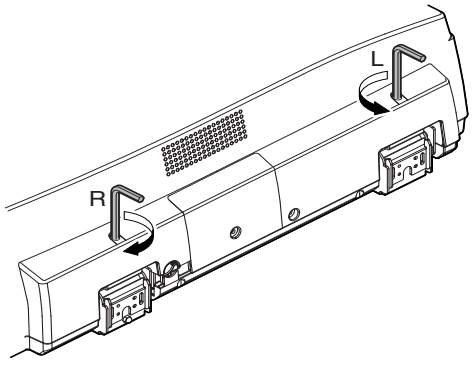
   Cut copy paper in the longitudinal direction.



2) Visually check to insure that the clearance A is 1mm or less and the clearance B is 0mm (in contact). If the above requirement is not met, do step 3).

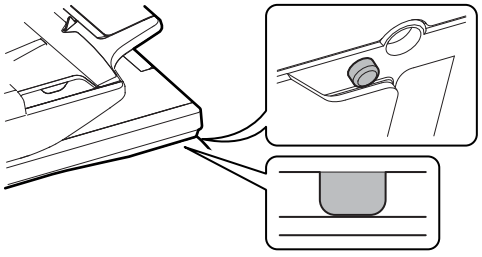


3) Turn the height adjustment screw to adjust the DSPF front/rear frame horizontal level.



   When the front frame side is higher (there is a clearance in B): Turn the height adjustment screw R of the DSPF rear frame clockwise. When the rear frame side is higher (clearance A is more than 1mm): Turn the height adjustment screw L of the DSPF rear frame counterclockwise. Repeat steps 2) to 3) until an acceptable result is obtained.

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



5-B DSPF/RSPF skew adjustment (Front surface mode)

This adjustment must be performed in the following cases:

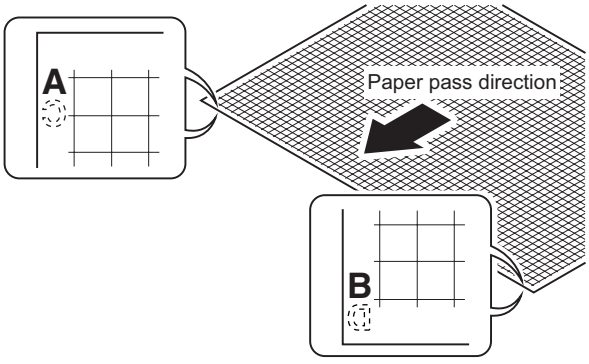
* The DSPF/RSPF section has been disassembled.
* When replacing the DSPF unit.
* The DSPF/RSPF unit generates skewed scanned images.

1) Make an adjustment chart by printing in duplex mode the self-print pattern (grid pattern) specified in Simulation 64-2.

   SIM 64-2 set values

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

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

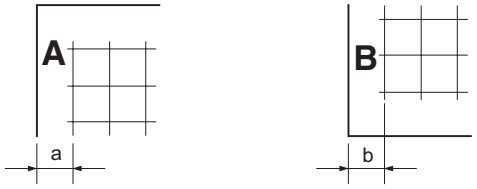


2) Copy the adjustment chart (created in step 1) to A3 (11" x 17") paper in DSPF/RSPF duplex mode, and then check the image for skews (Set in the DSPF/RSPF feed tray so that the mark on the adjustment chart is at the edge).

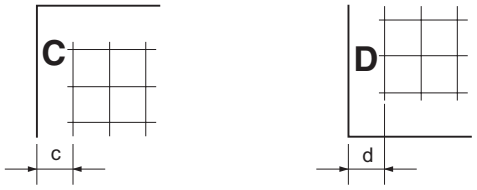
* Check with one of the following methods.

[Check Method 1]

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

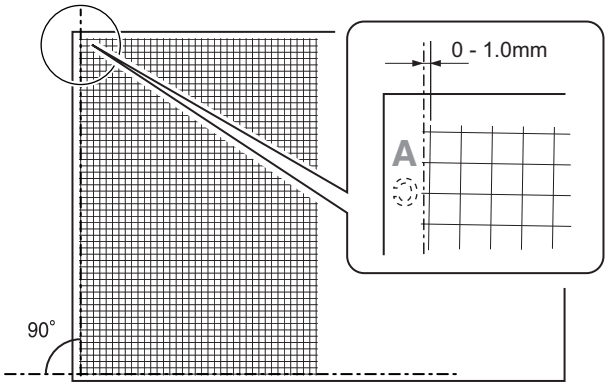


(Back side)
Make sure that the output satisfies the condition: |c-d| ± 1 mm



[Check Method 2]

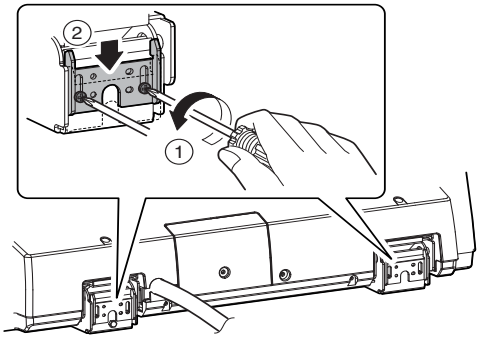
Check that the squareness of the main scanning direction print line for the longitudinal direction of paper is within 1.0mm.



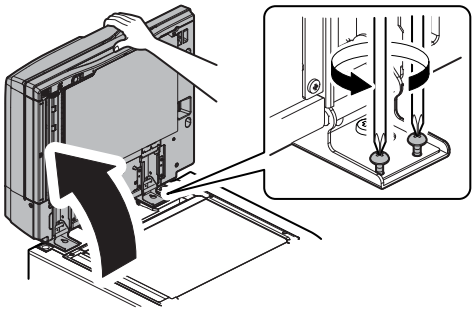
If the front surface copy image is as shown above and the back surface copy is not as shown above, go to the step 3) of "ADJ 5C DSPF skew adjustment (Back surface mode)".

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

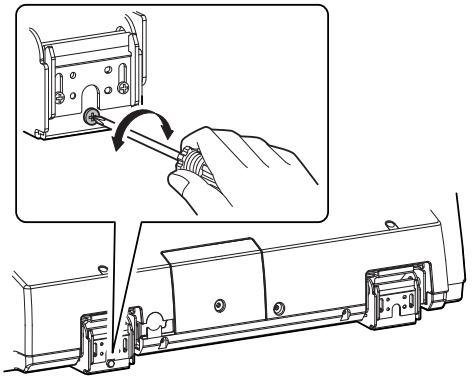
3) Loosen the hinge screws and lower the two attachments.



4) Open the DSPF/RSPF unit and loosen the screw.



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



5-C DSPF skew adjustment (Back surface mode)

This adjustment is needed in the following situations:

* The DSPF section has been disassembled.

* When replacing the DSPF unit.

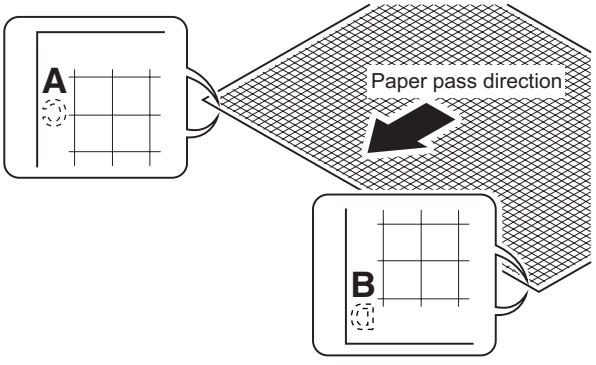
* The DSPF unit generates skewed scanned images.

1) Create an adjustment chart by printing in duplex mode the self-print pattern (grid pattern) specified in Simulation 64-2.

SIM 64-2 set values

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

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

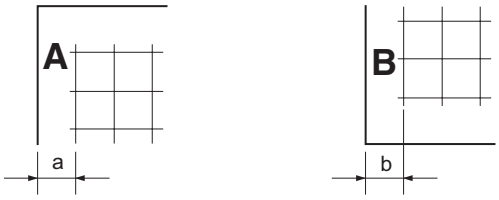


2) Copy the adjustment chart (created in step 1) to A3 (11" x 17") paper in DSPF duplex mode, and then check the image for skews (Set in the DSPF feed tray so that the mark on the adjustment chart is at the edge).

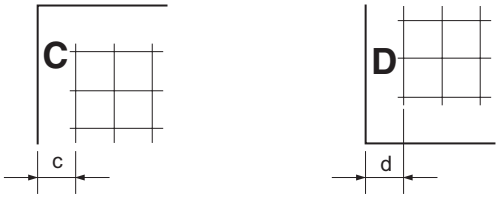
* Check with one of the following methods.

[Check Method 1]

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

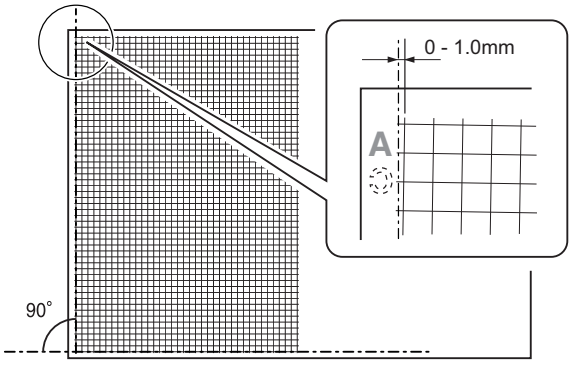


(Back side)
Make sure that the output satisfies the condition: |c-d| ± 1 mm



[Check Method 2]

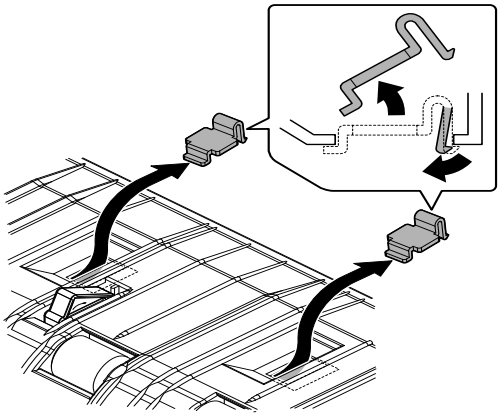
Check that the squareness of the main scanning direction print line for the longitudinal direction of paper is within 1.0mm.



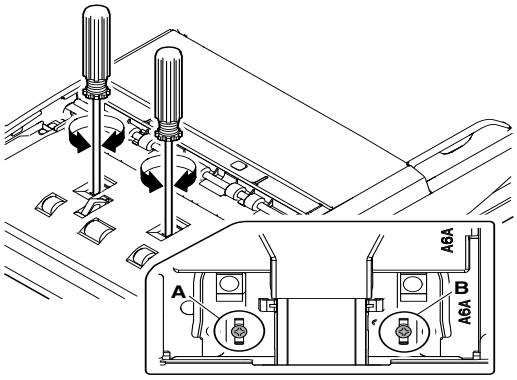
If the back surface copy image is as shown above and the front surface copy is not as shown above, go to the step 3) of "ADJ 5B DSPF skew adjustment (Front surface mode)".

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.



ADJ 6 Scan image focus adjustment

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

This adjustment is needed in the following situations:

* The CCD unit has been removed from the machine.

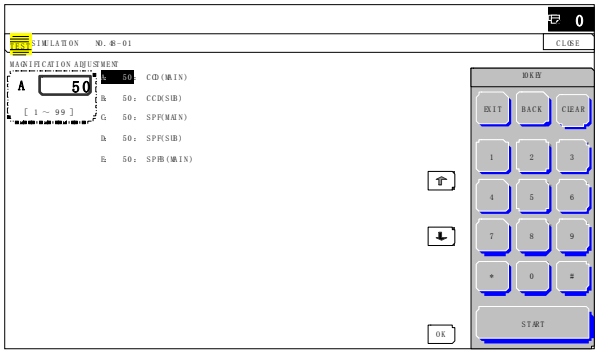
* The CCD unit has been replaced.

* When the copy image focus is not properly adjusted.

* When the copy magnification ratio in the copy image main scanning direction is not properly adjusted.

* U2 trouble has occurred.

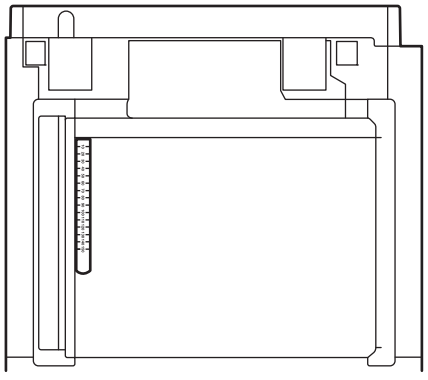
1) Enter the SIM 48-1 mode.



2) Set the adjustment item CCD (MAIN) to 50 (default value).

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

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



4) Make a normal copy on A4 paper.

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

5) Compare the copied image of the scale and the actual scale length in terms of length.

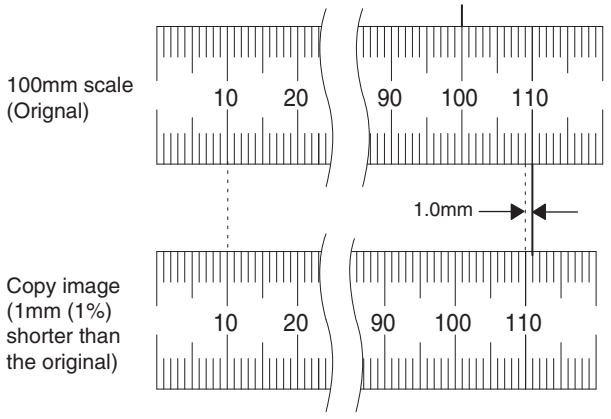
6) Obtain the copy magnification ratio correction ratio in the main scanning direction from the following formula.

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

(Example)

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

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

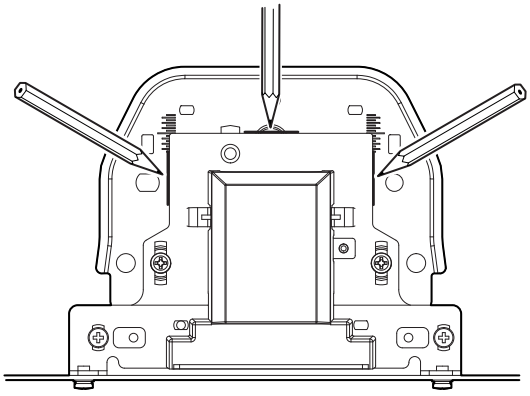


If the copy magnification ratio is not satisfactory, perform the following procedures.

7) Remove the document table glass.

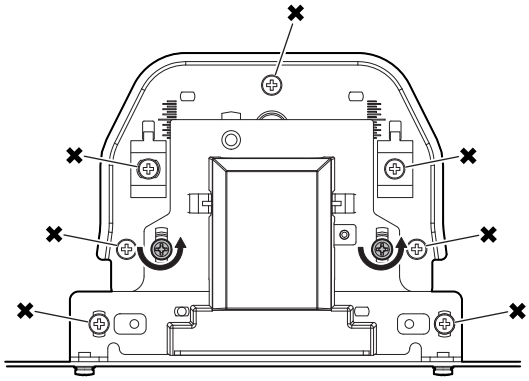
8) Remove the dark box cover.

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



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

10) Loosen the CCD unit fixing screws.



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

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

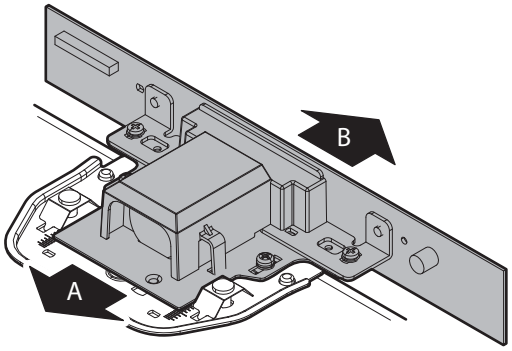
11) Slide the CCD unit in the arrow direction (CCD sub scanning direction) to change the installing position.

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

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

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

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



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

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

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

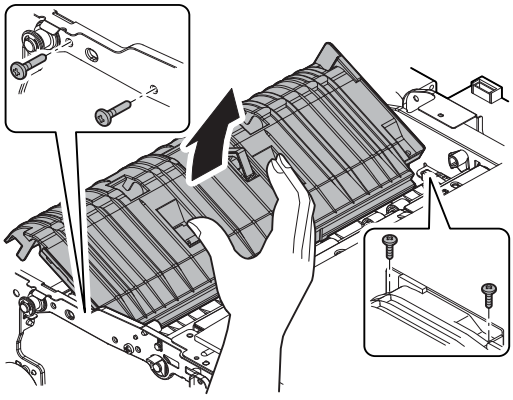
6-B Image focus adjustment (DSPF back surface mode)

This adjustment is required in the following cases:

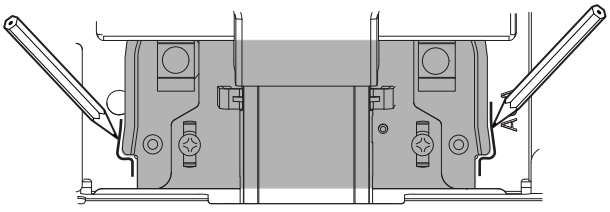
* When the DSPF CCD unit is replaced.
* When the COPY/SCAN/FAX image focus is not properly adjusted.
* When the DSPF unit is removed.
* When the DSPF unit is replaced.

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.

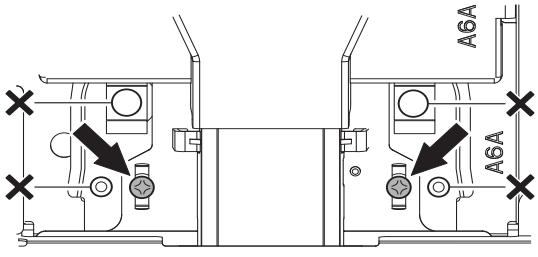
   If the image is not satisfactorily focused, do the following steps.
3) Open the door. Remove the screws and transport PG upper.



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.

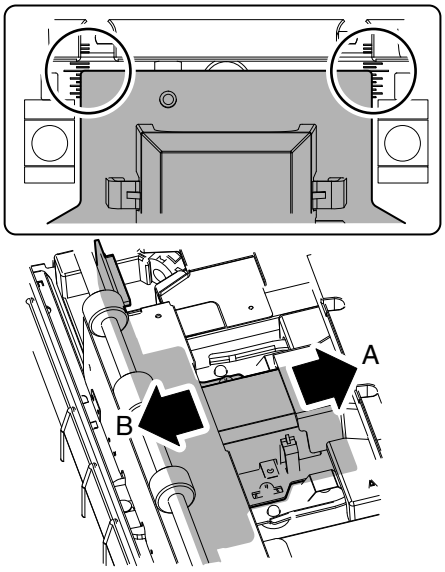


* **Never loosen the screws marked with 5.**

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 +/- 0.8%, 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 +/- 0.8%) and the specified resolution is obtained based on the optical system structure.

ADJ 7 Scan image magnification ratio adjustment (Manual adjustment)

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

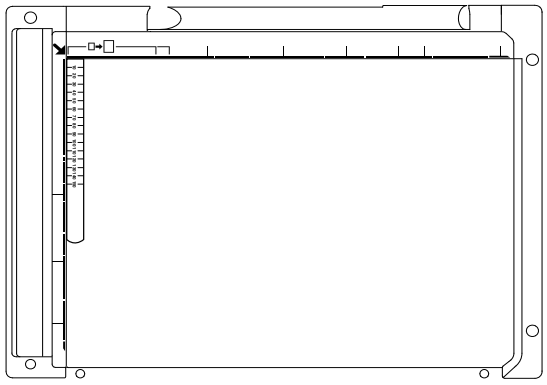
This adjustment is needed in the following situations:

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

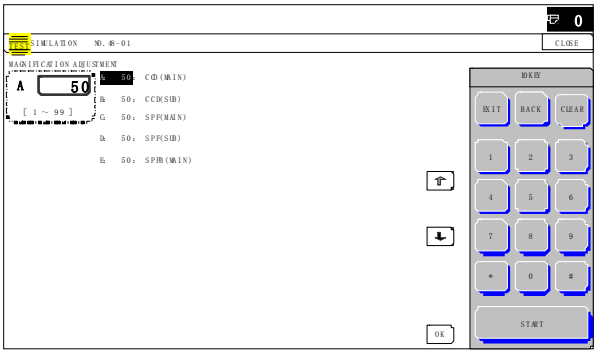
Before this adjustment, the focus adjustment (CCD unit installing position adjustment) must have been completed.

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

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



2) Enter the SIM 48-1 mode.



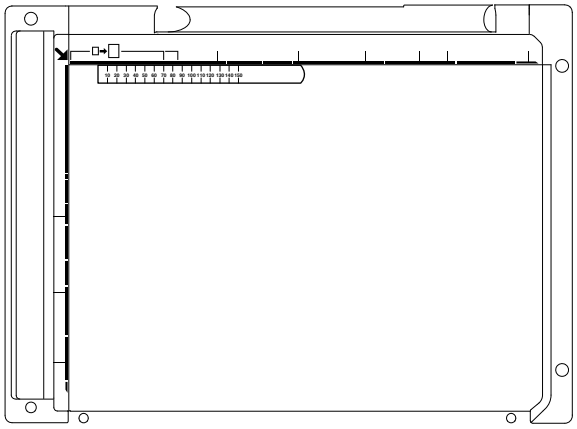
3) Make a normal copy and obtain the copy magnification ratio.
Press [CLOSE] key to shift from the simulation mode to the copy mode, and make a copy.

4) Check that the copy magnification ratio is within the specified range (100 □0.8%). If the copy magnification ratio is within the specified range (100 □1.0%), the adjustment is completed. If the copy magnification ratio is not within the specified range, perform the following procedure.

5) Change the CCD (MAIN) adjustment value of Simulation 48-1.
When the adjustment value is increased, the copy magnification ratio is increased. When the adjustment value is changed by 1, the copy magnification ratio is changed by about 0.02%.
Repeat the procedures 3) - 5) until the copy magnification ratio is within the specified range (100 □0.8%).

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

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

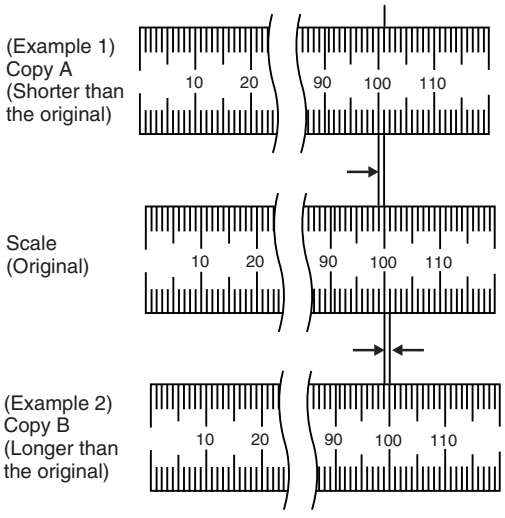


2) Enter the SIM 48-1 mode.



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

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



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

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

When the adjustment value is increased, the copy magnification ratio in the sub scanning direction is increased. When the adjustment value is changed by 1, the copy magnification ratio is changed by about 0.1%.

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

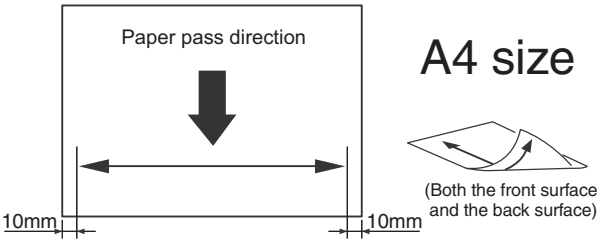
7-C Main scanning direction image magnification ratio adjustment (DSPF/RSPF mode)

This adjustment must be performed in the following cases:

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

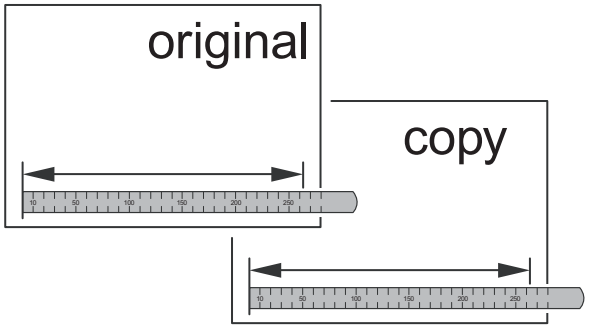
a. Adjustment procedures

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



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

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



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

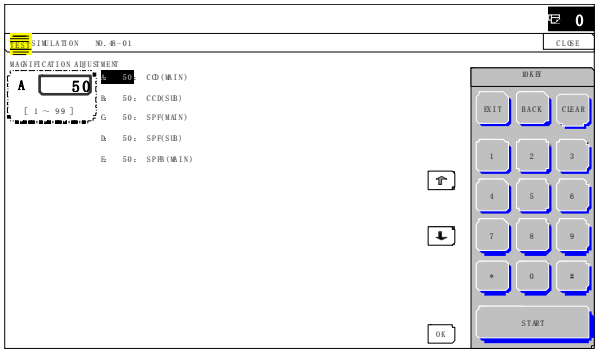
Image magnification ratio = Original size / Original size x 100 (%)

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

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

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

5) Enter the SIM 48-1 mode.



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

* Items A, C, E: When the set value is increased by 1, the magnification ratio is increased by 0.02%.
* Items B, D: When the set value is increased by 1, the magnification ratio is increased by 0.1%.
* It affects scanning (PC scanning, etc.) as well as copying.

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

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

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

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

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.

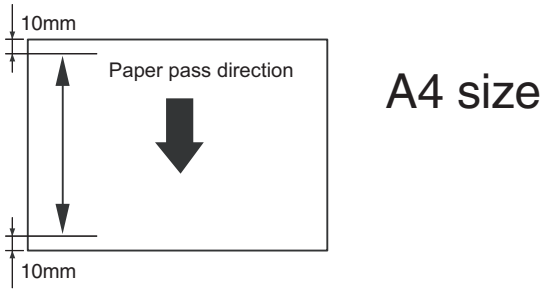
7-D Sub scanning direction image magnification ratio adjustment (DSPF/RSPF mode)

This adjustment must be performed in the following cases:

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

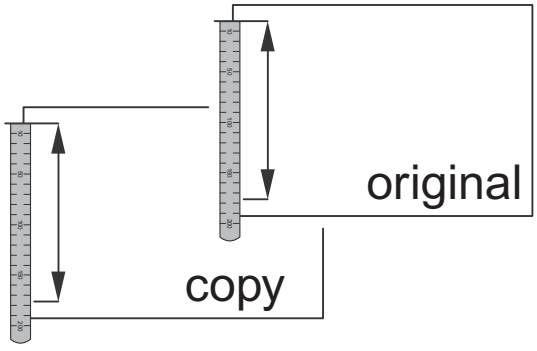
a. Adjustment procedures

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



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

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



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

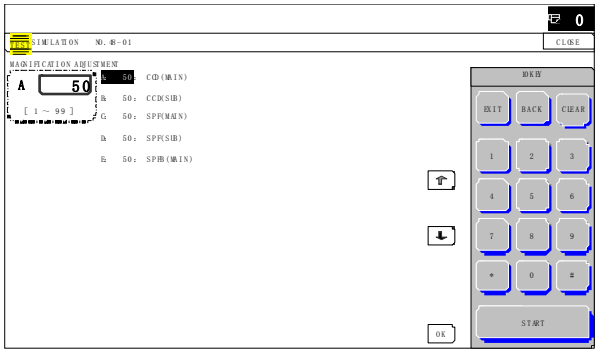
   Image magnification ratio = Original size / Original size x 100 (%)

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

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

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

5) Enter the SIM 48-1 mode.



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

   * Items A, C, E: When the set value is increased by 1, the magnification ratio is increased by 0.02%.
   * Items B, D: When the set value is increased by 1, the magnification ratio is increased by 0.1%.
   * It affects scanning (PC scanning, etc.) as well as copying.

6) Select an adjustment item with the scroll key.

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

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

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

   When the adjustment value is increased, the image magnification ratio is increased. When the adjustment value is changed by 1, the image magnification ratio is changed by 0.01%.

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 8 Scan image off-center adjustment (Manual adjustment)

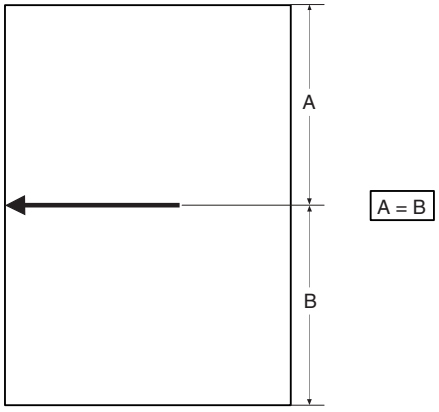
This manual adjustment is used when the automatic adjustment of SIM 50-28 cannot obtain a satisfactory result.

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

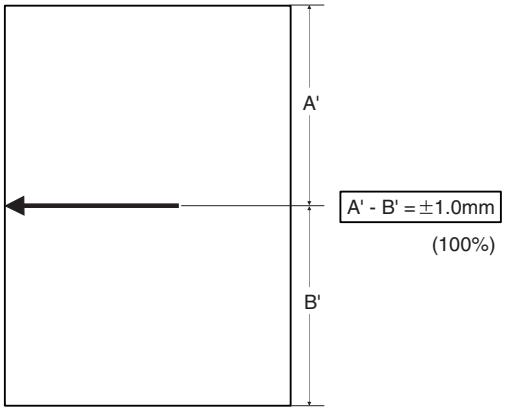
This adjustment is needed in the following situations:

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

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

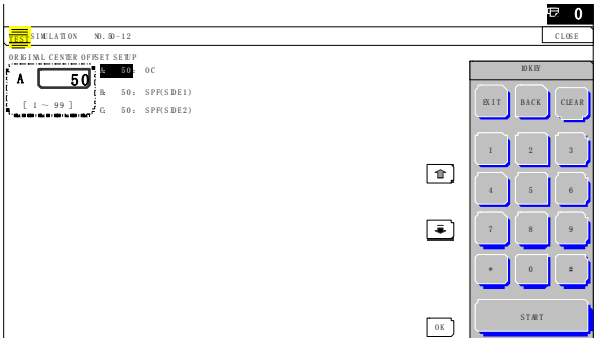


2) Check the copy image center position.
If A' - B' = □1.0mm, the adjustment is not required.



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

3) Enter the SIM 50-12 mode.



4) Select the adjustment mode 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.

8-B Scan image off-center adjustment (DSPF/RSPF mode)

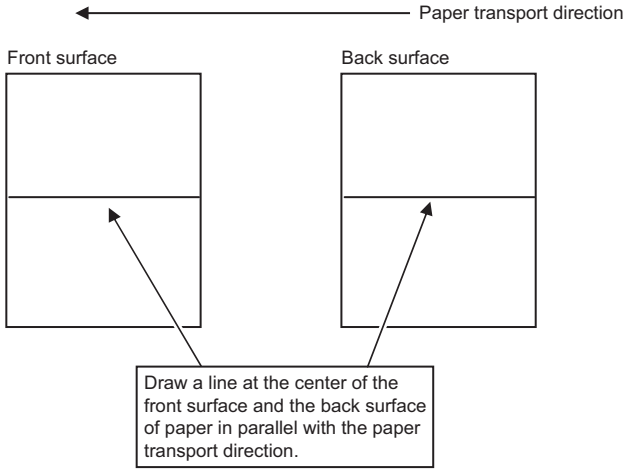
This adjustment must be performed in the following cases:

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

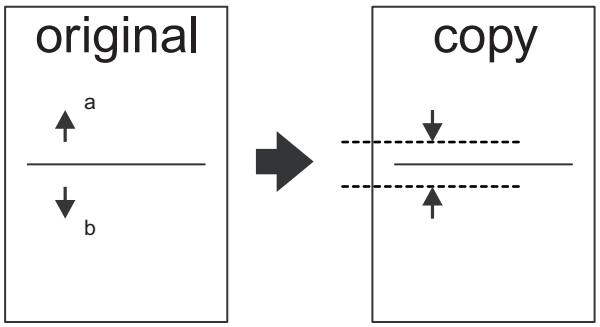
NOTE: To execute this adjustment, it is required that the ADJ 8A Scan image off-center adjustment (Document table mode) must have been properly adjusted.

a. Adjustment procedures

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

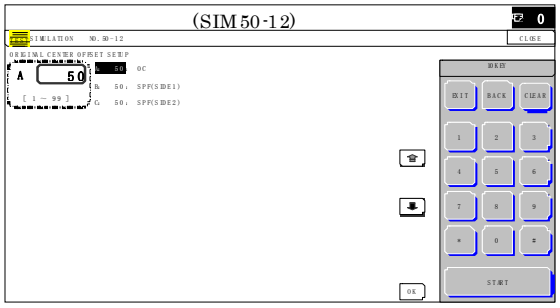


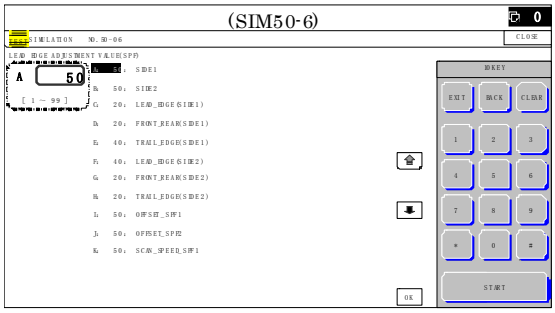
2) Set the adjustment chart to the DSPF/RSPF.
3) Make a duplex copy in the normal magnification ratio from the manual paper feed tray, and check the image position on the front surface and the back surface of the copy paper.



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

4) Enter the SIM 50-12 or 50-6 mode.





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 (CIS)	1 - 99	50
C	Image loss amount setting SIDE1	LEAD_EDGE (SIDE1)	Front surface lead edge image loss amount setting	0 - 99	20
D		FRONT_REAR (SIDE1)	Front surface side image loss amount setting	0 - 99	20
E		TRAIL_EDGE (SIDE1)	Front surface rear edge image loss amount setting	0 - 99	40
F	Image loss amount setting SIDE2	LEAD_EDGE (SIDE2)	Back surface lead edge image loss amount setting	0 - 99	40
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

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

5) Select an adjustment mode with the scroll key.

(SIM50-12)

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

(SIM50-6)

OFFSET SPF1 Front surface mode
OFFSET SPF2 Back surface mode

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

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

(When the adjustment value is increased, the print image is shifted to the rear.) 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.

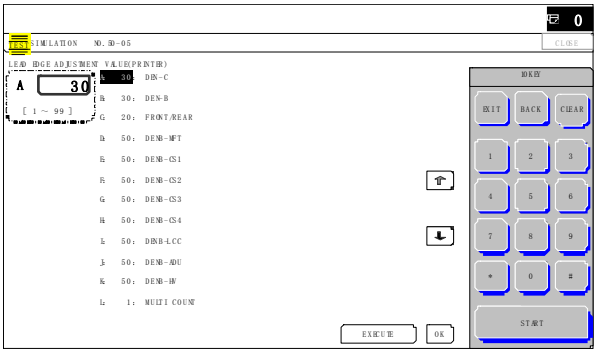
ADJ 9 Print lead edge image position, void area adjustment (Printer mode)

This adjustment is needed in the following situations:

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

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

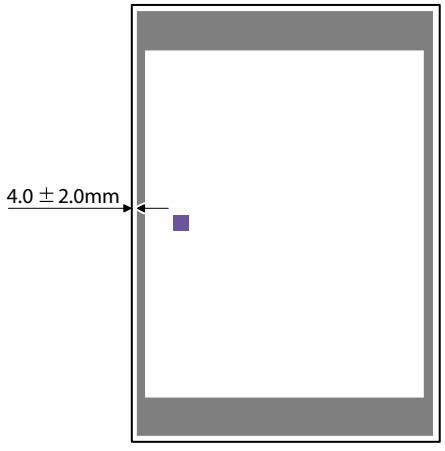
1) Enter the SIM 50-5 mode.



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

Item/Display			Content		Setting range		Default value
A	DEN-C		Used to adjust the print lead edge image position. (PRINTER MODE)		1 - 99		30
B	DEN-B		Rear edge void area adjustment		1 - 99		30
C	FRONT/REAR		FRONT/REAR void area adjustment		1 - 99		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 aria adjustment correction value		1 - 99		50
J	DENB-ADU		ADU rear edge void aria adjustment correction value		1 - 99		50
K	DENB-HV		Heavy paper rear edge void area adjustment correction value		1 - 99		50
L	MULTI COUNT		Number of print		1 - 999		1
M	PAPER	MFT	Tray selection	Manual paper feed	1 - 6	1	2 (CS1)
		CS1		Tray 1		2	
		CS2		Tray 2		3	
		CS3		Tray 3		4	
		CS4		Tray 4		5	
		LCC		LCC		6	
N	DUPLEX	YES	Duplex print selection	Yes	0 - 1	0	1 (NO)
		NO		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: 4.0 ±2.0mm



   If the above requirement is not met, do the following steps.
5) Select the adjustment target of the paper feed mode adjustment item DENC with the scroll key.
6) Change the adjustment value.
   Enter the adjustment value and press the [OK] key or the [EXECUTE] key.
   When [EXECUTE] key is pressed, the adjustment pattern is printed. When the adjustment value is increased, the distance from the paper lead edge to the image lead edge is increased. When the adjustment value is decreased, the distance is decreased. When the set value is changed by 1, the distance is changed by about 0.1mm.

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

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

ADJ 10 Copy image position, image loss, and void area adjustment (Manual adjustment)

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

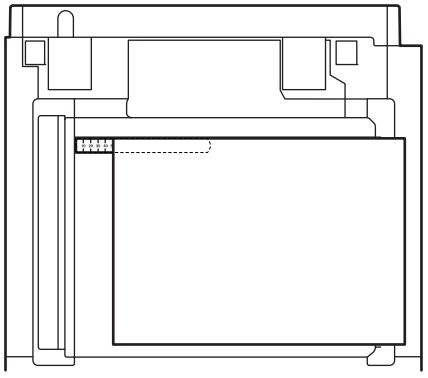
10-A Copy image position, image loss, void area adjustment (Document table mode)

This adjustment is needed in the following situations:

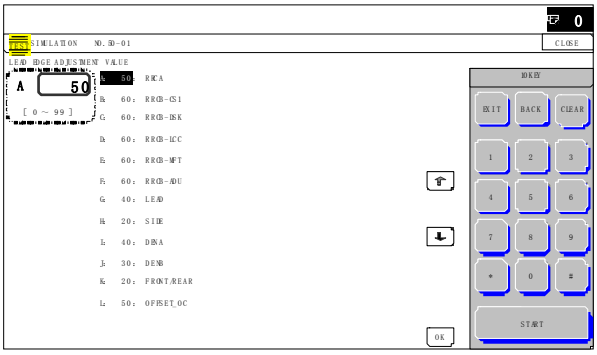
* When the scanner (reading) section is disassembled.
* When the scanner (reading) unit is replaced.
* When the LSU is replaced or removed.
* When the registration roller section is disassembled.
* U2 trouble has occurred.
* The PCU PWB has been replaced.
* The EEPROM of the PCU PWB has been replaced.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

NOTE: Before executing this adjustment, be sure to confirm that the ADJ 3 Print engine image skew, image position, image magnification ratio, void area adjustments has been completed normally.

1) Place a scale on the document table as shown in the figure below. Place a scale so that it is in parallel with the scanning direction and that its lead edge is in contact with the document guide plate. Place white paper on the document table so that the scale lead edge can be seen.



2) Enter the SIM 50-1 mode.



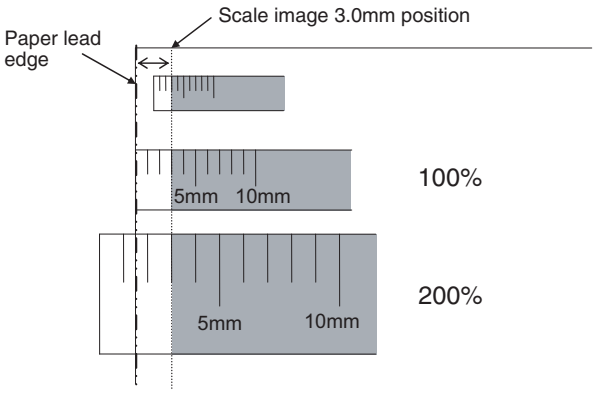
3) Set RRCA, LEAD, and SIDE to the default values.

Item/Display			Content		Setting range	Default value
A	Lead edge adjustment value	RRCA	Document lead edge reference position (OC)		0 - 99	50
B		RRCB-CS1	Resist motor ON timing adjustment	Standard Tray	1 - 99	60
C		RRCB-DSK		Desk	1 - 99	60
D		RRCB-LCC		LCC	1 - 99	60
E		RRCB-MFT		Manual paper feed	1 - 99	60
F		RRCB-ADU		ADU	1 - 99	60
G	Image loss area setting value	LEAD	Lead edge image loss area setting		0 - 99	40
H		SIDE	Side image loss area adjustment		0 - 99	20
I	Void area adjustment	DENA	Lead edge void area adjustment		1 - 99	40
J		DENB	Rear edge void area adjustment		1 - 99	30
K		FRONT/REAR	FRONT/REAR void area adjustment		1 - 99	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	Sub scanning direction print area correction value	DENB-ADU	ADU correction value		1 - 99	50
U		DENB-HV	Heavy paper correction value		1 - 99	50

4) Perform the image lead edge reference position adjustment.

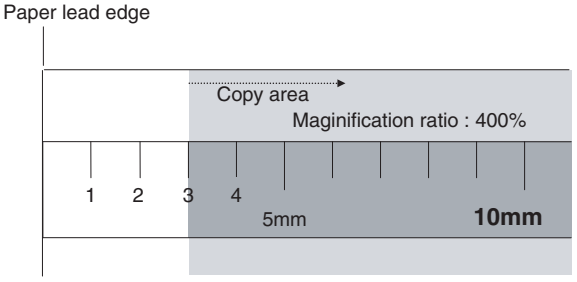
Press [CLOSE] key, and shift from the simulation mode to the copy mode and make a copy in 100% mode and in 200% mode. When the adjustment value of RRCA is proper, the lead edge image from 3.0mm is not copied in either of 100% and 200% copy scale. If not, change and adjust the RRCA value.

(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

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

When the adjustment value is increased, the image loss is increased. When the adjustment value is decreased, the image loss is decreased. When the adjustment value is changed by 1, the void area is changed by 0.1mm.

10-B Document scan position adjustment (DSPF/RSPF mode scanner scan position adjustment)

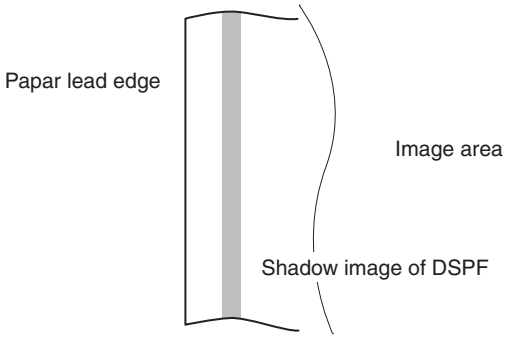
This adjustment must be performed in the following cases:

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

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

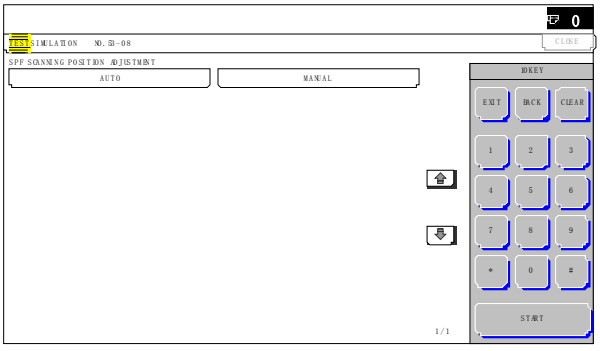
a. Adjustment procedures

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



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

2) Enter the SIM 53-8 mode, and press [MANUAL] key.



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

When the set value is increased, the distance from the home position to the DSPF/RSPF scanning position is increased. When the set value is changed by 1, the scanning position is changed by 0.1mm.

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

NOTE: After execution of this adjustment, be sure to execute ADJ 10C Copy mode image loss adjustment (DSPF/RSPF mode).

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

This adjustment must be performed in the following cases:

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

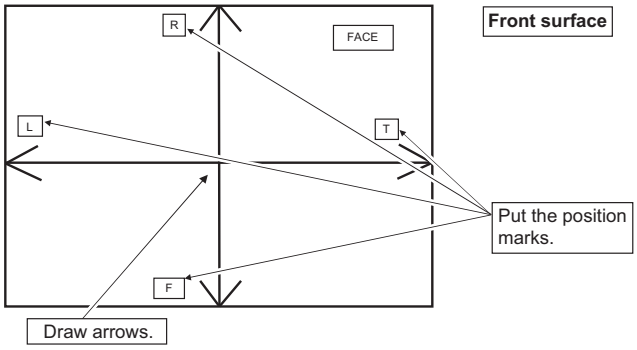
NOTE: To execute this adjustment, the following items must have been properly adjusted.

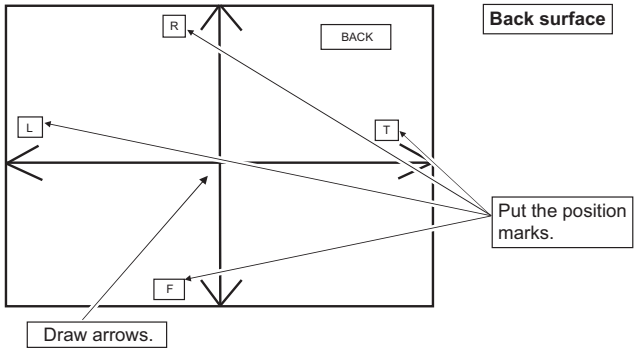
ADJ 3C	Print engine print area (void area) adjustment
ADJ 7C	Main scanning direction image magnification ratio adjustment (DSPF/RSPF mode)
ADJ 7D	Sub scanning direction image magnification ratio adjustment (DSPF/RSPF mode)
ADJ 8B	Scan image off-center adjustment (DSPF/RSPF mode)
ADJ 10B	Document scan position adjustment (DSPF/RSPF mode scanner scan position adjustment)

a. Adjustment procedures

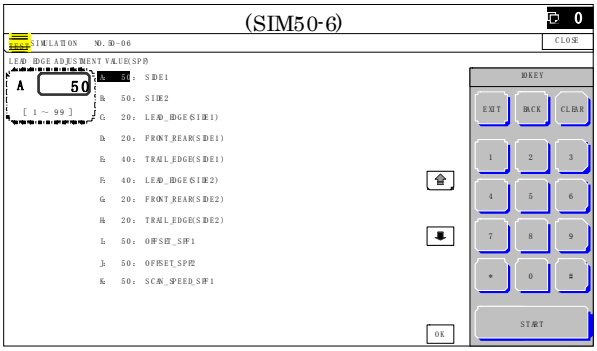
1) Prepare the adjustment chart.

The adjustment chart can be made by the following procedures. Use A4 (11" x 8.5") paper and draw arrow marks vertically and horizontally on the front and the back surfaces. At the same time, put marks of the lead edge, the trail edge, the front end, and the rear end as well as the identification marks of the front surface and the back surface.





2) Enter the SIM 50-6 mode.



(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 (CIS)	1 - 99	50
C	Image loss amount setting SIDE1	LEAD_EDGE (SIDE1)	Front surface lead edge image loss amount setting	0 - 99	20
D		FRONT_REAR (SIDE1)	Front surface side image loss amount setting	0 - 99	20
E		TRAIL_EDGE (SIDE1)	Front surface rear edge image loss amount setting	0 - 99	40
F	Image loss amount setting SIDE2	LEAD_EDGE (SIDE2)	Back surface lead edge image loss amount setting	0 - 99	40
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

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

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

(Lead edge image loss adjustment)

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

   (Standard set value)

   LEAD EDGE(SIDE 1):

   20 Lead edge image loss set value (Front surface)

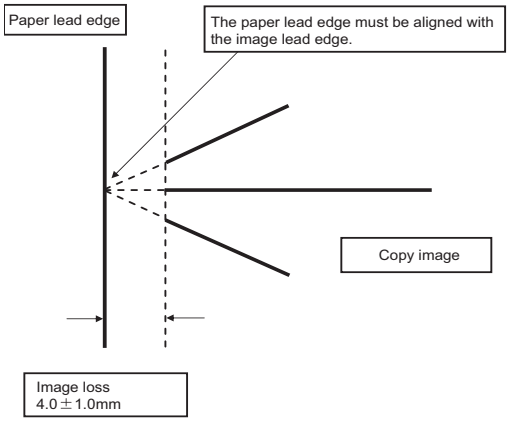
   LEAD EDGE(SIDE 2):

   30 Lead edge image loss set value (Back surface)

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

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

2) Make a duplex copy in 100% in the DSPF/RSPF mode. Check to confirm that the lead edge image loss is within 3.0 □1.0mm on the front surface and the back surface. The paper lead edge must be aligned with the presumed image lead edge.



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

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

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

   SIDE1: Front surface lead edge scan position adjustment

   SIDE2: Back surface lead edge scan position adjustment

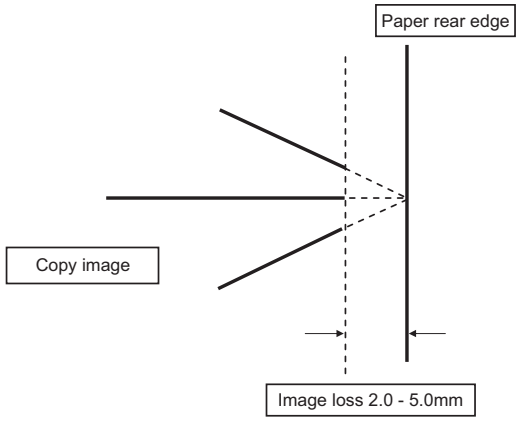
   (When the adjustment value is increased, the print image position is shifted to the delaying direction for the paper.)

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

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

(Rear edge image loss adjustment)

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



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

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

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

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

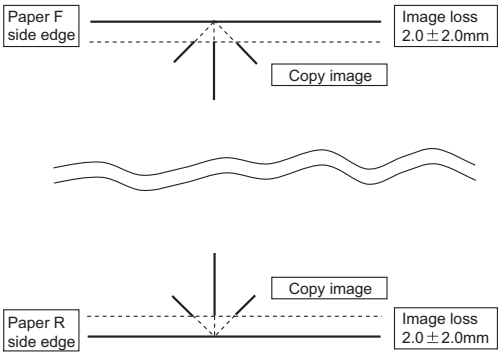
(When the adjustment value is increased, the rear edge image loss is increased.)

(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/RSPF mode. Check to confirm that the image losses on the front frame side and the rear frame side are 2.0□2.0mm on the front surface and the back surface.



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

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

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

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

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

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

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

ADJ 11 Gray balance/density adjustment

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

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

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

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

1) The following items must be adjusted properly.

Job No	Adjustment item			Sim
ADJ 1	Developing unit adjustment	ADJ 1A	Developing doctor gap adjustment	
		ADJ 1B	Developing roller main pole position adjustment	
ADJ J 1	Developing unit adjustment	ADJ 1C	Toner density control reference value setting	25-2
ADJ 2	High voltage value adjustment	ADJ 2A	Main charger grid voltage adjustment	8-2
		ADJ 2B	Developing bias voltage adjustment	8-1
		ADJ 2C	Transfer current and voltage adjustment	8-6
		ADJ 2D	Transfer separation bias voltage adjustment	8-17
ADJ 6	Scan image focus adjustment			48-1
ADJ 11	Gray balance/ density adjustment	ADJ 11A	Scanner calibration (CCD calibration)	63-3

Note for the gray balance/density check and adjustments

When setting the adjustment pattern on the document table in the automatic gray balance adjustment procedures, place 5 sheets of white paper on the adjustment pattern in order to prevent back copying and adverse effects of paper wrinkles as far as possible.

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

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

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

There are following four, major cases.

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

(3) Copy gray balance and density check

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

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

Method 1

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

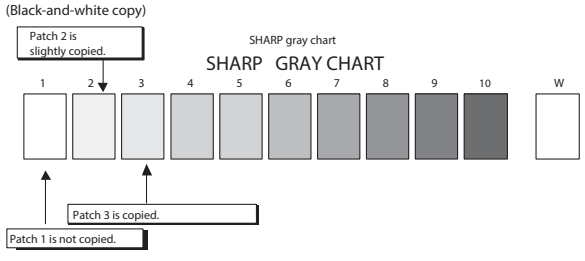
Note for checking the density

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

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

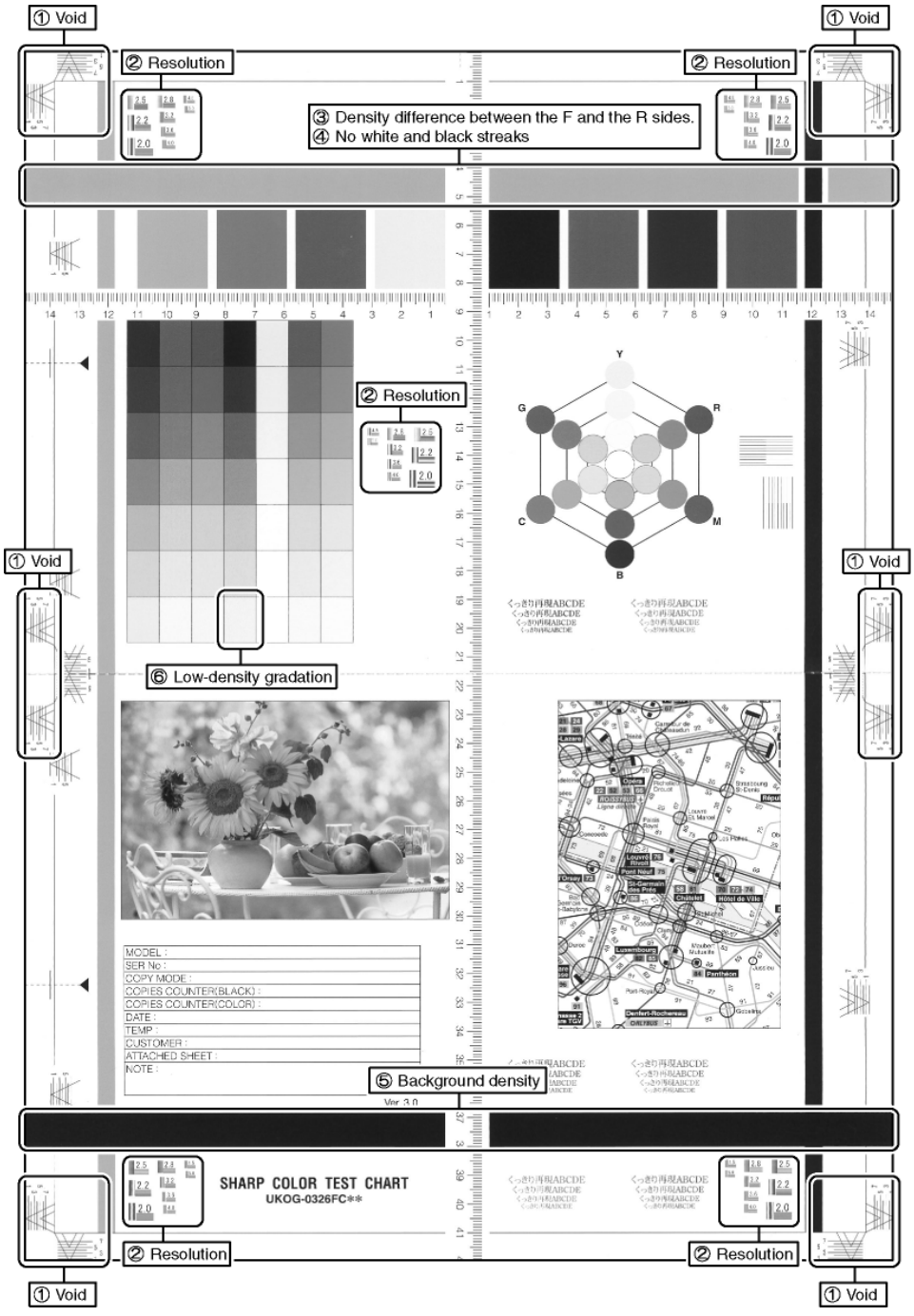
Check with the gray test chart (UKOG-0162FCZZ)

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



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

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



(4) Printer gray balance/density check

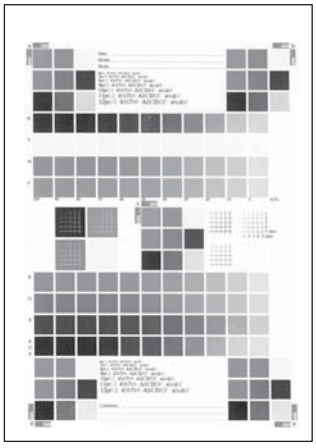
NOTE: Before checking the copy gray balance and the density, be sure to execute the following procedures in advance.

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

Method 1

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

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



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

11-A Scanner calibration (CCD calibration)

This adjustment must be performed in the following cases:

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

11-A (1) CCD gamma adjustment (CCD calibration) (Document table mode)

(1) Note before adjustment

? Check that the table glass, No. 1, 2, 3 mirrors, and the lens surface are free from dirt and dust.
(If there is some dust and dirt, wipe and clean with alcohol.)

? Check to confirm that the patches in BK1 and BK2 arrays of the SIT chart (UKOG-0280FCZZ or UKOG-0280FCZ1) are free from dirt and scratches.

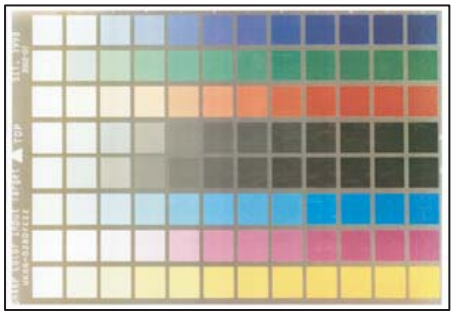
If they are dirty, clean them.

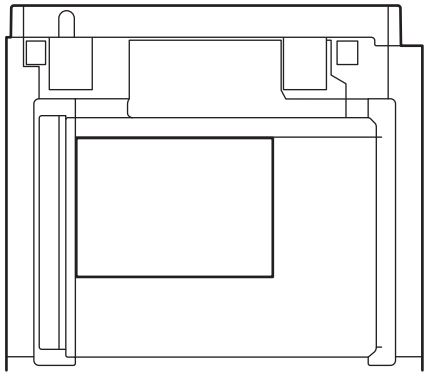
If they are scratched or streaked, replace with new one.

(2) Adjustment procedures

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

Set the chart so that the lighter density side of the patch is on the left side.





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

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

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

2) Enter the SIM 63-3 mode 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.

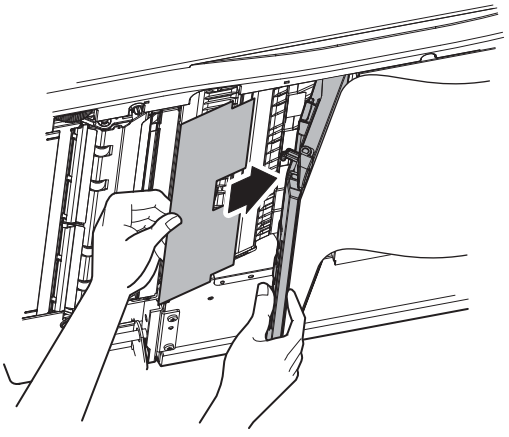
NOTE: Since the SIT chart (UKOG-0280FCZZ or UKOG-0280FCZ1) is easily discolored by sunlight (especially ultraviolet rays) and humidity and temperature, put it in a bag (such as a dark file) and store in a dark place of low temperature and low humidity.

11-A (2) Shading adjustment (Calibration) (DSPF mode)

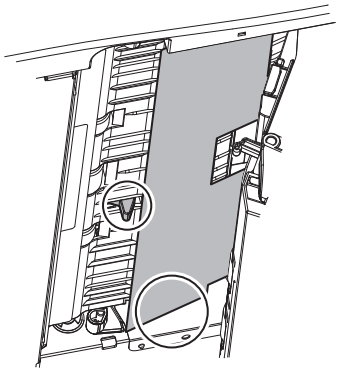
2

(1) Note before adjustment

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



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



3) Enter the SIM 63-2 mode.
4) Select [DSPF SHADING].
5) Press [EXECUTE] key. (The shading adjustment process is started.)
   * The shading adjustment sheet is transported by about 25mm, and shading data are obtained during transport.
   * During shading adjustment, "SHADING EXECUTING..." is displayed.
   * When [EXECUTE] key is pressed during shading adjustment, the operation is interrupted.
   * When shading adjustment is completed normally, [EXECUTE] key returns to the normal display and "COMPLETE" is displayed.

<Descriptions of keys>

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

11-A (3) CCD gamma adjustment (CCD calibration) (DSPF mode)

This adjustment is required in the following cases:

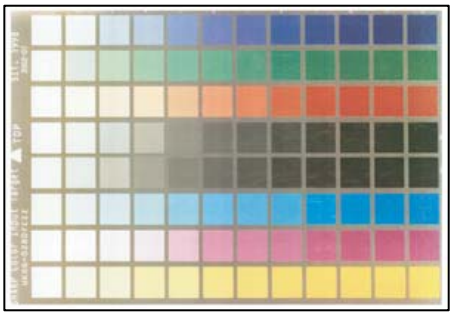
* When the DSPF CCD unit is replaced.
* When a U2 trouble occurs.
* When the DSPF control PWB is replaced.
* When the EEPROM on the scanner control PWB is replaced.

(1) Note before adjustment

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

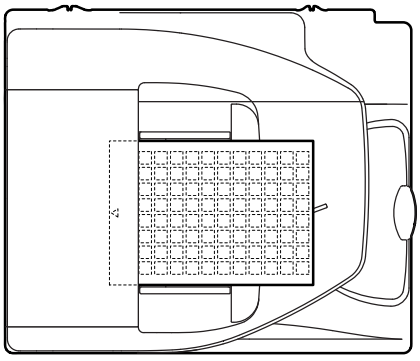
   NOTE:

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



(2) Adjustment procedures

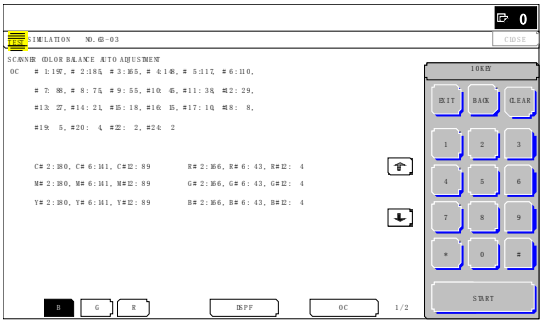
1) Set the SIT chart (UKOG-0280FCZZ or UKOG-0280FCZ1) face-down in the DSPF paper feed tray.



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

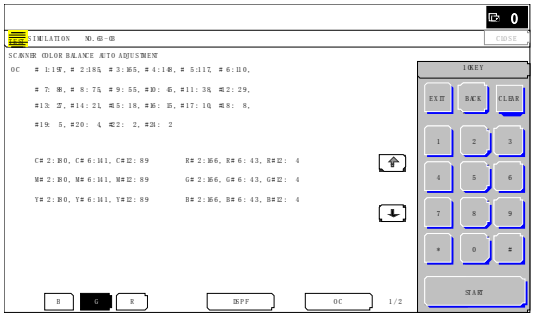
NOTE: UKOG-0280FCZZ is equivalent to UKOG-0280FCZ1.

2) Enter the SIM 63-3 mode.

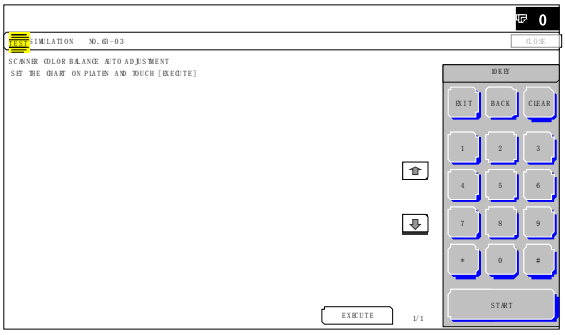


3) When a color button is selected, the adjustment value of the selected color is displayed.

* 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.

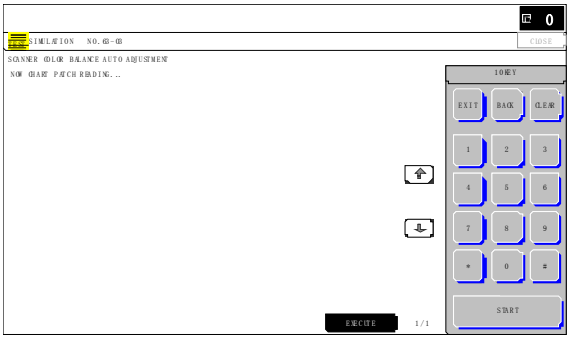


4) When [DSPF] button is pressed, it is highlighted, and the color automatic adjustment execution screen is displayed.



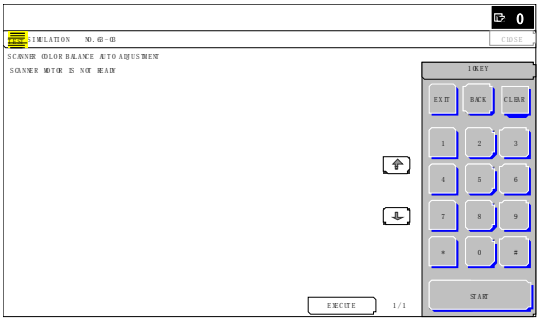
5) Press [EXECUTE] button and it is highlighted and the color auto adjustment is executed.

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

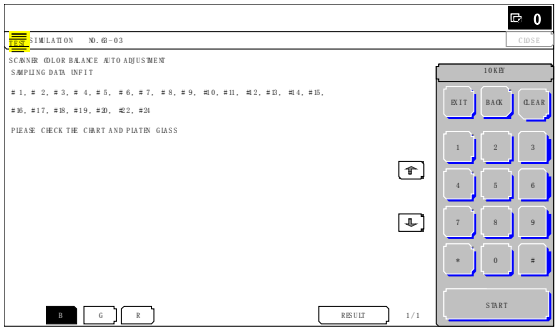


6) After normal completion, the result of calculation is displayed in the initial screen.

* 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.)

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

This adjustment must be performed in the following cases:

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

a. General

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

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

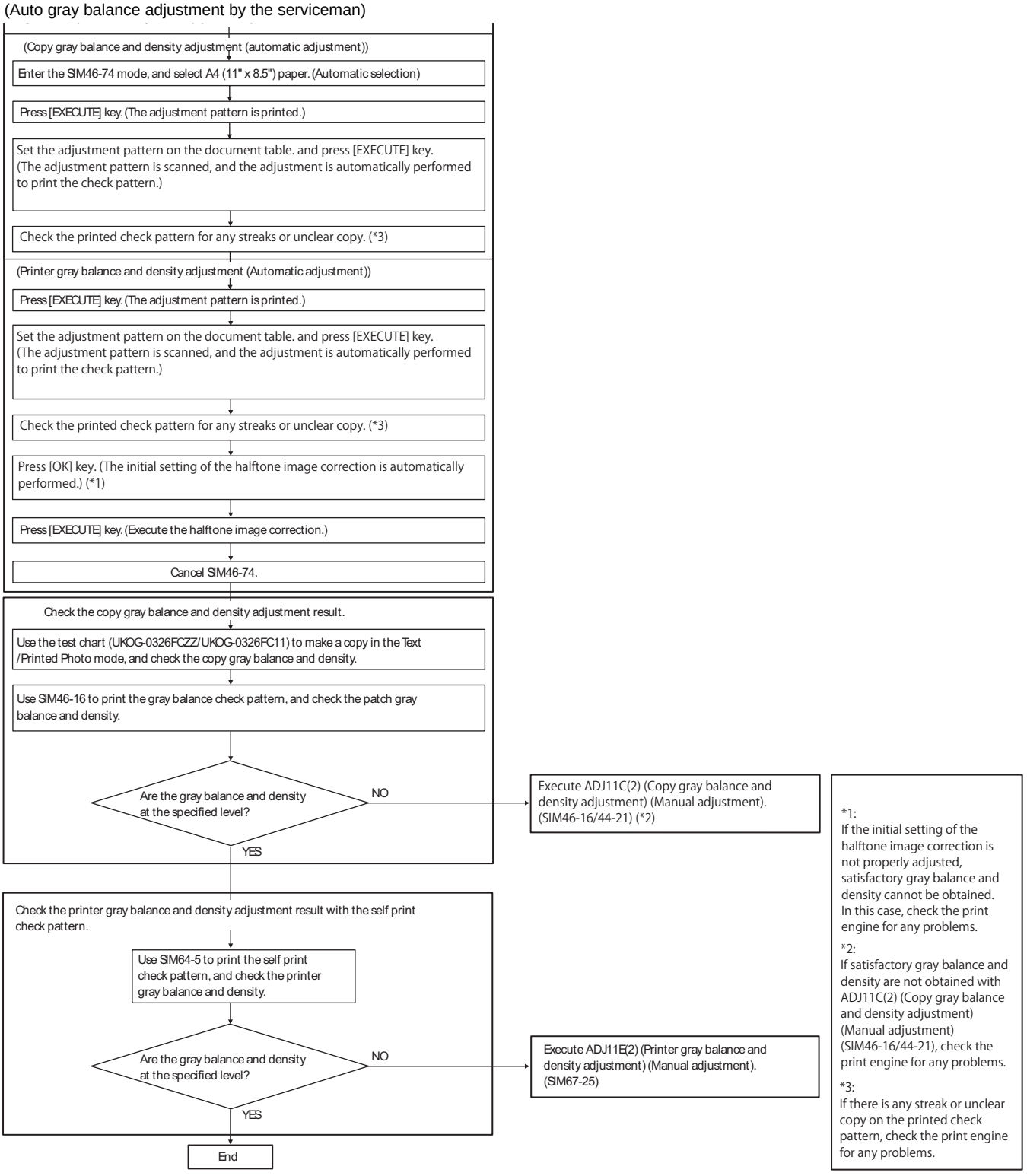
This mode is also advisable to effectively perform both of the automatic copy gray balance and density adjustment (SIM46-24) and the automatic printer gray balance and density adjustment (SIM67-24). It saves considerable time when compared with performing each of the auto copy/printer gray balance and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

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

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

b. Adjustment procedures

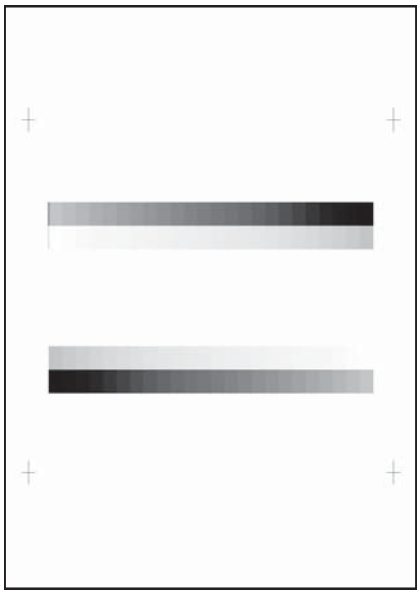
(Auto gray balance adjustment by the serviceman)



1) Enter the SIM46-74 mode.

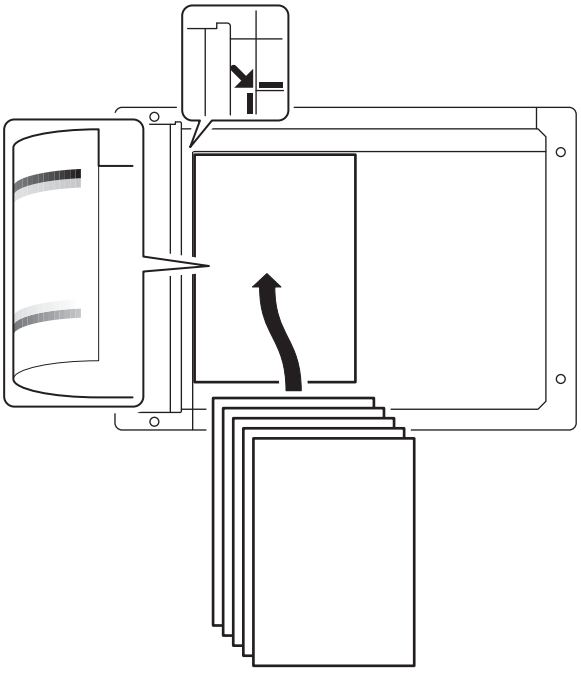
2) Press [EXECUTE] key.

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



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

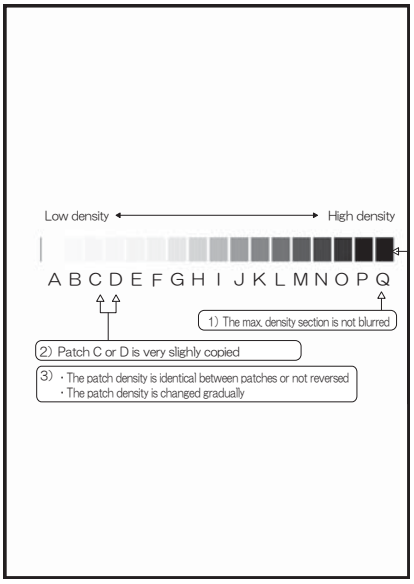
Set the gray patch image (adjustment pattern) printed in the procedure 2) on the document table. Place the gray patch image so that the fine lines are on the left side. At that time, place 5 sheets of white paper on the printed gray patch image (adjustment pattern).



4) Press [EXECUTE] key.

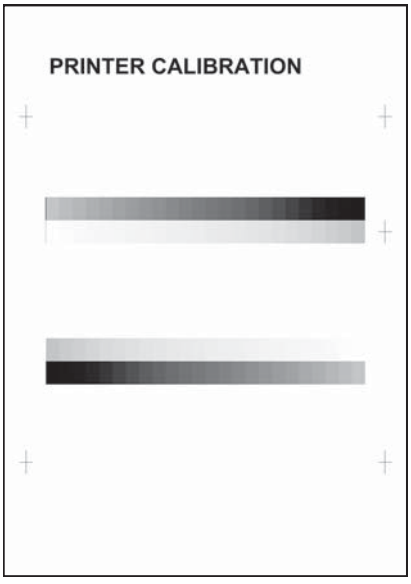
The copy gray balance adjustment is automatically executed and prints the gray balance check patch image.

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



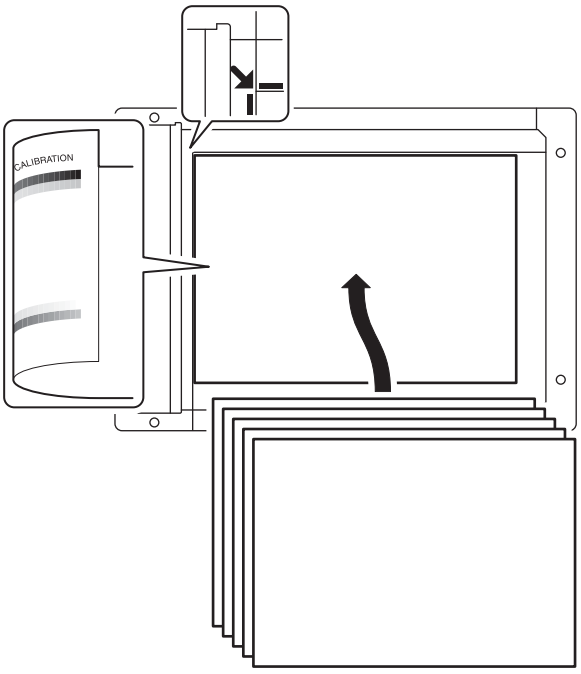
5) Press [EXECUTE] key.

The printer gray patch image (adjustment pattern) is printed out. (A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.)



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

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

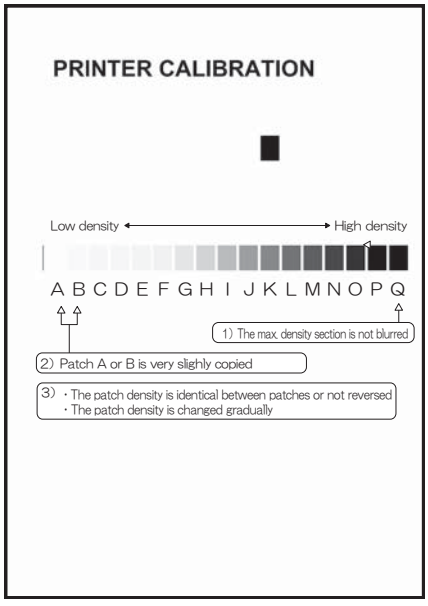


7) Press [EXECUTE] key.

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

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

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



8) The initial setting menu of the halftone image correction is displayed. Press [OK] key.

The initial setting of the halftone image correction is performed.

9) Wait until [EXECUTE] key is displayed. When it is displayed, press it.

The halftone image correction is performed.

10) When "COMPLETED THIS PROCEDURE" is displayed, the adjustment operation is completed.

Cancel SIM46-74.

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

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

11) Check the copy gray balance and density.

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

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

Also when the service target is selected in procedure 4) to execute the automatic adjustment and a satisfactory result is not obtained, perform the manual gray balance adjustment (ADJ 11C (2)).

12) Check the printer gray balance and density.

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

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

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

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

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

11-C Copy quality adjustment (Basic adjustment)

This adjustment must be performed in the following cases:

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

11-C (1) Copy gray balance and density adjustment (Automatic adjustment)

a. General

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

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

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

1) Auto gray balance adjustment by the serviceman (SIM 46-24 is used.)
2) Auto gray balance adjustment by the user (The user program mode is used.) (The gray balance target is the service target.)

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

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

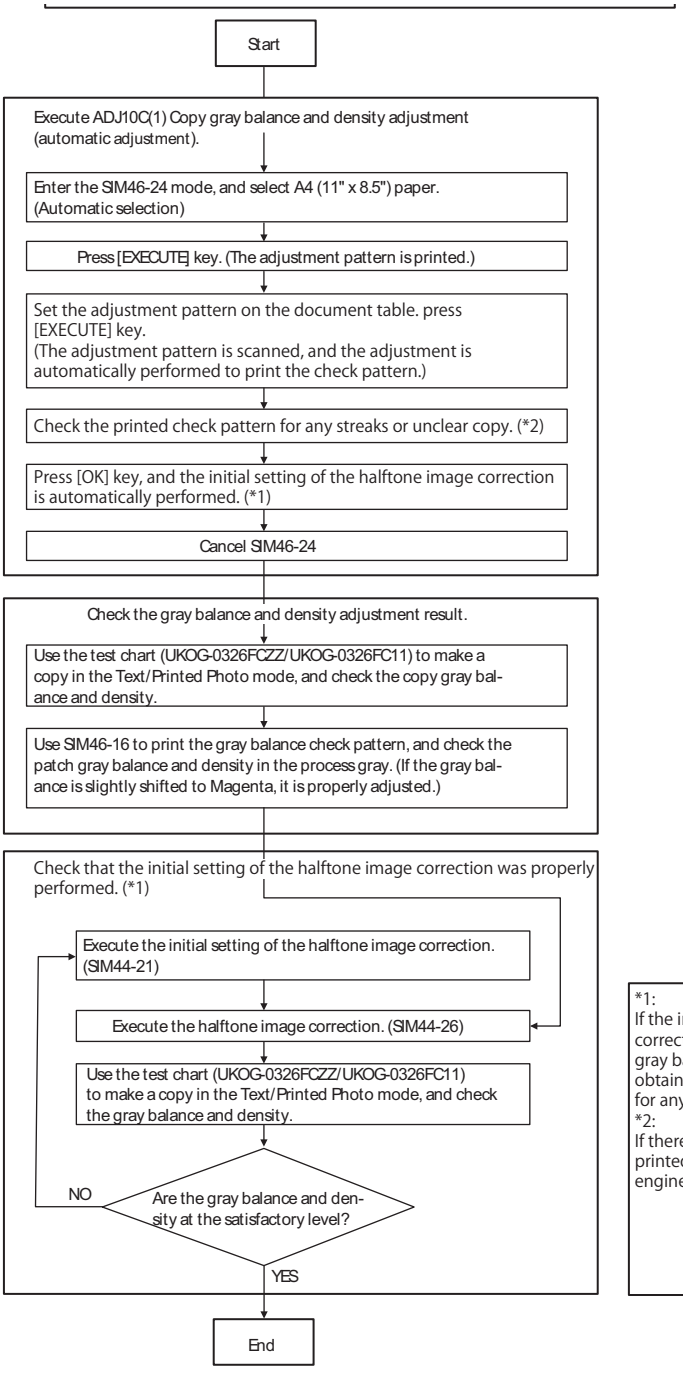
   When, however, the machine has a fatal problem or when the machine condition is greatly changed, this function does not work effectively.

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

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

b. Adjustment procedure

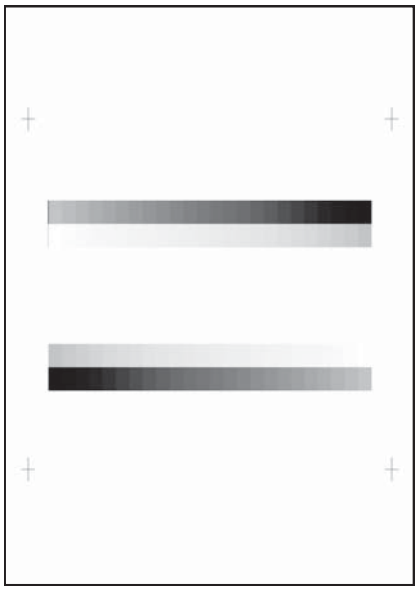
(Auto gray balance adjustment by the serviceman)



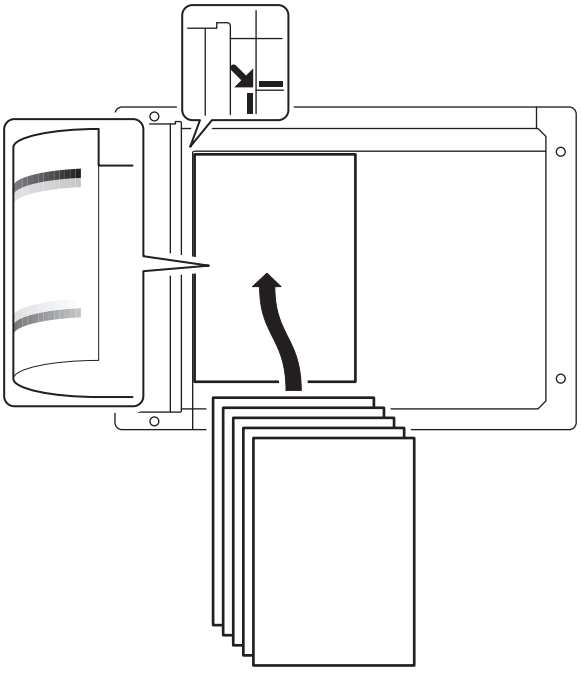
*1:
If the initial setting of the halftone image correction is not properly made, satisfactory gray balance and density cannot be obtained. In this case, check the print engine for any problems.

*2:
If there is any streak or unclear copy on the printed check pattern, check the print engine for any problems.

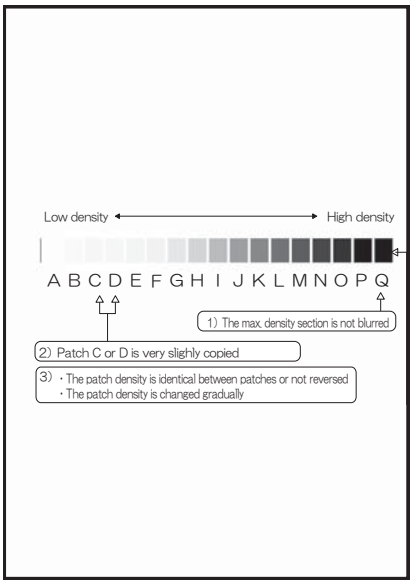
1) Enter the SIM 46-24 mode.
2) Press [EXECUTE] key. (A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.)
   The patch image (adjustment pattern) is printed out.



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



4) Press [EXECUTE] key.
   The copy gray balance adjustment is automatically executed to print the gray balance check patch image. Wait until the operation panel shown in procedure 5) is displayed.



5) Press [OK] key on the operation panel.
   According to data of this adjustment, the initial setting of the halftone image correction is performed.
   NOTE:
   After pressing [OK] key, the initial setting of the halftone image correction is started. During the operation, "NOW REGISTERING THE NEW TARGET OF HALFTONE PROCON." is displayed. This operation takes several minutes.
   After completion of the operation, "PLEASE QUIT THIS MODE" is displayed.
   Do not cancel the simulation until "PLEASE QUIT THIS MODE" is displayed.
6) Check the gray balance and density.
   (Refer to the item of the copy gray balance and density check.)
7) Use SIM44-26 to execute the halftone image correction. (Forcible execution)
   Enter the SIM44-26 mode and press [EXECUTE] key.
   [EXECUTE] key is highlighted and the operation is started.
   It takes several minutes to complete the operation. After completion of the operation, "COMPLETE" is displayed.
   After completion of the operation, the simulation is canceled.
8) Use the servicing color test chart (UKOG-0326FCZZ/UKOG-0326FC11) in the Text/Photo mode (Manual) to check the copy gray balance and density. (Refer to the item of the copy gray balance and density check.)
   If the copy gray balance and density are not satisfactory, perform the following procedures.
9) Execute the initial setting of the halftone image correction. (SIM 44-21)
10) Execute the halftone image correction. (Forcible execution) (SIM44-26)
11) Use the servicing color test chart (UKOG-0317FCZZ/UKOG-0317FC11) in the Text/Printed Photo mode (Manual) to check the copy gray balance/density. (Refer to the item of the copy gray balance and density check.)

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

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

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

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

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

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

11-C (2) Copy gray balance and density adjustment (Manual adjustment)

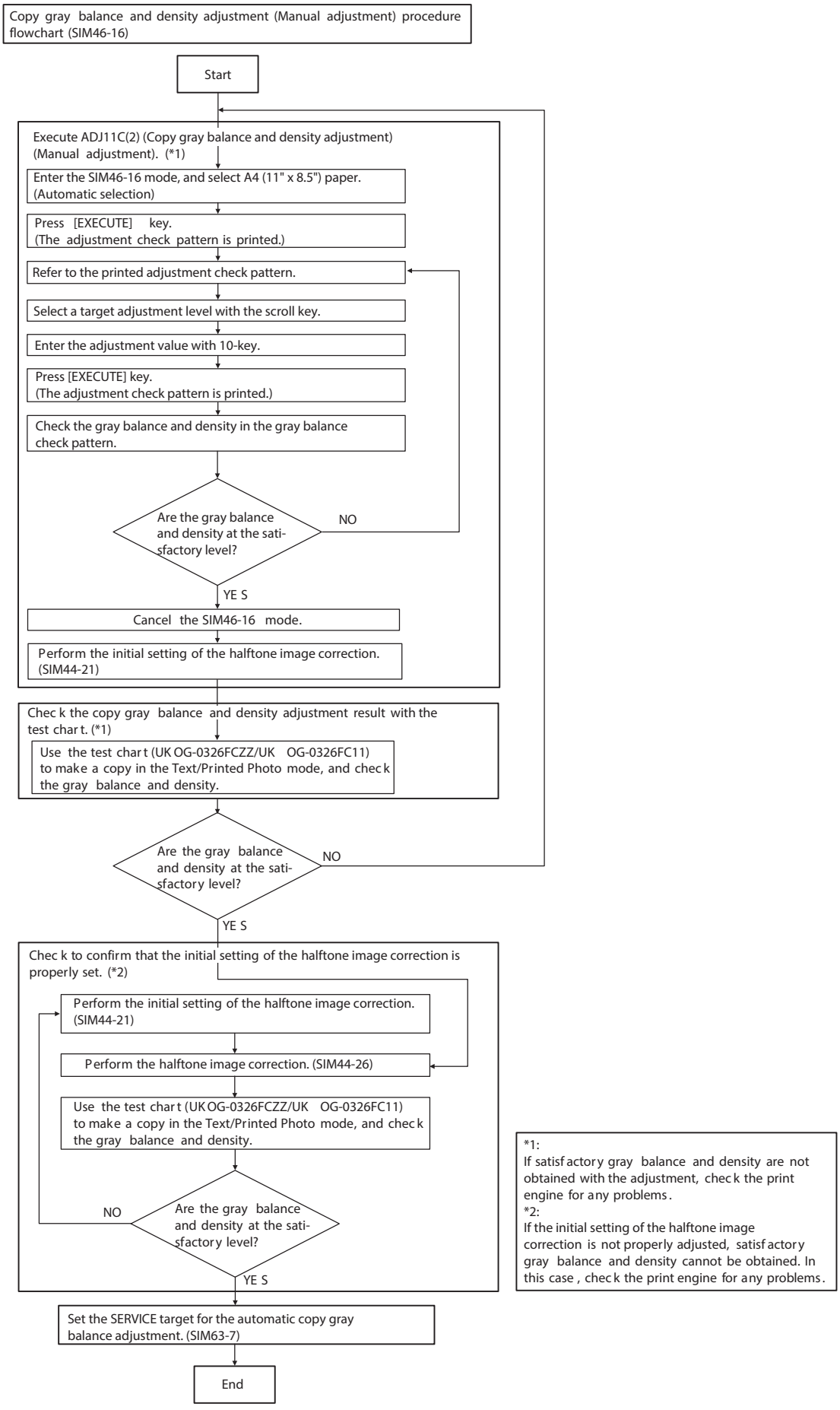
a. General

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

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

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

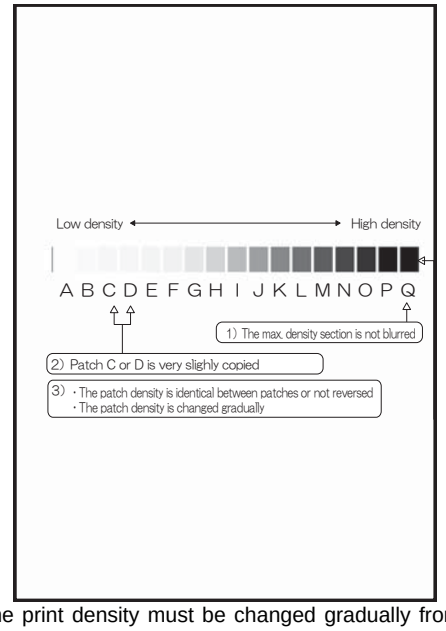
b. Adjustment procedure



1) Enter the SIM46-16 mode.
2) Press [EXECUTE] key. (A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.)

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

   If not, execute the following procedures.



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

   Patch B may not be copied.

   Patch A must not be copied.

   When, however, the gray balance is adjusted according to a request from the user, there is no need to set to the standard gray balance stated above.
4) Enter the adjustment value with 10-key and press [OK] key.

   The adjustment value is set in the range of (1 - 999). When SIM 46-24 is used to adjust the automatic gray balance and density, all the set values of this simulation are set to 500.

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

   Repeat procedures of 2) - 4) until the condition of 3) is satisfied.

   When the overall density is low, or when the density is high and patch A is copied, use the arrow key to adjust all the adjustment values of A - Q (MAX) to a same level collectively.
5) Make a copy of the servicing color test chart (UKOG-0326FCZZ/UKOG-0326FC11) and a user's document according to necessity in the normal copy mode, the text/Printed Photo mode (Manual) to check the adjustment result.

   (Refer to the item of the copy gray balance/density check.)
6) Execute SIM 44-21. (Execute the initial setting of the halftone image correction.)

   It takes several minutes to complete the operation. After completion of the operation, "COMPLETE" is displayed.

   After completion of the operation, the simulation is canceled.

   NOTE:

   This procedure is to save the copy gray balance adjustment data as the reference data for the halftone correction.

   Immediately after execution of ADJ 11C (2) (Gray balance adjustment, Manual) with SIM 46-16, be sure to execute this procedure.

   When ADJ 11C (1) (Gray balance adjustment, Auto) is executed with SIM 46-24, this procedure is automatically executed.
7) Use SIM 44-26 to execute the halftone image correction. (Forcible execution)

   Enter the SIM 44-26 mode and press [EXECUTE] key.

   [EXECUTE] key is highlighted and the operation is started.

   It takes several minutes to complete the operation. After completion of the operation, "COMPLETE" is displayed.

   After completion of the operation, the simulation is canceled.
8) Make a copy of the servicing color test chart (UKOG-0317FCZZ/UKOG-0317FC11) and a user's document according to necessity in the Text/Printed Photo mode (Manual) and check the adjustment result again. (Refer to the item of the copy gray balance/density check.)

   If the copy gray balance and density are not adjusted to the specified level, there may be another cause.

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

   NOTE:

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

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

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

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

a. General

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

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

This must be well understood for execution of the adjustment.

		Copy MODE		IMAGE SEND(SCAN) MODE					
		Monochrome mode		Color mode		Monochrome mode			
		Auto	Manual	Auto	Manual	Auto	Manual	FAX	Printer
46-02	Monochrome copy density adjustment (for each monochrome copy mode) (separately for the low-density area and the high-density area) (No need to adjust normally)	○	○	-	-	-	-	-	-
46-04	Color image send mode image density adjustment (for each mode) (No need to adjust normally)	-	-	○	○	-	-	-	-
46-05	Monochrome image send mode image density adjustment (for each mode) (No need to adjust normally)	-	-	-	-	○	○	-	-
46-08	Image send mode RGB gray balance adjustment (separately for the low-density area and the high-density area) (No need to adjust normally)	-	-	○	○	-	-	-	-
46-09	DSPF mode (Copy/Scan/FAX) density adjustment (No need to adjust normally)	○	○	○	○	○	○	○	-
46-10	Copy gray balance, gamma adjustment (for each copy mode) (No need to adjust normally)	○	○	-	-	-	-	-	-
46-16	Monochrome copy density, gamma adjustment (for each monochrome copy mode) (No need to adjust normally)	○	○	-	-	-	-	-	-
46-19	Automatic monochrome (Copy/Scan/FAX) mode document density scanning operation (exposure operation) conditions setting (Normally no need to set)	○	-	-	-	○	-	○	-
46-23	Copy high density image density reproduction setting (Normally unnecessary to the setting change)	○	○	-	-	-	-	-	-
46-24	Copy gray balance and density adjustment (Automatic adjustment)	○	○	-	-	-	-	-	-
46-32	Document low density image density reproduction adjustment in the automatic monochrome (Copy/Scan/FAX) mode (No need to adjust normally) (Background density adjustment in the scanning section)	○	-	-	-	○	-	○	-
46-37	Monochrome (Copy/Scan/FAX) mode color document reproduction adjustment (No need to adjust normally)	○	○	-	-	○	○	○	○
46-39	FAX send image sharpness adjustment	-	-	-	-	-	-	○	-
46-40	FAX send image density adjustment (Collective adjustment of all the modes)	-	-	-	-	-	-	○	-
46-41	FAX send image density adjustment (Normal text mode)	-	-	-	-	-	-	○	-
46-42	FAX send image density adjustment (Fine text mode)	-	-	-	-	-	-	○	-
46-43	FAX send image density adjustment (Super fine mode)	-	-	-	-	-	-	○	-
46-44	FAX send image density adjustment (Ultra fine mode)	-	-	-	-	-	-	○	-
46-45	FAX send image density adjustment (600dpi mode)	-	-	-	-	-	-	○	-
46-46	FAX send image density adjustment (RGB_RIP)	-	-	-	-	-	-	○	-
46-47	Copy image, image send image, FAX send image (JPEG) compression ratio setting (Normally unnecessary to the setting change)	○	○	○	○	○	○	○	○
46-48	Copy output resolution setting	○	○	-	-	-	-	-	-
46-51	Gamma manual adjustment for the copy mode heavy paper and the image process mode (dither) (No need to adjust normally)	○	○	-	-	-	-	-	-
46-52	Gamma default setting for the copy mode heavy paper and the image process mode (dither)	○	○	-	-	-	-	-	-
46-54	Copy gamma, gray balance adjustment for each dither (Automatic adjustment) (No need to adjust normally)	○	○	-	-	-	-	-	-
46-55	Dropout color setting	-	-	-	-	-	○	-	-
46-60	Color (Scan) mode sharpness adjustment (No need to adjust normally)	-	-	○	-	-	-	-	○
46-61	Area separation recognition level adjustment (No need to adjust normally)	○	○	○	○	○	○	-	-
46-62	ACS, area separation, background image process, automatic exposure mode operation conditions setting (Normally unnecessary to the setting change)	○	○	○	○	○	○	-	-
46-63	Copy/Scan low density image density adjustment (for each mode) (No need to adjust normally)	○	○	○	○	○	○	-	-
46-66	Watermark adjustment	○	○	-	-	-	-	-	-
46-74	Printer/Copy gray balance and density adjustment (Automatic adjustment) (Basic adjustment)	○	○	-	-	-	-	-	○
46-90	High-compression PDF image process operation setting (Normally unnecessary to the setting change)	-	-	○	○	-	-	-	-
46-91	Black text emphasis fine adjustment	-	-	○	○	-	-	-	-

11-D (1) Monochrome copy density adjustment (for each monochrome copy mode) (separately for the low-density area and the high-density area) (No need to adjust normally)

The density is adjusted in each copy mode individually.

This adjustment must be performed in the following cases:

* When there is necessity to change the copy density of the low density and high density part at each copy density individually.
* When there is necessity to change the density gradient of the copy by each the copy mode individually.
* When there is necessity to change all copy density by each the copy mode individually.
* When there is request from the user.

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

Display/Item		Content		Setting range	Default
A	AUTO1	Auto 1	LOW	1 - 99	50
			HIGH	1 - 99	50
B	AUTO2	Auto 2	LOW	1 - 99	50
			HIGH	1 - 99	50
C	TEXT	Text	LOW	1 - 99	50
			HIGH	1 - 99	50
D	TEXT/PRINTED PHOTO	Text/Printed Photo	LOW	1 - 99	50
			HIGH	1 - 99	50
E	TEXT/PHOTO	Text/Photograph	LOW	1 - 99	50
			HIGH	1 - 99	50
F	PRINTED PHOTO	Printed Photo	LOW	1 - 99	50
			HIGH	1 - 99	50
G	PHOTOGRAPH	Photograph	LOW	1 - 99	50
			HIGH	1 - 99	50
H	MAP	Map	LOW	1 - 99	50
			HIGH	1 - 99	50
I	TEXT (COPY TO COPY)	Text (Copy document)	LOW	1 - 99	50
			HIGH	1 - 99	50
J	TEXT/PRINTED PHOTO (COPY TO COPY)	Text/Printed Photo (Copy document)	LOW	1 - 99	50
			HIGH	1 - 99	50
K	PRINTED PHOTO (COPY TO COPY)	Printed Photo (Copy document)	LOW	1 - 99	50
			HIGH	1 - 99	50
L	LIGHT	Light document	LOW	1 - 99	50
			HIGH	1 - 99	50

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

   When adjusting the copy density on the low density part, select "LOW" mode and change the adjustment value. When adjusting the copy density on the high density part, select "HIGH" mode and change the adjustment value.

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

4) Make a copy and check the adjustment result.

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

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

11-D (2) Copy gray balance, gamma adjustment (No need to adjust normally)

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

This adjustment must be performed in the following cases:

* When there is necessity to change the gray balance and gamma by each the copy mode individually.
* When there is request from the user.

1) Enter the SIM 46-10 mode.
2) Select the copy mode to be adjusted with the mode key.
3) Select the density level (point) to be adjusted with the scroll key.

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

4) Enter the adjustment value with 10-key and press [OK] key.

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

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

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

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

   This adjustment pattern can be used to check the gray balance and the density for each density level (point).

5) Make a copy and check the adjustment result.

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

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

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

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

This adjustment must be performed in the following cases:

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

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

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

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

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

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

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

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

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

   This adjustment pattern can be used to check the gray balance and the density for each density level (point).

4) Make a copy and check the adjustment result.

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

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

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

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

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

This setting is required in the following cases.

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

1) Enter the SIM 46-19 mode.
2) Set REALTIME, STOP or PRE-SCAN to adjustment item AE STOP COPY. For contents of each setting item, refer to below. Change the setting value of "AE WIDTH" item to "FULL" or "PART", in some cases.

Display/Item	Content	Set value	Default
AE_MODE	Auto exposure mode	MODE1, MODE2	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: Normal gamma

MODE2: High gamma (Improves the image contrast)

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

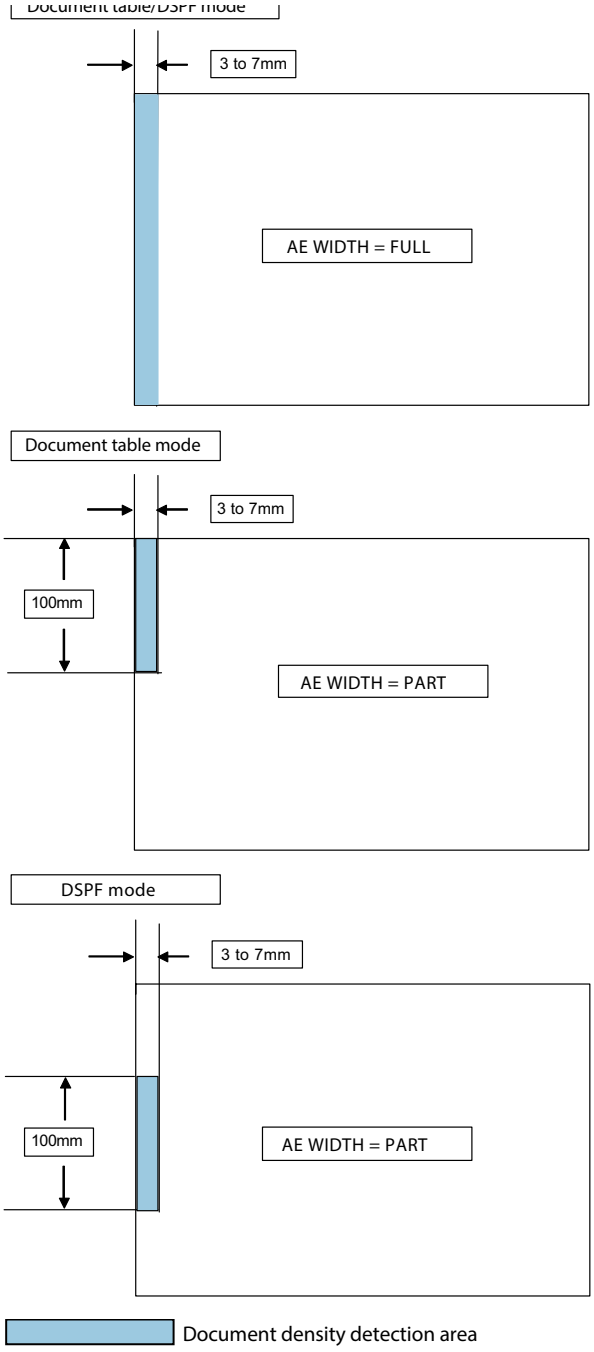
REALTIME:
Reads the density of width of the document one by one, decides the output image density according to the density of each part of the document. (The output image density may be not constant at whole area.)

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

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

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

Operation in monochrome auto copy mode:
When the density of the document of the read area is light, output image density is increased by control. When the density of the document of the read area is dark, output image density is decreased by control.



11-D (5) Document low density image density reproduction adjustment in the automatic monochrome (Copy/Scan/FAX) mode (No need to adjust normally) (Background density adjustment in the scanning section)

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

This adjustment is required in the following cases.

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

1) Enter the SIM 46-32 mode.
2) Select the adjustment mode with the scroll key.
3) Enter the adjustment value with 10-key and press [OK] key.
   When the adjustment value is increased, reproducibility of the background and the low density image is increased. When the adjustment value is decreased, reproducibility of the background and the low density image is decreased.

Item/Display		Content	Setting range	Default value
A	COPY: OC	Copy mode (for OC)	1 - 250	196
B	COPY: DSPF (SIDE1)	Copy mode (for DSPF front surface)	1 - 250	196
C	COPY: DSPF (SIDE2)	Copy mode (for DSPF back surface)	1 - 250	196
D	SCAN: OC	Scanner mode (for OC)	1 - 250	196
E	SCAN: DSPF (SIDE1)	Scanner mode (for DSPF front surface)	1 - 250	196
F	SCAN: DSPF (SIDE2)	Scanner mode (for DSPF back surface)	1 - 250	196
G	FAX: OC	FAX mode (for OC)	1 - 250	196
H	FAX: DSPF (SIDE1)	FAX mode (for DSPF front surface)	1 - 250	196
I	FAX: DSPF (SIDE2)	FAX mode (for DSPF back surface)	1 - 250	196

11-D (6) Copy/Scan low density image density adjustment (for each mode) (No need to adjust normally)

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

This adjustment is required in the following cases.

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

1) Enter the SIM 46-63 mode.
2) Select the copy mode to be adjusted with the scroll key.

Display/Item		Content	Set value	Default
A	COLOR PUSH:TEXT/ PRINTED PHOTO	Text print (color PUSH)	1 - 9	3
B	COLOR PUSH:TEXT	Text (color PUSH)	1 - 9	3
C	COLOR PUSH: PRINTED PHOTO	Printed photo (color PUSH)	1 - 9	5
D	COLOR PUSH: PHOTOGRAPH	Photograph (color PUSH)	1 - 9	5
E	COLOR PUSH: TEXT/PHOTO	Text/Photograph (color PUSH)	1 - 9	3
F	COLOR PUSH: MAP	Map (color PUSH)	1 - 9	5

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

When the adjustment value is increased, reproducibility of the background and the low density image is increased. When the adjustment value is decreased, reproducibility of the background and the low density image is decreased.

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

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

This adjustment is required in the following cases.

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

1) Enter the SIM 46-37 mode.
2) Select the mode to be adjusted with the scroll key.

Item/Display		Content	Setting range	Default value
A	R-Ratio	Gray making setting (R)	0 - 1000	104
B	G-Ratio	Gray making setting (G)	0 - 1000	817
C	R-Ratio RIP	Print gray making setting (R)	0 - 1000	299
D	G-Ratio RIP	Print gray making setting (G)	0 - 1000	587

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

3) Enter the adjustment value with 10-key.

When the adjustment value of adjustment item A is increased, copy density of red image is decreased. When the adjustment value is decreased, copy density of red image is increased.

When the adjustment value of adjustment item B is increased, copy density of yellow image is decreased. When the adjustment value is decreased, copy density of yellow image is increased.

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

If a satisfactory result is not obtained, return to the SIM 46-37 mode and change the adjustment value.

Repeat the above procedures until a satisfactory result is obtained.

11-D (8) Monochrome copy/color scan mode sharpness adjustment (No need to adjust normally)

Use for sharpness adjustment of the high density image in monochrome copy/color scan mode.

This adjustment changes smoothness (asperity) in the image shade part.

This adjustment is required in the following cases.

* When changing the sharpness of copy image in copy mode. (obtain crispy image) (decreases moire)
* When there is desire to improving smoothness in the image shade part (for decrease of asperity)
* To make the black background and the dark area darker.
* To reproduce the gradation change in the dark area.
* When there is request from the user.

1) Enter the SIM 46-60 mode.
2) Select the mode to be adjusted with the scroll key.

Item/Display			Content		Setting range		Default value
A	CPY PUSH AUTO FILTER LEVEL	SOFT CENTER HIGH	Sharpness: The sharpness is specified when the document mode is judged as A5 or A6 by the auto mode of PUSH.	SOFT CENTER HIGH	1 - 3	1 2 3	2 (CENTER)
B	B/W COPY	OFF ON	Filter mixture, Register select pattern, Monochrome copy	OFF ON	0 - 1	0 1	1(ON)
C	COLOR PUSH: RGB	OFF ON	Filter mixture, Register select pattern, Color push	OFF ON	0 - 1	0 1	1(ON)
D	B/W PUSH	OFF ON	Filter mixture, Register select pattern, Monochrome push	OFF ON	0 - 1	0 1	1(ON)
E	B/W PRINT	OFF ON	Filter mixture, Register select pattern, Monochrome print	OFF ON	0 - 1	0 1	0(OFF)

3) Input numeric value corresponding to sharpness level (filter process mode).

? Adjustment item A:

When selecting AUTO, filter is selected according to dot pattern state automatically and adjusts sharpness.

Input small numeric value to obtain crispy image. Input large numeric value to decrease moire.

? Adjustment item B:

Select HIGH to obtain clear images. Select SOFT to reduce moire.

? Adjustment item C - J:

When setting ON, smoothness in the image shade part improves by applying soft filter. (asperity decreases)

4) Press [OK] key.
5) Make a copy and check the copy image.

If a satisfactory result is not obtained, return to the SIM 46-60 mode and change the adjustment value.

Repeat the above procedures until a satisfactory result is obtained.

11-D (9) Copy high density image density reproduction setting (Normally unnecessary to the setting change)

If a tone gap occurs on part of high density in copy mode, or if there is necessity to increase the density of the part of high density, change the setting.

This setting is normally not required. When, however, there are case of following, change the setting.

* When a tone gap occurs on part of high density.
* When there is a necessity to increase the density of the part of high density.
* When there is request from the user.

a. Adjustment procedure

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

Item	Display	Content		Setting range	Default value
A	K (0:ENABLE 1:DISABLE)	0	K engine highest density correction mode: Enable	0 - 1	1
		1	K engine highest density correction mode: Disable		
B	BLACK MAX TARGET	Scanner target value for BLACK max. density correction		0 - 999	500

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

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

  The tone gap may occur in high density part.

NOTE: Do not change the setting values of item C, D, E and F. If these values are changed, density of the high density part is changed.

If these values are changed, be sure to execute the copy gray balance density adjustment. (Auto adjustment)

11-D (10) DSPF mode (Copy/Scan/FAX) density adjustment (No need to adjust normally)

This setting is normally not required, however, in the following cases, make changes to the setting:

* When copy in DSPF mode differs from copy in document table mode.
* When copy density in DSPF mode is low or too high.
* When the DSPF unit is replaced.
* When the DSPF unit is disassembled.
* The CCD unit has been replaced.
* U2 trouble has occurred.
* When the MFP PWB is replaced.
* When the EEPROM on the MFP PWB is replaced.

a. Adjustment procedure

1) Enter the SIM 46-9 mode.
2) Select the mode to be adjusted with the scroll key.

   When adjusting density on low density part, select "A (COPY SIDEA:LOW)". When adjusting density on high density part, select "D (COPY SIDEA:HIGH)".

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

3) Enter the adjustment value with 10-key.

   In case of increase of image density, input large numeric value. Or in case of diluting the image density, input small numeric value.
4) Press [OK] key.
5) Make a copy in the DSPF mode and check the copy.

If a satisfactory result is not obtained, return to the SIM 46-9 mode and change the adjustment value.

Repeat the above procedures until a satisfactory result is obtained.

11-D (11) Automatic gray balance adjustment by the user (Copy gray balance automatic adjustment ENABLE setting and adjustment)

a. General

In the user program mode, the user can execute the auto gray calibration (auto adjustment of the copy gray balance and density).

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

NOTE: This setting must be set to ENABLE only when the user's understanding on the automatic adjustment of the copy gray balance and density and the user's operational ability are judged adequate enough to execute the adjustment.

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

b. Setting procedure

1) Enter the SIM 26-53 mode.
2) Select ENABLE or DISABLE with 10-key.

   When disabling, set to "0" (NO). When enabling, set to "1" (Yes).
3) Press [OK] key.

When set to DISABLE, the menu of the user auto gray calibration (automatic adjustment of copy gray balance and density) is not displayed in the user program mode.

(Auto color calibration by the user (Auto gray balance adjustment))

NOTE: This adjustment is based on the service target gray balance set with SIM 63-7 and SIM 63-8. If, therefore, the above settings are not properly performed, this adjustment cannot be made properly.

1) Enter the system setting mode.
2) Enter the copy setting mode.
3) Press the auto gray calibration key.
4) Press [EXECUTE] key.

   The gray patch image (adjustment pattern) is printed out.
5) Set the gray patch image (adjustment pattern) printed in procedure 4) on the document table.

   Set the patch image so that the thin line is on the left side as shown in the figure.

   At that time, place 5 sheets of white paper on the above gray patch image (adjustment pattern).
6) Press [EXECUTE] key, and the copy gray balance adjustment is executed automatically. After completion of the adjustment, the display returns to the original operation screen.

   The message, "Will you go on to the printer gray balance adjustment?" is displayed.

   To execute the printer gray balance adjustment successively, perform the procedures same as the above.

11-D (12) Copy gamma, gray balance adjustment for each dither (Automatic adjustment)

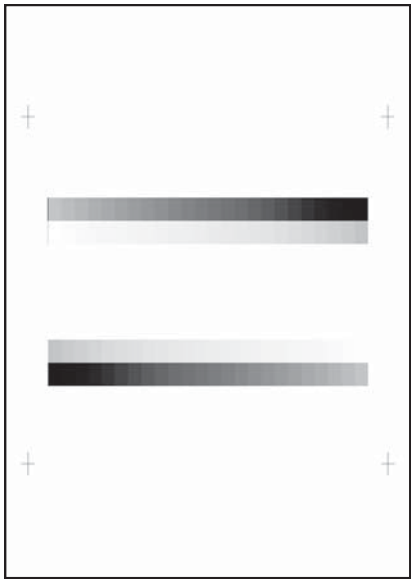
a. General

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

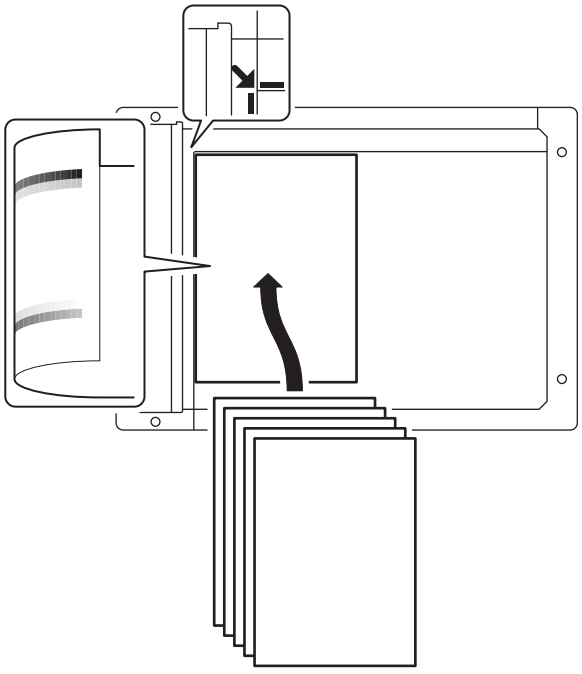
b. Adjustment procedures

1) Enter the SIM46-54 mode.
2) Press [EXECUTE] key.

   A4/11" x 8.5" or A3/11" x 17" paper is automatically selected. The gray patch image (adjustment pattern) is printed.



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



4) Press [EXECUTE] key.

The gray balance and the density are automatically adjusted.

The adjustment pattern is printed out. Check it for any abnormality.

5) Press [OK] key.

The list of the adjustment items (for each dither) is displayed.

6) Select an adjustment item (for each dither).

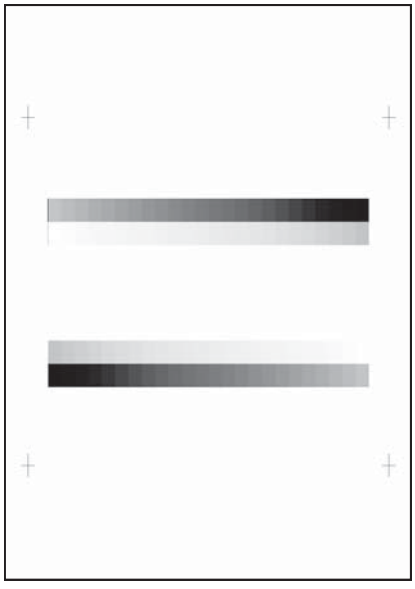
Select item (Mode/Image)	Content
Heavy Paper *1	Adjustment item to improve the gray balance in the heavy paper mode
B/W Ed	Adjustment item to improve the gray balance in the text mode, Text/Photograph mode, Light density document mode and the map mode.
B/W 1200	Adjustment item to improve the density and gradation in the monochrome printed photo mode and the photography mode.
WOVEN1	Adjustment item when adjusting the watermark density in the watermark mode 1
WOVEN2	Adjustment item when adjusting the watermark density in the watermark mode 2
WOVEN3	Adjustment item when adjusting the watermark density in the watermark mode 3
WOVEN4	Adjustment item when adjusting the watermark density in the watermark mode 4

*1: When performing adjustments in the heavy paper mode, load paper in the tray 3, 4.

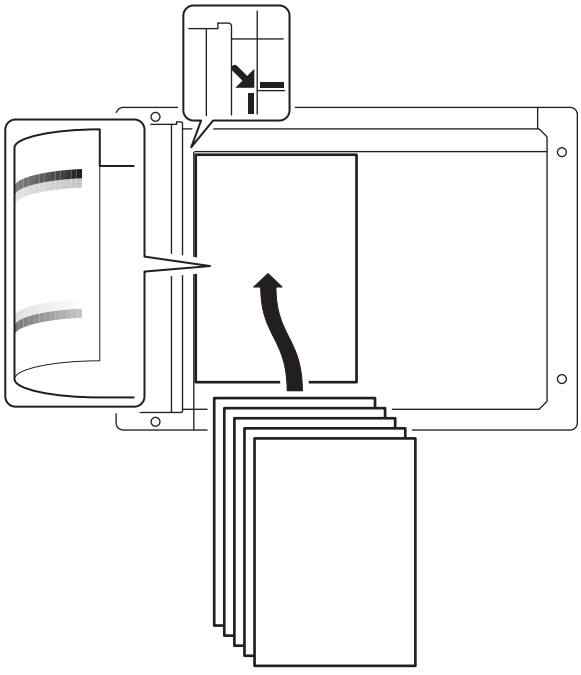
7) Press [EXECUTE] key.

A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.

The patch image (adjustment pattern) is printed out.



8) Set the patch image (adjustment pattern) printed in the procedure 7) on the document table so that the thin lines on the printed patch image (adjustment pattern) are on the left side. Place 5 sheets of white paper on the printed patch image (adjustment pattern).



9) Press [EXECUTE] key.

The gray balance and the density are automatically adjusted, and the machine goes to the state of procedure 6).

To complete the adjustment and enable the adjustment result, press [OK] key.

10) Make a copy, and check the copy image quality.

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

NOTE: Use SIM46-52 to reset the adjustment values to the default values.

11-D (13)
Dropout color adjustment (Normally not required)

a. General

This adjustment is used to adjust the range of reproduction of color document images as monochrome images in the image send mode (monochrome manual text mode).

In other words, it is used to adjust the level of chroma of color images which are reproduced as monochrome images.

This adjustment must be performed in the following cases:

* When there is request from the user.

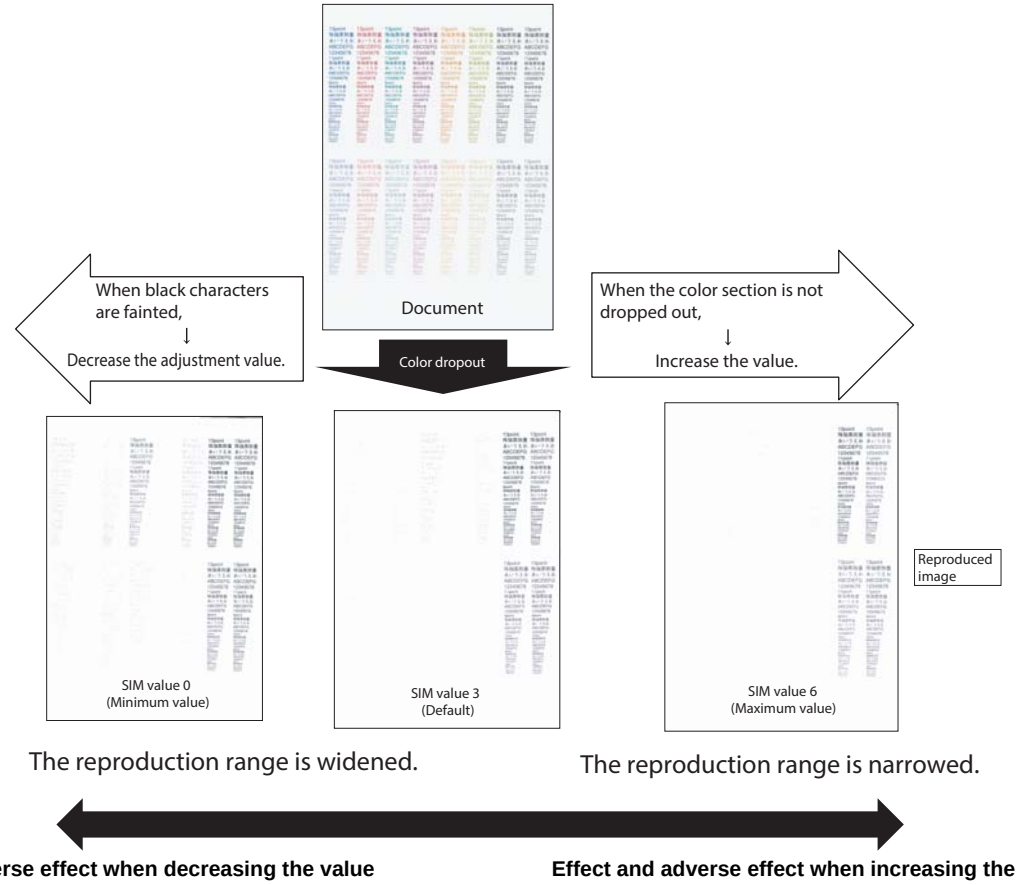
b. Adjustment procedures

1) Enter the SIM 46-55 mode.
2) Enter the adjustment value with 10-key and press [OK] key.

   When the adjustment value is increased, colors dropout becomes easy to narrow the reproduction range. When the adjustment value is decreased, color dropout becomes difficult to widen the reproduction range.

Item/Display		Content	Setting range	Default value
A	CHROMA	Dropout color range adjustment	0 - 6	3

3) Scan the document in the image send mode (monochrome manual text mode) and check the adjustment result.



Effect and adverse effect when decreasing the value

[Effect]

When black characters are fainted by color shift, etc, the black area is outputted clearly.

[Adverse effect]

Dropout of color sections becomes difficult.

Effect and adverse effect when increasing the value

[Effect]

Colors (of low chroma) which are difficult to be dropped out can be dropped out.

[Adverse effect]

Black characters are fainted or cracked.

11-D (14)
Watermark adjustment (Normally not required)

a. General

This adjustment is used to adjust the reproduction capability of the watermark in the copy/printer mode.

This adjustment is used for watermark documents (primary output). The result of this adjustment affects the result of watermark print (secondary output).

In the printer mode, the watermark density can be adjusted by the printer driver. That adjustment is based on the result of this adjustment.

This adjustment must be performed in the following cases:

* When there is request from the user. (When a satisfactory result is not obtained from the adjustment in the system setting mode.)
* When there is request from the user. (When a satisfactory result is not obtained from the adjustment with the printer driver.)

b. Adjustment procedures

1) Enter the SIM 46-66 mode.
2) Select the PATTERN mode, then select an adjustment item in the following list according to the situation.

NOTE: Normally there is no need to adjust the PATTERN mode (items E and F), the COPY MODE, and the POSITION mode.

Category	Item	Display	Content		Setting range	Default value
PATTERN	A	WOVEN DEN BK LOW	Watermark density level (Black LOW)		0 - 255	15
	B	WOVEN DEN BK MIDDLE	Watermark density level (Black MIDDLE)		0 - 255	19
	C	WOVEN DEN BK HIGH	Watermark density level (Black HIGH)		0 - 255	23
	D	CONTRAST	Contrast adjustment		0 - 255	2
	E	HT TYPE (POSI)	For halftone index watermark type positive		42 - 43	42
	F	HT TYPE (NEGA)	For halftone index watermark type negative		42 - 43	42
COPY MODE	A	TEXT/PRINTED PHOTO	Text/Printed Photo mode select Enable/Disable	OFF	0 - 1	1
				ON		
	B	TEXT	Text mode select Enable/Disable	OFF	0 - 1	1
				ON		
	C	PRINTED PHOTO	Printed Photo mode select Enable/Disable	OFF	0 - 1	1
				ON		
	D	PHOTOGRAPH	Photograph mode select Enable/Disable	OFF	0 - 1	1
				ON		
	E	TEXT/PHOTO	Text/Photograph mode select Enable/Disable	OFF	0 - 1	1
				ON		
	F	MAP	Map mode select Enable/Disable	OFF	0 - 1	1
				ON		
	G	LIGHT	Light density document mode select Enable/Disable	OFF	0 - 1	1
				ON		
	H	AUTO	Automatic mode select Enable/Disable	OFF	0 - 1	1
				ON		
	I	DEFAULT MODE	Default exposure mode	TEXT/PRINTED PHOTO	0 - 5	0
			Used to specify the exposure mode set when the watermark is ON.	TEXT		
				PRINTED PHOTO		
				PHOTOGRAPH		
				TEXT/PHOTO		
				MAP		
POSITION	A	LINE SPACE 1	Line space in the watermark print box (24P - 36P) (*1)		0 - 200	20
	B	LINE SPACE 2	Line space in the watermark print box (37P - 48P) (*1)		0 - 200	20
	C	LINE SPACE 3	Line space in the watermark print box (49P - 64P) (*1)		0 - 200	20
	D	LINE SPACE 4	Line space in the watermark print box (65P - 80P) (*1)		0 - 200	20
	E	BLANK H/B 1	Upper margin/Lower margin in the watermark print box (24P - 36P) (*2)		0 - 200	10
	F	BLANK H/B 2	Upper margin/Lower margin in the watermark print box (37P - 48P) (*2)		0 - 200	10
	G	BLANK H/B 3	Upper margin/Lower margin in the watermark print box (49P - 64P) (*2)		0 - 200	10
	H	BLANK H/B 4	Upper margin/Lower margin in the watermark print box (65P - 80P) (*2)		0 - 200	10
	I	BLANK L/R 1	Left margin/Right margin in the watermark print box (24P - 36P) (*3)		0 - 200	60
	J	BLANK L/R 2	Left margin/Right margin in the watermark print box (37P - 48P) (*3)		0 - 200	90
	K	BLANK L/R 3	Left margin/Right margin in the watermark print box (49P - 64P) (*3)		0 - 200	120
	L	BLANK L/R 4	Left margin/Right margin in the watermark print box (65P - 80P) (*3)		0 - 200	150

*1: When the adjustment value is varied by □1, the line space is varied by 0.1mm.

*2: When the adjustment value is varied by □1, the upper and the lower margins are varied by 0.1mm.

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

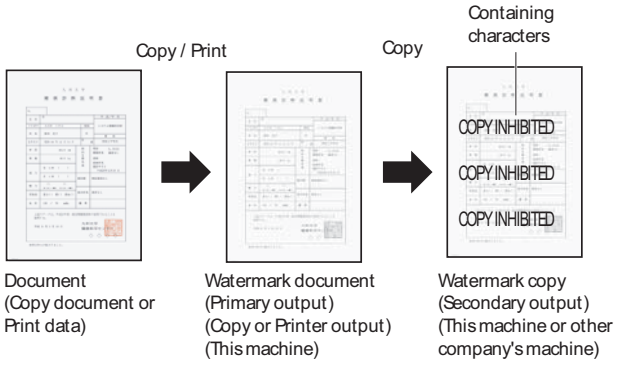
Changing adjustment values of adjustment items A - C and trade off

Kinds of watermarks (Mode selected in the watermark copy mode)	Density value	Adjustment values of adjustment items A - C	Effect
Characters appearing.	Decrease.	The adjustment value is decreased.	The watermark images become easy to disappear. The containing characters become lighter.
	Increase.	The adjustment value is increased.	The containing characters become darker. The watermark images become difficult to disappear.
Background appearing.	Decrease.	The adjustment value is decreased.	The containing characters become easy to disappear. The watermark images become easy to disappear.
	Increase.	The adjustment value is increased.	The watermark images become darker. The containing characters become difficult to disappear.

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

4) Make a copy, and check the adjustment result.

Descriptions on the watermark



Containing characters	Characters embedded in a watermark, such as "COPY INHIBITED," are called containing characters.
Kinds of watermarks	There are two kinds: "Character appearing" and "Background appearing." When a watermark of "Character appearing" is copied, the background disappears and the containing characters appear. When a watermark of "Background appearing" is copied, the watermark of the character area disappears and the containing characters become outline characters.
Principle of watermarks	A watermark is composed of two dots: fine dots and rough dots. Since fine dots disappear when copied, they are called disappearing patterns. Since rough dots remain when copied, they are called remaining patterns. In a watermark of "Character appearing," the background is a disappearing pattern and the containing characters are remaining patterns. In a watermark of "Background appearing," the background is a remaining pattern and the containing characters are disappearing patterns.

NOTE:
Note for watermarks
	Watermarks have the following characteristics:
	* A watermark is presumed to be synthesized with text documents. If it is used with photos or images, the containing characters may be seen in the watermark document (primary output) or the containing characters may not appear properly in the watermark copy (secondary output).
	* When a watermark is synthesized with newspapers or other dark-background documents, the containing characters may not appear in the watermark copy (secondary output).
	* Containing characters may not appear in the watermark copy (secondary output) depending on the kind of the copier which makes the watermark copy (secondary output) and the copy mode.
	* Containing characters may not appear clearly in the watermark copy (secondary output) depending on the copy mode in which the watermark document (primary output) is made.
	* When the print engine status changes, the containing characters may not be concealed properly in the watermark document (primary output). In this case, follow the procedures below to conceal the containing characters.
	  * Use SIM46-24 to execute the gray balance adjustment.
	  * Use SIM46-54 to execute the gray balance adjustment for each dither.
	  * Adjust the watermark print contrast in the system setting.
	* The preview screen of the watermark only indicates the setting of the watermark color, and does not indicate an actual copy image.
	* When the document control (printer mode) is used together, it is advisable to use "Characters appearing" setting. If "Background appearing" setting is used together, the detection accuracy of document control may be reduced.
	* In the printer mode watermark, setting of 1200dpi and a watermark cannot be used together.

Watermark adjustment in the system setting

System setting □ Security setting □ Watermark print □ Contrast tab

Watermark kind mode selection	Density	Adjustment
Character appearing	To increase the text density	Decrease the contrast value. (Default: 5)
	To decrease the text density	Increase the contrast value. (Default value: 5)
Background appearing	To increase the text density	Increase the contrast value. (Default value: 5)
	To decrease the text density	Decrease the contrast value. (Default: 5)

NOTE:

Note for adjusting the watermark with SIM46-54

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

However, note the following items.

* When either of item E or F of the PATTERN mode is 42, the adjustment must be executed for the both modes of WOVEN1 and WOVEN2 of SIM46-54.
* When either of item E or F of the PATTERN mode is 43, the adjustment must be executed for the both modes of WOVEN3 and WOVEN4 of SIM46-54.
* WOVEN1 and WOVEN2 must be adjusted in a pair as well as WOVEN3 and WOVEN4.

  If it is ignored, the containing characters remain reproduced.

11-E Printer image quality adjustment (Basic adjustment)

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

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

This adjustment is required in the following cases.

* Basically same as when the copy gray balance/density adjustment is required.
* After the copy gray balance/density adjustment.

11-E (1) Printer gray balance adjustment (Automatic adjustment)

a. General

The gray balance adjustment (auto adjustment) is used to adjust the print density of automatically with SIM 67-24 or the user program.

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

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

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

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

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

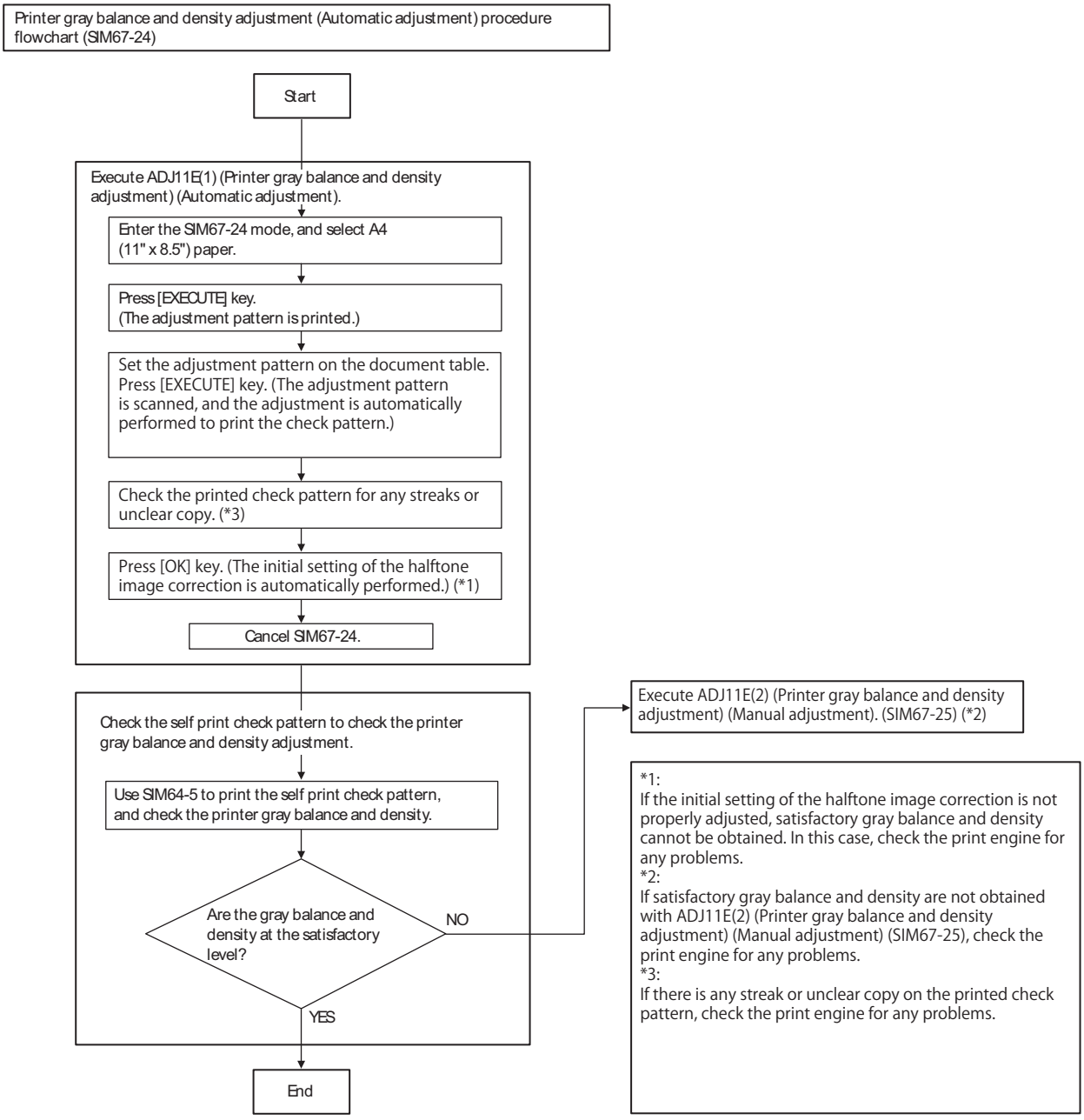
   When, however, the machine has a fatal problem or when the machine condition is greatly changed, this function does not work effectively.

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

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

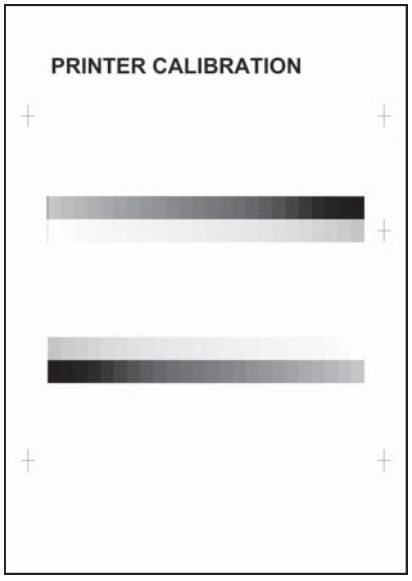
b. Adjustment procedure

(Auto gray balance adjustment by the serviceman)



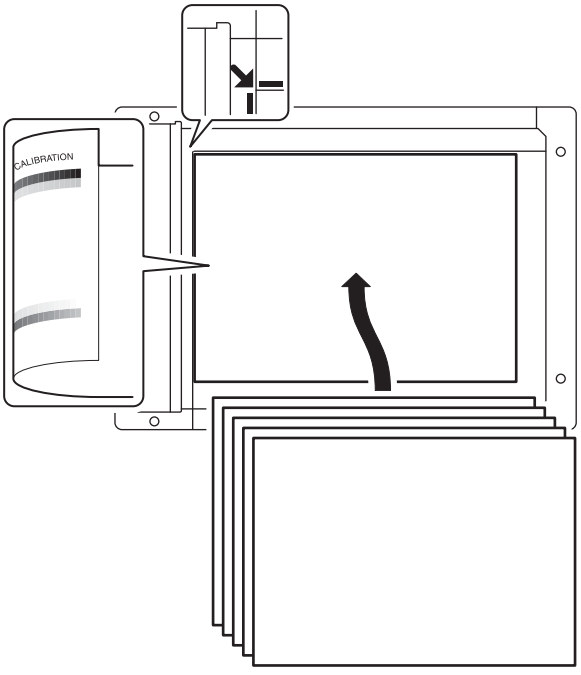
1) Enter the SIM 67-24 mode.
2) Press [EXECUTE] key. (A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.)

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



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

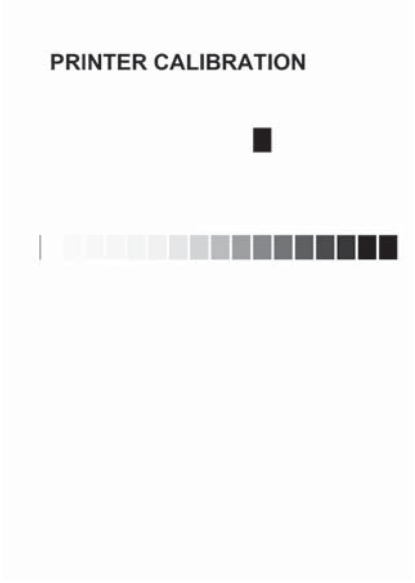
   Place the printed gray patch image (adjustment pattern) paper on the document table so that the thin lines on the paper are on the left side. Place 5 sheets of white paper on the printed gray patch image (adjustment pattern) paper.



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

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

   The copy gray balance adjustment is automatically executed and prints the gray balance check patch image. Wait until the operation panel shown in the procedure 5) is displayed.



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

   NOTE:

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

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

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

   After completion of the operation, the simulation is canceled.
6) Check the gray balance and density.

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

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

   Also when the service target is selected in procedure 4) to execute the automatic adjustment and a satisfactory result is not obtained, perform the manual gray balance adjustment (ADJ 11E (2)).

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

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

11-E (2) Printer gray balance adjustment (Manual adjustment)

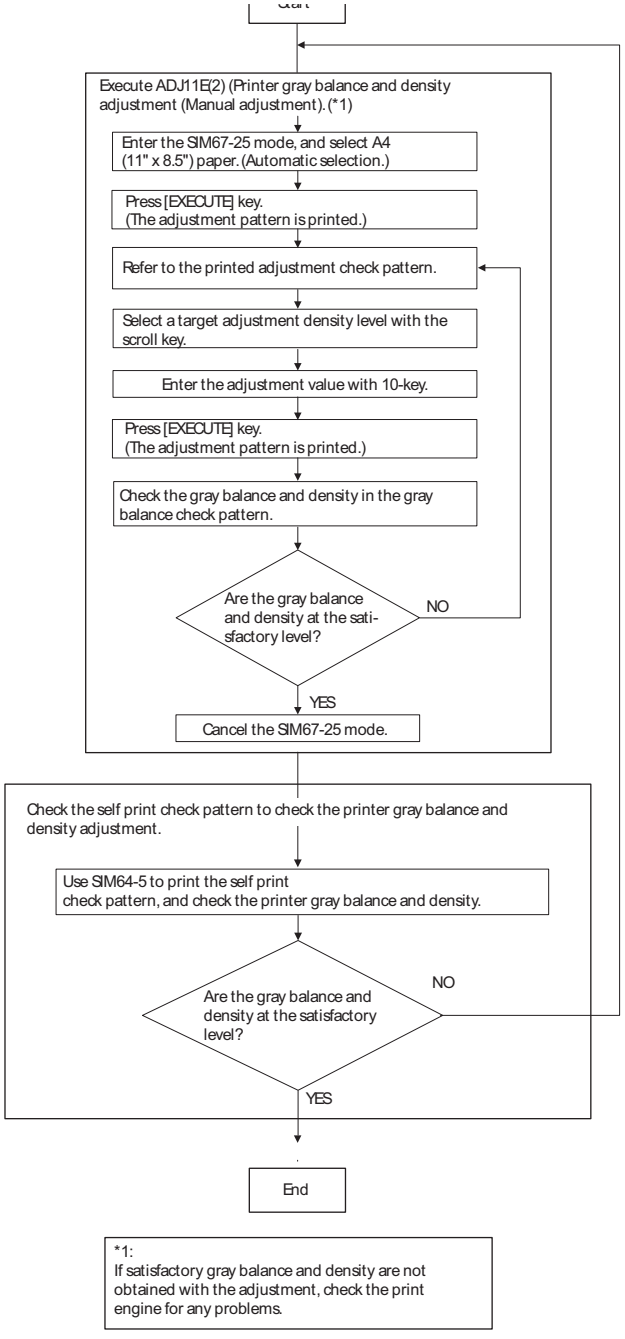
a. General

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

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

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

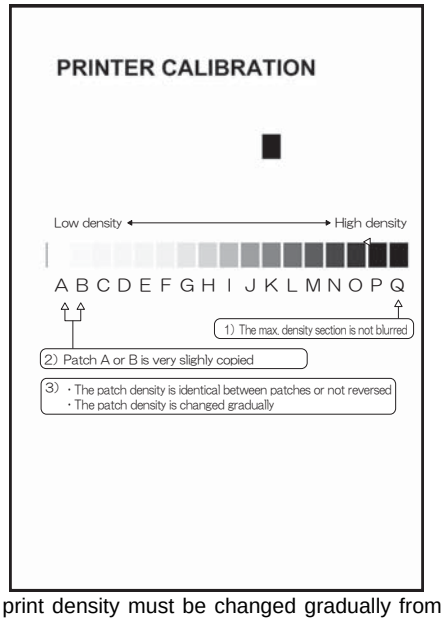
b. Adjustment procedure



1) Enter the SIM 67-25 mode.
2) Press [EXECUTE] key. (A4/11" x 8.5" or A3/11" x 17" paper is automatically selected.)

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

   If not, execute the following procedures.



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

   Patch B may not be copied.

   Patch A must not be copied.

   When, however, the gray balance is adjusted according to a request from the user, there is no need to set to the standard gray balance stated above.
4) Enter the adjustment value with 10-key and press [OK] key.

   The adjustment value is set in the range of (1 - 999). When SIM 67-24 is used to adjust the automatic gray balance and density, all the set values of this simulation are set to 500.

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

   Repeat procedures of 2) - 4) until the condition of 3) is satisfied.

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

   Then, adjust each patch density individually. This is an efficient way of adjustment.
5) Check the gray balance and density.

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

   NOTE:

   If the gray balance is customized, use SIM 67-27 to register the gray balance as the service target.

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

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

11-F Printer image quality adjustment (Individual adjustment)

a. General

This adjustment is used to execute the fine adjustment in each mode only when a satisfactory image quality is not obtained by the basic adjustments ADJ 11E (1) and ADJ 11E (2) or there is a request from the user. Normally there is no need to execute this adjustment.

This must be well understood for execution of the adjustment.

11-F (1) Printer density adjustment (Low density section density adjustment) (No need to adjust normally)

This adjustment is used to adjust the image density in the low density area in the printer mode.

Adjust to reproduction setting of the low density image.

This adjustment is required in the following cases.

* When it is required not to reproduce images in the low density section, or to reproduce low-density images.
* When there is request from the user.

1) Enter the SIM 67-36 mode.
2) Enter the adjustment value and press the [OK] key.

   In case of increase of the image density on low density part, increase the adjustment value. For diluting the image density on low density part, decrease the adjustment value.

11-F (2) Printer high density image density reproduction setting (Supporting the high density section tone gap) (No need to adjust normally)

When a tone gap is generated in the high density section in the printer mode, the setting is changed to lower the density in the high density section.

This setting is normally not required, however, in the following cases, a change of setting must be made.

* When a tone gap occurs on part of high density.
* To lower the density in the high density section.

a. Adjustment procedure

1) Enter the SIM 67-34 mode.
2) Select the item A, B with the scroll key.

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

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

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

  The tone gap may occur in high density part.

NOTE: If the setting values of item B is changed, density of the high density part is changed.

When these values are changed, be sure to perform the printer gray balance and density adjustment. (Automatic adjustment)

11-F (3) Printer gamma adjustment for each dither (Automatic adjustment) (No need to adjust normally)

a. General

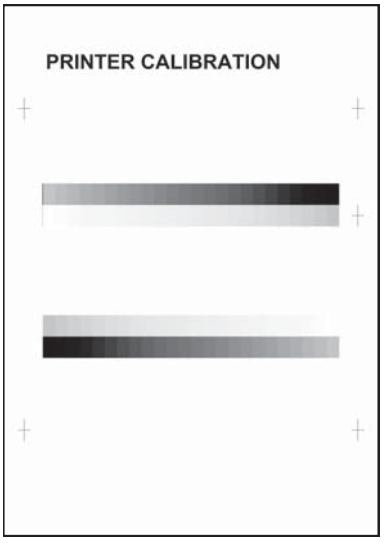
This adjustment is used to adjust the gray balance and the density in the monochrome mode, the heavy paper mode, and the gloss paper mode.

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

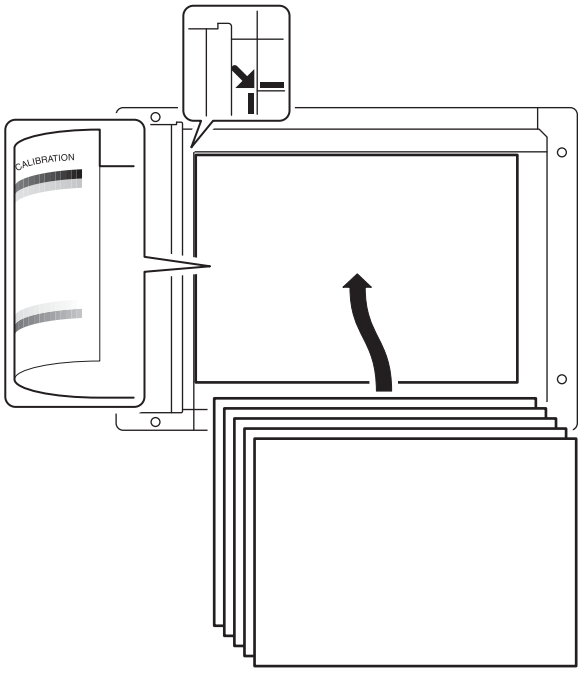
b. Adjustment procedures

1) Enter the SIM67-54 mode.
2) Press [EXECUTE] key.

   A4/11" x 8.5" or A3/11" x 17" paper is automatically selected. The patch image (adjustment pattern) is printed out.



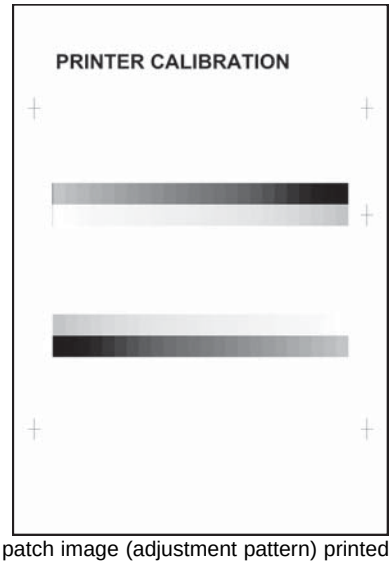
3) Set the patch image (adjustment pattern) printed in the procedure 2) on the document table so that the thin lines on the printed patch image (adjustment pattern) are on the left side. Place 5 sheets of white paper on the printed patch image (adjustment pattern).



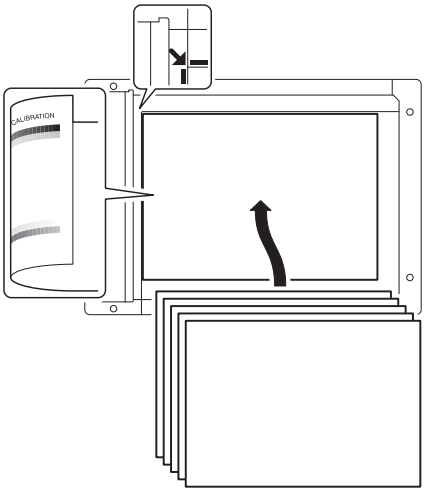
4) Press [EXECUTE] key.
The gray balance adjustment is automatically performed.
The adjustment pattern is printed out. Check it for any abnormality.
5) Press [OK] key.
The list of the adjustment items (for each dither) is displayed.
6) Select an adjustment item (for each dither).

HEAVY PAPER	Adjustment for heavy paper and that for gloss paper
4BIT_HIGH	For adjustments for each screen of 600/4bit HIGH screen
4BIT_SHIGH	For adjustments for each screen of 600/4bit SHIGH screen
1200DPI_LOW	For adjustments for each screen of 1200/1bit LOW screen
1200DPI_HIGH	For adjustments for each screen of 1200/1bit HIGH screen

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



8) Set the patch image (adjustment pattern) printed in the procedure 7) on the document table so that the thin lines on the printed patch image (adjustment pattern) are on the left side. Place 5 sheets of white paper on the printed patch image (adjustment pattern).



9) Press [EXECUTE] key.
The gray balance adjustment is automatically performed, and the machine goes to the state of procedure 6).
10) When [OK] key is pressed, the adjustment result is registered and the adjustment mode is terminated. When [EXECUTE] key is pressed, the adjustment result is registered and the screen is shifted to the other item (Mode/Image) select menu.
To execute the adjustment of the other item (Mode/Image), press [EXECUTE] key.
After completion of all the adjustments of the items (Mode/Image), press [OK] key, and the adjustment results are registered.
11) Make a print, and check the print image quality.
(Refer to the item of the printer gray balance and density check.)

NOTE: Use SIM67-52 to reset the adjustment values to the default values.

11-F (4) Automatic gray balance adjustment by the user (Printer gray balance automatic adjustment ENABLE setting and adjustment) (Normally unnecessary to the setting change)

a. General

In the user program mode, the user can execute the auto gray calibration (auto adjustment of the printer gray balance and density).

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

NOTE: This setting must be set to ENABLE only when the user's understanding on the automatic adjustment of the printer gray balance and density and the user's operational ability are judged enough to execute the adjustment.
When set to enable, operation procedures must be fully explained to the user.

b. Setting procedure

1) Enter the SIM 26-53 mode.
2) Select ENABLE or DISABLE with 10-key.
When disabling, set to "0" (NO). When enabling, set to "1" (Yes).
3) Press [OK] key.

When set to DISABLE, the menu of the user auto gray calibration (automatic adjustment of printer gray balance and density) is not displayed in the user program mode.

(Auto gray calibration by the user (Auto gray balance adjustment))

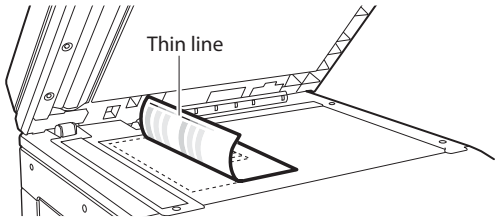
NOTE: This adjustment is based on the service target gray balance set with SIM 67-27 or SIM 67-28. If, therefore, the above settings are not properly performed, this adjustment cannot be made properly.

1) Enter the system setting mode.
2) Enter the printer setting mode.
3) Press the auto gray calibration key.
4) Press [EXECUTE] key.
The patch image (adjustment pattern) is printed out.

5) Set the patch image (adjustment pattern) printed in procedure 4) on the document table.

Set the patch image so that the thin line is on the left side as shown in the figure.

At that time, place 5 sheets of white paper on the above patch image (adjustment pattern).



6) Press [EXECUTE] key, and the printer gray balance adjustment is executed automatically.

The message, "Will you go on to the copy gray balance adjustment?" is displayed.

To execute the copy gray balance adjustment successively, perform the procedures same as the above.

ADJ 12 Image send, FAX send mode image quality adjustment

12-A Color image send mode, image density and gradation adjustment (by each mode)

Normally, there is no need to perform this adjustment. In the following cases, however, this adjustment must be performed.

* When the user requests to perform the adjustment.
* When there is a defective copy in a scan image.
* When the scan image density is too light.

1) Enter the Sim. 46-4 mode.
2) Select a mode to be adjusted with the scroll button.

Item/ Mode		Display	Document mode	Setting rage	Default value
A	LOW	AUTO	Auto	1 - 99	50
B		TEXT	Text	1 - 99	50
C		TEXT/ PRINTEDPHOTO	Text/Printed Photo	1 - 99	50
D		TEXT/PHOTO	Text/ Photograph	1 - 99	50
E		PRINTED PHOTO	Printed photo	1 - 99	50
F		PHOTOGRAPH	Photograph	1 - 99	50
G		MAP	Map	1 - 99	50
H		RIP	-	1 - 99	50
A	HIGH	AUTO	Auto	1 - 99	50
B		TEXT	Text	1 - 99	50
C		TEXT/PRINTED PHOTO	Text/Printed Photo	1 - 99	50
D		TEXT/PHOTO	Text/ Photograph	1 - 99	50
E		PRINTED PHOTO	Printed photo	1 - 99	50
F		PHOTOGRAPH	Photograph	1 - 99	50
G		MAP	Map	1 - 99	50
H		RIP	-	1 - 99	50

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

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

4) Scan the color document in the color scan mode (Scan to PC or Scan to e-Mail), and check the density of the received image.

Check can be made also in the copy mode by the following procedure. The scanned image, however, is in monochrome.

4) Press [CLOSE] button in the simulation mode to jump to the normal copy mode, and make a copy and check the adjustment result.

Switch alternatively between the simulation mode and the normal copy mode, and adjust and check the adjustment result with an actual copy.

Repeat the procedures 3 and 4 until a satisfactory result is obtained.

12-B Monochrome image send mode, image density and gradation adjustment (by each mode)

Normally, there is no need to perform this adjustment. In the following cases, however, this adjustment must be performed.

* When the user requests to perform the adjustment.
* When there is a defective copy in a scan image.
* When the scan image density is too light.

1) Enter the Sim. 46-5 mode.
2) Select a mode to be adjusted with the scroll button.

Item/ Mode		Display	Document mode	Setting rage	Default value
A	LOW	AUTOTEXT	Auto/Text	1 - 99	50
B		TEXT	Text	1 - 99	50
C		TEXT/PRINTED PHOTO	Text/Printed Photo	1 - 99	50
D		TEXT/PHOTO	Text/ Photograph	1 - 99	50
E		PRINTED PHOTO	Printed photo	1 - 99	50
F		PHOTOGRAPH	Photograph	1 - 99	50
G		MAP	Map	1 - 99	50
H		RIP	-	1 - 99	50
A	HIGH	AUTOTEXT	Auto/Text	1 - 99	50
B		TEXT	Text	1 - 99	50
C		TEXT/PRINTED PHOTO	Text/Printed Photo	1 - 99	50
D		TEXT/PHOTO	Text/ Photograph	1 - 99	50
E		PRINTED PHOTO	Printed photo	1 - 99	50
F		PHOTOGRAPH	Photograph	1 - 99	50
G		MAP	Map	1 - 99	50
H		RIP	-	1 - 99	50

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

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

4) Scan a monochrome document in the color scan mode (Scan to PC or Scan to e-Mail), and check the density of the received image.

Check can be made also in the copy mode by the following procedure.

4) Press [CLOSE] button in the simulation mode to jump to the normal copy mode, and make a copy and check the adjustment result.

Switch alternatively between the simulation mode and the normal copy mode, and adjust and check the adjustment result with an actual copy.

Repeat the procedures 3 and 4 until a satisfactory result is obtained.

12-C Image send mode, image gray balance adjustment

Normally, there is no need to perform this adjustment. In the following cases, however, this adjustment must be performed.

* When the user requests to perform the adjustment.
* When the scan image gray balance is defective.

1) Enter the Sim. 46-8 mode.
2) Select a color to be adjusted with [R], [G], [B] buttons.
3) Select a mode (low density section or high density section) to be adjusted with the scroll button.

Display/Item		Content	Setting range	Default
A	LOW DENSITY POINT	Low density section gray balance adjustment value	1 - 99	50
B	HIGH DENSITY POINT	High density section gray balance adjustment value	1 - 99	50

4) Enter the adjustment value with 10-key, and press [OK] key.
   To increase the density of the target color, increase the adjustment value. To decrease the density of the target color, decrease the adjustment value.
5) Scan a color document in the color scan mode (Scan to PC or Scan to e-Mail), and check the density of the received image.
   Check can be made also in the copy mode by the following procedure. The scanned image, however, is in monochrome.
   5) Press [CLOSE] button in the simulation mode to jump to the normal copy mode, and make a copy and check the adjustment result.
   Switch alternatively between the simulation mode and the normal copy mode, and adjust and check the adjustment result with an actual copy.
   Repeat the procedures 3 and 4 until a satisfactory result is obtained.

12-D FAX send mode, image sharpness adjustment

Normally, there is no need to perform this adjustment. In the following cases, however, this adjustment must be performed.

* When the user requests to perform the adjustment.
* When the sharpness in the FAX send mode is too low.

Note:

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

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

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

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

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

ADJ 13 FAX send mode image quality adjustment

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

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

NOTE:

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

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

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

1) Enter the Sim. 46-40 mode, and select the I-FAX or FAX.
2) Press [EXECUTE] button.
   The adjustment pattern is printed.
3) Check the print density in the adjustment pattern.
   If the print density of the adjustment pattern is unsatisfactory, perform the following procedure.
4) Enter the adjustment value with 10-key, and press [OK] button.
   When the adjustment value is increased, the image density is increased. When the adjustment value is decreased, the image density is decreased.
   Repeat the procedures 2 thru 4 until a satisfactory result is obtained.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

This adjustment is required in the following cases:

* When the U2 trouble occurs.
* When the MFP PWB is replaced.
* When the EEPROM on the MFP PWB is replaced.
* When the SCANNER CONTROL PWB is replaced.
* When the EEPROM on the SCANNER CONTROL PWB is replaced.

1) Enter the Sim. 46-19 mode.
2) Select the auto mode exposure operating condition of each mode with the mode button.

Item/ Display	Content	Set value	Default	NOTE
AE_MODE	Auto exposure mode gamma select (for copy)	MODE1, MODE2	MODE1	MODE1: High gamma MODE2: Nomal gamma
AE_STOP_COPY	Auto exposure mode document density detecting condition setting (for copy)	ON/ OFF	ON	ON : The document lead edge section density is detected and exposure is adjusted. OFF : Real time exposure adjustment
AE_STOP_FAX	Auto exposure mode document density detecting condition setting (for FAX)	ON/ OFF	ON	ON : The document lead edge section density is detected and exposure is adjusted. OFF : Real time exposure adjustment
AE_STOP_SCAN	Auto exposure mode document density detecting condition setting (for scanner)	ON/ OFF	ON	ON : The document lead edge section density is detected and exposure is adjusted. OFF : Real time exposure adjustment
AE_FILTER	Auto exposure mode sharpness setting (for copy)	SOFT	NORMAL	
		NORMAL		
		SHARP		
AE_WIDTH	Auto exposure mode document density detecting width setting	FULL/ PART	FULL	FULL : Document density detection in A4 (11 X 8.5) width PART : Document density detection in 10mm width on the rear frame side (Document table mode) / Document density detection in 10mm width on the center section (SPDF mode)

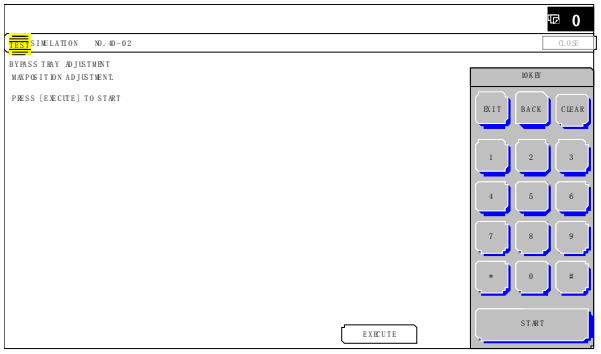
ADJ 15 Paper size detection adjustment

15-A Manual paper feed tray paper width sensor adjustment

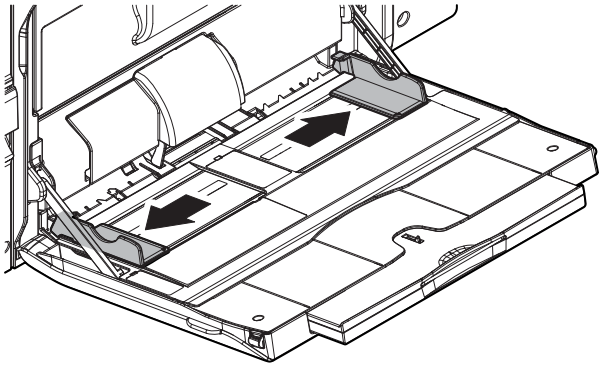
This adjustment is needed in the following situations:

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

1) Enter the SIM 40-2 mode.



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.

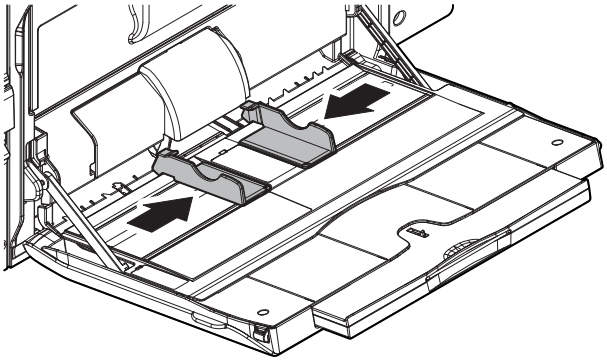
   [EXECUTE] key is highlighted. Then it returns to the normal display. The A4 size width position detection level of the manual paper feed guide is recognized.

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.

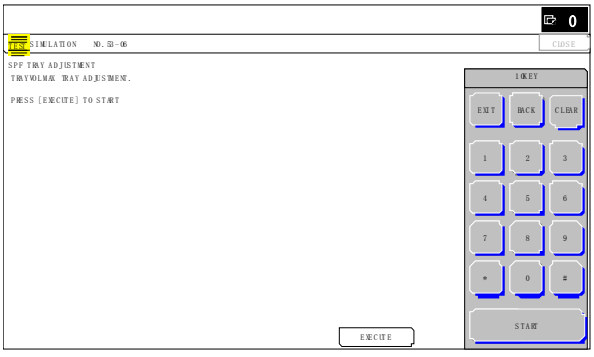
   [EXECUTE] key is highlighted. Then it returns to the normal display. The minimum width position detection level of the manual paper feed guide is recognized. If the above operation is not completed normally, "ERROR" is displayed. When the operation is completed normally, the above data are saved to the memory and "COMPLETE" is displayed.

15-B DSPF paper feed tray paper width sensor adjustment

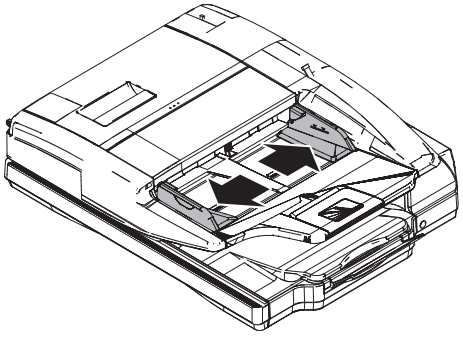
This adjustment is needed in the following situations:

* The DSPF paper feed tray section has been disassembled.
* The 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 SIM 53-6 mode.



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



3) Press [EXECUTE] key.

   The maximum width detection level is recognized.

4) Open the DSPF paper feed guide to the width for the A4R size.

5) Press [EXECUTE] key.

   The A4R width detection level is recognized.

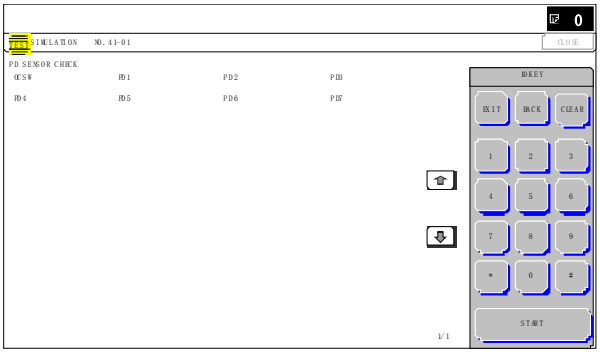
6) Open the DSPF paper feed guide to the width for the A5R size.
7) Press [EXECUTE] key.
   The A5R width detection level is recognized.
8) Open the DSPF paper feed guide to the minimum width position.
9) Press [EXECUTE] key.
   The minimum width detection level is recognized.
   * When each of the above operations has been completed, the "COMPLETE" message appears; when any of the operations has failed, the "ERROR" message appears.

ADJ 16 Document size detection adjustment (Document table mode)

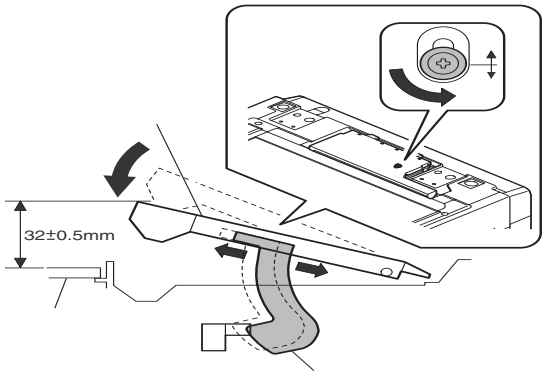
This adjustment is needed in the following situations:
* When the original size sensor section has been disassembled.
* When the original size sensor section has been replaced.
* When U2 trouble has occurred.
* When the scanner control PWB is replaced.
* When the EEPROM on the scanner control PWB is replaced.

16-A Document size sensor detection point adjustment

1) Enter the SIM 41-1 mode.



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 □0.5mm 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.)



16-B Adjust the sensitivity of the original size sensor

1) Enter the SIM 41-2 mode.
2) Execute the sensor adjustment without document.
   With the document cover open, without placing a document on the table glass, press [EXECUTE] key.
3) Place A3 (11" x 17") paper on the document table and press [EXECUTE] key.
   If the adjustment is completed normally, "DOCUMENT PHOTO SENSOR LEVEL IS ADJUSTED" is displayed.

ADJ 17 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 18 Image lead edge position, image off-center, image magnification ratio adjustment (Automatic adjustment)

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

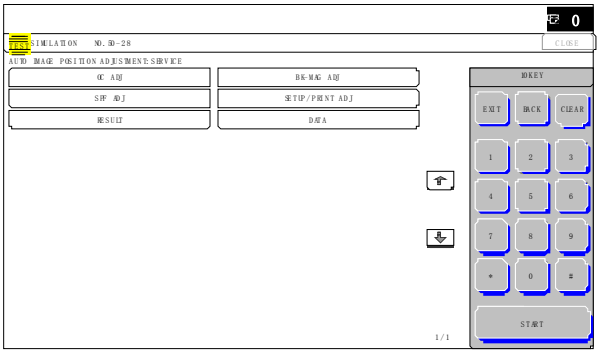
* ADJ 3B Print engine image magnification ratio adjustment (Main scanning direction)
* ADJ 3C Print engine print area (void area) adjustment
* ADJ 3D Print engine image off-center adjustment
* ADJ 7 Scan image magnification ratio adjustment (Manual adjustment)
* ADJ 10 Copy image position, image loss, and void area adjustment (Manual adjustment)

(Menu in SIM 50-28 mode)

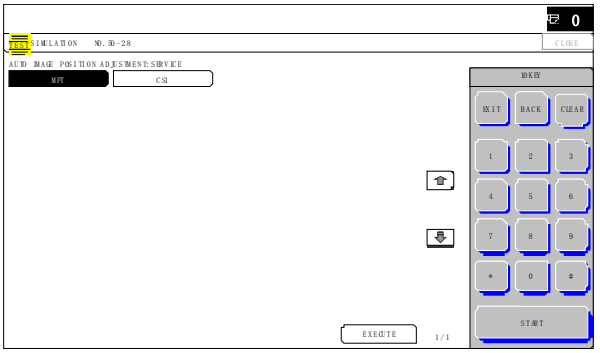
Item/Display	Content
OC ADJ	Image loss off-center sub scanning direction image magnification ratio adjustment (Document table mode)
BK-MAG ADJ	Main scanning direction image magnification ratio adjustment
SPF ADJ	Image loss off-center sub scanning direction image magnification ratio adjustment (DSPF mode)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

18-A Print image main scanning direction image magnification ratio automatic adjustment (Document table mode)

1) Enter the SIM50-28 mode.

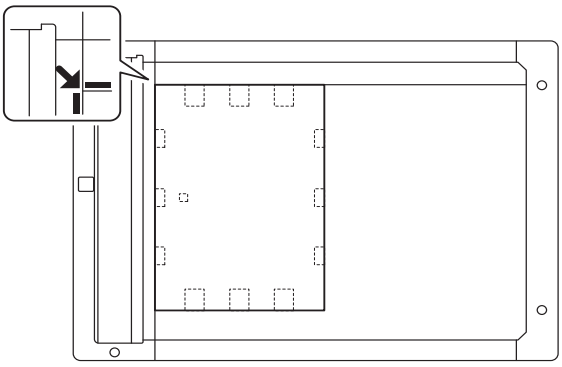


2) Select [BK-MAG ADJ] with the key button.
3) Select the paper feed tray with paper in it with the key button. (Any paper size will do.)



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.



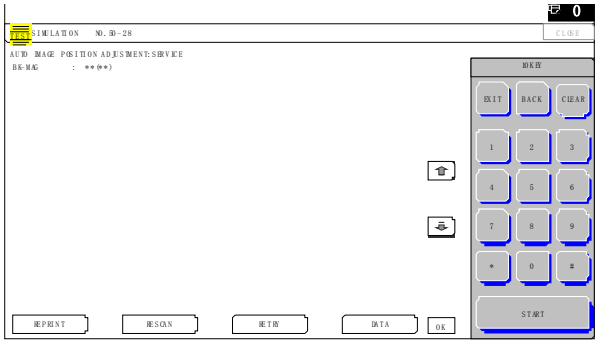
6) Press [EXECUTE] key.



The following item is automatically adjustment.

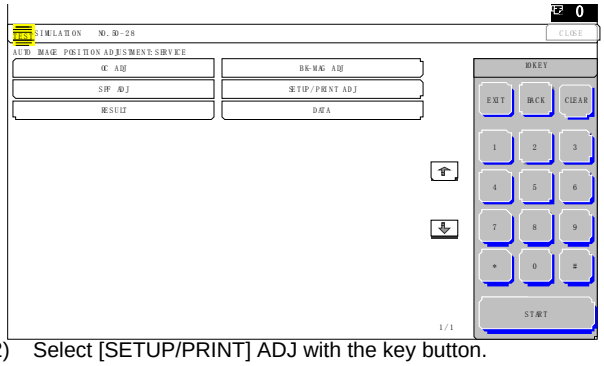
* Print image main scanning direction image magnification ratio

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



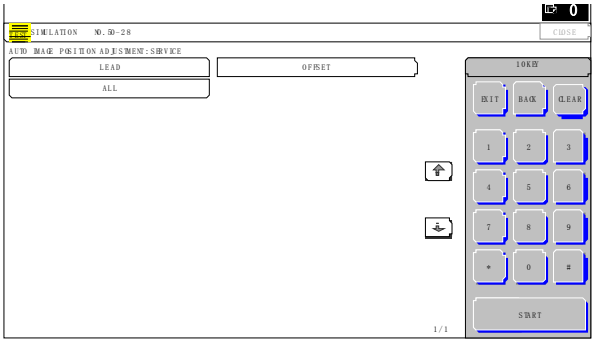
18-B Image off-center automatic adjustment (Each paper feed tray)

1) Enter the SIM50-28 mode.



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

3) Select [ALL] with the key button.



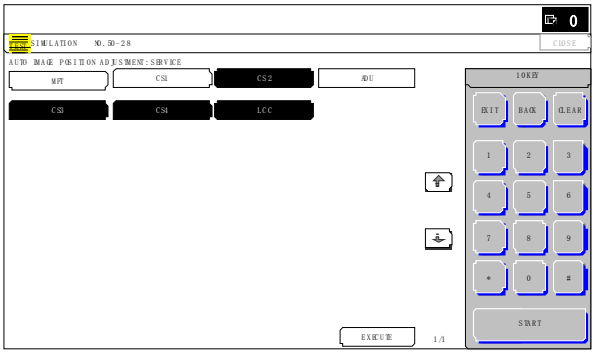
(Note)

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.

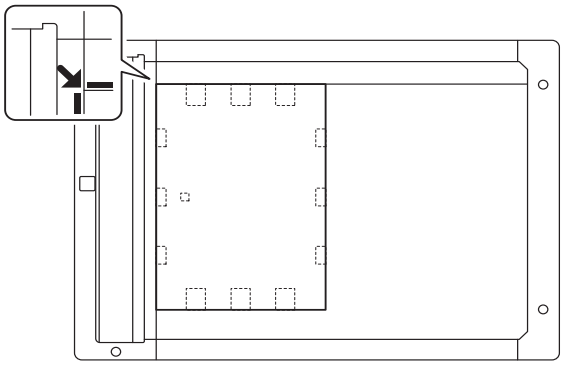


5) Press [EXECUTE] key.

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

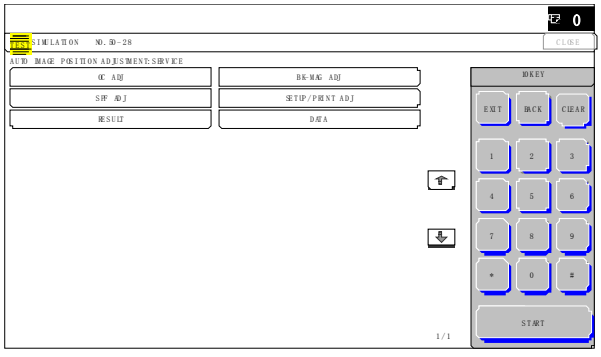
8) Press [OK] key.

The adjustment result becomes valid.

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

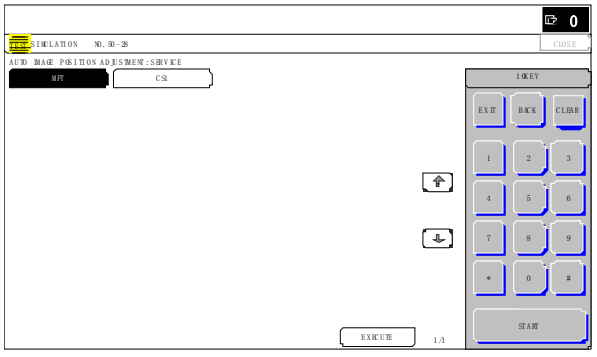
18-C Copy lead edge image reference position adjustment, image off-center, sub scanning direction image magnification ratio automatic adjustment (Document table mode)

1) Enter the SIM50-28 mode.



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

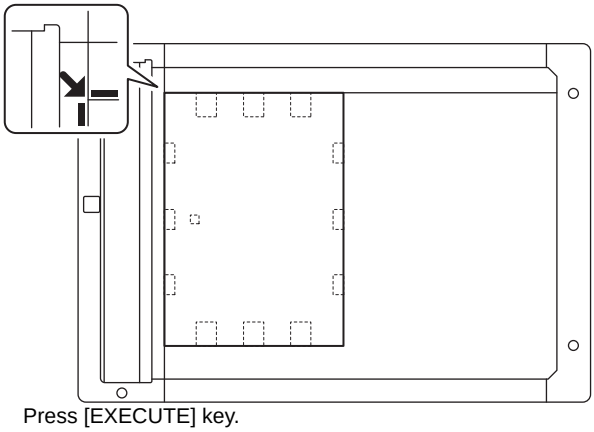
3) Select the paper feed tray with paper in it with the key button. (Any paper size will do.)



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.



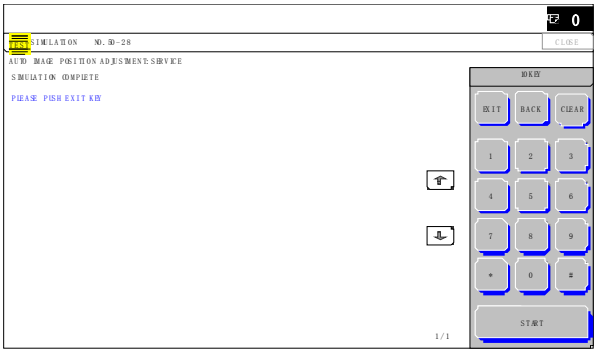
6) Press [EXECUTE] key.



The following item is automatically adjustment.

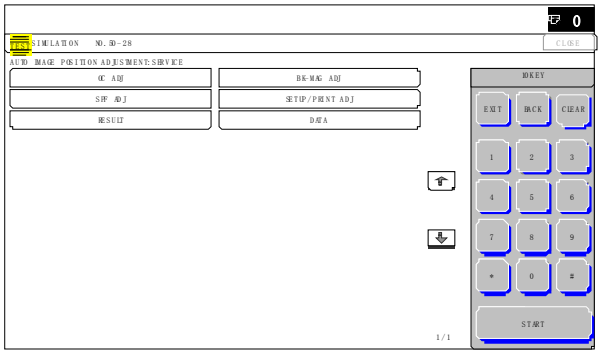
* Copy lead edge image reference position adjustment, image off-center, sub scanning direction image magnification ratio automatic adjustment

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

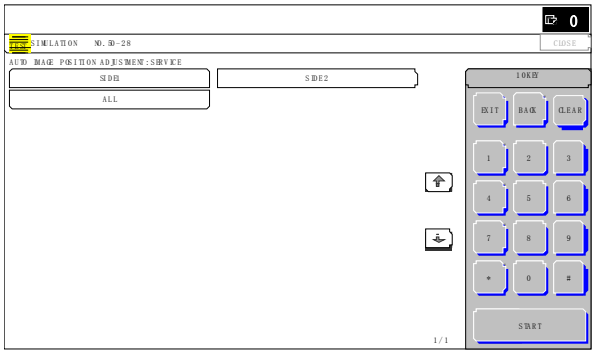


18-D Copy image off-center, image lead edge position, sub scanning direction image magnification ratio automatic adjustment (DSPF mode)

1) Enter the SIM50-28 mode.



2) Press the [SPF ADJ] button.



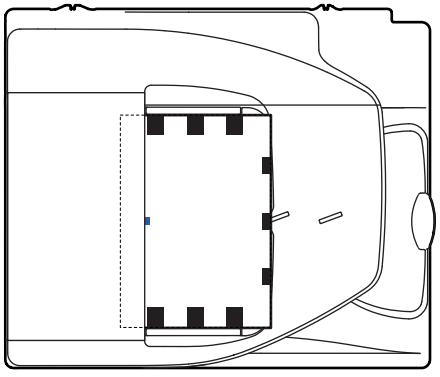
3) Proceed to one of the three screens for selecting the cassette used to print DSPF adjustment patterns by selecting the corresponding button. Select [ALL] with the key button.
SIDE1: DSPF adjustment for the front side
SIDE2: DSPF adjustment for the back side
ALL: DSPF adjustment for both the front and back sides

4) Select one of the cassettes that can be used to print DSPF adjustment patterns. (Multiple selection is not allowed.)

5) Press the [EXECUTE] button, and the machine starts self-print of DSPF adjustment patterns.

* The screen shows a message indicating that the machine is self-printing DSPF adjustment patterns.
When self-print finishes, the next screen appears where you can start DSPF adjustments.

6) DSPF adjustment patterns are loaded into the DSPF.

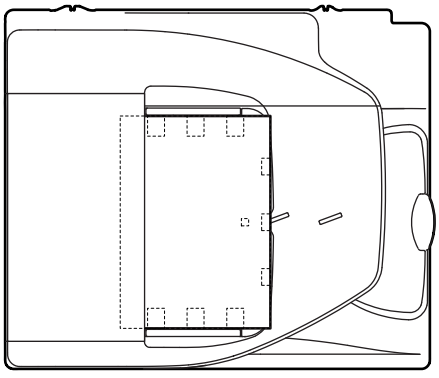


* By pressing the [REPRINT] button, you can return to the cassette selection screen and have the machine self-print DSPF adjustment patterns again.

7) Press the [EXECUTE] button, and the machine starts reading DSPF adjustment patterns (for the front side).
   * The screen shows a message indicating that the machine is reading and calculating DSPF 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 DSPF adjustment patterns (for the back side).

   <Adjustment item list>

   * DSPF original leading edge adjustment (front side)
   * DSPF original off-center adjustment (front side)
   * DSPF sub-scan magnification ratio adjustment (front side)
8) DSPF adjustment patterns are loaded into the DSPF.



   * By pressing the [REPRINT] button, you can return to the cassette selection screen and have the machine self-print DSPF adjustment patterns again.
9) Press the [EXECUTE] button, and the machine starts loading DSPF adjustment patterns (for the back side).
   * The screen shows a message indicating that the machine is reading DSPF 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>

   * DSPF original leading edge adjustment (back side)
   * DSPF original off-center adjustment (back side)
   * DSPF sub-scan magnification ratio adjustment (back side)
10) The adjustment result screen appears.

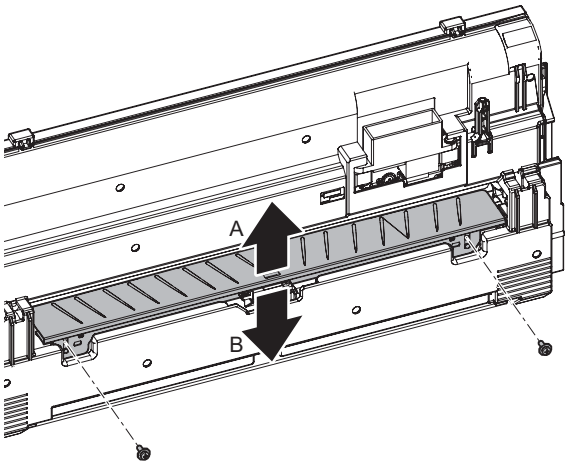
    This screen shows the current values along with the previous values in parentheses.
    * By pressing the [REPRINT] button, you can return to the cassette selection screen and have the machine self-print DSPF adjustment patterns (for the front and back sides) again.
    * To have the machine start re-reading the DSPF 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.

ADJ 19 Fusing paper guide position adjustment

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

* When a paper jam occurs in the fusing section.
* When wrinkles are made on paper in the fusing section.
* When an image deflection or an image blur is generated in the paper rear edge section.

1) Loosen the fusing paper guide fixing screws which are on two position in the front/rear frame direction.
2) Use the fusing paper guide position scale as the reference to shift the paper guide in the arrow direction A or B.



The standard fixing position is one scale lower than the center of the marking scale. Change the actual fixing position according to the condition.

* 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.

[5] 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

MX-M364N/M464N/M564N series

(1) Starting the simulation

* Entering the simulation mode

1) Copy mode key ON -> Program key ON -> Asterisk (*) key ON -> CLEAR key ON -> Asterisk (*) key ON -> Ready for input of a main code of simulation
2) Entering a main code with the 10-key -> START key ON.
   Or select a main code with the SIM key on the touch panel.
3) Entering a sub code with the 10-key -> START key ON.
4) Select an item with the scroll key and the item key.
5) The machine enters the mode corresponding to the selected item. Press [START] key or [EXECUTE] key to start the simulation operation.
   When canceling the current simulation mode to change the main code and the sub code, press [SYSTEM SETTINGS] key.

* Canceling the simulation mode to return to the normal mode

1) Press [CA] key.

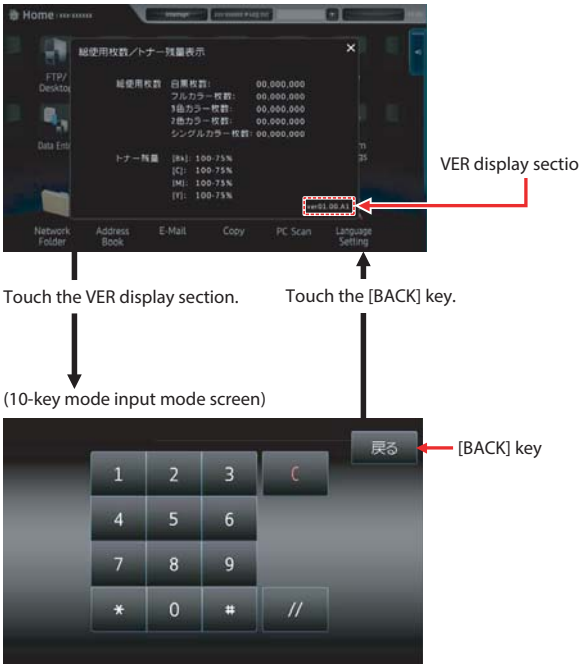
(Note for the simulation mode)

Do not turn OFF the power switch on the operation panel when the machine is in the simulation mode. If the power switch should be turned OFF in the simulation mode, a malfunction may be resulted. In this case, turn OFF/ON the main power source.

MX-M365N/M465N/M565N series

Entering the simulation mode

1) Double-click the [HOME] key. (Total use quantity/Toner remaining quantity display mode screen)



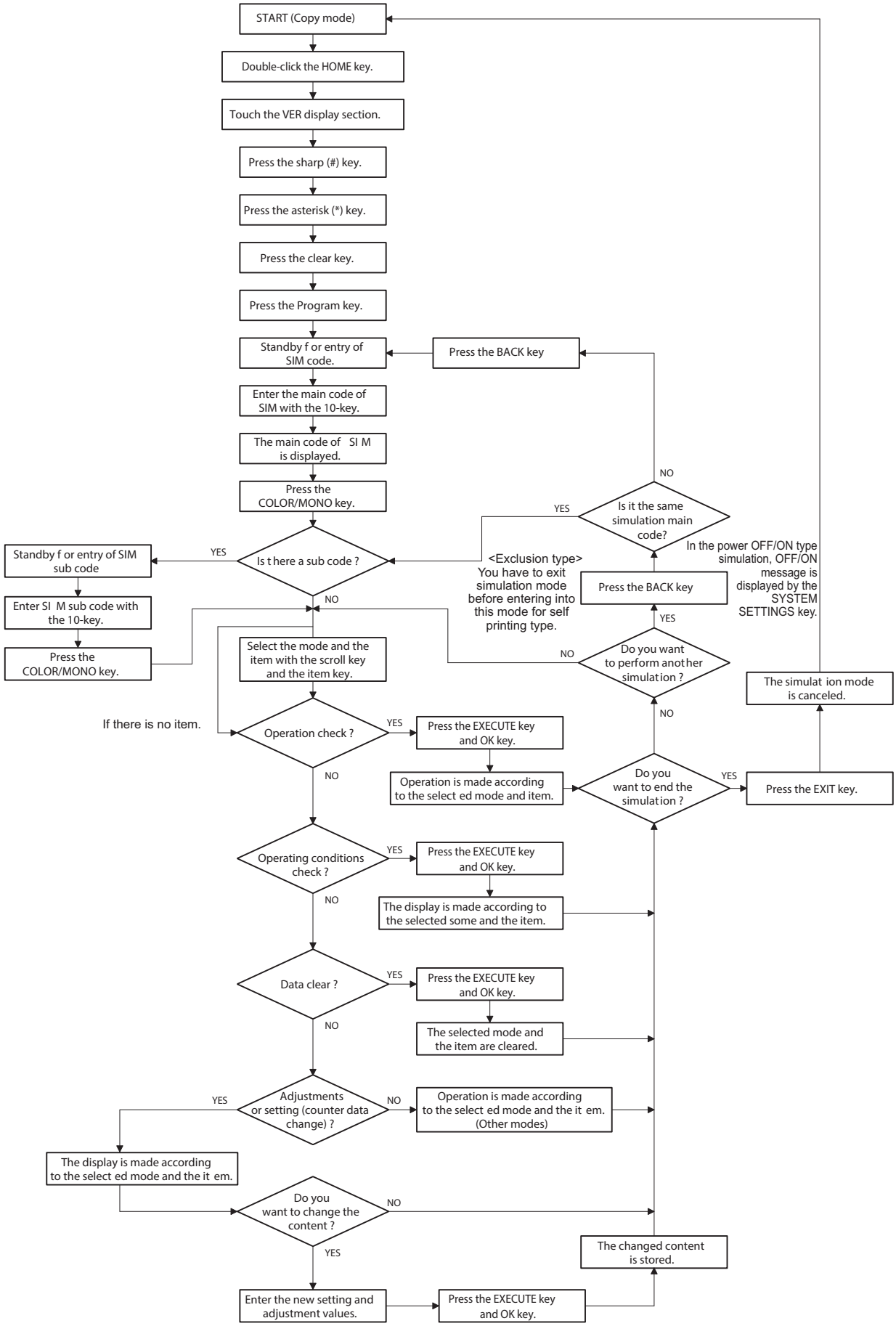
2) Touch the VER display section. (10-key mode input mode screen)
3) Touch the (#) key -> Asterisk (*) key -> Clear key -> Asterisk (*) key -> Ready for input of main code of simulation.
4) Enter a main SIM code with the 10-key pad then touch the START key or select a main code from the SIM key list on the touch panel.
5) Enter a sub code with the 10-key pad, then touch the START key or select a sub code from the code list on the touch panel.
6) Select an item with the scroll key and the item key.
7) The machine enters the mode corresponding to the selected item. Press [START] key or [EXECUTE] key to start the simulation operation.
   To cancel the current simulation mode and change the main code and the sub code, press [BACK] key.

* Canceling the simulation mode to return to the normal mode

1) Press [EXIT] key.

(Note for the simulation mode)

Do not turn OFF the power when the machine is in the simulation mode. If the power switch should be turned OFF in the simulation mode, a malfunction may be resulted. In this case, turn OFF/ON the main power source.


START (Copy mode)
Double-click the HOME key.
Touch the VER display section.
Press the sharp (#) key.
Press the asterisk (*) key.
Press the clear key.
Press the Program key.
Standby f or entry of SIM code.
Press the BACK key
Enter the main code of SIM with the 10-key.
The main code of SI M is displayed.
Press the COLOR/MONO key.
NO
YES
Is it the same simulation main code?
Is t here a sub code ?
YES
Standby f or entry of SIM sub code
<Exclusion type>
You have to exit simulation mode before entering into this mode for self printing type.
In the power OFF/ON type simulation, OFF/ON message is displayed by the SYSTEM SETTINGS key.
Press the BACK key
Enter SI M sub code with the 10-key.
NO
YES
Press the COLOR/MONO key.
Select the mode and the item with the scroll key and the item key.
NO
Do you want to perform another simulation ?
The simulat ion mode is canceled.
If there is no item.
Operation check ?
YES
Press the EXECUTE key and OK key.
NO
Operation is made according to the select ed mode and item.
Do you want to end the simulation ?
YES
Press the EXIT key.
NO
Operating conditions check ?
YES
Press the EXECUTE key and OK key.
NO
The display is made according to the selected some and the item.
Data clear ?
YES
Press the EXECUTE key and OK key.
NO
The selected mode and the item are cleared.
YES
Adjustments or setting (counter data change) ?
NO
Operation is made according to the select ed mode and the it em. (Other modes)
The display is made according to the select ed mode and the it em.
Do you want to change the content ?
NO
YES
The changed content is stored.
Enter the new setting and adjustment values.
Press the EXECUTE key and OK key.

2. List of simulation codes

Main	Sub	Functions	Section
1	1	Check the operation of the scanner (reading) unit and the control circuit.	Scanner (reading)
	2	Check the sensors in the scanner (reading) section and the related circuits.	Scanner
	5	Check the operation of the scanner (reading) unit and the control circuit.	Scanner (reading)
2	1	Check the operation of the automatic document feed unit and the control circuit.	Automatic document feeder
	2	Check the operation of sensors and detectors in the SPF unit section and the control circuits.	Automatic document feeder
	3	Check the operation of the loads in the automatic document feed unit and the control circuit.	Automatic document feeder
3	2	Check the operation of the sensors and the detectors in the finisher and the control circuit.	Finisher
	3	Check the operation of the load in the finisher and the control circuit.	Finisher
	10	Adjust the finisher.	Finisher
4	2	Check the paper feed section (Desk/LCC) sensors and detectors and their control circuits.	Paper feed, paper reverse/transport
	3	Check the paper feed section (Desk/LCC) loads and their control circuits.	Paper feed, paper reverse/transport
	5	Check the operation of the paper transport clutch for the paper feed tray unit.	Paper feed, paper reverse/transport
5	1	Check the operation of the display, LCD in the operation panel, and control circuit.	Operation unit (Operation/Display PWB)
	2	Check the operation of the heater lamp and the control circuit.	Fusing
	3	Check the operation of the scanner lamp and the control circuit.	Scanner (reading)
	4	Check the operation of discharge lamp and the control circuit.	Process
6	1	Check the operation of load in paper transport system (clutches, solenoids) and control circuits.	Paper feed, paper reverse/transport
	2	Check the operations of each fan and its control circuit.	Others
	90	Reset the machine to the factory setting. (The scanner is set to the lock enable position)	Scanner
7	1	Set the operating conditions of aging.	
	6	Set the operating intermittent aging cycle.	
	8	Display the warm-up time.	Fusing
	12	The document reading number of sheets setting (for aging operation)	Automatic document feeder
8	1	Check/Adjust the operation of the developing voltage in each print mode and control circuit.	Toner supply, developing
	2	Check/Adjust the operation of the main charger grid voltage in each printer mode and control circuit.	Photo-conductor
	6	Check/Adjust the operation of the transport voltage and the control circuit.	Transfer
	17	Check/Adjust the operation of the separation bias voltage and the control circuit.	
9	2	Check the operation of sensors and detectors in the duplex section and its control circuit.	Paper feed, paper reverse/transport
	3	Check the operation of the load in the paper reverse section (duplex section) and its control circuit.	Duplex
10	1	Check the operation of the toner supply mechanism (toner clutch) and the related circuit.	Toner supply, developing
13	-	Cancel the self diag "U1" trouble.	MFP (ICU) PWB
14	-	Cancel the self diag "H3, H4, H5" trouble.	Fusing
15	-	Cancel the self diag "U6-09" trouble.	LCC
16	-	Cancel the self diag "U2" trouble.	
21	1	Set the maintenance cycle.	
22	1	Check the print count value in each operation mode.	
	2	Check the total number of mis-feed and the troubles.(when the number of total jam is considerably great, it is judged as necessary for repair)	
	3	Check the mis-feed position and the mis-feed count of each position.	
	4	Check the trouble (self diag) history.	
	5	Check the ROM version of each unit (section).	
	6	Print settings, adjustments data (simulation, FAX soft switch, counters), firmware version, and counter list.	
	8	Check the number of operations (counter value) of the finisher, the SPF, and scanning (reading).	
	9	Check the umber of use (print quantity) of each paper feed section.	Paper feed, paper reverse/transport
	10	Check the system configuration (options and internal hardware).	
	11	Check the use frequency of send/receive of FAX. (Only when FAX is installed.)	FAX unit (TEL/LIU, FAX control PWB)
	12	Check the DSPF mis-feed position and the number of mis-feed at the position.(when the number of mis-feed is considerably great, it can be judged as necessary for repair)	Automatic document feeder
	13	Check the use quantity of the process section (OPC drum, DV unit, toner cartridge).and fusing.	Process
	14	Display the use status of the toner cartridge	Process
	18	Display the user data delete history	
	19	Check various counter values related to scan - image send.	
	40	Display the error code list and the contents	
	42	Check the JAM/trouble data	
	43	Display JAM data details	
	90	Output the various set data lists.	
23	2	Output the trouble history list of paper jam and mis-feed.	
	80	Output the operation data of paper feed and paper transport in the paper feed/transport section.	Paper feed, paper reverse/transport
	81	Backup the paper feed time data to the USB memory	
24	1	Clear the jam counter, and the trouble counter.	
	2	Clear the number of use (the number of prints) of each paper feed section.	Paper feed, paper reverse/transport
	3	Clear the finisher, SPF, and the scan (reading) unit counter.	
	4	Clear the maintenance counter, the printer counters of the transfer unit and the fusing unit.	
	5	Clear the developer counter.	Toner supply, developing
	6	Clear the copy counter.	
	9	Clear the printer mode print counter and the self print mode print counter.	
	10	Clear the FAX counter. (Only when FAX is installed)	FAX unit (TEL/LIU, FAX control PWB)
	12	Clear the document filing counter	

Main	Sub	Functions	Section
24	15	Clear the counters related to the scan mode and the image send.	
	35	Clear the toner cartridge use status data	
25	1	Check the operations of the developing section.	Toner supply, developing
	2	Make the initial setting of toner density when replacing developer. (Automatic adjustment)	Image process
	4	Display the operation data of the toner supply quantity	Process
26	1	Set the paper exit operation from the right side.	Paper exit section
	2	Set the paper size of the large capacity tray (LCC) .	Paper feed
	3	Set the specifications of the auditor.	Auditor
	5	Set the count mode of the total counter and the maintenance counter (A3/11" x 17" size).	
	6	Set the specifications (paper, fixed magnification ratio) of the destination.	
	7	Set the machine ID	
	8	Counter mode setting for long scale paper size	
	10	Set the trial mode of the network scanner.	
	18	Set Disable/Enable of the toner save mode operation. (For the Japan and the UK versions.)	
	30	Set the operation mode corresponding to the CE mark (Europe safety standards).	
	32	Set the specifications of the fusing cleaning operation	Fusing
	35	Set the trouble history display mode.	
	38	Set "Print continue" or "Print stop" when the maintenance timing is reached or the consumable part life is over.	
	41	Set Enable/Disable of magnification ratio automatic select function (AMS) in center binding mode.	
	49	Set the print speed of postcards mode.	
	50	Set the operation specifications and functions.	
	51	Set the specifications of the serial port operation	PCI
	52	Set whether non-printed paper (insertion paper, cover paper) is counted up or not.	
	53	Set Inhibit/Allow of the user auto calibration (gradation, density adjustment).	
	65	Set the limit of the staple process.	
	69	Set the operating conditions for toner near end.	
	71	Set the trial mode of the web browsing function	
	73	Adjust the image loss (shade removal amount) in the poster, the continuous enlargement copy, the card scan, and the A3 wide copy mode.	
	74	Set the OSA trial mode.	
	78	Set the password of the remote operation panel mode.	
	79	Set YES/NO of the pop-up display of user data delete result	
27	1	Set non-detection of communication error (U7-00) with RIC. (FSS function)	
	2	Set the sender's registration number and the HOST server telephone number. (FSS function)	
	4	Set the initial call and toner order auto send. (FSS function)	
	5	Set the machine tag No. (FSS function)	
	6	Set of the manual service call. (FSS function)	
	7	Set of the enable, alert call out. (FSS function)	
	9	Set the paper transport time recording YES/NO threshold value and shading gain adjustment retry number. (FSS function)	
	10	Clear the trouble prediction history information. (FSS function)	
	11	Check the serial communication retry number and the scanner gain adjustment retry number history. (FSS function)	
	12	Check the high-density and the half-tone process control error history. (FSS Function)	
	13	Check the history of paper transport time between sensors. (FSS function)	
	14	Set the FSS function connection test mode.	
	15	Display the FSS connection status	
	16	Set the FSS alert send	
	17	Set the FSS paper order alert	
	18	Clear the FSS paper feed retry counter	
30	1	Check the operation of sensors and detectors in other than paper feed section and control circuits.	Paper feed, paper reverse/transport
	2	Check the operations of the sensors and the detectors in the paper feed section and control circuits.	Paper feed, paper reverse/transport
40	2	Manual paper feed tray paper width sensor adjustment.	Paper feed, paper reverse/transport
	7	Set the adjustment value of the manual paper feed tray paper width sensor.	Paper feed, paper reverse/transport
41	1	Check the operation of the document size sensor and the control circuit.	Others
	2	Adjust the document size sensor detection level.	Others
	3	Check the operation of the document size sensor and the control circuit.	Others
43	1	Set the fusing temperature in each operation mode.	Fusing
	2	Set the fusing temperature and pre-heat each operation mode.	Fusing
	20	Set the environmental correction under low temperature and low humidity (L/L) for the fusing temperature setting (SIM 43-2) in each paper mode.	Fusing
	21	Set the environment correction under high temperature and high humidity (H/H) for the fusing temperature setting (SIM 43-2) in each paper mode.	Fusing
	24	Set the fusing operation mode.	Fusing
	31	Check the operation of the fusing web cleaning motor.	Fusing
	32	Set various items related to the forcible operation of web cleaning when job end.	Fusing
	34	Check the fusing lower web cleaning motor operation.	Fusing
	35	Check fusing nip operation.	Fusing
44	1	Set each correction operation function in the image forming (process) section.	Image process
	2	Adjust the sensitivity of the image density sensor. (registration sensor)	Process
	4	Set the conditions of the high density process control operation.	Process

Main	Sub	Functions	Section
44	6	Execute the high density process control forcibly.	Process
	9	Display the result data of the high density process control operation.	Image process
	12	Display the operation data of the high density process control and the image density sensor.(registration sensor)	Image process
	14	Display the output level of the temperature and humidity sensor.	Process
	15	Set the OPC drum idle rotation.	Process
	17	Process refresh execution	
	21	Set the halftone process control target.	Process
	22	Display the toner patch density level in the half tone process control operation.	Process
	24	Display the correction target and the correction level in the half tone process control operation.	Process
	25	Set the calculating conditions of the correction value for the half tone process control.	Process
	26	Execute the half tone process control compulsory.	Process
	27	Clear the correction data of the half tone process control.	Process
	28	Set the process control execution conditions.	Process
	29	Set the operating conditions of the process control during a job.	Process
	34	Set the process control execution conditions.	Process
	37	Set the development bias correction level in the continuous printing operation.	Toner supply, developing
	43	Display the identification information of the developing unit.	Developing
	62	Set the process control execution conditions	Process
46	2	Adjust the copy density in each copy mode.	
	4	Adjust the density in the image send mode (color mode)	
	5	Adjust the density in the image send mode (monochrome mode).	
	8	Adjust the image send mode color balance RGB.	
	9	Adjust scan image density (copy, image send mode)	
	10	Adjust the copy density (in each copy mode).	
	16	Adjust the copy density and gamma.	
	19	Set the operating conditions of document density scanning (copy, image send mode).	Scanner
	23	Set the density correction of copy high density section (High density tone gap supported).	
	24	Copy half tone adjustment (Auto adjustment)	
	32	Adjust the document background density reproductivity in the auto copy mode.	
	37	Adjust the reproduction capability of the scan image color document (copy, image send mode).	
	39	Adjust the sharpness of FAX send images.	
	40	Adjust the FAX send image density. (Collective adjustment of all the modes)	
	41	Adjust the FAX send image density. (Normal)	
	42	Adjust the FAX send image density. (Fine)	
	43	Adjust the FAX send image density. (Super Fine)	
	44	Adjust the FAX send image density. (Ultra fine)	
	45	Adjust the FAX send image density. (600dpi).	
	46	Adjust the FAX send image density (RGB RIP)	
	47	Set the JPEG compression rate in copy and scan images.	
	48	Set the output resolution in each copy mode.	
	51	Adjust the gamma for copy, heavy paper mode and image process mode (manual adjustment).	
	52	Set the gamma default for the copy mode heavy paper and the image process mode. (After execution of either SIM46-54 or SIM46-51 the adjustment value is reset to the initial value)	
	54	Perform the engine halftone automatic density adjustment (dither)	
	55	Adjust the drop out color in the image send mode (monochrome manual text mode)	
	58	Set the copy mode pseudo resolution (smoothing process)	
	59	Perform the copy mode pseudo resolution image process adjustment	
	60	Adjust the sharpness in the color auto mode	
	61	Adjust the area separation recognition level in image send mode (color, gray, auto exposure mode).	
	62	Set the operating conditions of the ACS, the area separation, the background image process, and the auto exposure mode.	
	63	Adjust the density in the copy low density section.	
	66	Adjust the reproduction capability of watermark in the copy/printer mode.	
	74	Adjust copy gray balance (Auto adjustment) / printer gray balance (Auto adjustment)	
	90	Set the process operation of high-compression PDF images.	
	91	Adjust the reproduction capability of black text.	
48	1	Adjust the scan image magnification ratio (main scanning direction and sub scanning direction).	Scanner
	5	Correction the scan image magnification ratio (sub scanning direction).	Scanner
	6	Adjust the rotation speed of each motor.	
49	1	Perform the firmware update.	
	3	Update the operation manual data stored in the HDD.	
	5	Update the watermark data stored in the HDD.	
	10	Perform the ACU firmware update.	
50	1	Copy image position, image loss adjustment	
	5	Adjust the print lead edge image position. (PRINTER MODE)	
	6	Adjust the copy image position and the image loss (SPF mode).	
	7	Adjust DSPF document lead edge (simple method) and copy image position on print paper and the void area (image loss) in the copy mode.	
	10	Adjust the image off-center position. (The adjustment is made separately for each paper feed section.)	

Main	Sub	Functions	Section
50	12	Perform the scan image off-center position adjustment. (The adjustment is made separately for each scan mode.)	
	27	Adjust the image loss of a scan image in the FAX/scanner mode.	
	28	Perform the OC adjustment, main scan magnification ration correction, the SPF adjustment and the print position adjustment.	
51	1	Adjust the ON/OFF timing of the transfer voltage	
	2	Adjust the contact pressure (deflection amount) on paper by the main unit and the SPF resist roller.	Paper feed, paper reverse/transport
53	6	Used to adjust the detection level of the SPF document width.	
	7	Used to adjust the SPF document size width sensor.	Automatic document feeder
	8	Used to adjust the document lead edge reference and the SPF mode document scan position.	Automatic document feeder
	9	SPF dirt detection setting.	
	10	SPF dirt detection execution.	
55	1	Set the specifications of the engine control operations. (SOFT SW)	
	2	Set the specifications of the scanner control operation. (SOFT SW)	
	3	Set the specifications of the controller operation. (SOFT SW)	
56	1	Transport data between HDD - MFP PWB SRAM/EEPROM. (Used to repair the PWB.)	
	2	Backup the data in the EEPROM. SRAM, and HDD (including user authentication data and address data) to the USB memory.	
	3	Backup the document filing data to the USB memory.	HDD
	4	Backup the JOB log data to the USB memory.	HDD
	5	Import the SIM22-6 data to the USB memory in the TEXT format.	
	6	Import the SIM23-2 data to the USB memory in the TEXT format.	
	7	Import SYSLOG data into the USB memory.	
60	1	Check the operations (read/write) of the MFP PWB memory.	MFP (ICU) PWB
61	1	Check the LSU polygon motor rotation and laser detection.	LSU
	3	Set the laser power	LSU
	4	Print the print image skew adjustment pattern	
	11	Correct the laser power automatically	
	12	Laser power manual correction LSU.	
	13	Clear the laser power correction value.	
62	1	Format HDD/SD card (HDD: excluding the operation manual and the watermark data) (SD card user data).	HDD
	2	Check read/write of the hard disk (partial).	HDD
	3	Check read/write of the hard disk (all areas).	HDD
	6	Perform the self diagnostics of the hard disk.	HDD
	7	Print the hard disk self diagnostics error log.	HDD
	8	Format the HDD/SD card (HDD: excluding the operation manual , watermark data and the system area) (SD card: user data)	HDD
	10	Clear the job completion list .	HDD
	11	Clear the document filing data.	HDD
	12	Set Enable/Disable of auto format in a hard disk trouble.	HDD
	13	Format the hard disk. (operation manual and watermark area only)	HDD
	14	Delete the document filing management data.	
	20	Check the operation of the mirroring HDD.	Mirroring HDD
63	1	Used to display the shading correction result.	Scanner
	2	Used to perform shading.	Scanner
	3	Used to perform scanner (CCD) color balance and gamma auto adjustment.	Scanner
	4	Used to display the SIT chart patch density.	Scanner
	5	Used to perform the scanner (CCD) color balance and gamma default setting.	Scanner
	11	Set the target color balance of the copy mode.	
64	2	Test print. (Self print) (Monochrome mode)	
	4	Printer test print. (Self print) * This simulation functions only for the machines which are provided with the printer function.	
	5	Printer test print. (Self print) (PCL)	
	6	Printer test print. (Self print) (PS)	
65	1	Adjust the touch panel (LCD display section) detection coordinates.	Operation unit
	2	Display the touch panel (LCD display section) detection coordinates.	Operation unit
	5	Check the operation panel key input.	Operation unit
67	17	Printer controller reset	
	24	Printer density adjustment (auto adjustment)	
	25	Printer density adjustment (Manual adjustment)	
	26	Set the target the halftone of the printer mode	
	31	Clear the printer calibration value (Half-tone process control data).	
	33	Set the gamma of the each printer screen.	
	34	Set the density correction in the printer high density section. (Support for the high density section tone gap)	
	36	Adjust the density in the low density section.	
	45	Adjust the printer image filter.	
	52	Set the default of the gamma of the printer screen.	
	54	Printer engine halftone auto adjustment.	

3. Details of simulation

1

1-1

Purpose	Operation test/check
Function (Purpose)	Check the operation of the scanner (reading) unit and the control circuit.
Section	Scanner (reading)

Operation/Procedure

1) Select the operation resolution (scan speed) with the touch panel key.
2) Press [EXECUTE] key.

   Scanning is once performed at the speed corresponding to the scan resolution (operation speed).

Item/Display		Operation mode	Default value
OC SCAN	300DPI	300DPI (372mm/s)	300DPI (372mm/s)
	400DPI	400DPI (279mm/s)	
	600DPI	600DPI (186mm/s)	
	1200DPI	1200DPI (93mm/s)	

1-2

Purpose	Operation test/check
Function (Purpose)	Check the sensors in the scanner (reading) section and the related circuits.
Section	Scanner

Operation/Procedure

The operating status of the sensor is displayed. When "MHPS" is highlighted, the scanner unit is in the home position.

1-5

Purpose	Operation test/check
Function (Purpose)	Check the operation of the scanner (reading) unit and the control circuit.
Section	Scanner (reading)

Operation/Procedure

1) Select the operation speed with the touch panel key.
2) Press [EXECUTE] key.

   Scanning is repeated at the speed corresponding to the scan resolution (operation speed). When [EXECUTE] key is pressed, the operation is terminated.

Item/Display		Operation mode	Default value
OC SCAN	300DPI	300DPI (372mm/s)	300DPI (372mm/s)
	400DPI	400DPI (279mm/s)	
	600DPI	600DPI (186mm/s)	
	1200DPI	1200DPI (93mm/s)	

2

2-1

Purpose	Operation test/check
Function (Purpose)	Check the operations of the automatic document feed unit and the control circuit.
Section	Automatic document feeder

Operation/Procedure

1) Select the operation mode and the speed with the touch panel key.
2) Press [EXECUTE] key.

   The DSPF repeats paper feed, transport, and paper exit operations at the speed corresponding to the scan resolution (operation speed).When [EXECUTE] key is pressed, the operation is terminated.

DSPF

Item/Display		Operation mode	Default value
(SINGLE)	300DPI	300DPI (372mm/s)	300DPI (372mm/s)
	400DPI	400DPI (279mm/s)	
	600DPI	600DPI (186mm/s)	
(DOUBLE)	300DPI	300DPI (372mm/s)	300DPI (372mm/s)
	400DPI	400DPI (279mm/s)	
	600DPI	600DPI (186mm/s)	

RSPF

Item/Display		Operation mode	Default value
(SINGLE)	300DPI	300DPI (279mm/s)	300DPI (279mm/s)
	400DPI	400DPI (279mm/s)	
	600DPI	600DPI (186mm/s)	
(DOUBLE)	300DPI	300DPI (279mm/s)	300DPI (279mm/s)
	400DPI	400DPI (279mm/s)	
	600DPI	600DPI (186mm/s)	

2-2

Purpose	Operation test/check
Function (Purpose)	Check the operations of the sensors and the detectors in the document feed unit section and the control circuits.
Section	Automatic document feeder

Operation/Procedure

The operating conditions of the sensors and detectors are displayed. The code names of the sensors and the detectors which are active are highlighted.

SSET	SPF installation detector
SOCD	SPF open/close detector
SCOV	SPF upper door open/close detector
SLCOV	SPF lower door open/close sensor
SPED1	SPF document upper limit detector
SPED2	SPF document empty detector
SPPD1	SPF document pass detector 1 (Paper entry detection)
SPPD2	SPF document pass detector 2 (Resist roller front document transport detection)
SPPD3	SPF document pass detector 3 (Document scanning front document transport detection)
SPPD4	SPF document pass detector 4
SPPD5	SPF document pass detector 5 (Document transport detection)
SPOD	SPF document exit detector
SPRDMD	SPF document random detector
SPLS1	SPF document length detection short detector
SPLS2	SPF document length detection long detector
STLD	SPF document feed tray lower limit detector
STUD	SPF document feed tray upper limit detector
STMPU	SPF stamp unit installation detector
SWD_LEN	SPF guide plate position (Unit: 0.1mm)
SWD_AD	SPF document detection volume output AD value

2-3

Purpose	Operation test/check
Function (Purpose)	Check the operations of the loads in the automatic document feed unit and the control circuit.
Section	Automatic document feeder

Operation/Procedure

1) Select a target item of the operation check with the touch panel key.
2) Press [EXECUTE] key.
   The selected load performs the operation. When [EXECUTE] key is pressed, the operation is terminated.

SPUM	SPF document feed motor
SPFM	SPF transport motor
SPOM	SPF document exit motor
SLUM	SPF lift up motor
SPFFAN	SPF cooling fan motor
SPFC	SPF document feed clutch
SRRC	SPF No2 registration roller clutch
STRRC	SPF No1 registration roller clutch
STRC	SPF transport roller clutch
STMPS	Stamp solenoid (Displayed only when the finish stamp is installed.)

3

3-2

Purpose	Operation test/check
Function (Purpose)	Check the operations of the sensors and the detectors in the finisher and the control circuit.
Section	Finisher

Operation/Procedure

The operating conditions of the sensors and detectors are displayed. The code names of the sensors and the detectors which are active are highlighted.

<Inner finisher / Punch module>

FABHS	Paper alignment belt HP sensor
FAPHPS_F	Paper alignment plate HP sensor F
FAPHPS_R	Paper alignment plate HP sensor R
FDRPS	Paper exit roller position sensor
FDTLLS	Paper exit tray lower limit sensor
FDTPD	Delivery tray paper detector
FDTULS	Paper exit tray upper limit sensor
FFL	Fan lock signal
FPLD1	Paper height sensor 1
FPLD2	Paper height sensor 2
FPPD1	Paper entry sensor
FSED	Staple empty sensor
FSHPS	Staple HP sensor
FSLD	Staple lead edge sensor
FSSHPS	Staple shift home position sensor
FSSS	Staple safety sensor
FSSW	Safety switch
FSTPD	Staple tray paper sensor
FTPS	Tray position sensor
FPCHPS	Punch home position sensor
FPD	Punch unit sensor (connector)
FPDFS	Punch dust 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
FPES5	Punch paper edge sensor 5
FPES6	Punch paper edge sensor 6
FPES7	Punch paper edge sensor 7
FPHPS	Punch unit home position sensor
FPMRS	Punch motor rotation sensor
FPMS	Punch mode sensor
FPTS	Punch timing sensor

<1K Saddle stitch finisher / Punch module>

PDPPD1	FJPID	Paper pass paper transport detector 1
PDPPD2	FJPOD	Paper pass paper transport detector 2
PDCS	FJPDD	Paper pass cover Open/Close sensor
FPPD1	FED	Paper delivery detector 1
FPAPHS_F	FFJHPD	Paper alignment plate home position sensor F
FPAPHS_R	FRJHPD	Paper alignment plate home position sensor R
FATPD	FAD	Paper alignment tray paper detector
FGHPS	FGHPD	Gripper home position sensor
FDTPD	EMPS	Delivery tray paper detector
FPLD	FSLD	Paper surface detector
FPPD2	FFPD	Paper transport detector 2
FSPHS	FFHPD	Saddle plate home position sensor
FSTPD	FFED	Saddle exit tray paper detector
FSMRS	FFE	Saddle motor rotation sensor
FTULD	FULD	Tray upper limit detector
FTLLD	FLLD	Tray lower limit detector
FTLMRS	FLE	Tray lift motor rotation sensor
FSHS	FSHPD	Staple home position sensor
FSSHPS	FSTHPD	Stapler shift home position sensor
FSED	FSD	Staple empty detector
FSLS	FSPD	Staple lead edge sensor
FTPS	FMLD	Tray position sensor
FCD1	FFDD	Cover detector 1
FCD2	FCD	Cover detector 2
FSSW1	FFDDW	Safety switch 1
FCD	FJSW	Finisher connection detector
FSSSW1	FSSSW	Staple safety switch
FFL	FFANLK	Fan lock signal
FDRHS	FNHPD	Delivery roller home position sensor
FPPD3	FSPOD	Paper transport detector 3
FSATPD	FSDTPD	Saddle paper alignment tray paper detector
FSSSW2	FSJPD	Stapler safety switch 2
FPHHD	FPHHPD	Paper hold home position sensor
FSAPHS	FSJHPD	Saddle alignment plate home position sensor
FSPGHS	FAHPD	Saddle paper guide home position sensor
FSRHS	FSR3HPD	Saddle roller home position sensor
FPDD	FGED	Delivery detector
FSSHS	FSSHPD	Saddle staple home position sensor
FSSES	FSSD	Saddle staple sensor
FSSCS	FSSDSW	Saddle staple cover sensor
FSSSHS	FSSTHPD	Finisher saddle stapler shift home position sensor
FPMRS	FPMCK	Punch motor rotation sensor
FPD	FPUC	Punch unit detection (connector)
FPCHPS	FPHPD	Punch home position sensor
FPDFS	FPDD	Punch dust sensor
FPHPS	FPSHPD	Punch unit home position sensor
FPTS	FPTD	Punch timing sensor
FPES1	FPSD1	Punch paper edge sensor 1
FPES2	FPSD2	Punch paper edge sensor 2
FPES3	FPSD3	Punch paper edge sensor 3
FPES4	FPSD4	Punch paper edge sensor 4
FPPS	FPPD	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
FFDSW	Front cover close 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

<4K Finisher saddle unit>

FS1PD	Saddle paper detection 1
FS2PD	Saddle paper detection 2
FS3PD	Saddle paper detection 3
FSAHPD	Alignment plate home position detection
FSBHPC	Paper pushing plate home position sensor connector connection detection
FSCRPD	Semi-circular roller phase detection
FSDTPD	Saddle tray paper detection
FSFOE	Paper folding motor lock detection
FSFOHPC	Paper folding home position sensor connector connection detection
FSFOHPD	Paper folding home position detection
FSGHPC	Paper folding guide home position sensor connection detection
FSGHPD	Guide home position detection
FSINDD	Inlet port cover open detection
FSINDSW	Saddle inlet port door detection
FSLGE	Paper pushing plate motor lock detection
FSLGHPD	Paper pushing plate home position detection
FSLGTC	Paper pushing plate lead edge position sensor connector connection detection
FSLGTD	Paper pushing plate lead edge position detection
FSPDD	Saddle paper exit detection
FSPIND	Saddle entry port paper detection
FSPPHPD	Paper positioning plate home position detection
FSPPPD	Paper positioning plate paper detection
FSPSW1	S-PUSHSW detection
FSSD1	Saddle needle presence detection 1
FSSD2	Saddle needle presence detection 2
FSSHP1	Switch operation home position detection 1
FSSHP2	Switch operation home position detection 2
FSSHPC	Stitcher home position sensor connection detection
FSSHPD	Stitcher home position detection
FSSUC	Saddle staple unit detection
FSVPPD	Vertical path paper detection

3-3

Purpose	Operation test/check
Function (Purpose)	Check the operation of the load in the finisher and the control circuit.
Section	Finisher

Operation/Procedure

1) Select the item to be operation checked with the touch panel key.
2) Press [EXECUTE] key.

   The selected load performs the operation. When [EXECUTE] key is pressed, the operation is terminated.

<Inner finisher / Punch module>

FCF	Cooling fan
FDRLM	Paper exit roller lift motor
FPAM_F	Paper alignment motor F
FPAM_R	Paper alignment motor R
FPAS	Paper alignment solenoid
FPDM	Paper exit motor
FPGS	Paper gate solenoid
FPLDS	Paper height detector solenoid
FPS	Paddle solenoid
FPTM	Paper transport motor
FSM	Staple motor
FSSM	Staple shift motor
FTLM	Tray lift motor
FPM	Punch motor
FPSM	Punch shift motor

<1K Saddle stitch finisher / Punch module>

PDPGS	FINRPS	Paper pass paper gate solenoid
PDPTM	FJPM	Paper pass paper transport motor
PDCF	FJFM	Paper pass cooling fan
FPTM1	FFM	Paper transport motor 1
FDRLM	FNM	Finisher paper exit roller lift motor
FGM	FGM	Gripper motor
FPAM-F	FFJM	Paper alignment motor F
FPAM-R	FRJM	Paper alignment motor R
FSSM	FSM	Stapler shift motor
FSM	FFSM	Staple motor
FPTM2	FLM	Paper transport motor 2
FSDM	FFM2	Saddle motor
FSPTM	FTM	Saddle paper transport motor
FSPAM	FSR3M	Saddle paper alignment motor
FSPM	FSJM	Saddle positioning motor
FSDSM	FPPM	Saddle staple motor
FPHS1	FSSM	Paper holding solenoid 1
FPHS2	FPHS	Paper holding solenoid 2
FTLM	FPS	Tray lift motor
FPM	FPNM	Punch motor
FPSM	FPSM	Punch shift motor

<4K Finisher / Punch module>

FAM	Bundle paper exit motor
FAORC	Bundle exit lower roller clutch
FASM	Rear edge assist motor
FBES	Buffer rear edge holding solenoid
FBRRS	Buffer roller separation solenoid
FFDRRS	Delivery roller separation solenoid
FFJM	Alignment motor front
FFM	Entry port transport motor
FFSM	Staple motor

FINRRS	Inlet port roller separation solenoid
FRJM	Alignment motor rear
FSHC	Shutter open/close clutch
FSM	Staple shift motor
FSWM	Oscillation motor
FTLM1	Tray 1 lift motor
FTLM2	Tray 2 lift motor
PDCF	Paper pass cooling fan
PDPGS	Paper pass paper gate solenoid
PDPTM	Paper pass paper transport motor
FPNM	Punch motor
FPSM	Punch horizontal resist motor

<4K Finisher saddle unit>

FPPM	Saddle paper positioning motor
FS1DFS	Paper deflection plate 1 solenoid
FS2DFS	Paper deflection plate 2 solenoid
FSFCS	Transport plate contact solenoid
FSFM	Saddle transport motor
FSFOM	Paper folding motor
FSFS	Saddle flapper solenoid
FSFSTM	Stitch motor front
FSGM	Guide motor
FSIFM	Saddle entry port transport motor
FSJM	Saddle alignment motor
FSLGM	Paper holding motor
FSRSTM	Stitch motor rear

3-10

Purpose	Adjustment
Function (Purpose)	Adjust the finisher.
Section	Finisher

Operation/Procedure

1) Select an adjustment target item with scroll key.
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

<1K 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) (When the paper width is greater than 232mm)	25 - 75	50
F	STAPLE REAR R	Staple binding position adjustment (one position at the rear) (When the paper width is 232mm or less)	45 - 75	50
G	STAPLE FRONT	Staple binding position adjustment (one position in front) (When the paper width is greater than 232mm)	25 - 75	50
H	STAPLE FRONT R	Staple binding position adjustment (one position in front) (When the paper width is 232mm or less)	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 □5.0mm)

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

<4K Saddle finisher>

Item	Display	Item	Set range	Default value
A	SADDLE POSITION	Saddle stitch position adjustment	197 - 203	200
B	FOLDING POSITION	Saddle folding position adjustment	192 - 208	200
C	FRONT ADJUST	Alignment position adjustment (front)	0 - 20	10

Item	Display	Item	Set range	Default value
D	STAPLE REAR	Stapling position adjustment (Rear, one position)	94 - 106	100
E	STAPLE FRONT	Stapling position adjustment (one position in front)	94 - 106	100
F	PUNCH CENTER	Punch center adjustment	30 - 70	50
G	PUNCH HOLE	Punch hole position adjustment	46 - 52	50

4

4-2

Purpose Operation test/check

Function (Purpose) Check the paper feed section (Desk/LCC) sensors and detectors and their control circuits.

Section Paper feed, paper reverse/transport

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>

D1MDC	Tray 1 installation detection connector
D1PED	Tray 1 paper empty detector
D1PPD	Tray 1 paper transport detector
D1PQD	Tray 1 remaining paper quantity detector
D1PRED1	Tray 1 paper rear edge detector 1
D1PRED2	Tray 1 paper rear edge detector 2
D1PRED3	Tray 1 paper rear edge detector 3
D1PRED4	Tray 1 paper rear edge detector 4
D1ULD	Tray 1 upper limit detector
D2MDC	Tray 2 installation detection connector
D2PED	Tray 2 paper empty detector
D2PPD	Tray 2 paper transport detector
D2PQD	Tray 2 remaining paper quantity detector
D2PRED1	Tray 2 paper rear edge detector 1
D2PRED2	Tray 2 paper rear edge detector 2
D2PRED3	Tray 2 paper rear edge detector 3
D2PRED4	Tray 2 paper rear edge detector 4
D2ULD	Tray 2 upper limit detector

<Tandem LCC>

DCDT	Tandem tray insertion detection
DPFD1	Tray 1 paper transport detector
D1LUD	Tray 1 paper empty detector
D1PED	Tray 1 paper empty detector
D1PQD	Tray 1 remaining paper quantity detector
D1PPD1	Tray 1 paper transport detector 1
D1PPD2	Tray 1 paper transport detector 2
D2LUD	Tray 2 upper limit detector
D2PED	Tray 2 paper empty detector
D2PQD	Tray 2 remaining paper quantity detector

<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
LCCD	LCC main unit connection detection

4-3

Purpose Operation test/check

Function (Purpose) Used to check the paper feed section (Desk/LCC) loads and their control circuits.

Section Paper feed, paper reverse/transport

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>

D1LM	Tray 1 lift up motor
D1PFC	Tray 1 paper feed clutch
D2LM	Tray 2 lift up motor
D2PFC	Tray 2 paper feed clutch
DPFM	Desk transport motor
DPTRC	Desk paper transport clutch

<Tandem LCC>

D1LM	Tray 1 lift up motor
D1PFC	Tray 1 paper feed clutch
D2LM	Tray 2 lift up motor
D2PFC	Tray 2 paper feed clutch
D2PUS	Tray 2 paper feed solenoid
DPFM	Desk transport motor
DPTRC	Desk paper 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

Purpose Operation test/check

Function (Purpose) Check the operation of the paper transport clutch for the paper feed tray unit.

Section Paper feed, paper reverse/transport

Operation/Procedure

[Check the ON operation]

Press the clutch button of the target of the ON operation check. Checking is started. When the operation is normal, the button on the display is highlighted. When it is abnormal, the button is not highlighted.

[Check the OFF operation]

Press the highlighted button which is ON. When the operation is normal, the highlighted button on the display returns to the normal display. When it is abnormal, the highlighted display is maintained.

button	Content
DTRC	Desk transport clutch
LTRC	LCC transport clutch

5

5-1

Purpose	Operation test/check
Function (Purpose)	Check the operation of the display, LCD in the operation panel, and control circuit.
Section	Operation unit (Operation/Display Control PWB)

Operation/Procedure

The LCD is changed as shown below.

The contrast changes every 2sec from the current level to MAX □ MIN □ the current level. During this period, each LED is lighted.

The LCD display contrast change and the LED lighting status are checked.

5-2

Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the heater lamp and the control circuit.
Section	Fusing

Operation/Procedure

1) Select the item to be operation checked with the touch panel key.
2) Press [EXECUTE] key.

   The selected heater lamp repeats ON/OFF operations 10 times at the interval of 500ms. When [EXECUTE] key is pressed, the operation is terminated.

Heater lamp operation check method:
Remove the rear cabinet, open the PWB holder, and the heater lamp lighting status can be checked from the clearance between the frames.

HL_UM	Main heater lamp (HL MAIN)
HL_US	Sub heater lamp (HL SUB)
HL_UW	Warm-up heater lamp (HL UW) (except 36 cpm)

5-3

Purpose	Operation test/check
Function (Purpose)	Check the operation of the scanner lamp and the control circuit.
Section	Scanner (reading)

Operation/Procedure

1) Select the item to be operation checked with the touch panel key.
2) Press [EXECUTE] key.

   The scanner lamp lights up for 10 sec. When [EXECUTE] key is pressed, the operation is terminated.

Display	Content
OC COPY LAMP	OC scanner lamp
DSPF COPY LAMP	DSPF scanner lamp

5-4

Purpose	Operation test/check
Function (Purpose)	Check the operation of the discharge lamp and the control circuit.
Section	Process

Operation/Procedure

1) Select the item to be operation checked with the touch panel key.
2) Press [EXECUTE] key.

   The discharge lamp lights up for 30 sec. When [EXECUTE] key is pressed, the operation is terminated.

6

6-1

Purpose	Operation test/check
Function (Purpose)	Check the operations of the load in the paper transport system (clutches and solenoids) and the control circuits.
Section	Paper feed, paper reverse/transport

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	CPFC1	Tray vertical transport clutch 1
	CPFC2	Tray vertical transport clutch 2
	CPFM	Paper feed motor
	FRS	Fusing lower pawl separation solenoid
	FUM	Fusing motor
	HPFC	Transport roller clutch
	OSM	Offset motor
	PFM	Transport motor
	POMF	Paper exit motor (normal rotation)
	POMR	Paper exit motor (reverse rotation)
	PSPS	Separation solenoid
	RRM	Registration motor
Paper feed	CLUM1	Paper tray lift motor (Tray 1)
	CLUM2	Paper tray lift motor (Tray 2)
	CPUC1	Paper feed clutch (Tray 1)
	CPUC2	Paper feed clutch (Tray 2)
	MPFS	Paper feed solenoid (Manual tray)

6-2

Purpose	Operation test/check
Function (Purpose)	Check the operations of each fan and its control circuit.
Section	Others

Operation/Procedure

1) Select the item to be operation checked with the touch panel key.
2) Press [EXECUTE] key.

   The selected load performs the operation. When [EXECUTE] key is pressed, the operation is terminated. Press [ALL] key to select all the fans collectively.

Load operation check method:
The load operation is checked by the operation sound. However, there are some loads which cannot be checked with the operation sound.

Item/Display	Content
LSUFM	LSU cooling fan
OZFM	Ozone fan motor
POFM	Power exit cooling fan 1,2,3
PROFM1	Process fan 1
PSFM	Power cooling fan1,2

6-90

Purpose	Setting
Function (Purpose)	Reset the machine to the factory setting. (The scanner is set to the lock enable position).
Section	Scanner

Operation/Procedure

1) Press [EXECUTE] key.
   The scanner is shifted to the lock enable position and stopped.

7

7-1

Purpose	Setting
Function (Purpose)	Set the operating conditions of aging.
Section	

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

Purpose	Setting
Function (Purpose)	Set the operating intermittent aging cycle.
Section	

Operation/Procedure

1) Enter the intermittent aging operation cycle (unit: sec) with 10-key.
2) Press [OK] key.
   The time entered in procedure 1) is set.
   * The interval time that can be set is 1 to 900 (sec).

The aging operation condition set by this mode is maintained hereafter unless the power is turned off or the setting is changed.

7-8

Purpose	Information display/print
Function (Purpose)	Display the warm-up time.
Section	Fusing

Operation/Procedure

Press [EXECUTE] key.

Counting of the warm-up time is started and the time required for warm-up is displayed

* Interruption of counting by pressing [EXECUTE] key is inhibited.

7-12

Purpose	Operation test/check
Function (Purpose)	The document reading number of sheets setting (for aging operation)
Section	Automatic document feeder

Operation/Procedure

1) Set document reading quantity with 10-key.
   (Setting range: 0 - 255)
2) Press [OK] key. The set value is saved.

The aging operation condition set by this mode is maintained hereafter unless the power is turned off or the setting is changed.

8

8-1

Purpose	Adjustment
Function (Purpose)	Check and adjust the operations of the developing voltage in each print mode and the control circuit.
Section	Toner supply, developing

Operation/Procedure

1) Enter the setting value with 10-key.
2) Press [EXECUTE] key.
   The entered voltage is outputted for 30 sec and the set value is saved. When [EXECUTE] key is pressed during outputting, the operation is terminated.

Item/Display		Content	Setting range	Default value
MIDDLE	A	Developing bias set value	0-700	475
LOW	A	Developing bias set value	0-700	475

8-2

Purpose	Adjustment
Function (Purpose)	Check and adjust the operation of the main charger grid voltage in each printer mode and the control circuit.
Section	Photo-conductor

Operation/Procedure

1) Enter the setting value with 10-key.
2) Press [EXECUTE] key.
   The entered voltage is outputted for 30 sec and the set value is saved. When [EXECUTE] key is pressed during outputting, the operation is terminated.

Item/Display		Content	Setting range	Default value	
				36 cpm	46/56 cpm
MIDDLE	A	Main charger grid voltage	150 - 850	645	650
LOW	A				645

8-6

Purpose	Adjustment
Function (Purpose)	Check and adjust the operation of the transport voltage and the control circuit.
Section	Transfer

Operation/Procedure

1) Select a target item to be adjusted with scroll key.
2) Enter the set value with 10-key.
   Enter the default value specified on the following list.
3) Press [EXECUTE] key.
   The set value is saved and the voltage corresponding to the set value is output for 30 sec. When [EXECUTE] key is pressed during outputting, the operation is terminated.

Item/Display		Content		Setting range	Default value 36/46/56
A	TC PLAIN BW SPX	Transfer current	Front surface	0 - 255	90/107/111
B	TC PLAIN BW DPX		Back surface	0 - 255	82/94/99
C	TC HEAVY1 BW SPX		Front surface	0 - 255	82/82/82
D	TC HEAVY1 BW DPX		Back surface	0 - 255	82/82/82
E	TC HEAVY2 BW SPX		Heavy paper2	0 - 255	82/82/82
F	TC HEAVY3 BW SPX		Heavy paper3	0 - 255	82/82/82
G	TC OHP BW		OHP	0 - 255	82/82/82
H	TC ENVELOPE BW		Envelope	0 - 255	82/82/82
I	TC THIN RW		Thin paper	0 - 255	82/82/82
J	TC GROSSY BW		Gross paper	0 - 255	82/94/99
K	TC ADSORPTION	Transfer current between paper		0 - 255	82/94/99
L	TC INTERVAL BIAS MID	Interval bias		0 - 255	55/55/55
M	TC INTERVAL BIAS LOW			0 - 255	55/55/55
N	TC BACKEND	Transfer rear bias		0 - 255	73/77/82
O	TC CLEANING	Transfer cleaning bias voltage	Cleaning in the normal operation mode	0 - 255	160/160/160
P	TC CLEANING PROCON		Cleaning in the process control mode	0 - 255	160/160/160

8-17

Purpose	Adjustment
Function (Purpose)	Check and adjust the operation of the separation bias voltage and the control circuit.
Section	

Operation/Procedure

1) Select a target item to be adjusted with scroll key.
2) Enter the set value with 10-key.
   Enter the default value specified on the following list.
3) Press [EXECUTE] key.
   The set value is saved and the voltage corresponding to the set value is output for 30 sec. When [EXECUTE] key is pressed during outputting, the operation is terminated.

Item/Display		Content	Setting range	Default value
A	PLV MID (FACE)	Separation bias output (Front surface)	0 - 255	180
B	PLV MID (BACK)	Separation bias output (Back surface)	0 - 255	180
C	PLV LOW (FACE)	Separation bias output (Front surface)	0 - 255	150
D	PLV LOW (BACK)	Separation bias output (Back surface)	0 - 255	150

9

9-2

Purpose	Operation test/check
Function (Purpose)	Check the operation of the sensors and detectors in the switchback section (duplex section) and the control circuit.
Section	Paper feed, paper reverse/transport

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

Purpose	Operation test/check
Function (Purpose)	Check the operations of the load in the paper reverse section (duplex section) and its control circuit.
Section	Duplex

Operation/Procedure

1) Select the item to be operation checked with the touch panel key.
2) Press [EXECUTE] key.
   The selected load performs the operation. When [EXECUTE] key is pressed during operation, the operation is terminated.

ADUGS	ADU gate solenoid
ADUM	ADU motor

10

10-1

Purpose	Operation test/check
Function (Purpose)	Check the operations of the toner supply mechanism (toner clutch) and the related circuit.
Section	Toner supply, developing

Operation/Procedure

1) Press [EXECUTE] key.
   The selected load operation is performed for 10 sec. When [EXECUTE] key is pressed during operation, the operation is terminated.

NOTE: This simulation must be executed without installing the toner cartridges.

If this simulation is executed with the toner cartridges installed, toner will be forcibly supplied to the developing unit, resulting in over toner. If this simulation is erroneously executed with the toner cartridge installed, the over toner state may be canceled by making several background copies.

13

13--

Purpose	Cancel
Function (Purpose)	Cancel the self-diag "U1" trouble.
Section	MFP (ICU) PWB

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key to execute cancellation of the trouble.

14

14--

Purpose	Cancel
Function (Purpose)	Cancel the self-diag "H3, H4, H5" trouble.
Section	Fusing

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key to execute cancellation of the trouble.

15

15--

Purpose	Cancel
Function (Purpose)	Cancel the self-diag "U6-01/02/09" trouble.
Section	LCC

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key to execute cancellation of the trouble.

16

16--

Purpose	Cancel
Function (Purpose)	Cancel the self-diag "U2" trouble.
Section	

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key to execute cancellation of the trouble.

21

21-1

Purpose	Setting
Function (Purpose)	Set the maintenance cycle.
Section	

Operation/Procedure

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

Item/Display		Content	Setting range	Default value
A	MAINTENANCE COUNTER (TOTAL)	Maintenance counter (Total)	0 : Default 1 - 300: 1K - 300K 999 : Free	250K

22

22-1

Purpose	Information display
Function (Purpose)	Display the print count value of each operation mode.
Section	

Operation/Procedure

Target counter	Display	Content
Total output quantity	TOTAL OUT (BW)	Total output quantity of black
Total use quantity	TOTAL (BW)	Total use quantity of black
	TOTAL (COL)	Total use quantity of color
Copy	COPY (BW)	Copy counter
Print	PRINT (BW)	Print counter
Document filing	DOC FIL (BW)	Document filing print counter
Other	OTHER (BW)	Black other counter
PCI	PCI OPE-TIME	PCI accumulated operation time (H)

22-2

Purpose	Information display
Function (Purpose)	Display the number of total mis-feed and the number of troubles.
Section	

Operation/Procedure

The paper jam, trouble counter value is displayed.

Item/Display	Content
MACHINE JAM	Machine JAM counter
RSPF/DSPF JAM	SPFJAM counter
TROUBLE	Trouble counter

22-3

Purpose	Information display
Function (Purpose)	Display the mis-feed position and the number of mis-feed at the position.
Section	

Operation/Procedure

The paper jam and mis-feed history is displayed from the latest one up to 50 items. (The old ones are deleted sequentially.)

22-4

Purpose	Information display
Function (Purpose)	Display the trouble (self diag) history.
Section	

Operation/Procedure

The trouble history is displayed from the latest one up to 30 items. (The old ones are deleted sequentially.)

22-5

Purpose Information display

Function (Purpose) Display the ROM version of each unit (section).

Section

Operation/Procedure

The ROM version of the installed unit in each section is displayed. When there is any trouble in the software, use this simulation to check the ROM version, and upgrade the version if necessary.

Item/Display	Content
S/N	Serial No. (The codes for November and December are "X" and "Y" respectively.)
ICUM (MAIN)	ICUM (Main)
ICUM (BIOS)	ICUM (Bios)
ICU (MAIN)	ICU (Main section)
ICU (BOOT)	ICU (Boot section)
ICU (SUB)	ICU (Sub)
LANGUAGE	Language support data version
UICONTENTS	Contents data for LCD
PCU	PCU
SCU	SCU
SPF	DSPF/RSPF
FAX1 (MAIN)	FAX 1-Line (Main section)
DESK	Desk unit
LCC	Side LCC
FINISHER	Finisher
SADDLE	Saddle unit
PUNCH	Punch unit
NIC	NIC
POWER-CON	Power controller
E-MANUAL	Operation manual (HDD storage)
WATER MARK	Watermark (HDD storage)
ESCP	ESCP font ROM
ACRE (MAIN)	ACRE (Main section)
ACRE (DATA)	ACRE (Data section)
PCI	PCI
EOSA	embedded OSA

22-6

Purpose Information print

Function (Purpose) Print information on various settings, adjustments, counters, controls, and versions.

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 content
DATA PATTERN	NO.1	Firmware version, counter data, etc.
	NO.3	Data related to the process control
2SIDED PRINT	1-SIDED	Simplex surface print (Default)
	2-SIDED	Duplex surface print

2) Press [EXECUTE] key to start printing the list selected in step 1).

22-8

Purpose Information display

Function (Purpose) Display the number of operations (the counter value) of the finisher, the SPF, and scanning (reading).

Section

Operation/Procedure

The counter values of the finisher, the SPF, 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) (DSPF-installed model only)

22-9

Purpose Information display

Function (Purpose) Display the print quantity of each paper feed section.

Section Paper feed, paper reverse/transport

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)

22-10

Purpose Information display

Function (Purpose) Display the system configuration (options and internal hardware).

Section

Operation/Procedure

The system configuration is displayed.

(The model names of the installed devices and options are displayed.)

Device	Model name	Content
MACHINE	MX-M365/M364 N	Main unit
	MX-M465/M464 N	
	MX-M565/M564 N	
SPF	STANDARD	Auto document feeder
STAMP	AR-SU1	Finish stamp
DESK	MX-DE12	Stand/1x500 sheet paper drawer
	MX-DE13	Stand/2x500 sheet paper drawer
	MX-DE14	Stand/3x500 sheet paper drawer
	MX-DE20	Stand/500&2000 sheet paper drawer
LCC	MX-LC11	A4 Large capacity tray (LCC)

Device	Model name	Content
PUNCHER	MX-PN11A	Punch module
	MX-PN11B	
	MX-PN11C	
	MX-PN11D	
	MX-PNX5A	
	MX-PNX5B	
	MX-PNX5C	
	MX-PNX5D	
	MX-PNX6A	
	MX-PNX6B	
	MX-PNX6C	
	MX-PNX6D	
FINISHER	MX-FN17	Inner finisher
	MX-FN10	Saddle stitch finisher (1K)
	MX-FN11	Finisher (4K)
	MX-FN18	Saddle stitch finisher (4K)
FAX1	MX-FX11	Facsimile expansion kit
PS	STANDARD/ MX-PK11	PS expansion
XPS	MX-PUX1	XPS expansion kit
SECURITY	MX-FR44U	Data security kit (commercial version)
	MX-FR44	Data security kit (Authentication version)
AIM	MX-AMX1	Application integration module
SDRAM (SYS)	*****MB	SDRAM capacity
SDRAM (ICU)	*****MB	SDRAM capacity
HDD	*****MB	Hard disk capacity
SD	*****MB	SD card capacity
NIC	STANDARD	NIC
BARCODE	MX-PF10	Bar code font
INTERNET-FAX	MX-FWX1	Internet Fax expansion kit
ACM (*)	MX-AMX2 / STANDARD	Application communication module
EAM (*)	MX-AMX3 / STANDARD	External account module
WEB BROWSING	MX-AM10 / STANDARD	Wen browsing kit is enabled
ACRE	MX-EB11	Enhanced compression kit (ACRE)
MIRRORING	MX-EB12 N	Mirroring kit
PCI	CONNECT	Plasmacluster ion generator mounting kit
CF	*****MB	Compact flash capacity

22-11

Purpose	Information display
Function (Purpose)	Display the use frequency of send/receive of FAX. (Only when FAX is installed.)
Section	FAX unit (TEL/LIU, FAX control PWB)

Operation/Procedure

The values of the FAX send counter and the FAX receive counter are displayed.

FAX OUTPUT	FAX print quantity counter (for line 1)
FAX SEND	FAX send counter
FAX RECEIVED	FAX receive counter
SEND IMAGES	FAX send quantity counter (for line 1)
SEND TIME	FAX send time
RECEIVED TIME	FAX receive time

22-12

Purpose	Information display
Function (Purpose)	Display the mis-feed position of the SPF and the number of mis-feed at the position.
Section	Automatic document feeder

Operation/Procedure

The paper jam and mis-feed history is displayed from the latest one up to 50 items. (The old ones are deleted sequentially.)

* For the list of the jam codes, Refer to "Paper JAM code list" in [6] SELF DIAG AND TROUBLE CODE.

22-13

Purpose	Information display
Function (Purpose)	Display the use quantity of the process section (OPC drum, DV unit, toner cartridge).
Section	Process

Operation/Procedure

The rotating time and the print quantity of the process section are displayed.

MAINTENANCE ALL	Maintenance counter (Total)
FUSING ROLLER	Fusing roller
PRESSURE ROLLER	Fusing pressure roller
SEPARATION PAWL	Fusing separation pawl
FUSING WEB UNIT	Fusing web unit
FUSING WEB SEND	Fusing web cleaning send counter
TC ROLLER	Transfer roller
PS PAPER	Paper dust cleaner
OZONE FILTER	Ozone filter
DEVE CTRG	DV unit
DRUM	OPC drum
MAIN CHARGER	Main charger
DRUM BLADE	OPC drum cleaning blade
TONER CTRG	Toner cartridge

22-14

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Display the use status of the toner cartridge.
Section	Process

Operation/Procedure

The status of the toner cartridge is displayed.

Display item	Content	Accumulated No. of installed cartridges (Unit)	Accumulated No. of near near end (Unit)	Accumulated No. of end (Unit)	Remaining quantity (Unit: %)
		INSTALL	NN END	END	RESIDUAL
TONER	Toner cartridge use counter	0- -255	0 - 255	0 - 255	0-25% 25-50% 50-75% 75-100%

22-18

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Display the use data delete history.
Section	

Operation/Procedure

The date and time of the user data delete are displayed.

Display item		Content
Item	Date	
START	Year/month/day /hour/min	Delete history (Date and time of operation start)
END		Delete history (Date and time of operation end)

22-19

Purpose	Information display
Function (Purpose)	Display various counter values related to scan - image send.
Section	

Operation/Procedure

Display the counter value related to the network scanner

NET SCN ORG_B/W	Network scanner document read quantity counter (B/W scan job)
NET SCN ORG_CL	Network scanner document read quantity counter (Color scan job)
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) (N model only)

22-40

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Display the error code list and the contents.
Section	

Operation/Procedure

1) Select the error code.

22-42

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Check the JAM/trouble data.
Section	

Operation/Procedure

1) Select the item to be checked with the touch panel key.

Display item	Counter	Content	
		JAM/Trouble code	Total count
PAPER JAM	Paper JAM counter	JAM code	Total output quantity
SPF JAM	SPF JAM counter	JAM code (SPF)	
TROUBLE	Trouble counter	Trouble code	

22-43

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Display the JAM data.
Section	

Operation/Procedure

1) Select the item to be checked with the touch panel.
   Display data and contents (COUNTER)

Item	Content
PAPER JAM COUNT	Number of machine JAM troubles
PAPER FEED COUNTER	Paper feed counter (Similar with SIM22-9 display content)
PAPER FEED RETRY COUNTER	Paper feed retry counter (Similar with SIM27-18 display content)

22-90

Purpose	Information print
Function (Purpose)	Output the various set data lists.
Section	

Operation/Procedure

1) Change the display with scroll key.
2) Select the print target with the keys on the touch panel.
3) Press [EXECUTE] key to start self print of the list.

All setting list	ALL CUSTOM SETTING LIST
Printer test page	PCL SYMBOL SET LIST
	PCL INTERNAL FONT LIST
	PCL EXTENDED FONT LIST
	PS FONT LIST
	PS KANJI FONT LIST
	PS EXTENDED FONT LIST
	NIC PAGE
Address registration list (*)	INDIVIDUAL LIST
	GROUP LIST
	PROGRAM LIST
	MEMORY BOX LIST
	ALL SENDING ADDRESS LIST
Document filing list	DOCUMENT FILING FOLDER LIST
System setting list	ADMIN. SETTINGS LIST (COPY)
	ADMIN. SETTINGS LIST (PRINT)
	ADMIN. SETTINGS LIST (IMAGE SEND)
	ADMIN. SETTINGS LIST (DOC FILING)
	ADMIN. SETTINGS LIST (SECURITY)
	ADMIN. SETTINGS LIST (COMMON)
	ALL ADMINISTRATOR SETTINGS LIST
Receive YES/NO number table	ANTI JUNK FAX NUMBER LIST
Receive rejection/ allow address domain table	ANTI JUNK MAIL/DOMAIN NAME LIST
To network Transfer table list	INBOUND ROUTING LIST
To administrator Transfer list	DOCUMENT ADMIN LIST
Web setting list	WEB SETTING LIST
Meta data set list	METADATA SET LIST

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

23

23-2

Purpose	Information print
Function (Purpose)	Output the trouble history list of paper jam and mis-feed.
Section	

Operation/Procedure

Press [EXECUTE] key to execute print.

The trouble history of paper jams and mis-feed is printed.

23-80

Purpose	Information print
Function (Purpose)	Output the operation data of paper feed and paper transport in the paper feed/transport section.
Section	Paper feed, paper reverse/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.

JAM CODE	JAM code
DATE / TIME	JAM occurrence date/time
MODE	Printing mode when JAM occurs
SIZE	Paper size
TYPE	Paper type
PIC TRAY	Paper feed tray
OUT TRAY	Paper exit tray
INF1 (ILLEGAL)	Illegal detection information
INF2(SENSOR)	Sensor information

23-81

Purpose	Data backup
Function (Purpose)	Backup the paper feed time data to the USB memory.
Section	

Operation/Procedure

Insert the USB memory into the main unit, and press [OK] key and [EXECUTE] key.

24

24-1

Purpose	Data clear/Reset
Function (Purpose)	Clear the jam counter, and the trouble counter.
Section	

Operation/Procedure

1) Select the item to be cleared with the touch panel key.
2) Press [EXECUTE] key.
3) Press [YES] key.
   The target counter is cleared.

MACHINE	Machine JAM counter
SPF	DSPF/RSPF JAM counter
TROUBLE	Trouble counter

24-2

Purpose	Data clear/Reset
Function (Purpose)	Clear the number of use (the number of prints) of each paper feed section.
Section	Paper feed, paper reverse/transport

Operation/Procedure

1) Select the item to be cleared with the touch panel key.
2) Press [EXECUTE] key.
3) Press [YES] key.
   The target counter is cleared.

TRAY1	Tray 1 paper feed counter
TRAY2	Tray 2 paper feed counter
TRAY3	Tray 3 paper feed counter
TRAY4	Tray 4 paper feed counter
MFT TOTAL	Manual paper feed counter (Total)
MFT HEAVY	Manual paper feed counter (Heavy paper)
MFT OHP	Manual paper feed counter (OHP)
MFT ENV	Manual paper feed counter (Envelope)
LCC	Side LCC paper feed counter (A4 LCC)
ADU	ADU paper feed counter

24-3

Purpose	Data clear/Reset
Function (Purpose)	Clear the finisher, SPF and the scan (reading) unit counter.
Section	

Operation/Procedure

1) Select the item to be cleared with the touch panel key.
2) Press [EXECUTE] key.
3) Press [YES] key.
   The target counter is cleared.

SPF	DSPF/RSPF 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 (DSPF-installed model only)

24-4

Purpose	Data clear/Reset
Function (Purpose)	Clear the maintenance counter, the printer counters of the transfer unit and the fusing unit.
Section	

Operation/Procedure

1) Select the item to be cleared with the touch panel key.
2) Press [EXECUTE] key.
3) Press [YES] key.
   The target counter is cleared.

Item / Display		Content
Maintenance	MAINTENANCE ALL	Maintenance counter (Total)
		Maintenance counter (Total) (Number of use days)
Fusing	FUSING ROLLER	Counter
		Number of use days
		Accumulated number of rotation
	PRESS ROLLER	Counter
		Number of use days
		Accumulated number of rotation
	SEPARATION PAWL	Counter
		Number of use days
		Accumulated number of rotation
	FUSING WEB	Print counter
		Number of use days
		Web cleaning send counter
Transfer	TC ROLLER	Counter
		Number of use days
		Accumulated number of rotation
Drum	DRUM	Counter
		Number of use days
		Accumulated number of rotation

Main charger	MAIN CHARGER	Counter
		Number of use days
		Accumulated number of rotation
Drum blade	DRUM BLADE	Counter
		Number of use days
		Accumulated number of rotation
Other	PS PAPER	Counter
		Number of use days
	OZONE FILTER	Counter
		Number of use days

24-5

Purpose	Data clear/Reset
Function (Purpose)	Clear the developer counter.
Section	Toner supply, developing

Operation/Procedure

1) Select the item to be cleared with the touch panel key.
2) Press [EXECUTE] key.
3) Press [YES] key.
   The target counter is cleared.

NOTE: When SIM25-2 is executed, this counter is also cleared automatically.

Developer cartridge print counter
Developer cartridge accumulated traveling distance (cm)
Number of day that used developer (Day)

24-6

Purpose	Data clear/Reset
Function (Purpose)	Clear the copy 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.

COPY BW	Copy counter

24-9

Purpose	Data clear/Reset
Function (Purpose)	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
OTHER BW	Other counter

24-10

Purpose	Data clear/Reset
Function (Purpose)	Clear the FAX counter. (Only when FAX is installed)
Section	FAX unit (TEL/LIU, FAX control PWB)

Operation/Procedure

1) Select the item to be cleared with the touch panel key.
2) Press [EXECUTE] key.
3) Press [YES] key.
   The target counter is cleared.

FAX OUTPUT	FAX Print quantity counter (for line 1)
FAX SEND	FAX send counter
FAX RECEIVED	FAX receive counter
SEND IMAGES	FAX send quantity counter (for line 1)
SEND TIME	FAX send time
RECEIVED TIME	FAX receive time

24-12

Purpose	Data clear/Reset
Function (Purpose)	Clear the document filing counter.
Section	

Operation/Procedure

1) Select the item to be cleared with the touch panel key.
2) Press [EXECUTE] key.
3) Press [YES] key.
   The target counter is cleared.

DOC FIL	Document filing print counter

24-15

Purpose	Data clear/Reset
Function (Purpose)	Clear the counters related to the scan mode and the image send.
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.

NET SCN ORG_B/W	Network scanner document read quantity counter (B/W scan job)
NET SCN ORG_CL	Network scanner document read quantity counter (COLOR scan job)
INTERNET FAX OUTPUT	Number of internet FAX output
INTERNET FAX SEND OUTPUT	Number of internet FAX sending page
INTERNET FAX RECEIVE	Number of internet FAX receive
INTERNET FAX SEND	Number of internet FAX send
MAIL COUNTER	Number of times of E-MAIL send
FTP COUNTER	Number of FTP send
SMB SEND	Number of SMB send
USB CNT	Number of times of USB storage
TRIAL MODE_B&C	Trial mode counter (B/W & COLOR scan job)
SCAN TO HDD_B/W	SCAN TO HDD record quantity (B/W)
SCAN TO HDD_CL	SCAN TO HDD record quantity (COLOR)

24-35

Purpose	Data clear/Reset
Function (Purpose)	Clear the toner cartridge use status data.
Section	

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key.
   The toner cartridge use status data (SIM22-14) are cleared.

25

25-1

Purpose	Operation test/check
Function (Purpose)	Check the operations of the developing section, and to display the toner density detection level.
Section	Toner supply, developing

Operation/Procedure

1) Press [EXECUTE] key.

The developing motor and the OPC drum motor rotate for 2 minutes and the output level of the toner density sensor is displayed.

TCS_K	Toner sensor output value
TSG_K	Toner density sensor control voltage level

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 over toner and a trouble.

25-2

Purpose	Setting
Function (Purpose)	Make the initial setting of toner density when replacing developer. (Automatic adjustment)
Section	Toner supply, developing

Operation/Procedure

1) Press [EXECUTE] key.

The developing motor rotates for 2 minutes, and the toner density sensor makes sampling of the toner density. The detected level is displayed.

After stopping the developing motor, the average value of the toner density sampling results is set as the reference toner density control level.

NOTE: When the above operation is interrupted on the way, the reference toner concentration level is not set. Also when error code of EE-EC, EE-EL or EE-EU is displayed, the reference toner density level is not set normally.

Do not execute this simulation unless new Developer material has been installed. If it is executed in other cases, under toner or overtone may occur, causing a trouble.

Adjustment result data display

Item/Display	Content
AT DEVE ADJ_L_K	Toner density control adjustment value in the low speed process mode.
AT DEVE ADJ_M_K	Toner density control adjustment value in the middle speed process mode
AT DEVE VO_L_K	Toner density sensor control voltage level in the low speed process node
AT DEVE VO_M_K	Toner density sensor control voltage level in the middle speed process mode

Data display during execution

Item/Display	Content
TCS_K	Toner sensor output level
TSG_K	Toner density sensor control voltage level

Display in case of an error

Error display	Content	Details of content
EE-EL	EL abnormality	Sensor output level less than 77, or sensor control voltage level over 207
EE-EU	EU abnormality	Sensor output level over 177, or sensor control voltage level less than 52
EE-EC	EC abnormality	The sampling level in the automatic toner density adjustment is outside of 128±3.

25-4

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Display the operation data of the toner supply quantity (Not used in the market).
Section	Process

Operation/Procedure

The operation data of the toner supply quantity are displayed..

DV CTRG	Developer cartridge print counter
DV RANGE	Developer cartridge accumulated traveling distance
HUMIDITY AREA	Current humidity area
ALL VREF	All correction value for the toner density reference value
DELTA VREF	Transition target correction amount
TONER DEN LT	Toner density output level
TONER DEN ST	Toner density standard level
AUTO DEVE VO	Toner density sensor control voltage
ALL V0	All correction values for the control voltage value
HUM V0	Humidity correction amount
LIFE V0	Life correction amount
PROCON V0	Process control feedback correction amount
AREA V0	Area correction amount
PRINT RATE V0	Print ratio correction amount
ENV V0	Environment multiple correction amount
AUTO DEVE AREA	Humidity area
PRINT RATE V0	Print rate correction amount

26

26-1

Purpose	Setting
Function (Purpose)	Set the paper exit operation from the right side.
Section	Paper exit section

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

Item/Display			Content
A	0	YES	Paper exit tray: YES
	1	NO	Paper exit tray: NO

26-2

Purpose	Setting
Function (Purpose)	Set the paper type and the weight type.
Section	Paper feed, paper reverse/transport

Operation/Procedure

Select a paper size to be changed with the touch panel.

TRAY3 (TANDEM)	0	8.5 x 11
	1	A4
	2	B5
LCC	0	8.5 x 11
	1	A4
	2	B5
G/LBS SET	0	GRAM
	1	LBS

26-3

Purpose	Setting
Function (Purpose)	Set the specifications of the auditor
Section	Auditor

Operation/Procedure

Select an item to be set with the touch panel.

Item/Display		Content	Default value
BUILT-IN AUDITOR	P10	Built-in auditor mode (standard mode) operation.	P10
OUTSIDE AUDITOR	NONE	No external connection vendor is used.	NONE
	P VENDOR1	Coin vendor mode (Only the copy mode can be controlled.)	
	P VENDOR2	Vendor mode communicating with the parallel I/F (for DocuLyzer) (Japan only)	
	P VENDOR3	Vendor mode in which signals for the intercard connected to the PCU are used for communication in parallel I/F.	
	VENDOR-EX (*1)	Vendor I/F for EQUITRAC	
	VENDOR-EX (MULTI) (*1)	VENDOR-EX + Multi job cueing Enable mode	
	P OTHER	NOT USED	
	S_VENDOR	Serial vendor mode	
DOC ADJ	ON	Support for the auditor in document filing print	OFF
	OFF	No support for the auditor in document filing print	
PF ADJ	ON	Continuous printing is performed in the duplex print mode. If the remaining money expires during continuous printing, the sheets in the machine are discharged without being printed on the back surfaces.	OFF
	OFF	Continuous printing is not performed in the duplex print mode. (The remaining amount is checked for printing every surface in all the printing process.) If the remaining money expires during printing, the sheet is discharged without printing on the back surface.	
VENDOR MODE (*2)	MODE1	Vendor mode 1	MODE 3
	MODE2	Vendor mode 2	
	MODE3	Vendor mode 3	
COUNTUP TIMING	FUSER_IN	When the paper lead edge passes the fusing rear sensor.	EXIT_ OUT
	FUSER_OUT	When the paper rear edge passes the fusing rear sensor.	
	EXIT_OUT	When the paper rear edge passes the paper exit sensor in the main unit, the right tray, and the after process unit.	
IMS CONTROL	ON	There is some restriction in the image send mode.	OFF
	OFF	There is no restriction in the image send mode.	

(*1) Displayed only when EQUITRAC.

(*2) Details of the vendor mode

VENDER MODE	Completion of the specified quantity. (Money remaining)	Insufficient money during copy job / No money remaining	Completion of the specified quantity. (No money remaining)
	Condition 1	Condition 2	Condition 3
MODE1	Operation 1	Operation 2	Operation 1
MODE2	Operation 1	Operation 1	Operation 1
MODE3	Operation 1	Operation 3	Operation 3

Operation 1:
Standby during setting time of auto clear. Default is 60 seconds, which can be changed in the system setting.

Operation 2:
Auto clear is not made.

Operation 3:
The display is shifted to the initial screen.

26-5

Purpose	Setting
Function (Purpose)	Set the count mode in A3 (11" x 17") print.
Section	

Operation/Procedure

1) Select an item to be set with scroll key.
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	2
B	MAINTE (B/W)	Maintenance counter	2
C	DEV (B/W)	Developer counter	

26-6

Purpose	Setting
Function (Purpose)	Set the specifications 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

26-7

Purpose	Setting
Function (Purpose)	Set the machine ID.
Section	

Operation/Procedure

1) Enter the machine ID with the 10-key.
   Max. 30 digits of numerals and alphabetical characters can be inputted. To select a desired character, press the 10-key repeatedly. Refer to the following list and enter characters. Touch the “CONFIRM” section every time a character is inputted. To modify an inputted character, delete it with “CLEAR” key and enter the correction character.

2) Press [SET] key to set the contents entered in procedure 1).

Note

The machine ID can be set also by the Web Page service mode function. Conventionally, the machine ID has been set by the Web Page function. In this mode, this function is made available in the simulation mode.

10-key	Number of times of key input									
	1	2	3	4	5	6	7	8	9	10
1	1	-	-	-	-	-	-	-	-	-
2	A	B	C	a	b	c	2	-	-	-
3	D	E	F	d	e	f	3	-	-	-
4	G	H	I	g	h	i	4	-	-	-
5	J	K	L	j	k	l	5	-	-	-
6	M	N	O	m	n	o	6	-	-	-
7	P	Q	R	S	p	q	r	s	7	-
8	T	U	V	t	u	v	8	-	-	-
9	W	X	Y	Z	w	x	y	z	9	-
0	0	-	-	-	-	-	-	-	-	-

26-8

Purpose Setting

Function (Purpose) Set the count mode (Long scale).

Section

Operation/Procedure

1) Select an item to be set with scroll key.
2) Enter the set 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	Setting range	Default value	Default value (Taiwan)
A	TOTAL(B/W) LONG SIZE(S)	Long scale (Small) Total counter	1 - 10	3	2
B	MAINTE (B/W) LONG SIZE(S)	Long scale (Small) Maintenance counter (B/W)	1 - 10	3	2
C	DEV(B/W) LONG SIZE(S)	Long scale (Small) Developer counter (B/W)	1 - 10	3	2
D	TOTAL(B/W) LONG SIZE(L)	Long scale (Large) Total counter (B/W)	1 - 10	5	2
E	MAINTE (B/W) LONG SIZE(L)	Long scale (Large) Maintenance counter (B/W)	1 - 10	5	2
F	DEV(B/W) LONG SIZE(L)	Long scale (Large) Developer counter (B/W)	1 - 10	5	2

Long Scale (Small) : 631 - 1050mm
Long Scale (Large) : 1051 - 1200mm

2

26-10

Purpose Setting

Function (Purpose) Set the trial mode of the network scanner.

Section

Operation/Procedure

1) Enter the set value with 10-key.
2) Press [OK] key.
   The set value in step 1) is saved.

TRIAL MODE (0: YES 1: NO)	0	Trial mode setting
	1	Trial mode cancel (Default)

26-18

Purpose Setting

Function (Purpose) Set Disable/Enable of the toner save mode operation.
(For the Japan and the UK versions.)

Section

Operation/Procedure

1) Select an item to be set with [UP] [DOWN] 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 1	
		2	Copy toner save mode 2	
		3	Copy toner save mode 3	
B	PRINTER	0	Printer toner save mode is inhibited.	0
		1	Printer toner save mode 1	
		2	Printer toner save mode 2	
		3	Printer toner save mode 3	
C	COPY TS DISPLAY	0	Toner save setting is displayed	Refer to the destination list below
		1	Toner save setting is not displayed	
D	PRINTER TS DISPLAY	0	Toner save setting is displayed	
		1	Toner save setting is not displayed	

Destination	Default value C	Default value D
U.S.A	0 (Displayed)	0 (Displayed)
CANADA	0 (Displayed)	0 (Displayed)
INCH	0 (Displayed)	0 (Displayed)
JAPAN	1 (Not Displayed)	0 (Displayed)
AB_B	0 (Displayed)	0 (Displayed)
EUROPE	0 (Displayed)	0 (Displayed)
U.K.	1 (Not Displayed)	0 (Displayed)
AUS.	0 (Displayed)	0 (Displayed)
AB_A	0 (Displayed)	0 (Displayed)
CHINA	0 (Displayed)	0 (Displayed)

26-30

Purpose Setting

Function (Purpose) Set the operation mode corresponding to the CE mark (Europe safety standards).

Section

Operation/Procedure

1) Enter the set value with 10-key.

0	Control allowed
1	Control inhibited

2) Press [OK] key.
   The set value in step 1) is saved.
   * Even in Enable state, the control may not be executed due to the power frequency, etc.

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)

26-32

Purpose	Setting
Function (Purpose)	Set the specifications of the fusing cleaning operation.
Section	Fusing

Operation/Procedure

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

Item	Display	Content		Default value
A	CLEANING PRINT SET	0	User fusing cleaning function is Enabled	1
		1	User fusing cleaning function is Disabled	

26-35

Purpose	Setting
Function (Purpose)	Set the display mode of SIM22-4 trouble history when a same trouble occurred repeatedly. There are two display modes: display as one trouble or display as several series of troubles.
Section	

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.

26-38

Purpose	Setting
Function (Purpose)	Set "Print continue" or "Print stop" when the maintenance timing is reached or the consumable part life is over.
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	When the maintenance life is over (Print Continue)	0
		1	When the maintenance life is over (Print Stop)	
B	FUSER WEB END (0: CONTINUE 1: STOP)	0	Continue/Stop setting of print when the fusing web is end (Print Continue)	0
		1	Continue/Stop setting of print when the fusing web is end (Print Stop)	

26-41

Purpose	Setting
Function (Purpose)	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)

26-49

Purpose	Setting
Function (Purpose)	Set the print speed of postcards mode.
Section	

Operation/Procedure

Select the copy speed mode with the touch panel. (Default: LOW)

When the setting is changed, the paper feed interval in print or copy in the postcard mode is changed and the job speed is changed accordingly.

LOW: The paper feed interval is long. (Normal mode)

HIGH: The paper feed interval is short. (when a paper jam occurs, the number of sheets of jam paper is greater than that in the LOW mode.)

26-50

Purpose	Setting
Function (Purpose)	Set the operation specifications and functions.
Section	

Operation/Procedure

1) Select a target item of setting with scroll key on the touch panel.
2) Enter the set value with 10-key.
3) Press [OK] key. (The set value is saved.)

Item/Display		Content		Default value
A	BW REVERSE	0	BW reverse copy Disable	Refer to *1
		1	BW reverse copy Enable	
B	FINISHER FUNCTION	0	Finisher special paper The number of paper exit is limited.	0 Refer to *2
		1	Finisher special paper The number of paper exit is not limited.	
C	FEED TRAY COLOR	0	Paper feed tray color display ON during paper feed	0
		1	Paper feed tray color display OFF during paper feed	
D	LONG SIZE PRINT	0	Disable	0
		1	Enable	
E	WIRELESS SET	0	Disable	0
		1	Enable	

(*1) Default values for each destination of item A

Destination	Item A
U S A	1
CANADA	1
INCH	1
JAPAN	1
AB_B	1
EUROPE	1
U K	0
AUS	1
AB_A	1
CHINA	1

(*2)

	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 full, 500 sheets, or 94mm height of paper exit is detected.
	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".	The operation is stopped when the paper exit tray full, 250 sheets, or 33.5mm height of paper exit is detected.
	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".	
4K finisher	Postcard, envelope	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".	The operation is stopped when the paper exit tray full, 650 sheets, or 94mm height of paper exit is detected.
	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".	

26-51

Purpose	Setting
Function (Purpose)	Set the specifications of the serial port operation. (For PCI)
Section	

Operation/Procedure

1) Enter the set value with 10-key.
   When the PCI is installed, setting is made to 1 or 2.
2) Press [OK] key.

Item/Display		Content		Default value
A	PCI SETTING	0	Serial port PCI mode OFF. (For connecting the serial port vendor)	0
		1	Serial port PCI mode ON. (JOB status LED MODE1)	
		2	Serial port PCI mode ON. (JOB status LED MODE2)	

MODE1: Red LED is light/blink/OFF, MODE2: Red LED always OFF

When PCI SETTING is changed from “0” to “1” or “2” . if SIM26-3 “OUTSIDE AUDITOR” is set to “S_VENDOR”. “AUDITOR” is changed to “NONE”.

26-52

Purpose	Setting
Function (Purpose)	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)

26-53

Purpose	Setting
Function (Purpose)	Set Inhibit/Allow of the user auto calibration (gradation, density adjustment) in the copy mode.
Section	

Operation/Procedure

1) Enter the set value with 10-key.

Item/Display		Content		Default value
A	COPY	0	Inhibit	1
		1	Allow	
B	PRINTER	0	Inhibit	1
		1	Allow	

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

26-65

Purpose Setting

Function (Purpose) Set the finisher alarm mode.

Section

Operation/Procedure

Use the touch key to set.

Item	Set value	Content	Setting range	Default value	NOTE
LIMIT SHEETS	30	Number of sheets of stapling: Max. 30	30 or 50	50	A4,A4R,B5, 8.5x11, 8.5x11R, 16K,16KR For saddle finisher
	50	Number of sheets of stapling: Max. 50			
LIMIT COPIES	ON	Inner finisher: 30 sheets for all sizes 1K saddle finisher: 50 sheets for all sizes 4K finisher: A4, B5, 8.5 x 11, 16K → 100 sheets Other than the above → 50 sheets	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	A3,B4, 11x17, 8.5x14 ,8.5x13.5, 8.5x13.4, 8.5x13, 8K For saddle stitch finisher
	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	For saddle stitch finisher
	OFF	Number of sets loaded in the saddle staple: Not Limited			

* LIMIT SHEETS: The 4K finisher is fixed to 50 sheets.

* LIMIT SHEETS(L): Valid only for the 1K saddle finisher. The 4K finisher is fixed to 30 sheets.

*1: 1-5sheets (20 sets) / 6-10 sheets (15 sets) / 10-15 sheets (10 sets)

26-69

Purpose Setting

Function (Purpose) Set the operating conditions for toner near end.

Section

Operation/Procedure

1) Select an item to be set with scroll key.
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	The toner preparation message is displayed.	0 - 1	0
		1	The toner preparation message is not displayed.		
B	REMAINING TONER LEVEL	0	Remaining toner level of 5%	0 - 9	1
		1	Remaining toner level of 10%		
		2	Remaining toner level of 15%		
		3	Remaining toner level of 20%		
		4	Remaining toner level of 25%		
		5	Remaining toner level of 30%		
		6	Remaining toner level of 35%		
		7	Remaining toner level of 40%		
		8	Remaining toner level of 45%		
		9	Remaining toner level of 50%		
C	TONER NEAR END	0	The toner near end message is displayed	0 - 1	0
		1	The toner near end message is not displayed		
D	TONER END	1	Operation Enable in TONER END	0 - 1	2
		2	Operation STOP in TONER END		
		3	Operation STOP in TONER END		
E	TONER END COUNT	0	Setting of the number of print outputs Enable after TONER NEAR END	1 - 5	3
F	TONER E-MAIL ALERT	0	Low status send of E-mail alert toner near near end	0 - 1	1
		1	Low status send of E-mail alert toner near end		

(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 6%. (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.

26-71

Purpose Setting

Function (Purpose) Set the trial mode of the web browsing function.

Section

Operation/Procedure

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

Item/Display		Content		Setting range	Default value
A	WEB BROWSING TRIAL MODE	0	Web browsing trial mode setting	0 - 1	1
		1	Web browsing trial mode canceling		

26-73

Purpose Setting

Function (Purpose) Enlargement continuous shoot, A3 wide copy mode image loss (shade delete quantity) adjustment.

Section

Operation/Procedure

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

   When the adjustment value is increased, the image loss (shade delete quantity) is increased.

Item/Display		Content	Setting range	Default value
A	DELETING SHADOW ADJ (M)	Rear frame side image loss quantity (shade delete quantity) adjustment	0 - 50	0 (Adjustment amount: 0.1mm/step)
B	DELETING SHADOW ADJ (S)	Lead edge image loss quantity (shade delete quantity) adjustment	0 - 50	0 (Adjustment amount: 0.1mm/step)

26-74

Purpose Setting

Function (Purpose) Set the OSA trial mode.

Section

Operation/Procedure

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

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

26-78

Purpose Setting

Function (Purpose) Set the password of the remote operation panel mode.

Section

Operation/Procedure

1) Enter a password with 10-key. (5 - 8 digits)

   The entered password is displayed on the column of "NEW".

   In order to correct the entered password, press the [clear] key to delete the entered value one digit by one digit.
2) Press [SET] key.

26-79

Purpose Setting

Function (Purpose) Set YES/NO of the popup display of user data delete result.

Section

Operation/Procedure

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

Item/Display		Content		Setting range	Default value
A	DISP SET	0	User data delete result popup display OFF	0 - 1	0
		1	User data delete result popup display ON		

27

27-1

Purpose Setting

Function (Purpose) 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.

27-2

Purpose Setting

Function (Purpose) Set the sender's registration number and the HOST server telephone number. (FSS function)

Section

Operation/Procedure

1) Select an item to be set with touch panel.
   [USER FAX NO] [SERVA TEL NO]
2) Enter the set value with 10-key.
3) Press [SET] key.
   The set value in step 2) is saved.

USER FAX_NO.	Sender registration number (Max. 16 digits)
SERVA TEL_NO.	Host server telephone number (Max. 16 digits) If the connection process is not completed normally when registering the FSS, calling to the HOST may be continuously made every time when the power is turned ON (from OFF) or rebooted. In this case, enter "********" to inhibit calling to the HOST.

27-4

Purpose Setting

Function (Purpose) Set the initial call and toner order auto send. (FSS function)

Section

Operation/Procedure

1) Select an item to be set with scroll keys.
2) Enter the set value with 10-key.
3) Press [OK] key.
   The set value in step 2) is saved.

Item/Display		Content		Default value
A	FSS MODE	0	Exclusive for send in NE-B mode	1
		1	Send/Receive in NE-B mode	
		2	Exclusive for send in NE-F mode	
		3	Send/Receive in NE-F mode	
B	RETRY_BUSY	0 - 15	Resend number setting when busy	2
C	TIMER (MINUTE) _BUSY	1 - 15	Resend timer setting (minute) when busy	3
D	RETRY_ERROR	0 - 15	Resend number setting when error	1
E	TIMER (MINUTE) _ERROR	1 - 15	Resend timer setting (minute) when error	1
F	FAX RETRY	0 - 15	Toner order auto send timing setting (K)	2
G	TONER ORDER TIMING	0	Empty	11
		1	Near end	
		2	5%	
		3	10%	
		4	15%	
		5	20%	
		6	25%	
		7	30%	
		8	35%	
		9	40%	
		10	45%	
		11	50%	
H	TEMP HISTORY CYCLE	1 - 1440	Frequency of acquiring the temperature and humidity history (Minute)	60
I	LOG OUTPUT CAPACITY	0 - 50	Log output capacity (KB)	30
J	TONER ORDER TIMING CONTROL	0	Toner order alert send at the fixed toner remaining quantity	0
		1	Toner under alert send when presuming the toner consumption	
K	TONER ORDER DELIVERY SETTING	0	Toner order delivery setting OFF	0
		1	Toner order delivery setting ON	
L	TONER ORDER DELIVERY INTERVAL	1 - 15	Toner order delivery setting delivery threshold setting (DATE)	3

27-5

Purpose Setting

Function (Purpose) Set the machine tag No. (FSS function)

Section

Operation/Procedure

1) Enter the password (max. 8 digits) with 10-key.
   The entered password is displayed on the column of "NEW". In order to correct the entered password, press the [clear] key to delete the entered value one digit by one digit.
2) Press [SET] key.

27-6

Purpose Setting

Function (Purpose) Set of the manual service call. (FSS function)

Section

Operation/Procedure

1) Enter the set value with 10-key.

0	Allow (Default)
1	Inhibit

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

27-7

Purpose Setting

Function (Purpose) Set of the enable, alert call out. (FSS function)

Section

Operation/Procedure

1) Select an item to be set with scroll keys.
2) Enter the set value with 10-key.
3) Press [OK] key.
   The set value in step 2) is saved.

A	FSS FUNCTION	0	FSS function enable
		1	FSS function disable (*1) (Default)
B	ALERT	0	Alert call enable (*2) (Default)
		1	Alert call disable
C	CONNECTION	0	FAX connection enable
		1	E-MAIL connection enable

*1 The FSS function setting can be changed only from Disable to Enable. (Cannot be changed from Enable to Disable.)

*2 Alert send timing

No alert cause	Initial state / Trouble / Continuous JAM alert
Maintenance	When the maintenance timing is reached.
Service call	When pressing Service call.

Toner send request	When the toner order automatic send setting is reached.
Toner collection request	Revision of the toner installation date (only for a new product)
Alert resend	

27-9

Purpose Setting

Function (Purpose) Set the paper transport time recording YES/NO threshold value and shading gain adjustment retry number. (FSS function)

Section

Operation/Procedure

1) Select an item to be set with scroll keys.
2) Enter the set value with 10-key.
3) Press [OK] key.
   The set value in step 2) is saved.

A	FEED TIME 1	0 - 100	Threshold value of the paper transport time between sensors (Main unit) (50: Default)
B	FEED TIME 2	0 - 100	Threshold value of the paper transport time between sensors (DSPF/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)
E	JAM ALERT PERIOD	0 - 99	Continuous JAM alert period setting (Default: 30days)

* 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.

27-10

Purpose Data clear/Reset

Function (Purpose) 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
	Scanner gain adjustment retry history
	DSPF gain adjustment retry history (DSPF model only)
	Paper transport time between sensors

27-11

Purpose Information display

Function (Purpose) 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	
FINISHER2	99/99/99 99:99:99	8 digits	
SCAN GAIN ADJ1	99/99/99 99:99:99	8 digits	Scanner gain adjustment retry history
SCAN GAIN ADJ2	99/99/99 99:99:99	8 digits	
SCAN GAIN ADJ3	99/99/99 99:99:99	8 digits	
SCAN GAIN ADJ4	99/99/99 99:99:99	8 digits	
SCAN GAIN ADJ5	99/99/99 99:99:99	8 digits	
DSPF GAIN ADJ1	99/99/99 99:99:99	8 digits	DSPF gain adjustment retry history (Only the DSPF model is displayed.)
DSPF GAIN ADJ1	99/99/99 99:99:99	8 digits	
DSPF GAIN ADJ2	99/99/99 99:99:99	8 digits	
DSPF GAIN ADJ3	99/99/99 99:99:99	8 digits	
DSPF GAIN ADJ4	99/99/99 99:99:99	8 digits	
DSPF GAIN ADJ5	99/99/99 99:99:99	8 digits	

27-12

Purpose Information display

Function (Purpose) Check the high-density and the half-tone process control error history. (FSS Function)

Section

Operation/Procedure

The high density and the half-tone process control error history are displayed.

HV_ERR1	High density error history 1
HV_ERR2	High density error history 2
HV_ERR3	High density error history 3
HV_ERR4	High density error history 4
HV_ERR5	High density error history 5
H_TONE ERR1	Half tone error history 1
H_TONE ERR2	Half tone error history 2
H_TONE ERR3	Half tone error history 3
H_TONE ERR4	Half tone error history 4
H_TONE ERR5	Half tone error history 5

27-13

Purpose Information display

Function (Purpose) Check the history of paper transport time between sensors. (FSS function)

Section

Operation/Procedure

Change the display with scroll key.

Item/Display		Content	Occurrence date	Code between sensors	Passing time	Reference passing time
Main unit	FEED TIME1 - 10	History of paper transport time between sensors 1 - 10	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
SPF	FEED TIME1 - 10	History of paper transport time between SPF sensors 1 - 10	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)

27-14

Purpose	Setting
Function (Purpose)	Set the FSS function connection test mode.
Section	

Operation/Procedure

1) Enter the set value with 10-key.

0	Disable (Default)
1	Enable

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

27-15

Purpose	Operation test/check
Function (Purpose)	Display the FSS connection status.
Section	

Operation/Procedure

The FSS operating status is displayed.

FSS CONNECTION	Display the FSS connection status	0	Not operated (Default)
		1	Operated

27-16

Purpose	Setting
Function (Purpose)	Set the FSS alert send.
Section	

Operation/Procedure

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

Item/Display		Content		Default value
A	MAINTENACE ALERT	0	Alert send Enable	0
		1	Alert send Disable	
B	TONER OEDER ALERT	0	Alert send Enable	0
		1	Alert send Disable	
C	TONER CTRG ALERT	0	Alert send Enable	0
		1	Alert send Disable	
D	JAM ALERT	0	Alert send Enable	0
		1	Alert send Disable	
E	TROUBLE ALERT	0	Alert send Enable	0
		1	Alert send Disable	
F	PAPER ORDER ALERT	0	Alert send Enable	0
		1	Alert send Disable	

27-17

Purpose	Setting
Function (Purpose)	Set the FSS paper order alert.
Section	

Operation/Procedure

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

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

27-18

Purpose	Setting
Function (Purpose)	Clear the FSS paper feed retry counter.
Section	

Operation/Procedure

1) Select an item to be cleared.
2) Press [EXECUTE] key..
3) Press [YES] key.

Item/Display	Content
TRAY1	Tray1 paper feed retry counter
TRAY2	Tray2 paper feed retry counter
TRAY3	Tray3 paper feed retry counter
TRAY4	Tray4 paper feed retry counter
MFT	Manual paper feed retry counter

30

30-1

Purpose	Operation test/check
Function (Purpose)	Check the operations of the sensors and the detectors in other than the paper feed section and the control circuits.
Section	Paper feed, paper reverse/transport

Operation/Procedure

The operating conditions of the sensors and detectors are displayed. The sensors and the detectors which are turned ON are highlighted.

PPD1	Paper transport detector 1
PPD2	Paper transport detector 2
POD1	Paper exit detector 1
POD2	Paper exit detector 2
POD3	Paper exit detector 3
TFD2	Paper exit tray full detector (Face down tray)
TFD3	Paper exit tray full detector (Right paper exit tray)
SHPOS	Shifter home position sensor
DSW_R	ADU open/close detector
DSW_C	Transport cover open/close detector
DSW_F	Front cover open/close detection
TNFD	Waste toner full detector
TNBOX	Waste toner near end detection
FPFD	Fusing upper paper entry detector
DSW_C2	Transport cover open/close detector (Paper feed tray 2)
PRTPD	Paper exit tray paper detector (Right paper exit tray)

WEBEND	Web end detector

30-2

Purpose	Operation test/check
Function (Purpose)	Check the operations of the sensors and the detectors in the paper feed section and the control circuits.
Section	Paper feed, paper reverse/transport

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 paper transport detector
CLUD1	Tray 1 paper feed tray upper limit detector
CPED1	Tray 1 paper empty detector
CSPD1	Tray 1 paper remaining quantity detector
CSS11	Tray 1 paper feed tray size detector
CSS12	
CSS13	
CSS14	
CPFD2	Tray 2 paper transport detector
CLUD2	Tray 2 paper feed tray upper limit detector
CPED2	Tray 2 paper empty detector
CSPD2	Tray 2 paper remaining quantity detector
CSS21	Tray 2 paper feed tray paper size detector
CSS22	
CSS23	
CSS24	
MPLD	Manual feed paper length detector
MPED	Manual feed paper empty detector

40

40-2

Purpose	Adjustment
Function (Purpose)	Manual paper feed tray paper width sensor adjustment.
Section	Paper feed, paper reverse/transport

Operation/Procedure

1) Open the manual paper feed guide to the max. width (MAX).
2) Press [EXECUTE] key.
   The max. width (MAX) detection level is recognized.
3) Open the manual paper feed guide to P1 width (A4).
4) Press [EXECUTE] key.
   The P1 width (A4) detection level is recognized.
5) Open the manual paper feed guide to P2 width (A4R).
6) Press [EXECUTE] key.
   The P2 width (A4R) detection level is recognized.
7) Open the manual paper feed guide to the min. width (MIN).
8) Press [EXECUTE] key.
   The min. width (MIN) detection level is recognized.

When the above operation is not performed normally, "ERROR" is displayed. When completed normally, "COMPLETE" is displayed.

MAX POSITION	Manual feed max. width
P1(A4)POSITION	Manual feed P1 position width (A4)
P2(A4R)POSITION	Manual feed P2 position width (A4R)
MIN POSITION	Manual feed min. width

40-7

Purpose	Setting
Function (Purpose)	Set the adjustment value of the manual paper feed tray paper width sensor.
Section	Paper feed, paper reverse/transport

Operation/Procedure

1) Select a target item to be adjusted with scroll.
2) Enter the set value with 10-key.
3) Press [OK] key.
   The set value in step 2) is saved.

	Item/Display	Content	Default value
A	MAX POSITION	Manual feed max. width	241
B	P1(A4) POSITION	Manual feed P1 position width (A4)	231
C	P2(A4R) POSITION	Manual feed P2 position width (A4R)	140
D	MIN POSITION	Manual feed min. width	19

41

41-1

Purpose	Operation test/check
Function (Purpose)	Check the operations of the document size sensor and the control circuit.
Section	Others

Operation/Procedure

The operating conditions of the sensors and detectors are displayed. The sensors and the detectors which are turned ON are highlighted.

OCSW	Document cover status	Open: Normal display Close: Highlighted
PD1 - 7	Document detection sensor status	No document: Normal display Document present: Highlighted

41-2

Purpose	Operation test/check
Function (Purpose)	Used to adjust the document size sensor detection level.
Section	Others

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

Purpose	Operation test/check
Function (Purpose)	Check the operations of the document size sensor and the control circuit.
Section	Others

Operation/Procedure

The detection output level (A/D value) of OCSW and the document sensor (PD1 - PD7) is displayed in real time. The light receiving range of PD1 - PD7 is 1 - 255. (Default: 128)

Item/Display	Content	Detection level range
OCSW	Original cover SW	0-1 ("1" to Close)
PD1 - PD7	Document detection	0 - 255

43

43-1

Purpose	Setting
Function (Purpose)	Set the fusing temperature in each mode.
Section	Fusing

Operation/Procedure

1) Select the SW-A or the SW-B.
2) Select an item to be set with scroll key.

Display	Content	Setting range	Default value
PLAIN PAP&WUP &RDY GR	Change the fusing temperature setting of plain paper, WUP and Ready series	-10	0
		-5	
		0	
		+5	
		+10	
HEAVY PAPER GR	Change the fusing temperature setting of heavy paper series	-10	0
		-5	
		0	
		+5	
		+10	
THIN PAPER GR	Change the fusing temperature setting of thin paper series	-10	0
		-5	
		0	
		+5	
		+10	
RECYLED PAPER GR	Change the fusing temperature setting of recycled paper series	-10	0
		-5	
		0°	
		+5°	
		+10	
GLOSS PAPER GR	Change the fusing temperature setting of gloss paper series	-10	0
		-5	
		0	
		+5	
		+10	
ENV PAPER GR	Change the fusing temperature setting of envelope series	-10	0
		-5	
		0	
		+5	
		+10	
PAP CURL IMPROVE MENT	Change the fusing temperature setting of paper curl improvement	-10	0
		-5	
		0	
		+5	
		+10	

<List of destination groups>

Group	Destination			
Group A	Japan	China	AB_B	
Group B	U.S.A.	Canada	Inch	
	AB_A	U.K.	AUS	Europe

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.

43-2

Purpose	Setting
Function (Purpose)	Set the fusing temperature and pre-heating.
Section	Fusing

Operation/Procedure

1) Select the SW-A or SW-B .
2) Select an item to be set with scroll key.

Item	Display	Content	Setting range	Default value (SW-A) 36/ 46/ 56 cpm		Default value (SW-B) 36/ 46/ 56 cpm	
				Gr. B	Gr. C	Gr. B	Gr. C
A	WARMUP FUMONHL UM T	Fusing motor previous rotation start TH_UM set value	30 - 200	165/ 150/ 100	165/ 150/ 100	100/ 150/ 100	165/ 150/ 100
B	WARMUP FUMOFF	Fusing motor previous rotation complete time	0 - 255	10/ 10/ 10	10/ 10/ 10	10/ 10/ 10	10/ 10/ 10
C	WARMUP END TIME	Warm up complete time	1 - 255	10/ 10/ 10	10/ 10/ 10	10/ 10/ 10	10/ 10/ 10
D	HI WU FM ON TMP	FM preliminary rotation start TH_UM when warming up at alpha degree C or above	30 - 200	165/ 160/ 100	165/ 160/ 100	100/ 165/ 100	170/ 165/ 100
E	HI WU END TIME	Warm up completion time when warm up at alpha degree C or above	0 - 255	10/ 10/ 10	10/ 10/ 10	10/ 10/ 10	10/ 10/ 10
F	LO WARMUP TIME	Setting value applying time in warm up of 120 degree C or below (Time from ready completion)	0 - 255	10/ 10/ 10	10/ 10/ 10	10/ 10/ 10	10/ 10/ 10
G	HI WARMUP TIME	Setting value applying time in warm up of 120 degree C or above (Timer from ready completion)	0 - 255	10/ 10/ 10	10/ 10/ 10	10/ 10/ 10	10/ 10/ 10
H	HI WARMUP BORDER	Threshold value alpha to apply the setting value in warm up of alpha degree C or above	1 - 119	70/ 70/ 70	70/ 70/ 70	70/ 70/ 70	70/ 70/ 70
I	JOBEND FUMON TIME	After-rotation time after completion of a job	0 - 255	5/ 5/ 5	5/ 5/ 5	5/ 5/ 5	5/ 5/ 5
J	HL UM E-STAR	TH_UM set value when preheating	30 - 200	95/ 130/ 135	95/ 130/ 135	95/ 130/ 135	95/ 130/ 135
K	HL US E-STAR	TH_US set value when preheating	30 - 200	95/ 130/ 135	95/ 130/ 135	95/ 130/ 135	95/ 130/ 135
L	HL UM PRE-JOB	Resetting from preheating TH_UM set value	30 - 200	180/ 170/ 180	180/ 170/ 180	185/ 175/ 185	185/ 175/ 185

<Code descriptions>

TH_UM	Fusing upper thermistor main
TH_US	Fusing upper thermistor sub
HL_UM	Heater lamp upper main
HL_US	Heater lamp upper sub

<List of destination groups>

Group	Destination		
Group A	Japan		
Group B	U.S.A.	Canada	Inch

Group	Destination		
Group C	AB_A	Europe	U.K
	AUS	AB_A	CHINA

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.

43-20

Purpose Setting

Function (Purpose) Set the environmental correction under low temperature and low humidity (L/L) for the fusing temperature setting (SIM 43-2) in each paper mode.

Section Fusing

Operation/Procedure

1) Select an item to be set with scroll keys.
2) Enter the set value with 10-key.
3) Press [OK] key.
The set value in step 2) is saved.

NOTE: The set value may changed for a design change or an individual arrangement. Except for the above cases, however, the set value must not be changed. If it is changed, a trouble may occur.

Correction value: -49 - +49, 1 Count = 1□C change/1sec change

Correction value	-49	-25	-5	0	+5	+25	+49
Input value	1	25	45	50	55	75	99

Item	Display	Content	Setting range	Default value
A	WARMUP FUMON HL UM TLL	Correction value for fusing motor pre-rotation start TH_UM set value under LL environment	1 - 99	40
B	WARMUP FUMOFF LL	Fusing motor prior rotation completion time under LL environment	1 - 99	50
C	WARMUP END TIME LL	Correction value for warm up completion time under LL environment	1 - 99	80
D	HI WU FM ON TMP LL	Correction value for FM prior rotation start TH_UM in warm up at alpha degree C or above under LL environment	1 - 99	40
E	HI WU END TIME LL	Correction value for warm up completion time in warm up at alpha degree C or above under LL environment	1 - 99	50
F	LO WARMUP TIME LL	Correction value of the setting value applying time in warm up of 120 degree C or below under LL environment	1 - 99	50
G	HI WARMUP TIME LL	Correction value of the setting value applying time in warm up of 120 degree C or above under LL environment	1 - 99	50
H	HI WARMUP BORDER LL	Correction value of threshold value alpha to apply the setting value in warm up of alpha degree C or above under LL environment	1 - 99	50
I	JOBEND FUMON TIME LL	Correction value for after rotation time when completing a job under LL environment	1 - 99	50
J	HL UM E-STAR LL	Correction value for preheating TH_UM set value under LL environment	1 - 99	55
K	HL US E-STAR LL	Correction value for preheating TH_US set value under LL environment	1 - 99	55
L	HL UM PRE-JOB LL	Correction value for set value of TH_UM when restoring from preheating under LL environment	1 - 99	55

<Code descriptions>

TH_UM	Fusing upper thermistor main
TH_US	Fusing upper thermistor sub
HL_UM	Heater lamp upper main
HL_US	Heater lamp upper sub

43-21

Purpose Setting

Function (Purpose) Set the environment correction under high temperature and high humidity (H/H) for the fusing temperature setting (SIM 43-2) in each paper mode.

Section Fusing

Operation/Procedure

1) Select an item to be set with scroll keys.
2) Enter the set value with 10-key.
3) Press [OK] key.
The set value in step 2 is saved.

NOTE: The set value may changed for a design change or an individual arrangement. Except for the above cases, however, the set value must not be changed. If it is changed, a trouble may occur.

Correction value: -49 - +49, 1 Count = 1□C change/1sec change

Correction value	-49	-25	-5	0	+5	+25	+49
Input value	1	25	45	50	55	75	99

Item	Display	Content	Setting range	Default value
A	WARMUP FUMON HL_UM T HH	Fusing motor previous rotation start TH_UM set value	1 - 99	50
B	WARMUP FUMOFF HH	Fusing motor previous rotation completion time	1 - 99	50
C	WARMUP END TIME HH	Warm up completion time	1 - 99	50
D	HI WU FM ON TMP HH	FM preliminary rotation start TH_UM when warming up at alpha degree C or above	1 - 99	50
E	HI WU END TIME HH	Warm up completion time when warm up at alpha degree C or above	1 - 99	50
F	LO WARMUP TIME HH	Correction value for AF-AH application time (Time from ready complete)	1 - 99	50
G	HI WARMUP TIME HH	Correction value for AJ-AL application time (time from ready complete)	1 - 99	50
H	HL WARMUP BORDER HH	Threshold value alpha to which AN-AP is applied	1 - 99	50
I	JOBEND_FUMON TIME HH	After-rotation time after completion of a job	1 - 99	50
J	HL UM E-STAR HH	TH_UM set value when preheating	1 - 99	50
K	HL US E-STAR HH	TH_US set value under HH environment	1 - 99	50
L	HL UM PRE-JOB HH	Resetting from preheating TH_UM set value	1 - 99	50

<Code descriptions>

TH_UM	Fusing upper thermistor main
TH_US	Fusing upper thermistor sub
HL_UM	Heater lamp upper main
HL_US	Heater lamp upper sub

43-24

Purpose	Setting
Function (Purpose)	Set the fusing operation.
Section	Fusing

Operation/Procedure

1) Select an item to be set with scroll keys.
2) Enter the set value with 10-key.
3) Press [OK] key.
   The set value in step 2 is saved.

NOTE: The set value may changed for a design change or an individual arrangement. Except for the above cases, however, the set value must not be changed. If it is changed, a trouble may occur.

Correction value: -49 - +49, 1 Count = 1□C change

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	
				Gr. B	Gr. C
A	COOL DOWN HEAVY	Cool down time (Heavy paper)	1 - 60	5	5
B	COOL DOWN OHP	Cool down time (OHP)	1 - 60	10	10
C	COOL DOWN ENVELOPE	Cool down time (Envelope)	1 - 60	15	15
D	FUS MOTOR	Fusing web motor operating interval	3 - 200	100	100
E	POWER SET	Power voltage setting 1:100V, 2:110-230V, 3:220-240V	1 - 3	2	3

<Code descriptions>

TH_UM	Fusing upper thermistor main
TH_US	Fusing upper thermistor sub
HL_UM	Heater lamp upper main
HL_US	Heater lamp upper sub

<List of destination groups>

Group	Destination		
Group A	Japan		
Group B	U.S.A.	Canada	Inch
Group C	AB_A	Europe	U.K
	AUS	AB_A	CHINA

43-31

Purpose	Adjustment/Setup
Function (Purpose)	Check the operation of the fusing web cleaning motor.
Section	Fusing

Operation/Procedure

1) Press [EXECUTE] key.
   Perform the fusing web cleaning motor drive.
2) When driving the fusing web cleaning motor is completed, "COMPLETE" is displayed.

NOTE: The set value may changed for a design change or an individual arrangement. Except for the above cases, however, the set value must not be changed. If it is changed, a trouble may occur.

Fusing web unit installation detection state	Operation	Remark
Fusing web unit mot installed	Not operate	* During this operation, the fusing web cleaning feed counter is not counted up.
Fusing web unit installed	10sec continuous rotation	

43-32

Purpose	Adjustment/Setup
Function (Purpose)	Set various items related to the forcible operation of web cleaning when job end.
Section	Fusing

Operation/Procedure

1) Select an item to be set with scroll keys.
2) Enter the set value with 10-key.
3) Press [OK] key.
   The set value in step 2 is saved.

NOTE: The set value may changed for a design change or an individual arrangement. Except for the above cases, however, the set value must not be changed. If it is changed, a trouble may occur.

Item	Display	Item		Setting range		Default value
A	JOB END COMP ACT CHECK	Fusing web motor forcible operation condition when job end	Enable	0 - 1	0	1
			Disable		1	
B	JOB END COMP ACT INTERVAL	Interval of the print quantity of compulsory action of the fusing web motor at job end		1 - 200		100
C	JOB END COMP ACT CNT	Number of forcible operations of the fusing web motor when job end		1 - 5		1

43-34

Purpose	Adjustment/Setup
Function (Purpose)	Check the fusing lower web cleaning motor operation.
Section	Fusing

Operation/Procedure

1) Press [EXECUTE] key.
   Perform the fusing web cleaning motor drive.
2) When driving the fusing web cleaning motor is completed, "COMPLETE" is displayed.

NOTE: The set value may be changed for a design change or an individual arrangement. Except for the above cases, however, the set value must not be changed. If it is changed, a trouble may be occur.

Fusing web unit installation detection state	Operation	Remarks
Fusing lower web unit not installed	Not operate	* During this operation, the fusing web cleaning feed counter is counted up.
Fusing lower web unit installed	10sec continuous rotation	

43-35

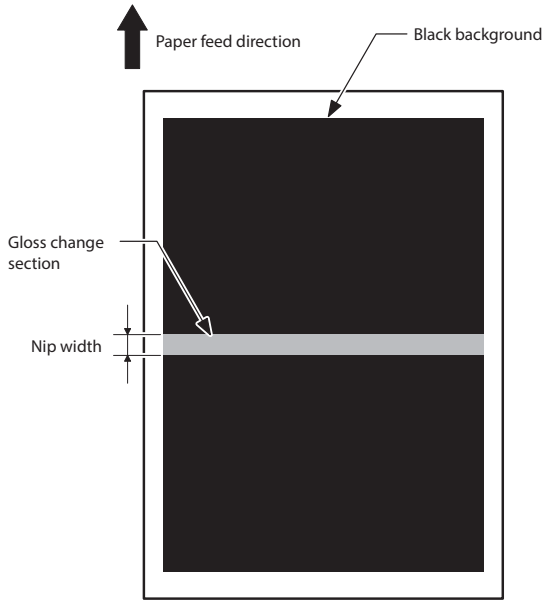
Purpose	Setting
Function (Purpose)	Check fusing nip operation.
Section	Fusing

Operation/Procedure

1) Prepare a black background image and put it on the cassette with the black background facing upward.

2) Enter the set value with 10-key.
3) Press [EXECUTE] key
   [EXECUTE] key is highlighted and printing is started. when printing is executed a jam is always generated. (As shown in the photo below).
4) Leave the jam paper for about 30sec, then remove the jam paper.
5) Measure the width of the gloss change section (nip) of the jam paper and check to confirm that it is in the range of about 4mm - 5mm for 36 cpm machine and 6mm - 7.5mm for 46/56 cpm machine.

Item/Display		Content		Default value
A	PAPER	1	MFT	2
		2	CS1	
		3	CS2	
		4	CS3	
		5	CS4	



44

44-1

Purpose Setting

Function (Purpose) Set each correction operation function in the image forming (process) section.

Section Process

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
HV	Normal operation high density process control Enable/Disable setting	Normal (Disable) Reverse (Enable)	Enable
HT	Normal operation halftone 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 EV	Membrane decrease environment grid voltage correction Enable/ Disable setting		Enable
MD LD	Membrane laser power voltage correction Enable/Disable setting		Enable
MD LD EV	Environment laser power correction for the OPC drum membrane decrease correction Enable/Disable setting		Enable
MD LD HV	The process control laser power correction Enable/ Disable setting		Enable
MD DL	Membrane decrease discharge light quantity correction Enable/ Disable setting		Disable
MD DL EV	Membrane decrease environment discharge light quantity correction Enable/Disable setting		Enable
PRT HT	Half tone process control printer correction feedback Enable/Disable setting		Enable
AT DL	Discharge correction Enable/Disable setting		Enable
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 ration 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 compulsory consumption mode Enable/Disable setting		Disable
TN INT	Toner compulsory supply correction for the development traveling distance Enable/Disable setting		Enable
TN ABS	Toner unconditional supply Enable/Disable setting		Enable
TN P RET	Toner difference return correction Enable/ Disable setting		Enable
TN VREF	V re correction Enable/ Disable setting		Enable
TN DIS	Toner density low print area correction Enable/ Disable setting		Enable

44-2

Purpose	Adjustment
Function (Purpose)	Adjust the sensitivity of the image density sensor.
Section	Process

Operation/Procedure

When [EXECUTE] key is pressed, the adjustment is executed automatically. After completion of the adjustment, the adjustment result is displayed. If the adjustment is not executed normally, "ERROR" is displayed.

Item/Display		Content	Setting range	Default value
A	PCS_K LED ADJ	Image density sensor sensitivity (light quantity) adjustment value	1 - 255	21
B	PCS_K DARK	Image density sensor dark voltage	0 - 255	0
C	PCS_K GRND	Belt surface detection level when the adjustment of item A is completed	0 - 255	0
D	PCS_K DRUM MAX	OPC drum surface detection level Max. value	0 - 255	0
E	PCS_K DRUM MIN	OPC drum surface detection level Min. value	0 - 255	0
F	PCS_K DRUM DIF	OPC drum surface detection level differential (Item D - Item E)	0 - 255	0

Error name	Error content
Sensor adjustment abnormality	PCS_K LED ADJ error The adjustment target level is not reached by three times of retry operations.
Surface scanning abnormality	PCS_K GRND error The difference between the max. value and the min. value of the OPC drum surface detection level is out of the specified range in detection of one circle of the OPC drum surface.

44-4

Purpose	Setting
Function (Purpose)	Set the conditions of the high density process control operation.
Section	Process

Operation/Procedure

1) Select an item to be set with scroll keys.
2) Enter the set value with 10-key.
3) Press [OK] key.

NOTE: The set value may changed for a design change or an individual arrangement. Except for the above cases, however, the set value must not be changed. If it is changed, a trouble may occur.

Item/Display		Content	Setting range	Default value
A	PCS_K TARGET	Image density sensor sensitivity adjustment target value	1 - 255	210
B	LED_K OUTPUT	Initial current level black sensor LED light emitting quantity set value in the image density sensor adjustment	1 - 255	21
C	PCS ADJSTMENT LIMIT	Adjustment error allowance level in the sensor sensitivity adjustment	1 - 255	10
D	DRUM GROUND DIF	The difference between the max. value and the min. value of the OPC drum surface detection level is in the allowable range in detection of one circle of the OPC drum surface.	0 - 255	1
E	BIAS_BK STANDARD DIF	Developing bias reference value in the high density process control	0 - 255	0
F	BIAS PATCH INTERVAL	Patch-forming developing bias voltage interval (voltage difference) in the high density process control	1 - 255	45
G	K_PAT TARGET ID	Toner patch density target value (black) in the high density process control	1 - 255	50
H	HV BK_GROUND LIMIT	Error judgment criterion for the difference between the max. level and the min. level of the OPC drum surface detection	1 - 255	29

44-6

Purpose	Operation test/check
Function (Purpose)	Execute the high density process control forcibly.
Section	Process

Operation/Procedure

Press [EXECUTE] key. In case of a normal completion, the result is saved. In case of an abnormal completion, "ERROR" is displayed. (Refer to the table below.) In case of an ERROR, the previous correction data are saved.

Result display	Content description
COMPLETE	Normal complete
ERROR	Abnormal end
INTERRUPTION	Forcible interruption

Details of error display	Content description
BK_SEN_ADJ_ERR	Image density sensor sensitivity adjustment error
K_HV_ERR	Density process control operation error
TIMEOUT_ERR	Density process control operation time-out

44-9

Purpose	Information display
Function (Purpose)	Used to display the result data of the high density process control operation.
Section	Process

Operation/Procedure

Select a target display mode with [CPY/PRN],[OTHER] keys.

Mode	Item/Display (*: Correction value)	Content	Display range
CPY / PRN	BLACK : GB ***/*** DV ***/***	High density process control mode GB/DV data (K) (Actual output voltage level / Base voltage level)	GB 150-850 DV: 0-700
	BLACK : GB ***/*** DV ***/***	Actual operation mode GB/DV data (K) (Actual output voltage level / Base voltage level)	GB: 150-850 DV: 0-700
	BLACK : GB ***/*** DV ***/***	Actual operation mode GB/DV data (K) (Actual output voltage level / Base voltage level)	GB: 150-850 DV: 0-700
OTHER	TN HUD AREA	Toner density correction humidity area	1-14
	TN HUD DATA	Toner density correction humidity AD value	0-1023
	TC TMP AREA	Transfer voltage correction temperature area	1-11
	TC TMP DATA	Transfer voltage correction temperature AD value	0-1023
	TC HUD AREA	Transfer voltage correction humidity area	1-10
	TC HUD DATA	Transfer voltage correction humidity AD value	0-1023
	MD HUD AREA	OPC drum membrane decrease correction humidity area	1-9
	MD HUD DATA	OPC drum membrane decrease correction humidity AD value	0-1023
	MD K STEP	OPC drum membrane decrease correction STEP number display (K)	0-4
	MD K DRUM COUNTER	OPC drum membrane decrease correction counter (rotation distance)	0-30
	MD K REVISE (LIFE)	MC grid correction voltage level	-255-255
	MD K REVISE (EV)	MC grid voltage correction level	-255-255
	MD K REVISE (ALL)	MC grid voltage correction level	-255-255
	MD K REVISE (LD LIFE)	Drum membrane decrease laser power voltage correction	-255-255
	MD K REVISE (LD EV)	Drum environment laser power voltage correction	-255-255
	MD K REVISE (LD HV)	Laser power voltage correction	-255-255
	MD K REVISE(LD ALL)	Display of laser power total correction amount	-255-255
	MD K REVISE (DL)	Drum membrane decrease discharge light quantity correction	-255-255
	MD K REVISE (DL EV)	Drum membrane decrease environment discharge light quantity correction	-255-255
	DESTINATION	CRUM destination data stored in the PCU PWB of the machine	-
	MODEL TYPE	Model type of the machine	0-1
	CRUM DEST_K	Crum destination data	-
	PROCON COUNT HV	High density process control execution number	0-99999999
	PROCON COUNT HT	Half-tone process control execution umber	0-99999999

44-12

Purpose Information display

Function (Purpose) Display the operation data of the high density process control and the image density sensor.

Section Process

Operation/Procedure

Select a display mode with [TARGET] [PATCH] keys.

Item/Display	Content	Display range	Default value
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
n-1	High density process control nth time patch density level 1 (n=1-5)	0 - 255	0
n-2	Patch data nth time patch 2 (n=1-5)	0 - 255	0
n-3	Patch data nth time patch 3 (n=1-5)	0 - 255	0
n-4	Patch data nth time patch 4 (n=1-5)	0 - 255	0
n-1	Patch data nth time patch 1 (n=6-10)	0 - 255	0
n-2	Patch data nth time patch 2 (n=6-10)	0 - 255	0
n-3	Patch data nth time patch 3 (n=6-10)	0 - 255	0
n-4	Patch data nth time patch 4 (n=6-10)	0 - 255	0

44-14

Purpose Information display

Function (Purpose) Display the output level of the temperature and humidity sensor.

Section

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 thermistor main A/D value, temperature	Temperature: 0 - 255C AD value: 0 - 1023
TH_UM_CS	Fusing upper main thermistor temperature.and AD value	Temperature: 0 - 255C AD value: 0 - 1023
TH_UM_D	Fusing upper main thermistor AD value	AD value: 0 - 1023
TH_LM	Fusing lower main thermistor temperature and AD value	Temperature: 0 - 255C AD value: 0 - 1023
TH_US	Fusing sub thermistor A/D value	Temperature: 0 - 255C AD value: 0 - 1023
TH_M	External air temperature sensor temperature and AD value	Temperature:-40-150C AD value: 0 - 1023
HUD_M	External air humidity sensor and AD value	Temperature:0 - 100% AD value: 0 - 1023
TH1_LSU	LSU thermistor detection level	Temperature: 0 - 255C AD value: 0 - 1023

44-15

Purpose Setting

Function (Purpose) Set the OPC drum idle rotation.

Section Process

Operation/Procedure

1) Select an item to be set with scroll keys.
2) Enter the set value with 10-key.
3) Press [OK] key.

NOTE: The initial value must be set unless any special change is required.

Item/Display		Content	Setting range	Default value
A	TIME	Idle rotation interval (time interval between the previous OPC drum idle rotation and the next one) setting	0 - 255	6

Item/Display		Content	Setting range	Default value
B	AREA1	Environment area difference judgment threshold value setting (different between the previous OPC drum idle rotation and the current one)	0 - 5	2
C	AREA2	Environment area conditions (condition of the previous OPC drum idle rotation and the current one)	1 - 15	1
D	CYCLE	Previous rotation time setting in the process control when recovered from power ON	0 - 255	0

44-17

Purpose	Information display
Function (Purpose)	Execution process refresh.
Section	Process

Operation/Procedure

1) Select a refresh item with touch panel key.
2) Press [EXECUTE]

DEVE REFRESH	Development refresh

44-21

Purpose	Registration
Function (Purpose)	Set the half tone process control target.
Section	Process

Operation/Procedure

Press [EXECUTE] key.

The half tone process control target is set and the operation data are displayed.

Display	Content
COMPLETE	Normal complete
ERROR BLACK SENSOR ADJUSTMENT	Image density sensor sensitivity adjustment error
[K]	High density process control error
OTHER	Other errors

44-22

Purpose	Information display
Function (Purpose)	Display the toner patch density level in the half tone process control operation.
Section	Process

Operation/Procedure

1) The toner patch density level made in the half tone process control operation is displayed.

Item/Display	Content
BASE1	Belt substrate data (START)
ID_n	Patch data display (n = 1 - 6, 19 - 24)

44-24

Purpose	Information display
Function (Purpose)	Display the correction target and the correction level in the half tone process control operation.
Section	Process

Operation/Procedure

1) Select the display category with [NEXT] key.

Category	Item/Display	Content
Coefficient	EX-LOW	Coefficient value of the approximate formula of the minimum density
	LOW	Coefficient of the approximation formula of the low density
	CONNECT1	Coefficient of the approximation formula of when connecting the low density and the medium density
	MID	Coefficient of the approximation formula of when connecting the low density and the medium density
	CONNECT2	Coefficient of the approximation formula of when connection the medium density and high 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
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

44-25

Purpose	Setting
Function (Purpose)	Set the calculating conditions of the correction value for the half tone process control.
Section	Process

Operation/Procedure

1) Select a target adjustment density level with scroll key.
2) Enter the set value with 10-key.
3) Press [OK] key.

NOTE: The set value may changed for a design change or an individual arrangement. Except for the above cases, however, the set value must not be changed. If it is changed, a trouble may occur.

Item/Display		Content	Setting range	Default value
A	LOW FIELD LOWER LIMIT	Low density approximate expression data lower limit value	0 - 255	98
B	LOW FIELD UPPER LIMIT	Low density approximate expression data upper limit value	0 - 255	60
C	MID FIELD LOWER LIMIT	Medium density approximate expression data lower limit value	0 - 255	80
D	MID FIELD IPPER LIMIT	Medium density approximate expression data lower limit value	0 - 255	7
E	HILIGHT POINT	Reference point of the highlight correction amount	1 - 8	7
F	HILIGHT VALUE LIMIT	Highlight correction amount limit value	0 - 128	20
G	MAX VALUE LIMIT	Maximum density value correction limit value	0 - 128	0
H	HIGH FIELD LOWER LIMIT	High density approximate expression data lower limit value	0 - 255	15

Item/Display		Content	Setting range	Default value
I	HIGH FIELD UPPER LIMIT	High density approximate expression data lower limit value	0 - 255	1

44-26

Purpose Operation test/check

Function (Purpose) Execute the half tone process control compulsory.

Section Process

Operation/Procedure

Press [EXECUTE] key.

The half tone process control is performed and the operation data are displayed.

COMPLETE	Normal complete
ERROR BLACK SENSOR ADJUSTMENT	Image density sensor sensitivity adjustment error
[K]	High density process control error
OTHER	Other errors

44-27

Purpose Data clear/Reset

Function (Purpose) Clear the correction data of the half tone process control.

Section Process

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key.
   The correction data of the half tone process control are cleared.

44-28

Purpose Setting

Function (Purpose) Set the process control execution conditions.

Section Process

Operation/Procedure

1) Select a target item of setting with scroll key.
2) Enter the set value with 10-key.
3) Press [OK] key. (The set value is saved.)

NOTE: The set value may changed for a design change or an individual arrangement. Except for the above cases, however, the set value must not be changed. If it is changed, a trouble may occur.

Item/ Display		Content			Default value
A	INITIAL	When warm-up after clearing the counter of the OPC drum and the developer unit	Enable	0	0
			Disable	1	
B	SW ON	When supplying the power (when canceling shut-off.)	Process control Disable	1	2
			BK process control Enable	2	
			Pixel count judgment (Judgement is based on the setting value of item K, L.)	3	

Item/ Display		Content			Default value
C	TIME	After passing the specified time from leaving READY continuously (Time can be changed by INTERVAL TIME)	Process control Disable	1	3
			BK process control Enable	2	
			Pixel count judgment (Judgement is based on the setting value of item I.)	3	
D	HUM_LIMIT	HUM judgment is made when turning ON the power and after passing TIME.	Process control Disable	1	2
			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 M). When the changes in the temperature and the humidity are greater than the specified level (the set value of item N) in comparison with the previous process control.	Process control Disable	1	2
			BK process control Enable	2	
F	REV1	When the accumulated rotation time of the OPC drum unit reaches a certain level after supply the power.	Enable	0	0
			Inhibit	1	
G	REV2_BK	When the accumulated rotation time of the BK position OPC drum unit reaches a certain level after execution of the previous density correction.	Enable	0	0
			Inhibit	1	
H	REFRESH MODE	YES/NO setting of the display of the manual process control key by key operations	Key operation display YES	0	1
			Key operation display NO	1	
I	DAY	When the next warm-up if there is no job after a job after passing the specified days from execution of the previous process control	0: Disable of the specified days judgment	0	1
			1 - 999: 1 - 999 days passing	1 - 999	

Item/ Display		Content			Default value
J	HI-COV	Setting of the execution conditions of the process control for the print ration	The process control is performed by considering the average print ration of every 10 pages as the judgment criteria	0	0
			Print ration judgment inhibit (The process control for the target of print ration is not performed)	1	
			The process control is performed by considering the average print ration of 30 pages as the judgment criteria in a continuous print job of 30 or more pages	2	
K	LO-COV	Setting of the execution judgment of the process control in continuous printing of low print ratio images	Enable	0	0
			Inhibit	1	
L	TonerCA-END	Setting of the process control interval reduction when the toner cartridge remaining quantity is 25% or less	Enable	0	1
			Inhibit	1	
M	JOB STOP	Execution setting of item G,J,K judgment during a job	Allow	0	0
			Inhibit	1	
N	AVERAGE-PAGE	Setting of the number of average print ratio	1:10 pages, 5:50 pages 1 step corresponds to 10 pages	1 - 5	5
O	LIMIT PAGE	Setting of the number of connected jobs of the process control and of the limit number of the process control	1:10 pages 10:100 pages 1 step corresponds 10 pages	1 - 10	10
P	PIX_RATIO_BK	Magnification ratio setting (%) of the toner count specified value entry of 100 corresponds to 1k of A4 5% print.		1 - 999	10
Q	INTERVAL TIME	Setting of the leaving time when turning ON the power (h:hour)		1 - 255	2
R	HUM HOUR	Interval setting of the temperature and humidity monitoring time of "HUM" (h: hour)		1 - 24	2
S	HUM_DIF	The specified value of the area difference in humidity between the level at execution of the previous control and the current humidity		1 - 9	2
T	BK_RATIO	Magnification ratio setting (%) of the specified value of the BK position OPC drum traveling distance of "REV2_BK"		1 - 999	30
U	REV1_RATIO	OPC drum traveling distance value magnification ratio setting		1 - 255	100
V	HT_DIF	HT process control execution judgment developing bias variation value		1 - 255	60

Item/ Display		Content			Default value
W	DRUM REVERSE	Drum reverse rotation control setting	Enable	0	1
			Disable	1	

44-29

Purpose Setting

Function (Purpose) Set the operating conditions of the process control during a job.

Section Process

Operation/Procedure

1) Select a target item of setting with scroll key.
2) Enter the set value with 10-key.
3) Press [OK] key.

Item/Display		Content		Default value
A	COPY	During copy job	0: No execution 1: HV only 2: HV->HT	2
B	PRINTER	During print job		2
C	FAX	During FAX print job		2
D	SELF PRINT	During self print		2
E	CPY TO PRT TABLE	Half tone process control copier printer conversion table select	0: Gray balance calculation value 1: Fixed	0

HV: High density process control

HT: Half tone process control

44-37

Purpose Setting

Function (Purpose) Set the development bias correction level in the continuous printing operation.

Section Toner supply, developing

Operation/Procedure

1) Select a target item with scroll key
2) Enter the set value with 10-key.
3) Press [OK] key

Item/Display		Content	Setting range	Default value
A	DV_ADJ_K_L_DATA_1	DV bias correction data 1-3 in printing (low speed)	0 - 5	0
B	DV_ADJ_K_L_-DATA_2			
C	DV_ADJ_K_L_-DATA_3			
D	DV_ADJ_K_M_-DATA_1	DV bias correction data 1-3 in printing (middle speed)	0 - 5	0
E	DV_ADJ_K_M_DATA_2			
F	DV_ADJ_K_M_DATA_3			
G	DV_ADJ_START_K_L_1	DV bias correction starting position data 1-4 in printing (low speed)	1 - 12	4
H	DV_ADJ_START_K_L_2			3
I	DV_ADJ_START_K_L_3			1
J	DV_ADJ_START_K_L_4			1
K	DV_ADJ_START_K_M_1	DV bias correction starting position data 1-4 in printing (middle speed)	1 - 12	4
L	DV_ADJ_START_K_M_2			3
M	DV_ADJ_START_K_M_3			1
N	DV_ADJ_START_K_M_4			1

44-43

Purpose	Data display
Function (Purpose)	Display the identification information of the developing unit.
Section	Developing

Operation/Procedure

The identification number and the identification signal level of the developing unit are displayed.

The half tone process control is performed and the operation data are displayed.

Item/Display		Content
A	DVCH KIND K	Developing unit identification number

44-62

Purpose	Setup/Adjustment
Function (Purpose)	Set the process control execution conditions.
Section	Process

Operation/Procedure

This simulation allows collective change in the set contents of SIM44-4 and SIM44-28.A suitable one is selected among a number of options depending on the condition.

Select an item to be set.

- To change the image density in the high density area, select PROCON TARGET.
- To change the frequency of the process control operations select PROCON MODE.

Display/Item		Content
PROCON TARGET	ID DOWN(-2)	The registered value of the process control reference value are collectively changed
	ID DOWN(-1)	
	ID UP(+1)	
	ID UP(+2)	
	NORMAL(0)	The registered values of the process control reference values are collectively changed to the default value
	CUSTOM	The value set by SIM44-4 is restored
PROCON MODE	HIGH QUALITY(+2)	The values of the density correction execution timing mode are collectively changed
	HIGH QUALITY(+1)	
	PRINT PERFORMANCE(-1)	
	PRINT PERFORMANCE(-2)	
	NORMAL(0)	The value of the density correction execution timing mode are collectively changed to the default value
	CUSTOM	The value set by SIM44-28 is stored

When PROCON TARGET is selected.

1) Select the density level.

When PROCON MODE is selected.

1) Select the execution frequency of the process control.
2) Press [EXECUTE] key.
3) Press [YES] key.

46

46-2

Purpose	Adjustment
Function (Purpose)	Adjust the copy density in each copy mode.
Section	

Operation/Procedure

1) Select an adjustment target item with scroll key.
2) Enter the set value with 10-key.
   * When the △ ▽ key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
3) Press [OK] key. (The set value is saved.)

To adjust the copy density in the low density area, select the "LOW" mode and change the adjustment value. To adjust the copy density in the high density area, select the "HIGH" mode and change the adjustment value. When the adjustment value is increased, the copy density is increased. When the adjustment value is decreased, the copy density is decreased.

Item/Display		Content		Setting range	Default value
A	AUTO1	Auto 1	LOW	1 - 99	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	
D	TEXT/PRINTED PHOTO	Text/Printed Photo	LOW	1 - 99	50
			HIGH	1 - 99	
E	TEXT/PHOTO	Text/ Photograph	LOW	1 - 99	50
			HIGH	1 - 99	
F	PRINTED PHOTO	Printed Photo	LOW	1 - 99	50
			HIGH	1 - 99	
G	PHOTOGRAPH	Photograph	LOW	1 - 99	50
			HIGH	1 - 99	
H	MAP	Map	LOW	1 - 99	50
			HIGH	1 - 99	
I	AUTO1	Auto 1 (copy to copy)	LOW	1 - 99	50
			HIGH	1 - 99	
J	AUTO2	Auto 2 (copy to copy)	LOW	1 - 99	50
			HIGH	1 - 99	
K	TEXT	Text (copy to copy)	LOW	1 - 99	50
			HIGH	1 - 99	
L	TEXT/PRINTED PHOTO	Text printed photo (copy to copy)	LOW	1 - 99	50
			HIGH	1 - 99	
M	PRINTED PHOTO	Printed photo (copy to copy)	LOW	1 - 99	50
			HIGH	1 - 99	
N	LIGHT	Light	LOW	1 - 99	50
			HIGH	1 - 99	

46-4

Purpose	Adjustment
Function (Purpose)	Adjust the density in the image send mode (color mode)
Section	

Operation/Procedure

1) Select an adjustment target item with scroll key.
2) Enter the set value with 10-key.
   * When the △ ▽ key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
3) Press [OK] key. (The set value is saved.)

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

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

46-5

Purpose Adjustment

Function (Purpose) Adjust the density in the image send mode.

Section

Operation/Procedure

1) Select an adjustment target item with scroll key.
2) Enter the set value with 10-key.
   * When the △ ▽ key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
3) Press [OK] key. (The set value is saved.)

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

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

46-8

Purpose Adjustment

Function (Purpose) Adjust the image send mode color balance RGB.

Section

Operation/Procedure

1) Select an adjustment target with [R] [G] [B] keys on the touch panel.
2) Select an adjustment target item with scroll key.
3) Enter the set value with 10-key.
4) Press [OK] key. (The set value is saved.)

The color balance can be adjusted separately for the low density area and the high density area.

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

Item/Display		Content	Default value
A	LOW DENSITY POINT	Low density correction amount	50
B	HIGH DENSITY POINT	High density correction amount	50

46-9

Purpose Adjustment (DSPF mode)

Function (Purpose) Adjust the SPF mode scan image density (copy, image send mode)

Section

Operation/Procedure

1) Select an adjustment target mode with [OC] and [DSPF] keys on the touch panel.
2) Select an adjustment target item with scroll key on the touch panel.
3) Enter the set value with 10-key.
   * 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.

[DSPF]

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

[RSPF]

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

46-10

Purpose Adjustment

Function (Purpose) Adjust the copy density (in each copy mode).

Section

Operation/Procedure

1) Select an adjustment target mode with the touch panel key.
2) Select 600dpi or 1200dpi with the resolution select button.
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. A4 (11" x 8.5") paper is selected by priority. If there is no A4 (11" x 8.5") paper, A3 (11" x 17") paper is selected.

Item	Content
AUTO	Auto 1/Auto 2
TEXT	Text
TEXT/PRT PHOTO	Text/Printed Photo
TEXT/PHOTO	Text/Photograph
PRINTED PHOTO	Printed Photo
PHOTO	Photograph
MAP	Map
LIGHT	Light
COPY ORG	Copy document

Item/Display		Density level	Setting range	Default value
A - Q	POINT1 - 17	Point 1 - 17	1 - 999	500

46-16

Purpose Adjustment

Function (Purpose) Adjust the copy density manually.

Section

Operation/Procedure

1) Select an adjustment target item with scroll key.
2) Enter the set value with 10-key.
   * When the △ ▽ key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
3) Press [OK] key. (The set value is saved.)

When the adjustment value is increased, the image density is increased, and vice versa. A4 (11" x 8.5") paper is selected by priority. If there is no A4 (11" x 8.5") paper, A3 (11" x 17") paper is selected.

Item/Display		Density level	Setting range	Default value
A - Q	POINT1 - 17	Point 1 - 17	1 - 999	500

46-19

Purpose Setting

Function (Purpose) Set the operating conditions of document density scanning (copy, image send mode).

Section Scanner

Operation/Procedure

Select an item to be set with touch panel. When an item is selected, it is highlighted and the setting change is saved.

Item/Display	Content	Set value	Default value
AE MODE	Auto exposure mode	MODE1, MODE2	MODE2
AE STOP COPY	Auto exposure Stop (for copy)	REALTIME/ STOP/ PRESCAN	STOP
AE STOP FAX	Auto exposure Stop (for FAX)	ON/OFF	ON
AE STOP SCAN	Auto exposure Stop (for scanner)	REALTIME/ STOP/ PRESCAN	STOP
AE FILTER	Auto exposure filter setting	SOFT/ NORMAL/ SHARP	NORMAL
AE WIDTH	AE exposure width	FULL/PART	FULL

NOTE:

MODE 1	High gamma (high contrast images)
MODE 2	Normal gamma
STOP	The image density in 3 - 7mm area at the lead edge is scanned, and the output image density is determined according to the scanned density. (The output image density is even for all the surface.)
REALTIME	The densities of the document width are scanned sequentially, and the output image density is determined according to the density in each area of document. (The output image density may not be even for all the surface.)
AE WIDTH FULL	The document density scan area in the monochrome auto mode is 3 - 7mm at the document lead edge x the document width. This is not related to the PRESCAN mode.
AE WIDTH PART	The document density scan area in the monochrome auto mode is 3 - 7mm at the document lead edge x 100mm width. This is not related to the PRESCAN mode.

46-23

Purpose Setting

Function (Purpose) 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	K	0	K engine highest density correction mode: Enable	0 - 1	1
		1	K engine highest density correction mode: Disable		
B	BLACK MAX TARGET	Scanner target value for maximum density correction		0 - 999	500
C	RATIO LOW	High density correction ration (LOW)		0 - 100	50
D	RATIO HIGH	High density correction ration (HIGH)		0 - 100	5
E	DITHER THRESHOLD	Dither threshold		0 - 255	250

Item/Display		Content	Setting range	Default value
F	SLOPE THRESHOLD	Slope threshold	100 - 500	400

* When tone gap is generated in the high density area, set item A to "0". The density of high density part decreases. However, the tone gap is better.
* To increase the density in the high density area further, set item A to "1". The tone gap may occur in high density part.

46-24

Purpose Adjustment

Function (Purpose) Adjust copy and printer density (Auto adjustment)

Section

Operation/Procedure

1) Press [EXECUTE] key.
   The adjustment pattern is printed out.
2) Place the printed adjustment pattern on the document table then press [EXECUTE] key. The automatic adjustment of copy and printer density is executed, and then the adjustment result pattern of the copy mode as well as that of the printer mode is printed.
3) Press [OK] key.
   The half tone correction target registration is processed.
4) The half-tone correction execution menu is displayed. Press [EXECUTE] key. Half-tone correction is executed. When [RESULT] button is pressed after completion of correction, the data of the half-tone correction can be checked.

46-32

Purpose Adjustment

Function (Purpose) Adjust the reproducibility of the document background density in the automatic copy mode.

Section

Operation/Procedure

1) Select a target item of setting with scroll key.
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.

[DSPF-installed model]

Item	Display	Content	Setting range	Default value
A	COPY: OC	Copy mode (for OC)	1 - 250	196
B	COPY: DSPF (SIDE1)	Copy mode (for DSPF front surface)	1 - 250	196
C	COPY: DSPF (SIDE2)	Copy mode (for DSPF back surface)	1 - 250	196
D	SCAN: OC	Scanner mode (for OC)	1 - 250	196
E	SCAN: DSPF (SIDE1)	Scanner mode (for DSPF front surface)	1 - 250	196
F	SCAN: DSPF (SIDE2)	Scanner mode (for DSPF back surface)	1 - 250	196
G	FAX: OC	FAX mode (for OC)	1 - 250	196
H	FAX: DSPF (SIDE1)	FAX mode (for DSPF front surface)	1 - 250	196
I	FAX: DSPF (SIDE2)	FAX mode (for DSPF back surface)	1 - 250	196

46-37

Purpose Adjustment

Function (Purpose) Adjust the reproducibility of the scan image color document (copy, image send mode).

Section

Operation/Procedure

1) Select a target item with scroll key.
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	104
B	G-Ratio	Gray making setting (G)	0 - 1000	819
C	R-Ratio RIP	Print gray making setting (R)	0 - 1000	299
D	G-Ration RIP	Print gray making setting (G)	0 - 1000	587

* B-Ratio: The value of gray making setting (B) is obtained from the formula below.
  1000-R-Ratio - G-Ratio

When [DEFAULT] key is pressed, the values are set to the initial values (default). When the adjustment values of items A and B are decreased, the copy density of yellow images is increased. When the adjustment values are increased, the density is decreased. When the adjustment value of item A is decreased and the adjustment value of item B is increased, the copy density of red images is increased. When the adjustment value of item A is increased and the adjustment value of item B is decreased, the copy density is decreased.

46-39

Purpose Adjustment

Function (Purpose) Adjust the sharpness of FAX send images.

Section

Operation/Procedure

1) Select a target item with scroll key.
2) Enter the set value with 10-key.
3) Press [OK] key. (The set value is saved.)

Input large numeric value to obtain crispy image. Input small numeric value to decrease moire.

Item/Display		Content	Setting range	Default value
A	200 x 100 [DPI] OFF	200 x 100 [DPI] half tone OFF	0 - 2	1
B	200 x 200 [DPI] OFF	200 x 200 [DPI] half tone OFF	0 - 2	1
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

46-40

Purpose	Adjustment
Function (Purpose)	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

46-41

Purpose	Adjustment
Function (Purpose)	Adjust the FAX send image density
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	Print mode	Auto	1 - 6	1	1 (AUTO)
		EXP1		Exposure 1		2	
		EXP2		Exposure 2		3	
		EXP3		Exposure 3		4	
		EXP4		Exposure 4		5	
		EXP5		Exposure 5		6	

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.

46-42

Purpose	Adjustment
Function (Purpose)	Adjust the FAX send image density. (Fine)
Section	

Operation/Procedure

1) Set the original on the original table.
2) Enter the set value with 10-key.
3) Press [EXECUTE] key, or [OK] key

   When [EXECUTE] key is pressed, the adjustment value is set and the scanned document image is outputted.

Item/Display		Content	Setting range	Default value
A	AUTO	Fine/Automatic	1 - 99	50
B	EXPOSURE1	Fine/Exposure 1	1 - 99	50
C	EXPOSURE2	Fine/Exposure 2	1 - 99	50
D	EXPOSURE3	Fine/Exposure 3	1 - 99	50
E	EXPOSURE4	Fine/Exposure 4	1 - 99	50
F	EXPOSURE5	Fine/Exposure 5	1 - 99	50
G	AUTO H_TONE	Fine/Automatic/ Half tone	1 - 99	50
H	EXPOSURE1 H_TONE	Fine/Exposure 1/Half tone	1 - 99	50
I	EXPOSURE2 H_TONE	Fine/Exposure 2/ Half tone	1 - 99	50
J	EXPOSURE3 H_TONE	Fine/Exposure 3/Half tone	1 - 99	50
K	EXPOSURE4 H_TONE	Fine/Exposure 4/ Half tone	1 - 99	50
L	EXPOSURE5 H_TONE	Fine/Exposure 5/Half tone	1 - 99	50
M	EXECUTE MODE	AUTO	Fine/Auto	1 - 12	1	1 (AUTO)
		EXP1	Fine/Exposure 1		2	
		EXP2	Fine/Exposure 2		3	
		EXP3	Fine/Exposure 3		4	
		EXP4	Fine/Exposure 4		5	
		EXP5	Fine/Exposure 5		6	
		AUTO H_TONE	Fine/Automatic/ halftone		7	
		EXP1 H_TONE	Fine/Exposure 1 /Half tone		8	
		EXP2 H_TONE	Fine/Exposure 2 /Half tone		9	
		EXP3 H_TONE	Fine/Exposure 3 /Half tone		10	
		EXP4 H_ONE	Fine/Exposure 4 /Half tone		11	
		EXP5 H_TONE	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.

46-43

Purpose	Adjustment
Function (Purpose)	Adjust the FAX send image density. (Super Fine)
Section	

Operation/Procedure

1) Set the original on the original table.
2) Enter the set value with 10-key.
3) Press [EXECUTE] key, or [OK] key

   When [EXECUTE] key is pressed, the adjustment value is set and the scanned document image is outputted.

Item/Display		Content	Setting range	Default value
A	AUTO	Super Fine/Auto	1 - 99	50
B	EXPOSURE1	Super Fine/Exposure 1	1 - 99	50
C	EXPOSURE2	Super Fine/Exposure 2	1 - 99	50
D	EXPOSURE3	Super Fine/Exposure 3	1 - 99	50
E	EXPOSURE4	Super Fine/Exposure 4	1 - 99	50
F	EXPOSURE5	Super Fine/Exposure 5	1 - 99	50
G	AUTO H_TONE	Super Fine /Auto/Half tone	1 - 99	50
H	EXPOSURE1 H_TONE	Super Fine/Exposure 1 /Half tone	1 - 99	50
I	EXPOSURE2 H_TONE	Super Fine/Exposure 2 /Half tone	1 - 99	50
J	EXPOSURE3 H_TONE	Super Fine/Exposure 3 /Half tone	1 - 99	50
K	EXPOSURE4 H_TONE	Super Fine/Exposure 4 /Half tone	1 - 99	50

Item/Display			Content	Setting range		Default value
L	EXPOSURE5 H_TONE		Super Fine/Exposure 5 /Half tone	1 - 99		50
M	EXECUTE MODE	AUTO	Super Fine/Auto	1 - 12	1	1 (AUTO)
		EXP1	Super Fine/Exposure 1		2	
		EXP2	Super Fine/Exposure 2		3	
		EXP3	Super Fine/Exposure 3		4	
		EXP4	Super Fine/Exposure 4		5	
		EXP5	Super Fine/Exposure 5		6	
		AUTO H_TOE	Super Fine/Auto /Half tone		7	
		EXP1 H_TOE	Super Fine/Exposure 1 /Half tone		8	
		EXP2 H_TOE	Super Fine/Exposure 2 /Half tone		9	
		EXP3 H_TOE	Super Fine/Exposure 3 /Half tone		10	
		EXP4 H_TOE	Super Fine/Exposure 4 /Half tone		11	
		EXP5 H_TOE	Super Fine/Exposure 5 /Half tone		12	

To check the adjustment density level of items A - L, set the document and set the setting value of item M according to items A - L, and press [EXECUTE] key.

46-44

Purpose Adjustment

Function (Purpose) 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

Item/Display			Content	Setting range		Default value
M	EXECUTE MODE	AUTO	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_TOE	Ultra Fine/Auto/Half tone		7	
		EXP1 H_TOE	Ultra Fine/Exposure 1/Half tone		8	
		EXP2 H_TOE	Ultra Fine/Exposure 2 /Half tone		9	
		EXP3 H_TOE	Ultra Fine/Exposure 3 /Half tone		10	
		EXP4 H_TOE	Ultra Fine/Exposure 4 /Half tone		11	
		EXP5 H_TOE	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

Purpose Adjustment

Function (Purpose) 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

Item/Display			Content	Setting range		Default value
M	EXECUTE MODE	AUTO	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.

46-46

Purpose Adjustment

Function (Purpose) Adjust the FAX send image density. (RGB RIP).

Section

Operation/Procedure

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

   When the set value is in crease , the density becomes higher. when the set value is decreased, the density becomes lower.

Item/Display		Content	Setting range	Default value
A	STANDARD RIP	600dpi/Auto 1	1 - 99	50
B	FINE RIP	600dpi/Exposure 1	1 - 99	50
C	FINE RIP H TONE	600dpi/Exposure 2	1 - 99	50
D	SUPER FINE RIP	600dpi/Exposure 3	1 - 99	50
E	SUPER FINE RIP H TONE	600dpi/Exposure 4	1 - 99	50
F	ULTRA FINE RIP	600dpi/Exposure 5	1 - 99	50
G	ULTRA FINE RIP H TONE	600dpi/Auto /Half tone 1	1 - 99	50
H	600DPI RIP	600dpi/Exposure 1 /Half tone	1 - 99	50
I	600DPI RIP H TONE	600dpi/Exposure 2 /Half tone	1 - 99	50

46-47

Purpose Setting

Function (Purpose) Set the compression rate of copy and scan images (JPEG).

Section

Operation/Procedure

1) Select a target item with scroll keys.
2) Enter the set value with 10-key.
3) Press [OK] key.

Operation mode	Item/Display			Content	Setting range	Default value
FILING (COLOR mode)	A	FILING (C)	LOW	Low compression (Color)	0	0 (LOW)
			MIDDLE	Meddle compression (Color)	1	
			HIGH	High compression (Color)	2	
FILING (GRAY) (Monochrome half tone mode)	B	FILING (G)	LOW	Low compression (Gray)	0	0 (LOW)
			MIDDLE	Meddle compression (Gray)	1	
			HIGH	High compression (Gray)	2	
PRINT HOLD (COLOR mode)	C	PRINT (C)	LOW	Low compression (Color)	0	0 (LOW)
			MIDDLE	Meddle compression (Color)	1	
			HIGH	Highcompression (Color)	2	
PRINT HOLD (GRAY) (Monochrome half tone mode)	D	PRINT (G)	LOW	Low compression (Gray)	0	0 (LOW)
			MIDDLE	Meddle compression (Gray)	1	
			HIGH	High compression (Gray)	2	
PUSH SCAN (COLOR mode)	E	SCAN (C)	MIDDLE 1	Middle compression mode 1 Low compression	0	1 (MIDDLE2)
			MIDDLE 2	Middle compression mode 3 Medium compression	1	
			MIDDLE 3	Middle compression mode 3 High compression	2	
PUSH SCAN (GRAY) (Monochrome half tone mode)	F	SCAN (G)	MIDDLE 1	Middle compression mode 1 Low compression	0	1 (MIDDLE2)
			MIDDLE 2	Middle compression mode 2 Medium compression	1	
			MIDDLE 3	Middle compression 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.

46-48

Purpose Setting

Function (Purpose) Set the output resolution in each copy mode.

Section

Operation/Procedure

1) Select the output resolution of each copy mode with the key.

   In order to change the reproducibility of line images, change this setting.

600dpi mode: Line images becomes thicker. The reproducibility of line images is increased. 1200dpi mode: Line images are reproduced finer than 600dpi mode.

Item	Button display	Content	Default value
AUTO	600DPI ED	Automatic	600DPI ED
	600DPI DT		
	1200DPI DT		
TEXT/PRT PHOTO	600DPI ED	Text Printed photo	600DPI ED
	600DPI DT		
	1200DPI DT		
TEXT/PHOTO	600DPI DT	Text photograph	600DPI DT
	1200DPI DT		
PRINTED PHOTO	600DPI DT	Printed photo	1200DPI DT
	1200DPI DT		
PHOTO	600DPI DT	Photograph	1200DPI DT
	1200DPI DT		

* ED: Error diffusion DT: Dither .

46-51

Purpose Adjustment

Function (Purpose) Adjust the gamma for the copy mode heavy paper mode and the image process mode (manual adjustment).

Section

Operation/Procedure

1) Select a target adjustment mode with the touch panel key [PAPER/DITHER].
2) Select a target adjustment density level with scroll key.
3) Enter the set value with 10-key.
4) Press [EXECUTE] key, or [OK] key.

   When [EXECUTE] key is pressed, the self print image is outputted. A4 (11" x 8.5") paper is selected by priority. If there is no A4 (11" x 8.5") paper, A3 (11" x 17") paper is selected.

When the image density is insufficient or a background copy is made in heavy paper copy, change this adjustment value to adjust the image density.

Item/Display	Content	
HEAVY	Heavy paper	
DITH1	600dpi Dither	For PRINTED PHOTO/ PHOTO / TEXT PHOTO MODE
DITH2	1200dpi dither	For TEXT PRINTED PHOTO / TEXT PHOTO / PRINTED PHOTO / PHOTO MODE

Item/Display		Setting range	Default value
A - Q	POINT1 - 17	1 - 999	500

46-52

Purpose Data clear/Reset

Function (Purpose) Set the gamma default for the copy mode heavy paper and the image process mode.

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.

46-54

Purpose Adjustment

Function (Purpose) Perform the engine halftone automatic density adjustment (dither).

Section

Operation/Procedure

1) Press [EXECUTE] key.

   The high density process control is started to make 48 patch self print. (A4 (11" x 8.5") or A3 (11" x 17") paper in the paper feed tray is used.)
2) Place the 48 patch self print on the document table, and press [EXECUTE] key.

   Scanning the 48 patch self print is started.After scanning the 48 patch self print, the 17 patch self print is automatically printed.
3) Press [OK] key.

   After completion of the correction amount registration, the screen shifts to the dither selection menu.
4) Press [EXECUTE] key.

   The 48 patch self print is printed.
5) Place the 48 patch self print on the document table, and press [EXECUTE] key.

   Scanning the 48 patch self print is started. After scanning the patch, the screen automatically shifts to the dither selection menu.
6) After completion of the adjustment of all the density adjustment items (dither), press [OK] key.

46-55

Purpose Adjustment/Setup

Function (Purpose) Adjust the drop out color in the image send mode (monochrome manual text mode).

Section

Operation/Procedure

In the image send mode (monochrome manual text mode), the range where color images are reproduced as monochrome images is adjusted.

1) Enter the adjustment value with 10-key and press [OK] key.

   When the adjustment value is increased, colors dropout becomes easy to narrow the reproduction range. When the adjustment value is decreased, color dropout becomes difficult to widen the reproduction range.

Item/Display		Content	Setting range	Default value
A	CHROMA	Dropout color range adjustment	0 - 6	3

2) Scan the document in the image send mode (monochrome manual text mode), and check the adjustment result.

46-58

Purpose Adjustment/Setup

Function (Purpose) Set the copy mode pseudo resolution (Smoothing process).

Section

Operation/Procedure

1) Select an item (mode) to be set with the button and the scroll key.
2) Enter the set value with 10-key.
3) Press [OK] key.

1(ON): 9600 (equivalent) x 600 dpi

0 (OFF): 600 x 600 dpi

The setting is reflected only the image edge area.

Item/Display		Content (copy mode)	Setting range		Default value
A	AUTO	Auto	OFF	0	0 (OFF)
			ON	1	
B	TEXT	Text	OFF	0	1 (ON)
			ON	1	
C	TEXT PRT	Text print	OFF	0	0 (OFF)
			ON	1	
D	PRINTED PHOTO	Printed Photo	OFF	0	0 (OFF)
			ON	1	

Item/Display		Content (copy mode)	Setting range		Default value
E	TEXT PHOTO	Text photograph	OFF	0	0 (OFF)
			ON	1	
F	PHOTO	Photograph	OFF	0	0 (OFF)
			ON	1	
G	MAP	Map	OFF	0	1 (ON)
			ON	1	
H	LIGHT	Light document	OFF	0	0 (OFF)
			ON	1	
I	CPY TO CPY/AUTO	Auto (copy document)	OFF	0	1 (ON)
			ON	1	
J	CPY TO CPY/TXTE	Text (copy document)	OFF	0	0 (OFF)
			ON	1	
K	CPY TO CPY/TXT PRT	Text print	OFF	0	0 (OFF)
			ON	1	
L	CPY TO CPY/ PHOTO	Printed Photo (copy document)	OFF	0	0 (OFF)
			ON	1	

46-59

Purpose Adjustment/Setup

Function (Purpose) Perform the copy mode pseudo resolution image process adjustment.

Section

Operation/Procedure

1) Select the MAIN (main scanning direction) or the SUB (sub scanning direction) button.
2) Press the button of the adjustment value of the target copy mode.

Important

This adjustment is valid when SIM46-58 Pseudo resolution setting is set to ON. The thickness of images in the section processed by smoothing is changed.

Positive: The image in the section processed by smoothing becomes thicker.

Negative: The image in the section processed by smoothing becomes thinner.

Mode	Item	button	Content	Default value	NOTE
MAIN	MONO COPY	(-)2	Monochrome copy	0	Main scanning direction smoothing fine adjustment Negative (-) direction: The smoothing section becomes thinner. Positive (+) direction: The smoothing section becomes thicker.
		(-)1			
		0			
		(+)1			
		(+)2			
	MONO PRINT	(-)2	Monochrome print	0	
		(-)1			
		0			
		(+)1			
		(+)2			
SUB	MONO COPY	(-)2	Monochrome copy	0	Sub scanning direction smoothing fine adjustment Negative (-) direction: The smoothing section becomes thinner. Positive (+) direction: The smoothing section becomes thicker.
		(-)1			
		0			
		(+)1			
		(+)2			
	MONO PRINT	(-)2	Monochrome print	0	
		(-)1			
		0			
		(+)1			
		(+)2			

46-60

Purpose Adjustment/Setup

Function (Purpose) Adjust the sharpness in the color auto mode.

Section

Operation/Procedure

1) Select a target item with scroll keys on the touch panel.
2) Input numeric value corresponding to sharpness level (filter process mode).
3) Press [OK] key.

This is used to adjust the sharpness in the color auto copy mode and the smoothness (roughness) in the dark area.

Item/Display		button	Content	Default value	NOTE
A	CPY PUSH AUTO FILTER LEVEL	Sharpness (filter) adjustment for the automatic push scan mode (Text, Printed Photo / Printed Photo images)	SOFT	1	2
			CENTER	2	
			HIGH	3	
B	B/W COPY	Soft filter applying setting in monochrome copy mode	OFF	0	1
			ON	1	
C	COLOR PUSH RGB	Soft filter applying setting to image in push scan color mode	OFF	0	1
			ON	1	
D	B/W PUSH	Soft filter applying setting to image in push scan monochrome mode	OFF	0	1
			ON	1	
E	B/W PRINT	Setting of ON/OFF of soft filter application to monochrome print images	OFF	0	0
			ON	1	

46-61

Purpose Adjustment/Setup

Function (Purpose) Adjust the area separation recognition level.

Section

Operation/Procedure

1) Select an adjustment mode.
2) Select a target adjustment item with scroll key on the touch panel.
3) Enter the adjustment value using the 10-key.
4) Press [OK] key.

Important

This must be set to the default unless any change is specially required. When the adjustment value is set to a value greatly different from the default value, image quality trouble may occur for some documents.

Item/Display		Content
COLOR	AUTO	[Color/Gray] Auto
	TPP	[Color/Gray] Manual (Text print)
	COPY(TPP)	[Color/Gray] Copy document (Text print)
MONO	AUTO	[Monochrome] Auto
	TPP	[Monochrome] Manual (Text print)
	COPY(TPP)	[Monochrome] Copy document (Text print)

Item/Display		Content	Setting range	Default value
A	SEGMENT: SWITCH [TXT ON SCR]	Detection ON/OFF: Text on dot	0 - 1	0
B	SEGMENT: SWITCH [LINE SCR]	Detection ON/OFF: line screen	0 - 1	0
C	SEGMENT: SWITCH [SMALL SCR]	Detection ON/OFF: Dot in a small area	0 - 1	0
D	SEGMENT: SWITCH [HIGH LPI]	Detection ON/OFF: High line number judgment select	0 - 1	0

Item/Display		Content	Setting range	Default value
E	SEGMENT: SWITCH [TXT ON SCR IMAGE SEND]	Detection ON/OFF: Text on image send dots	0 - 1	0
F	SEGMENT: ADJUST [BK TXT 1]	Detection level adjustment: Black text 1	1 - 99	50
G	SEGMENT: ADJUST [CL TXT 1]	Detection level adjustment: Color text 1	1 - 99	50
H	SEGMENT: ADJUST [BK TXT 2, CL TXT 2]	Detection level adjustment: Black text 2, Color text 2	1 - 49	25
I	SEGMENT: ADJUST [TXT ON SCR 1]	Detection level adjustment: Text 1 on dots	1 - 99	50
J	SEGMENT: ADJUST [TXT ON SCR 2]	Detection level adjustment: Text 2 on dots	1 - 99	50
K	SEGMENT: ADJUST [TXT ON SCR AREA]	Detection level adjustment: Detection area of text on dots	1 - 15	8
L	SEGMENT: ADJUST [HIGH LPI]	Detection level adjustment: High line number judgment	1 - 49	25
M	SEGMENT: ADJUST [BK]	Detection level adjustment: No chrome judgment	1 - 99	50
N	SEGMENT: ADJUST [CL]	Detection level adjustment: Chrome judgment	1 - 99	50
O	SEGMENT: ADJUST [TXT ON BG]	Detection level adjustment: Text on background	1 - 99	50
P	SEGMENT: ADJUST [SCR 1 HIGH]	Detection level adjustment: High density dots	1 - 49	25
Q	SEGMENT: ADJUST [SCR 1 MIDDLE]	Detection level adjustment: Medium density dots	1 - 49	25
R	SEGMENT: ADJUST [SCR 1 LOW]	Detection level adjustment: Low density dots	1 - 49	25
S	SEGMENT: ADJUST [SCR 2]	Detection level adjustment: Dot 2	1 - 15	8
T	SEGMENT: ADJUST [SCR 3]	Detection level adjustment: Dot 3	1 - 15	8
U	SEGMENT: ADJUST [LINE HALFTONE]	Detection level adjustment: line screen	1 - 49	25

46-62

Purpose Adjustment/Setup

Function (Purpose) Set the operating conditions of the ACS, the area separation, the background image process and the auto exposure mode.

Section

Operation/Procedure

1) Select a target adjustment item with scroll key on the touch panel.
2) Enter the adjustment value using the 10-key.
3) Press [OK] key.

Important

This must be set to the default unless any change is specially required. When the adjustment value is set to a value greatly different from the default value, image quality trouble may occur for some documents.

Item/Display		Content		Setting range	Default value
A	SW_ACS	ACS judgment reference area select		0 - 1	1
B	TEXT_IMAGE	Text/Image judgment priority level adjustment		0 - 6	3
C	TEXT_BLANK	Text/Blank judgment priority level adjustment		0 - 6	4
D	HT_LV	Dot area judgment threshold value adjustment		0 - 6	1
E	AE_AREA_LV	Color AE judgment target area adjustment		0 - 6	3
F	AE_LV_CC	AE background detection division result adjustment:		0 - 8	4
G	AE_LV_MC	AE background detection division result adjustment:		0 - 8	4
H	AE_LV_CS	AE background detection division result adjustment: For color scan		0 - 8	4
I	AE_LV_MS	AE background detection division result adjustment: For monochrome scan		0 - 8	4
J	AE_JUDGE_LV_L_U	Color AE background density threshold value adjustment (lower limit)		0 - 4	0
K	AE_JUDGE LV_L_O	Color AE background density threshold value adjustment (upper limit)		0 - 10	0
L	AE_JUDGE_LV_C	Color AE background detection level adjustment (chroma)		0 - 10	5
M	AE_ONOFF_CC	AE mode ON/OFF switch:	ON	0	0 (ON)
			OFF	1	
N	AE_ONOFF_MC	AE mode ON/OFF switch:	ON	0	0 (ON)
			OFF	1	
O	AE_ONOFF_CS	AE mode ON/OFF switch : For color scan	ON	0	0 (ON)
			OFF	1	
P	AE _ONOFF_MS	AE mode ON/OFF switch : For monochrome scan	ON	0	0 (ON)
			OFF	1	
Q	BLANK_JUDGE_LV_L	Blank judgment level adjustment (value)		0 - 10	0
R	BLANK_JUDGE_LV_C	Blank judgment level adjustment (chroma)		0 - 10	0
S	MODE0_UNDER	Mode 0 developing paper mode select		0 - 6	0
T	MODE1_UNDER	Mode 1 developing paper mode select		0 - 6	0
U	MODE5_UNDER	Mode 5 developing paper mode select		0 - 6	0
V	MODE6_UNDER	Mode 6 developing paper mode select		0 - 6	0
W	SW_CHANGE_MODE0	Mode 0: Mode judgment select		0 - 6	0
X	SW_CHANGE_MODE1	Mode 1: Mode judgment select		0 - 6	1
Y	SW_CHANGE_MODE2	Mode 2: Mode judgment select		0 - 6	2
Z	SW_CHANGE_MODE3	Mode 3: Mode judgment select		0 - 6	3
AA	SW_CHANGE_MODE4	Mode 4: Mode judgment select		0 - 6	4
AB	SW_CHANGE_MODE5	Mode 5: Mode judgment select		0 - 6	5
AC	SW_CHANGE_MODE6	Mode 6: Mode judgment select		0 - 6	6

46-63

Purpose Adjustment

Function (Purpose) Aadjust the density in the low density area of a scan image.

Section

Operation/Procedure

1) Select a target adjustment item with scroll key on the touch panel.
2) Enter the adjustment value using the 10-key.
3) Press [OK] key.

When the adjustment value is increased, reproducibility of the background and the low density image is increased. When the adjustment value is decreased, reproducibility of the background and the low density image is decreased.

Item/Display		Content	Setting range	Default value
A	COLOR PUSH: TEXT/ PRINTED PHOTO	Text print (Color PUSH)	1 - 9	3
B	COLOR PUSH: TEXT	Text (Color PUSH)	1 - 9	3
C	COLOR PUSH: PRINTED PHOTO	Printed photo (Color PUSH)	1 - 9	5
D	COLOR PUSH: PHOTOGRAPH	Photograph (Color PUSH)	1 - 9	5
E	COLOR PUSH: TEXT/ PHOTO	Text photograph (Color PUSH)	1 - 9	3
F	COLOR PUSH: MAP	Map (Color PUSH)	1 - 9	5

46-66

Purpose Adjustment

Function (Purpose) Adjust the reproduction capability of water marks in the copy/printer mode.

Section

Operation/Procedure

This is to adjust the reproduction capability of watermarks in the copy/printer mode.

1) Select the adjustment mode.
2) Select an adjustment item according to the necessity.
3) Enter the adjustment value with 10-key and press [OK] key.
4) Make a copy, and check the adjustment result.

Category	Item/ Display		Content	Setting range	Default value	NOTE
PATTERN	A	WOVEN DENBK LOW	Watermark density level (LOW)	0 - 255	15	The adjustment value is changed to increase or decrease the density of the watermark of background documents. To increase the watermark density, increase the adjustment value. NOTE: When the adjustment value is increased, the watermark area which is originally not reproduced becomes difficult to hide. When the adjustment value is decreased, the watermark area which is originally reproduced becomes easy to hide.
	B	WOVEN DENBK MIDDLE	Watermark density level (MIDDLE)	0 - 255	19	
	C	WOVEN DENBK HIGH	Watermark density level (HIGH)	0 - 255	23	
	D	CONTRAST	Contrast adjustment	0 - 255	2	This is used to adjust the variation in the watermark density when the adjustment value of the watermark print/ contrast adjustment in the system setting is changed by 1. When this value is increased, the variation is also increased. When the adjustment value is 0, the result of the contrast adjustment is not reflected. (* The adjustment value must be set to 1 or greater.)
	E	HT TYPE (POSI)	For halftone index watermark type positive	42 - 43	42	To reproduce the containing characters of watermark copy more clearly, set to 43. In that case, however, the containing characters of the watermark document can be easily reproduced.
	F	HT TYPE (NEGA)	For halftone index watermark type negative	42 - 43	42	

Category	Item/Display		Content		Setting range	Default value	NOTE
COPY MODE	A	TEXT/ PRINTED PHOTO	Text/ Printed Photo mode	OFF	0	1	Normally set to the default. No need to change in the market.
				ON	1		
	B	TEXT	Text mode	OFF	0	1	
				ON	1		
	C	PRINTED PHOTO	Printed Photo mode	OFF	0	1	
				ON	1		
	D	PHOTOGRAPH	Photograph mode	OFF	0	1	
				ON	1		
	E	TEXT/ PHOTO	Text/ Photograph mode	OFF	0	1	
				ON	1		
	F	MAP	Map mode	OFF	0	1	
				ON	1		
	G	LIGHT	Light density document mode	OFF	0	1	
				ON	1		
	H	TEXT/ PRINTED PHOTO (CPY TO CPY)	Copy document: selection of the text print mode	OFF	0	1	
				ON	1		
	I	TEXT (CPY TO CPY)	Copy document: selection of the text mode	OFF	0	1	
				ON	1		
	J	PRINTED PHOTO (CPY TO CPY)	Copy document: selection of the printed photo mode	OFF	0	1	
				ON	1		
	K	AUTO	Automatic mode	OFF	0	1	
				ON	1		
	L	DEFAULT MODE	When the default exposure mode background is ON, the exposure mode to be set is specified.	TEXT/ PRINTED PHOTO	0	0	
				TEXT	1		
				PRINTED PHOTO	2		
				PHOTOGRAPH	3		
				TEXT/ PHOTO	4		
				MAP	5		

Category	Item/Display		Content	Setting range	Default value	NOTE
POSITION	A	LINE SPACE 1	Line space in the watermark print box (24P - 36P)	0 - 200	20	
	B	LINE SPACE 2	Line space in the watermark print box (37P - 48P)	0 - 200	20	
	C	LINE SPACE 3	Line space in the watermark print box (49P - 64P)	0 - 200	20	
	D	LINE SPACE 4	Line space in the watermark print box (65P - 80P)	0 - 200	20	
	E	BLANK H/B 1	Upper margin/ Lower margin in the watermark print box (24P - 36P)	0 - 200	10	
	F	BLANK H/B 2	Upper margin/ Lower margin in the watermark print box (37P - 48P)	0 - 200	10	
	G	BLANK H/B 3	Upper margin/ Lower margin in the watermark print box (49P - 64P)	0 - 200	10	
	H	BLANK H/B 4	Upper margin/ Lower margin in the watermark print box (65P - 80P)	0 - 200	10	
	I	BLANK L/R 1	Left margin/ Right margin in the watermark print box (24P - 36P)	0 - 200	60	
	J	BLANK L/R 2	Left margin/ Right margin in the watermark print box (37P - 48P)	0 - 200	90	
	K	BLANK L/R 3	Left margin/ Right margin in the watermark print box (49P - 64P)	0 - 200	120	
	L	BLANK L/R 4	Left margin/ Right margin in the watermark print box (65P - 80P)	0 - 200	150	

46-74

Purpose Adjustment

Function (Purpose) Copy balance adjustment (Auto adjustment)/Printer balance adjustment (Auto adjustment).

Section

Operation/Procedure

This simulation is used to perform SIM46-24 and SIM67-24 continuously.

To perform both the copy balance adjustment (Automatic adjustment) and the printer 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 balance adjustment pattern is printed.
2) Place the printed adjustment pattern on the document table.
3) Press [EXECUTE] key, and the copy balance adjustment is performed and the adjustment result pattern is printed.
4) Press [EXECUTE] key, and the printer balance adjustment pattern is printed.
5) Place the printed adjustment pattern on the document table
6) Press [EXECUTE] key, and the printer balance adjustment (automatic adjustment) is performed and the adjustment result pattern is printed.
7) Press [OK] key, and the halftone correction target is registered.
8) When [EXECUTE] key is displayed, press it.

When "COMPLETED THIS PROCEDURE" is displayed, the adjustment is completed.

Important

The adjustment result becomes effective only when the adjustment procedure for both copy and print mode have completed successfully. For example, when the copy balance adjustment (automatic adjustment) is performed and the simulation is canceled, the adjustment result is not effective.

46-90

Purpose Adjustment

Function (Purpose) Set the process operation of high-compression PDF images.

Section

Operation/Procedure

1) Select a target adjustment mode with [TEXT], [COLOR] and [BG LAYER] keys.
2) Select a target adjustment item with scroll key.
3) Enter the set value with 10-key.
4) Press [OK] key.
   The set value is saved.

Item	Button	Display	Content	Setting range	Default value
A	TEXT	GLYPH SENSITIVITY	Text handling selection	0 - 2	0
B		BG SW FOR FINDLINES	Line handling selection	0 - 1	0
C		HOR FINDLINES SW	Line detection SW (H)	0 - 2	0
D		VERT FINDLINES SW	Line detection SW (V)	0 - 2	0
E		FGCOLOR INDEXING SEL	Text color number adjustment SW	0 - 3	0
F		FGCOLOR INDEXING ADJ	Text color adjustment	0 - 4	2
A	COLOR	LUMINANCE ADJUSTMENT	Luminance adjustment	0 - 4	2
B		CHROMA INTENT	Chroma selection	0 - 2	1
C		NEUTRAL ADJUSTMENT	Neutral adjustment	0 - 2	0
D		R-RATIO ADJUSTMENT	Gray scale adjustment (R)	0 - 1000	299
E		G-RATIO ADJUSTMENT	Gray scale adjustment (G)	0 - 1000	587
A	BG LAYER	BG LAYER INTENT 1	Speed priority setting	0 - 2	1
B		BG LAYER INTENT 2	Image quality priority setting	0 - 2	1

46-91

Purpose Adjustment

Function (Purpose) Adjust the reproduction capability of black text

Section

Operation/Procedure

1) Select an item to be set with the scroll key.
2) Enter the set value with 10-key.
3) Press [OK] key. The adjustment value is set.

Item	Display	Content	Description	Setting range	Default value
A	SEGMENT PARAM	Area separation setting select	0: Other than image send mode black text emphasis 1: Image send mode black text emphasis	0 - 1	0
B	BG: JPEG QUALITY LV [COL: COMPACT]	JPEG recompression level adjustment	The JPEG compression ratio of the background layer is selected. 0: Low 1: Middle 2: High	0 - 2	1
C	BG: JPEG QUALITY LV [COL: ULTRA FINE]	JPEG recompression level adjustment		0 - 2	1
D	BG: JPEG QUALITY LV [GRY: COMPACT]	JPEG recompression level adjustment		0 - 2	1
E	BG: JPEG QUALITY LV [GRY: ULTRA FINE]	JPEG recompression level adjustment		0 - 2	1
F	FG: TARGET AREA	Front ground extraction area select	0: type0 1: type1 2: type2	0 - 2	0
G	FG: TEXT DENSITY [COL]	Front ground black text density adjustment	The black text density in the front ground layer is changed. 0: Dark - 5: Default - 10: Light	0 - 10	5
H	FG: TEXT DENSITY [GRY]	Front ground black text density adjustment		0 - 10	5
I	ULTRA FINE MODE	High compression/ Ultra Fine mode select	0: High compression mode 1: Ultra fine mode	0 - 1	0

NOTE: This must be set to the default unless any change is specially required. When the adjustment value is changed greatly from the initial value an image quality trouble may occur.

48

48-1

Purpose Adjustment

Function (Purpose) Adjust the scan image magnification ratio (in the main scanning direction and the sub scanning direction).

Section Scanner

Operation/Procedure

1) Select a target adjustment item with scroll key on the touch panel.
2) Enter the set value with 10-key.
3) Press [OK] key.
   The set value is saved.

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

A change of "1" in the adjustment value of item A, C or E corresponds to a change of about 0.02% in the copy magnification ratio.

A change of "1" in the adjustment value of item B or D corresponds to a change of about 0.1% in the copy magnification ratio.

[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

48-5

Purpose	Adjustment
Function (Purpose)	Correction the scan image magnification ratio (in the sub scanning direction).
Section	Scanner

Operation/Procedure

1) Select a target adjustment item with scroll key on the touch panel.
2) Enter the set value with 10-key.
3) Press [OK] key.
   The set value is saved.

When the image magnification ratio in the sub scanning direction is adjusted with SIM48-1, and a different magnification ratio is specified, and the image magnification ratio is not satisfactory, perform this adjustment. When there is an error in the image magnification ratio in reduction, change the adjustment value in the high speed mode. When there is an error in the image magnification ratio in enlargement, change the adjustment value in the low speed mode.

Item/Display		Content	Setting range	Default value
A	MR (HI)	Scanner motor (High speed)	1 - 99	50
B	MR(MID)	Scanner motor (Reference speed)	1 - 99	50
C	MR(LO)	Scanner motor (Low speed)	1 - 99	50
D	SPF(HI)	Document feed (SPF) motor (High speed)	1 - 99	50
E	SPF(MID)	Document feed (SPF) motor (Reference speed)	1 - 99	50

Scan speed

Unit	Reference speed		
	HI	MID	LO
OC	372mm/s	186mm/s	93mm/s
DSPF	372mm/s	186mm/s	–

48-6

Purpose	Adjustment
Function (Purpose)	Adjust the rotation speed of each motor.
Section	

Operation/Procedure

1) Select a target adjustment item with scroll key on the touch panel.
2) Enter the set value with 10-key.
3) Press [OK] key.
   The set value is saved.

When the adjustment value is increased, the speed is increased, and vice versa. A change of 1 in the adjustment value corresponds to a change of about 0.1% in the speed.

Item/Display		Content	Setting range	Default value
A	RRM	Resist motor correction value	1 - 99	50
B	DVM_K	Developing K motor correction value	1 - 99	50
C	FSM	Fusing motor correction value	1 - 99	50
D	PFM	Paper transport motor correction value	1 - 99	50
E	POM	Paper exit motor correction value	1 - 99	50
F	FUSER SETTING	Fusing speed select timing	1 - 99	50
G	RRM START	RRM speed increasing start timing	0 - 255	50
H	RRM END	RRM speed increasing end timing	0 - 255	50

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.

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49-1

Purpose	Version upgrade
Function (Purpose)	Perform the firmware update.
Section	

Operation/Procedure

1) Save the firmware to the USB memory.

2) Insert the USB memory into the main unit. (Use USB I/F of the operation panel section.)
3) Select a target firmware file for update with the touch panel.
4) Select a target firmware.
   Press [ALL] key to select all the Firmware collectively.
5) Press [EXECUTE] key.
6) Press [YES] key.
   The selected firmware is updated. When the operation is normally completed, "COMPLETE" is displayed. When terminated abnormally, "ERROR" is displayed.

Item/Display	Content
ICUM(MAIN)	ICUM Main section
ICUM(BOOT)	ICUM boot section
ICUM(BIOS)	ICUM BIOS
ICU (MAIN)	ICU Main section former half
ICU (BOOTM)	ICU Boot section main
ICU (SUB)	ICU sub section
LANGUAGE	Language support data program (General term)
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
SADDLE (BOOT)	Saddle finisher boot section
SADDLE (MAIN)	Saddle 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
ACRE (BOOT)	ACRE Boot section
ACREM (MAIN)	ACRE Main section
ACRE_DATA	ACRE table

49-3

Purpose Install

Function (Purpose) Install and update the Operation Manual data stored in the HDD.

Section

Operation/Procedure

1) Insert the USB memory into the main unit.
   * When the USB is not inserted, "INSERT A STORANGE E-MANUAL STORED ON" is displayed. When [OK] key is pressed, the display is shifted to the folder select menu 1.
2) Press the folder button of the operation manual data. (The display is shifted to the operation manual update menu.) The current version and the update version are displayed.
3) Press [EXECUTE] key.
   [EXECUTE] key is highlighted, and [YES] [NO] keys becomes active from gray out.
4) When [YES] key is pressed, the selected operation manual is updated. When update is completed normally, "COMPLETE" is displayed. When terminated abnormally, "ERROR" is displayed.

49-5

Purpose Install

Function (Purpose) Install and update the watermark data stored in the HDD.

Section

Operation/Procedure

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

49-10

Purpose Install

Function (Purpose) Perform the ACU firmware update.

Section

Operation/Procedure

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

50

50-1

Purpose Adjustment

Function (Purpose) Copy image position, image loss adjustment

Section

Operation/Procedure

1) Select an adjustment target item with scroll key on the touch panel.
2) Enter the set value with 10-key.
   Set the items other than RRCA, LEAD, and SIDE to the default.
   RRCA: Image lead edge reference position adjustment
   LEAD: Lead edge image loss adjustment
   SIDE: Side image loss adjustment
3) Press [OK] key. (The set value is saved.)

Item/Display			Content		Setting range	Default value
A	Lead edge adjustment value	RRCA	Document lead edge reference position (OC)		0 - 99	50
B		RRCB-CS1	Resist motor ON timing adjustment	Standard Tray	1 - 99	44
C		RRCB-DSK		Desk	1 - 99	44
D		RRCB-LCC		LCC	1 - 99	44
E		RRCB-MFT		Manual paper feed	1 - 99	44
F		RRCB-ADU		ADU	1 - 99	44
G	Image loss area setting value	LEAD	Lead edge image loss area setting		0 - 99	40
H		SIDE	Side image loss area adjustment		0 - 99	20
I	Void area adjustment	DENA	Lead edge void area adjustment		1 - 99	40
J		DENB	Rear edge void area adjustment		1 - 99	30
K		FRONT/REAR	FRONT/REAR void area adjustment		1 - 99	20

Item/Display			Content	Setting range	Default value
L	Off-center adjust-ment	OFFSET _OC	OC document off-center adjustment	1 - 99	50
M	Magnifi-cation ratio correction	SCAN _SPEED _OC	SCAN sub scanning magnification ratio adjustment (CCD)	1 - 99	50
N	Sub scanning direction print area correction value	DENB-MFT	Manual feed correction value	1 - 99	50
O		DENB-CS1	Tray 1 correction value	1 - 99	50
P		DENB-CS2	Tray 2 correction value	1 - 99	50
Q		DENB-CS3	Tray 3 correction value	1 - 99	50
R		DENB-CS4	Tray 4 correction value	1 - 99	50
S		DENB-LCC	LCC correction value	1 - 99	50
T		DENB-ADU	ADU correction value	1 - 99	50
U		DENB-HV	Heavy paper correction value	1 - 99	50

A. (RRC-A) Timing from starting document scanning to specifying the image lead edge reference is adjusted. (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)

50-5

Purpose Adjustment

Function (Purpose) Adjust the print lead edge image position (PRINTER MODE)

Section

Operation/Procedure

1) Select a target adjustment with scroll key on the touch panel.
2) Enter the adjustment value using the 10-key.
3) Press [EXECUTE] key.

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

   Standard reference value: 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.	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	
E	DENB-CS1	Tray 1 rear edge void area adjustment correction value	1 - 99	50	
F	DENB-CS2	Tray 2 rear edge void area adjustment correction value	1 - 99	50	
G	DENB-CS3	Tray 3 rear edge void area adjustment correction value	1 - 99	50	
H	DENB-CS4	Tray 4 rear edge void area adjustment correction value	1 - 99	50	
I	DENB-LCC	LCC rear edge void aria adjustment correction value	1 - 99	50	
J	DENB-ADU	ADU rear edge void aria adjustment correction value	1 - 99	50	
K	DENB-HV	Heavy paper rear edge void area correction value	1 - 99	50	

Item/ Display		Content		Setting range	Default value	NOTE
L	MULTI COUNT	Number of print		1 - 999	1	
M	PAPER	Tray	Manual paper feed	1	2	
			Tray 1	2		
			Tray 2	3		
			Tray 3	4		
			Tray 4	5		
			LCC	6		
N	DUPLEX	Duplex	Yes	0	1	
			No	1		

50-6

Purpose Adjustment

Function (Purpose) Adjust the copy image position and the image loss (DSPF mode).

Section

Operation/Procedure

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

[DSPF-installed model]

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

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.

All adjustment items: 1 step = 0.1mm change

50-7

Purpose Adjustment

Function (Purpose) Adjust the copy image position and the image loss (DSPF mode) (simple adjustment).

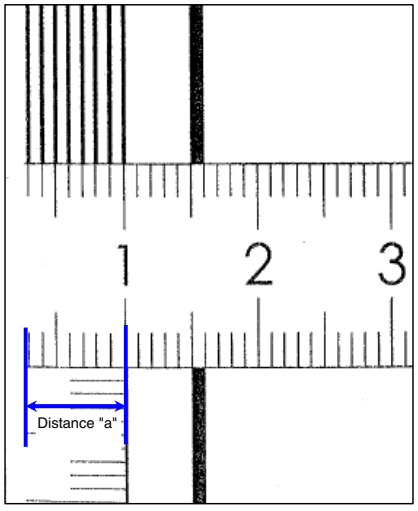
Section

Operation/Procedure

1) Select an adjustment target item with scroll key on the touch panel.
2) Set item A (L4) and item B (L5) to 0.
3) Set the magnification ratio to 200%, and make a copy in the DSPF duplex mode.
4) Measure the size of the printed image. Enter the actual measurement value of distance a (DSPF) to L4 and L5 in the unit of 0.1mm.

   (Adjustment value "1" for 0.1mm)

   L4: Distance a (DSPF front surface: 200%) (unit: 0.1mm)
   L5: Distance a (DSPF back surface: 200%) (unit: 0.1mm)



5) Press [EXECUTE] key. (The set value is saved.)

Item/Display		Content	Setting range	Default value
A	L4	Distance (SPF 200%, 0.1mm unit) from the front surface image lead edge to the scale of 10mm.	0 - 999	-
B	L5	Distance (SPF 200%, 0.1mm unit) from the back surface image lead edge to the scale of 10mm.	0 - 999	-
C	LEAD_EDGE (SIDE1)	Front surface lead edge image loss amount setting	0 - 99	20
D	FRONT_REAR (SIDE1)	Front surface side image loss amount setting	0 - 99	20
E	TRAIL_EDGE (SIDE1)	Front surface rear edge image loss amount setting	0 - 99	30
F	LEAD_EDGE (SIDE2)	Back surface lead edge image loss amount setting	0 - 99	30
G	FRONT_REAR (SIDE2)	Back surface side image loss amount setting	0 - 99	20
H	TRAIL_EDGE (SIDE2)	Back surface rear edge image loss amount setting	0 - 99	20

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

All adjustment items: 1 step = 0.1mm change

Items C - H are linked with items C - H of SIM50-06.

50-10

Purpose Adjustment

Function (Purpose) Adjust the image off-center position. (The adjustment is made separately for each paper feed section.)

Section

Operation/Procedure

1) Select an adjustment target item with scroll key on the touch panel.
2) Enter the set value with 10-key.
3) Press [EXECUTE] key. (The set value is saved.)

Item/Display		Content		Setting range	Default value
A	BK-MAG	Main scan print magnification ratio BK		60 - 140	116
B	MAIN-MFT	Print off center adjustment value (Manual paper feed)		1 - 99	52
C	MAIN-CS1	Print off center adjustment value (Tray 1)		1 - 99	60
D	MAIN-CS2	Print off center adjustment value (Tray 2)		1 - 99	60
E	MAIN-CS3	Print off center adjustment value (Tray 3)		1 - 99	60
F	MAIN-CS4	Print off center adjustment value (Tray 4)		1 - 99	60
G	MAIN-LCC	Print off center adjustment value (Large capacity tray)		1 - 99	60
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	42
I	SUB-MFT	Resist motor ON timing adjustment	Manual paper feed	1 - 99	44
J	SUB-CS1		Standard cassette	1 - 99	44
K	SUB-DESK		Desk	1 - 99	44
L	SUB-LCC		LCC	1 - 99	44
M	SUB-ADU		ADU	1 - 99	44
N	MULTI COUNT	Number of print		1 - 999	1
O	PAPER	Tray selection	Manual paper feed	1 - 99	2
			Tray 1	1 - 99	
			Tray 2	1 - 99	
			Tray 3	1 - 99	
			Tray 4	1 - 99	
			LCC	1 - 99	
P	DUPLEX	Duplex print selection	Yes	1 - 99	1
			No	1 - 99	

50-12

Purpose Adjustment

Function (Purpose) 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 scroll key on the touch panel.
2) Enter the set value with 10-key.
3) Press [OK] key. (The set value is saved.)

When the adjustment value is increased, 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

50-27

Purpose Adjustment

Function (Purpose) 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 scroll key on the touch panel.
3) Enter the set value with 10-key.
4) Press [OK] key. (The set value is saved.)

Button	Item/Display		Content	Setting range	Default value
FAX	A	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	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	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)

Button	Item/Display		Content	Setting range	Default value
SCANNER	A	LEAD EDGE (OC)	OC lead edge image loss amount setting	0 - 100	0 (0mm)
	B	FRONT REAR(OC)	OC side image loss amount setting	1 - 99	0 (0mm)
	C	TRAIL EDGE(OC)	OC rear edge image loss amount setting	1 - 99	0 (0mm)
	D	LEAD EDGE (SPF SIDE1)	Front surface lead edge image loss amount setting	1 - 99	0 (0mm)
	E	FRONT REAR (SPF SIDE1)	Front surface side image loss amount setting	1 - 999	0 (0mm)
	F	TRAIL EDGE(SPF SIDE1)	Front surface rear edge image loss amount setting	1 - 99	0 (0mm)
	G	LEAD EDGE (SPF SIDE2)	Back surface lead edge image loss amount setting	1 - 99	0 (0mm)
	H	FRONT REAR (SPF SIDE2)	Back surface side image loss amount setting	1 - 99	0 (0mm)
	I	TRAIL EDGE(SPF SIDE2)	Back surface rear edge image loss amount setting	1 - 99	0 (0mm)

50-28

Purpose Adjustment

Function (Purpose) 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.

* Print image magnification ratio adjustment (Main scanning direction) (Print engine section)
* Image off-center adjustment (Print engine section)
* Scan image magnification ratio adjustment
* Scan image off-center adjustment
* Print area (void area) adjustment (Print engine section)
* Copy image position, image loss adjustment

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

(1) Image loss off-center sub scan direction image magnification ratio adjustment (Document table mode)

1) Select [OC ADJ] on the touch panel.
2) Select the paper tray to be used for the adjustment pattern print.
3) Press [EXECUTE] key, and the adjustment pattern is printed.
4) Set the adjustment pattern on the document table.
5) Press [EXECUTE] key, and the adjustment pattern is scanned.
6) Press [OK] key.

(2) Main scan direction image magnification ration adjustment

1) Select [BK-MAG ADJ] on the touch panel.
2) Select the paper tray to be used for the adjustment pattern print.
3) Press [EXECUTE] key, and the adjustment pattern is printed.
4) Set the adjustment pattern on the document table.
5) Press [EXECUTE] key, and the adjustment pattern is scanned.
6) Press [OK] key.

(3) Image loss off-center sub scan direction image magnification ratio adjustment (DSPF mode)

1) Select [SPF ADJ] on the touch panel.
2) Select the adjustment mode; SIDE 1 (Front surface) or SIDE 2 (Back surface) or ALL (Both modes).
3) Select the paper tray to be used for the adjustment pattern print.
4) Press [EXECUTE] key, and the adjustment pattern is printed.
5) Set the adjustment pattern on the DSPF.
6) Press [EXECUTE] key, and the adjustment pattern is scanned.
   When ALL is selected in the procedure 2), perform procedures 5) and 6) for both of the front surface and the back surface.
7) Press [OK] key.

(4) Print lead edge adjustment image off-center (Each paper feed tray, duplex mode) adjustment

1) Select [SETUP/PRINT ADJ] on the touch panel.
2) Select the adjustment mode; LEAD (print lead edge adjustment) or OFF SET (image off-center) or ALL (both modes).
3) Select the paper feed tray for the adjustment pattern print. (Two or more trays can be selected.)
4) Press [EXECUTE] key, and the adjustment pattern is printed.
5) Set the adjustment pattern on the document table.
6) Press [EXECUTE] key, and the adjustment pattern is scanned.
   When two or more paper feed trays are selected in the procedure 3), perform procedures 5) and 6) for the adjustment pattern printed with each paper.
7) Press [OK] key.

RESCAN: The adjustment pattern is scanned.

REPRINT: The adjustment pattern is printed again.

RETRY: Shifts to the top menu.

51

51-1

Purpose Adjustment

Function (Purpose) Adjust the ON/OFF timing of the transport voltage.

Section Paper feed, paper reverse/transport

Operation/Procedure

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

When the adjustment value is decreased, the transfer ON/OFF timing for the paper is advanced. When the adjustment value is increased, the timing is delayed. When the adjustment value is changed by 1, the timing is changed by about 10ms. The setting range is -490 - +490ms.

Item/Display		Content	Default value
A	TC ON TIMING	Transfer voltage ON timing setting	45
B	TC OFF TIMING	Transfer voltage OFF timing setting	50

51-2

Purpose	Adjustment
Function (Purpose)	Adjust the contact pressure (deflection amount) on paper by the main unit and the DSPF resist roller.
Section	Paper feed, paper reverse/transport

Operation/Procedure

1) (When DSPF model)
   Select a target adjustment mode with [REGI1] or [REGI2] or [ENGINE] keys.
2) Select a target item to be adjusted with scroll key.
3) Enter the set value with 10-key.
4) Press [OK] key. (The set value is saved.)

Button	Item/Display		Content	Setting range	Default value
REGI1	A	NORMAL PLAIN HIGH	DSPF deflection amount adjustment value 1	1 - 99	50
	B	NORMAL PLAIN LOW	DSPF deflection amount adjustment value 1	1 - 99	50
	C	NORMAL THIN HIGH	DSPF deflection amount adjustment value 1	1 - 99	50
	D	NORMAL THIN LOW	DSPF deflection amount adjustment value 1	1 - 99	50
	E	RANDOM PLAIN HIGH	DSPF deflection amount adjustment value 1	1 - 99	50
	F	RANDOM PLAIN LOW	DSPF deflection amount adjustment value 1	1 - 99	50
	G	RANDOM THIN HIGH	DSPF deflection amount adjustment value 1	1 - 99	50
	H	RANDOM THIN LOW	DSPF deflection amount adjustment value 1	1 - 99	50
REGI2	A	NORMAL PLAIN HIGH	DSPF deflection amount adjustment value 2	1 - 99	50
	B	NORMAL PLAIN LOW	DSPF deflection amount adjustment value 2	1 - 99	50
	C	NORMAL THIN HIGH	DSPF deflection amount adjustment value 2	1 - 99	50
	D	NORMAL THIN LOW	DSPF deflection amount adjustment value 2	1 - 99	50
	E	RANDOM PLAIN HIGH	DSPF deflection amount adjustment value 2	1 - 99	50
	F	RANDOM PLAIN LOW	DSPF deflection amount adjustment value 2	1 - 99	50
	G	RANDOM THIN HIGH	DSPF deflection amount adjustment value 2	1 - 99	50
	H	RANDOM THIN LOW	DSPF deflection amount adjustment value 2	1 - 99	50

Button	Item/Display		Content	Setting range	Default value
ENGINE	A	TRAY1(S)	Main unit cassette deflection adjustment value small size	1 - 99	66
	B	TRAY1(L)	Main unit cassette deflection adjustment value large size	1 - 99	66
	C	TRAY1 HEAVY A PAPER(S)	Main unit cassette deflection adjustment value Small size	1 - 99	40
	D	TRAY1 HEAVY A PAPER(L)	Main unit cassette deflection adjustment value Large size	1 - 99	40
	E	TRAY2(S)	Desk cassette deflection adjustment value Small size	1 - 99	66
	F	TRAY2(L)	Desk cassette deflection adjustment value Large size	1 - 99	66
	G	TRAY2 HEAVY A PAPER(S)	Desk cassette deflection adjustment value Small size	1 - 99	40
	H	TRAY2 HEAVY A PAPER(L)	Desk cassette deflection adjustment value Large size	1 - 99	40
	I	MANUAL PLAIN PAPER(S)	Manual feed tray deflection adjustment value Small size	1 - 99	66
	J	MANUAL PLAIN PAPER(L)	Manual feed tray deflection adjustment value Large size	1 - 99	66
	K	MANUAL HEAVY A PAPER(S)	Manual feed tray deflection adjustment value Small size	1 - 99	40
	L	MANUAL HEAVY A PAPER(L)	Manual feed tray deflection adjustment value Large size	1 - 99	40
	M	MANUAL HEAVY B PAPER(S)	Manual feed tray deflection adjustment value Small size	1 - 99	40
	N	MANUAL HEAVY B PAPER(L)	Manual feed tray deflection adjustment value Large size	1 - 99	30
	O	MANUAL OHP	Manual feed tray deflection adjustment value OHP	1 - 99	40
	P	MANUAL ENV	Manual feed tray deflection adjustment value Envelope	1 - 99	40
	Q	ADU PLAIN PAPER(S)	ADU deflection adjustment value Small size	1 - 99	66
	R	ADU PLAIN PAPER(L)	ADU deflection adjustment value Large size	1 - 99	66
	S	ADU HEAVY A PAPER(S)	ADU deflection adjustment value Small size	1 - 99	40
	T	ADU HEAVY A PAPER(L)	ADU deflection adjustment value Large size	1 - 99	40
	U	DESK(S)	DESK deflection adjustment value Small size	1 - 99	66
	V	DESK(L)	DESK deflection adjustment value Large size	1 - 99	66
	W	DESK HEAVY A PAPER(S)	DESK deflection adjustment value Small size	1 - 99	40
	X	DESK HEAVY A PAPER(L)	DESK deflection adjustment value Large size	1 - 99	40
	Y	A4LCC	A4LCC/deflection adjustment value	1 - 99	66

<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)	Adjust the detection level of the DSPF document width.
Section	

Operation/Procedure

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

When the above operation is 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

53-7

Purpose	Adjustment
Function (Purpose)	Adjust the DSPF document size width sensor.
Section	Automatic document feeder

Operation/Procedure

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

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

53-8

Purpose	Adjustment
Function (Purpose)	Adjust the document lead edge reference and the DSPF mode document scan position.
Section	Automatic document feeder

Operation/Procedure

Select an adjustment item with [AUTO] [MANUAL] key.

<AUTO: Document lead edge reference (RRCA) adjustment> (Auto adjustment)

1) Set a sheet of black paper of A4 or 11"x 8.5" on the document table.
2) Press [EXECUTE] key. (The adjustment is performed and the adjustment value is saved.)

Item/Display	Content	Setting range	Default value
MEASUREMENT DISTANCE	Document lead edge measurement distance	0-255 (0.1mm unit)	-
RRCA	Document lead edge reference position	0 - 99	50

NOTE: The AUTO mode must not be used.

<MANUAL: DSPF mode document scan position adjustment>

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

Item/Display		Content	Setting range	Default value
A	ADJUST VALUE	DSPF mode document scan position adjustment (Scanner stop position adjustment)	1 - 99	10

When the adjustment value is increased, the scanner stop position in the DSPF mode is shifted to the right.

When the adjustment value is changed by 1, the position is shifted by 0.1mm.

53-9

Purpose	Adjustment
Function (Purpose)	Set dirt detection for DSPF scanning position.
Section	Automatic document feeder

Operation/Procedure

1) Select an items to be set with scroll key.
2) Enter the set value with 10-key.
3) Press [OK] key. (The set value is saved.)

Item/Display		Content		Setting range	Default value
A	SIDEA_SCAN_POSITION_SET_START	SPF front surface optimum scan position detection setting	OFF	0	1
			ON	1	
B	SIDEA_SCAN_POSITION_SET_JOB	SPF front surface optimum scan position detection setting	OFF	0	1
			ON	1	
C	SIDEA_SCAN_POSITION_LV	SPF front surface optimum scan position detection level setting	WEAK	0	1
			MIDDLE	1	
			STRONG	2	
D	OC_DIRT_LV	OC dirt level setting	WEAK	0	1
			MIDDLE	1	
			STRONG	2	
E	SIDEA_DIRT_ALARM_LV	SPF front surface dirt alarm level setting	WEAK	0	1
			MIDDLE	1	
			STRONG	2	

Item/Display		Content		Setting range	Default value
F	SIDEB_DIRT_ALARM_LV	SPF back surface dirt alarm level setting	WEAK	0	1
			MIDDLE	1	
			STRONG	2	
G	SIDEA_DIRT_SHADING_SET	SPF front surface streak delete shading setting	OFF	0	1
			ON	1	
H	SIDEB_DIRT_SHADING_SET	SPF back surface streak delete shading setting	OFF	0	1
			ON	1	
I	SCAN_POSITION_PRIORITY_SET	SPF front surface MVIEW/SCU priority setting	MVIEW	0	1
			SCU	1	
J	DIRT_ALARM_PRIORITY_SET	SPF MVIEW/SCU priority	MVIEW	0	0
			SCU	1	

53-10

Purpose	Adjustment
Function (Purpose)	SPF dirt detection execution.
Section	Automatic document feeder

Operation/Procedure

1) Press [EXECUTE] key.

Item	Content
SPF SIDEA	RSPF front surface dirt detection position (main scan position 1 to 8) "-": No dirt, A"*": Dirt
OC	OC surface dirt detection position (main scan position 1 to 8) "-": No dirt, "*": Dirt

55

55-1

Purpose	Setting
Function (Purpose)	Set the specifications of the engine control operations. (SOFT SW)
Section	

Operation/Procedure

55-2

Purpose	Setting
Function (Purpose)	Set the specifications of the scanner control operation. (SOFT SW)
Section	

Operation/Procedure

55-3

Purpose	Setting
Function (Purpose)	Set the specifications of the controller operation. (SOFT SW)
Section	

Operation/Procedure

55-10

Purpose	Setting
Function (Purpose)	Set the special stamp text
Section	

Operation/Procedure

1) Select an item to be set (digit, color, type) with the scroll key.
2) Enter the value corresponding to the setting item with 10-key.
3) Press [OK] key.

Item/Display			Content		Setting range	Default value
A	1ST DIGIT		First digit (left edge)		1 - 90	1
B	2ND DIGIT		Second digit			
C	3RD DIGIT		Third digit		32 [blank: 20H]	
D	4TH DIGIT		Fourth digit		65 - 90 [Alphabet: 41H("A") - 5AH("Z")]	
E	5TH DIGIT		Fifth digit		48 - 57 [Numeral: 30H("0") - 39H("9")]	
F	6TH DIGIT		Sixth digit (right edge)			
G	TYPE	PATTERN 1	Print composing method	Edging type	0	1
		PATTERN 2		OR process type	1	
		PATTERN 3		No-delete-composition type	2	

Input value

Print	Blank	A	B	C	E	F	G
Input value	32	65	66	67	69	70	71

Print	H	I	J	K	L	M	N
Input value	72	73	74	75	76	77	78

Print	O	P	Q	R	T	U	V
Input value	79	80	81	82	84	85	86

Print	W	X	Y	Z	0	1	2
Input value	87	88	89	90	48	49	50

Print	3	5	6	7	8	9
Input value	51	53	54	55	56	57

56

56-1

Purpose	Data transfer
Function (Purpose)	Transport data between HDD - EEPROM. (Used to repair the PWB.)
Section	

Operation/Procedure

1) Select a target content of data transfer.
2) Press [EXECUTE] key and press [YES] key.
   Data transfer of the item selected in procedure 1) is executed.
   When the operation is completed normally, "COMPLETE" is displayed. In case of an abnormal end, "ERROR" is displayed.

EEPROM → HDD	Transfer from EEPROM to HDD
HDD → EEPROM	Transfer from HDD to EEPROM

NOTE: The backup data must not be installed to another machine. If installed, the adjustment data will be overwritten and a machine issue may arise.

56-2

Purpose	Data backup
Function (Purpose)	Backup the data in the EEPROM. SD card, and HDD (including user authentication data and address 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, SD, HDD
   <EXPORT>
   From EEPROM, SD, 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, SD, HDD
   <EXPORT>
   From EEPROM, SD, 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/SD card)

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
Job end list	Job end list display data (The image send series include the preserved job list.)	
Log	Job log	Read from WEB is enable.
Operation manual	E-manual	
Document filing	Document filing data	

NOTE: The backup data must not be installed to another machine. If installed, the adjustment data will be overwritten and a trouble may be generated.

56-3

Purpose	Data backup
Function (Purpose)	Backup the document filing data to the USB memory
Section	HDD

Operation/Procedure

1) Insert the USB memory into the main unit.
2) Select a target transfer item with the touch panel.
   <IMPORT>
   From USB MEMORY DEVICE To EEPROM, SD card, HDD
   <EXPORT>
   From EEPROM, SD card, HDD To USB MEMORY 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

Purpose	Data backup
Function (Purpose)	Backup the JOB log data to the USB memory.
Section	HDD

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.

56-5

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Import the SIM22-6 data to a USB memory in the TEXT format
Section	

Operation/Procedure

1) Insert the USB memory into the main unit.
2) Select a kind of data to be imported.
3) Press [EXECUTE] key, and press [YES] key.
   Procedure 2) The selected data is imported.
   When the operation is completed normally, "COMPLETE" is displayed. In case of an abnormal end, "ERROR" is displayed.

56-6

Purpose	Operation data check
Function (Purpose)	Import the SIM23-2 data to a USB memory in the TEXT format.
Section	HDD

Operation/Procedure

1) Insert the USB memory into the main unit.
2) Select a kind of data to be imported.
3) Press [EXECUTE] key, and press [YES] key.

56-7

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Import the syslog data to a USB memory.
Section	HDD

Operation/Procedure

1) Insert the USB memory into the main unit.
2) Select SYSLOG EXPORT to be imported.
3) Press [EXECUTE] key, and press [YES] key.

60

60-1

Purpose	Operation test/check
Function (Purpose)	Check the operations (read/write) of the MFP PWB memory.
Section	MFP (ICU) PWB

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	
ICUM SLOT1	ICUM (standard)	ON BOARD
ICUM SLOT2	ICUM (expansion)	DIMM
ICU1 SLOT1	ICU1 (standard)	ON BOARD
ACRE SLOT	ACRE	ACRE–

61

61-1

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

Operation/Procedure

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

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

61-3

Purpose	Setting
Function (Purpose)	Set the laser power
Section	LSU

Operation/Procedure

1) Select a target mode for adjustment with [COPY600], [COPY1200], [PR600/FAX] and [PR1200] on the touch panel.
2) Select an adjustment target item with scroll key on the touch panel.
3) Enter the adjustment value using the 10-key.
4) Press [OK] key. (The set value is saved.)
   When the laser power and the DUTY adjustment value are increased, the print density is increased and the line width of line images are increased.

Item/Display			Content	Setting range	Default value (cpm)		
					36	46	56
COPY 600	A	LASER POWER MIDDLE (BW)	Laser power setting/middle speed	0 - 255	102	123	140
	B	LASER POWER LOW (BW)	Laser power setting/low speed	0 - 255	102	102	102
	C	LASER POWER MIDDLE SAVE (BW)	Laser power setting/middle speed save mode	0 - 255	102	123	140
	D	LASER POWER LOW SAVE (BW)	Laser power setting/low speed save mode	0 - 255	102	102	102
	E	LASER DUTY MIDDLE (BW)	Laser duty select middle speed	0 - 255	0	0	0
	F	LASER DUTY LOW (BW)	Laser duty select low speed	0 - 255	0	0	0
	G	LASER DUTY MIDDLE SAVE (BW)	Laser duty select middle speed save mode	0 - 255	0	0	0
	H	LASER DUTY LOW SAVE (BW)	Laser duty select low speed save mode	0 - 255	0	0	0
	I	LASER POWER K1	Laser power setting K1	0 - 255	100	100	100
	J	LASER POWER K2	Laser power setting K2	0 - 255	100	100	100
	K	LASER POWER K3	Laser power setting K3	0 - 255	100	100	100
	L	LASER POWER K4	Laser power setting K4	0 - 255	100	100	100
COPY 1200	A	LASER POWER MIDDLE (BW)	Laser power setting/middle speed	0 - 255	102	123	140
	B	LASER POWER LOW (BW)	Laser power setting/low speed	0 - 255	102	102	102
	C	LASER POWER MIDDLE SAVE (BW)	Laser power setting/middle speed save mode	0 - 255	102	123	140
	D	LASER POWER LOW SAVE (BW)	Laser power setting/low speed save mode	0 - 255	102	102	102
	E	LASER DUTY MIDDLE (BW)	Laser duty select middle speed	0 - 255	0	0	0
	F	LASER DUTY LOW (BW)	Laser duty select low speed	0 - 255	0	0	0
	G	LASER DUTY MIDDLE SAVE (BW)	Laser duty select middle speed save mode	0 - 255	0	0	0
	H	LASER DUTY LOW SAVE (BW)	Laser duty select low speed save mode	0 - 255	0	0	0

Item/Display			Content	Setting range	Default value (cpm)		
					36	46	56
PR 600/ FAX	A	LASER POWER MIDDLE (BW)	Laser power setting/middle speed	0 - 255	102	123	140
	B	LASER POWER LOW (BW)	Laser power setting/low speed	0 - 255	102	102	102
	C	LASER POWER MIDDLE SAVE (BW)	Laser power setting/middle speed save mode	0 - 255	102	123	140
	D	LASER POWER LOW SAVE (BW)	Laser power setting/low speed save mode	0 - 255	102	102	102
	E	LASER DUTY MIDDLE (BW)	Laser duty select middle speed	0 - 255	40	40	40
	F	LASER DUTY LOW (BW)	Laser duty select low speed	0 - 255	40	40	40
	G	LASER DUTY MIDDLE SAVE (BW)	Laser duty select middle speed save mode	0 - 255	40	40	40
	H	LASER DUTY LOW SAVE (BW)	Laser duty select low speed save mode	0 - 255	40	40	40
PR1 200	A	LASER POWER MIDDLE (BW)	Laser power setting/middle speed	0 - 255	102	123	140
	B	LASER POWER LOW (BW)	Laser power setting/low speed	0 - 255	102	102	102
	C	LASER POWER LOW SAVE (BW)	Laser power setting/low speed save mode	0 - 255	102	123	140
	D	LASER POWER LOW SAVE (BW)	Laser power setting/low speed save mode	0 - 255	102	102	102
	E	LASER DUTY MIDDLE (BW)	Laser duty select middle speed	0 - 255	0	0	0
	F	LASER DUTY LOW (BW)	Laser duty select low speed	0 - 255	0	0	0
	G	LASER DUTY MIDDLE SAVE (BW)	Laser duty select middle speed save mode	0 - 255	0	0	0
	H	LASER DUTY LOW SAVE (BW)	Laser duty select low speed save mode	0 - 255	0	0	0

61-4

Purpose	Adjustment
Function (Purpose)	Print the print image skew adjustment pattern
Section	LSU

Operation/Procedure

1) Select a target item with scroll key on the touch panel.
2) Enter the print conditions setting value with 10-key.
3) Press [EXECUTE] key.
   The print image skew adjustment pattern is printed.

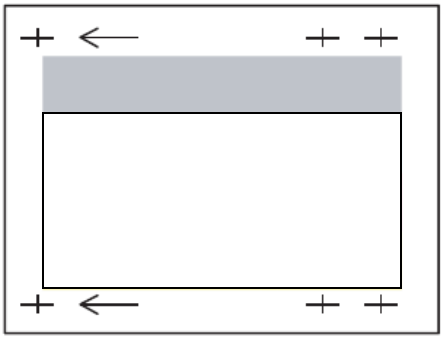
Item/Display			Content			Default value
A	MULTICOUNT		Print quantity (1-999)			1
B	PAPER	MFT	Tray selection	1	Manual paper feed	2 (Paper feed tray 1)
		CS1		2	Paper feed tray 1	
		CS2		3	Paper feed tray 2	
		CS3		4	Paper feed tray 3	
		CS4		5	Paper feed tray 4	
		LCC		6	LCC	

61-11

Purpose	Adjustmet
Function (Purpose)	Correct the laser power automatically
Section	LSU

Operation/Procedure

1) Press [AUTO CORRECTION] key.
2) Select a density to be corrected.
3) Press [EXECUTE] key.
4) Place the printed sample for scanning on the OC in the A4R(LTR) direction.



5) Press [EXECUTE] key.

61-12

Purpose	Adjustment
Function (Purpose)	Laser power manual correction
Section	LSU

Operation/Procedure

Press an item button to be adjusted.

When [MEASURING INSTRUMENT] is pressed:

1) Select the adjustment density pattern.
2) Press [EXECUTE] key.
3) The adjustment pattern is printed out.
4) Enter the adjustment value by the density meter.
5) Press [EXECUTE] key.
   Execute the manual correction of the laser power. Then the adjustment result pattern is outputted and the data are displayed.

When [VISUAL INSPECTION] is pressed:

1) Select the adjustment density pattern.
2) Press [EXECUTE] key.
3) The adjustment pattern is printed out.
4) Press [4POINT CORRECTION] or [31POINT CORRECTION].
5) Enter an adjustment value.
6) Press [EXECUTE] key.
   Execute the manual correction of the laser power. Then the adjustment result pattern is outputted and the data are displayed.

61-13

Purpose	Adjustment
Function (Purpose)	Clear the laser power correction value
Section	LSU

Operation/Procedure

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

Reference value reset item
Laser power automatic correction amount 32 data (point)
Laser power manual correction amount 32 data (point)

62

62-1

Purpose	Data clear/Reset
Function (Purpose)	Format the hard disk/SD card (HDD:except operation manual area/SD card:user data).
Section	HDD

Operation/Procedure

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

62-2

Purpose	Operation test/check
Function (Purpose)	Check read/write of the hard disk (partial).
Section	HDD

Operation/Procedure

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

62-3

Purpose	Operation test/check
Function (Purpose)	Check read/write of the hard disk (all areas).
Section	HDD

Operation/Procedure

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

62-6

Purpose	Operation test/check
Function (Purpose)	Perform the self diagnostics of the hard disk.
Section	HDD

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 cheek 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.

62-7

Purpose	Operation test/check
Function (Purpose)	Print the hard disk self diagnostics error log.
Section	HDD

Operation/Procedure

1) Press [EXECUTE] key.

ERROR LOG SECTOR of the SMART function is executed, and the result is printed.

62-8

Purpose	Data clear/Reset
Function (Purpose)	Format the hard disk/SD card. (HDD:Excluding the system area and the operation manual area/SD card:user area)
Section	HDD

Operation/Procedure

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

62-10

Purpose	Data clear
Function (Purpose)	Clear the job completion list data.
Section	HDD

Operation/Procedure

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

62-11

Purpose	Data clear
Function (Purpose)	Delete the document filing data
Section	HDD

Operation/Procedure

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

62-12

Purpose	Setting
Function (Purpose)	Set Enable/Disable of auto format in a hard disk trouble.
Section	HDD

Operation/Procedure

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

   The set value is saved.

When it is set to Enable, if a read error of HDD occurs in the system data storage area (FAX/device cloning data, etc.), only the system data storage area is cleared.

A	0	Enable
	1	Disable (Default)

62-13

Purpose	Data clear/Reset
Function (Purpose)	Format the hard disk. (only operation manual and watermark data)
Section	HDD

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key.
   The operation manual data are deleted.

62-14

Purpose	Data clear
Function (Purpose)	Delete the document filing management data
Section	HDD

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key.
   The document filing management data are cleared.
   At the same time, the job log data are also cleared.

This simulation is executed in the following trouble cases.

* The document filing function does not work normally.
* The job log is not recorded normally.

Note

This simulation may not function with some firmware versions.

In such a case, the firmware must be upgraded to the latest version.

62-20

Purpose	Data clear/Reset
Function (Purpose)	Check the operation of the mirroring hard disc
Section	HDD

Operation/Procedure

Enter the simulation mode, and the operation status of the HDD is displayed.

The status display is renewed in every second.

Display	Content description
OK	Normal operation
NONE	Not connected
REBUILDING	Data rebuilding
ERROR	Error occurrence
TROUBLE	Trouble

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63-1

Purpose	Information display
Function (Purpose)	Display the shading correction result.
Section	Scanner

Operation/Procedure

1) Select a mode.
2) Select a target color to display with [R] [G] [B] key on the touch panel

Button	Item/Display	Content
OC	ANALOG GAIN ODD	Analog gain adjustment value (odd number)
	ANALOG GAIN EVEN	Analog gain adjustment value (even number)
	DIGITAL GAIN ODD	Digital gain adjustment value (odd number)
	DIGITAL GAIN EVEN	Digital gain adjustment value (even number)
	SMP AVE ODD	Reference plate sampling average value
	SMP AVE EVEN	Reference plate sampling average value
	TARGET VALUE	Target value
	BLACK LEVEL	Black output level
	ERROR CODE	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: Retry max
		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 (white booting/ gain)
		14: Register check error (before light quantity correction)
	DSPF FACE WHITE LEVEL 1ST	First scan DSPF front surface white reference level
	DSPF FACE WHITE LEVEL 2ND	DSPF front surface white reference level of the second or later scanning
DSPF	ANALOG GAIN ODD	Max. density judgment value
	ANALOG GAIN EVEN	Max. density position
	DIGITAL GAIN ODD	LED DA adjustment value
	DIGITAL GAIN EVEN	LED DA adjustment save value
	SMP AVE ODD	Gain adjustment save value
	SMP AVE EVEN	Target save value
	TARGET VALUE	White plate scan ratio
	BLACK LEVEL	Black offset set value (1-12 area)
	ERROR CODE	0: No error
		1: Loop number over
		2: The target value is under specified value
		3: The gain set value is negative
		4: END is not asserted (gain adjustment)
		5: Retry max
		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 (white booting/ gain)
		14:Register check error (before light quantity correction)
	DSPF BACK WHITE LEVEL1ST	First scan DSPF back surface white reference level
	DSPF BACK WHITE LEVEL2ND	DSPF back surface white reference level of the second or later scanning

63-2

Purpose	Adjustment
Function (Purpose)	Perform shading.
Section	Scanner

Operation/Procedure

DSPF-installed model

1) Select [OC SHADING] key or [DSPF SHADING] key, and press [EXECUTE] key.

63-3

Purpose	Adjustment
Function (Purpose)	Perform scanner (CCD) color balance and gamma auto adjustment.
Section	Scanner

Operation/Procedure

1) Place the SIT chart (UKOG-0280FCZZ or UKOG-0280FCZ1) on the reference position of the left rear frame side of the document table and place the SIT chart backside up on the DSPF tray.
2) Select [OC] key or [DSPF] key.
3) Press [EXECUTE] key.

   The scanner (CCD) color balance automatic adjustment is performed.

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.

63-4

Purpose	Information display
Function (Purpose)	Display the SIT chart patch density.
Section	Scanner

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 and place the SIT chart backside up on the DSPF tray.
2) Select [OC] key or [DSPF] key.
3) Press [EXECUTE] key.

   The patch of the SIT chart is scanned.

   When the operation is completed, [EXECUTE] key returns to the normal display.
4) Select a data display mode.

THROUGH GAMMA	SIT chart scan data
COPY GAMMA	Copy mode gamma process data of the SIT chart scan data
SCANNER GAMMA	Image send mode gamma process data of the SIT chart scan data

Select an target display color with [R] [G] [B] keys

63-5

Purpose	Adjustment/Setup
Function (Purpose)	Perform the scanner (CCD) color balance and gamma default setting.
Section	Scanner

Operation/Procedure

1) Select [SIDE A(OC)] key or [SIDE B(DSPF)] key.
2) Press [EXECUTE] key, and press [OK] key

   The scanner (CCD) color balance and gamma are set to the default.

63-11

Purpose	Adjustment/Setup
Function (Purpose)	Set standard target of engine halftone auto adjustment.
Section	Scanner

Operation/Procedure

1) Select the target gray balance with the touch panel

   Default.DEF1

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64-2

Purpose	Self print
Function (Purpose)	Test print (Self print).
Section	Scanner

Operation/Procedure

1) Set the print conditions.

   Select an item to be print condition with scroll keys.

   Set the print conditions with 10-key.
2) Press [EXECUTE] key.

   The test print (self print) is performed.

Item/Display		Content		Setting range	Default value
A	PRINT PATTERN (1,2,9 - 11,17 - 19, 21, 22, 29, 33 - 35)	Print pattern specification (* For details, refer to the description below.)		1, 2, 9 - 11, 15 - 19, 21, 22, 29, 33 - 35	1
B	DOT1 (DOT1>=2 IF A:2,11)	Setting of print dot number (M parameter) (Self print pattern: m by n)		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)		Pattern2, 11: 2-255 except above: 0-255	254
D	DENSITY (FIXED "255" IF A: 9)	Used to specify the print gradation.		Pattern 9: 255 Fixed except above:1-255	255
E	MULTI COUNT	Number of print		1 - 999	1
F	EXPOSURE (2 - 9 IF A: 15 - 19, 33 - 35)	Exposure mode specification	THROUGH	1	8
			CHAR/PIC	2	
			CHAR/PRPIC	3	
			CHAR	4	
			PRINT PIC	5	
			PRINT PAPER	6	
			MAP	7	
			STANDARD DITHER	8	
			AUTO	9	
G	PAPER	Tray selection	Manual paper feed	1	2
			Tray 1	2	
			Tray 2	3	
			Tray 3	4	
			Tray 4	5	
			LCC	6	
H	DUPLEX	Duplex print	YES	0	1
			NO	1	

Item/Display		Content		Setting range	Default value
I	PAPER TYPE	Paper type	Standard paper	1	1
			Heavy paper	2	
			OHP	3	
			Envelope	4	
			Heavy paper2	5	
			Glossy paper	6	
			Heavy paper3	7	

<Print pattern of Item A>

Pattern No.	Content	Pattern generating section
1	Grid pattern	LSU-ASIC
2	Dot print	
9	10% area (A4/A4R) density print	
10	Belt print	
11	Dot print (sub scan)	
17	Halftone pattern (all over the page)	Controller (Memory)
18	256 gradations pattern (Other dither)	
19	256 gradations pattern (straight) 600dpi	
21	4-point dot print (main scan)	LSU-ASIC
22	Slant line	
29	Dot print 1200dpi	
33	Halftone pattern 1200dpi (all over the page)	Controller (Memory)
34	256 gradation pattern 1200dpi	
35	256 gradation pattern (straight) 1200dpi	

64-4

Purpose	Self print
Function (Purpose)	Printer test print (Self print).
Section	Scanner

<Print pattern of Item A>

Pattern No.	Content
1	256 gradations pattern
2	Half tone pattern
3	Dot, background

64-5

Purpose	Self print
Function (Purpose)	Printer test print (Self print).
Section	Scanner

Operation/Procedure

1) Set the print conditions.
   Select an item to be print condition with scroll keys.
   Set the print conditions with 10-key.
2) Press [EXECUTE] key.
   The test print (self print) is performed.

Item/Display		Content		Setting range	Default value
A	PRINT PATTERN	Print pattern specification		1	1
B	DENSITY	Print gradation specification		1 - 255	255
C	MULTI COUNT	Number of print		1 - 999	1
D	PAPER	Paper feed tray selection	Manual paper feed	1	2
			Tray 1	2	
			Tray 2	3	
			Tray 3	4	
			Tray 4	5	
			LCC	6	
E	HALFTONE	Halftone	Image	0	0
			Text	1	

Operation/Procedure

1) Set the print conditions.
   Select an item to be print condition with scroll keys.
   Set the print conditions with 10-key.
2) Press [EXECUTE] key.
3) The test print (self print) is performed.

Item/Display		Content		Setting range	Default value
A	PRINT PATTERN	Print pattern specification (* For details, refer to the description below.)		1 - 3	3
B	DENSITY	specify the print gradation.		1 - 255	128
C	MULTI COUNT	Number of print		1 - 999	1
D	PAPER	Paper feed tray selection	Manual paper feed	1	2
			Tray 1	2	
			Tray 2	3	
			Tray 3	4	
			Tray 4	5	
			LCC	6	
E	HALFTONE	Halftone	Low line number	0	0
			High line number	1	
F	QUALITY	Image quality setting	Standard	0	1
			High quality	1	
			Fine	2	
G	DITHER	Dither correction	Straight	0	1
			Calibration	1	
H	PAPER TYPE	Paper type	Standard paper	0	0
			Heavy paper	1	
			Heavy paper2	2	
			Heavy paper3	3	
			Glossy paper	4	

Item/Display		Content		Setting range	Default value
F	QUALITY	Image quality setting	Standard (600dpi, 1bit)	0	1
			High quality (600dpi, 4bit)	1	
			Fine (1200dpi, 1bit)	2	
G	DITHER	Dither correction	straight	0	1
			calibration	1	
H	PAPER TYPE	Paper type	Standard paper	0 - 1	0
			Heavy paper	1	
			Heavy paper2	2	
			Heavy paper3	3	
			Glossy paper	4	
I	TONER SAVE MODE	Toner save mode	not set	0	0
			set	1	

64-6

Purpose	Self print
Function (Purpose)	Printer test print (Self print) (PS).
Section	Scanner

Operation/Procedure

1) Set the print conditions.
   Select an item to be print condition with scroll keys.
   Set the print conditions with 10-key.

2) Press [EXECUTE] key.
The test print (self print) is performed.

Item/Display		Content		Setting range	Default value
A	PRINT PATTERN	Print pattern specification		1	1
B	DENSITY	Print gradation specification		1 - 255	255
C	MULTI COUNT	Number of print		1 - 999	1
D	PAPER	Paper feed tray selection	Manual paper feed	1	2
			Tray 1	2	
			Tray 2	3	
			Tray 3	4	
			Tray 4	5	
			LCC	6	
E	HALFTONE	Halftone	Image	0	0
			Text	1	
F	QUALITY	Image quality setting	Standard (600dpi, 1bit)	0	1
			Hight quality (600dpi, 4bit)	1	
			Ultra Fine (1200dpi, 1bit)	2	
G	DITHER	Dither correction	straight	0	1
			calibration	1	
H	PAPER TYPE	Paper type	Standard paper	0	0
			Heavy paper	1	
			Heavy paper2	2	
			Heavy paper3	3	
			Glossy paper	4	
I	TONER SAVE MODE	Toner save mode	not set	0	0
			set	1	

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65-1

Purpose Adjustment

Function (Purpose) Adjust the touch panel (LCD display section) detection coordinates.

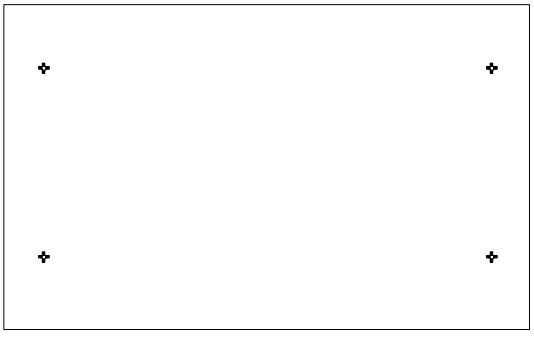
Section Operation unit (Operation/Display control PWB)

Operation/Procedure

Touch the center of the cross mark at the four corners of the screen.

When the adjustment is completed normally, the screen shifts to the simulation sub number entry menu.

In case of an error, the screen returns to the adjustment menu.



65-2

Purpose Information display

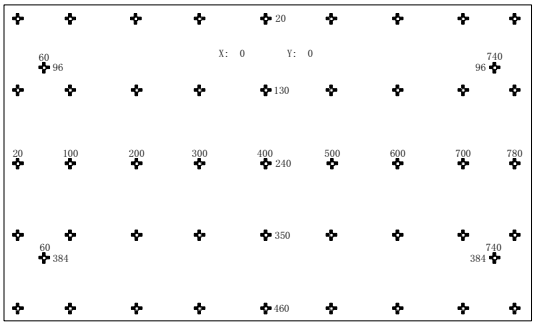
Function (Purpose) Display the touch panel (LCD display section) detection coordinates.

Section Operation unit (Operation/Display control PWB)

Operation/Procedure

Touch the touch panel.

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



65-5

Purpose Operation test/check

Function (Purpose) Used to check the operation panel key input.

Section Operation unit (Operation/Display control PWB)

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.

67

67-17

Purpose Data clear/Reset

Function (Purpose) Printer controller reset

Section

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key.
The set data related to the printer are initialized.

67-24

Purpose Adjustment/Setup

Function (Purpose) Printer density adjustment (Auto adjustment)

Section

Operation/Procedure

1) Press [EXECUTE] key.
The patch image (adjustment pattern) is printed out.
2) Place the printed adjustment pattern on the document table.
3) Press [EXECUTE] key.
The printer density auto adjustment is performed, and the adjustment result is printed.
4) Press [OK] key.

67-25

Purpose	Adjustment
Function (Purpose)	Printer density adjustment (Manual adjustment)
Section	

Operation/Procedure

1) Select a target adjustment density level with scroll key on the touch panel.
2) Enter the set value with 10-key.
   * When the △ ▽ key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
3) Press [OK] key. (The set value is saved.)

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

When [EXECUTE] key is pressed, the check pattern in printed in the density corresponding to the adjustment value.

A4 (11" x 8.5") paper is selected by priority. If there is no A4 (11" x 8.5") paper, A3 (11" x 17") paper is selected.

Item/Display		Setting range	Default value
A - Q	POINT1 - POINT17	1 - 99	50

67-26

Purpose	Adjustment/Setup
Function (Purpose)	Set the standard scanner target of Printer engine halftone adjustment (Manual adjustment)
Section	

Operation/Procedure

1) Select the target gray balance with the touch panel.
   Default DEF1.

67-31

Purpose	Data clear
Function (Purpose)	Clear the printer calibration value (Half-tone process control data).
Section	

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key.
   The printer calibration data (Half tone correction data) are cleared.
   (The printer density correction is canceled.)

67-33

Purpose	Adjustment
Function (Purpose)	Adjust the gamma and the density in each printer screen.
Section	

Operation/Procedure

1) Select a target screen with [SCREEN] key.
2) Select a target adjustment density level with scroll key.
3) Enter the set value with 10-key.
4) Press [OK] key. (The set value is saved.)

When [EXECUTE] key is pressed, the check pattern in printed in the density corresponding to the adjustment value.

A4 (11" x 8.5") paper is selected by priority. If there is no A4 (11" x 8.5") paper, A3 (11" x 17") paper is selected.

Screen	Content
HEAVY PAPER	Heavy paper mode
SCREEN1	600dpi 1bit screen
SCREEN2	600dpi 4 bit low (photo)
SCREEN3	600dpi 4 bit high (graphics)
SCREEN4	1200dpi 1 bit low
SCREEN5	1200dpi 1 bit high

Item/Display		Content	Setting range	Default value
A - Q	POINT1 - POINT17	Point 1 - Point 17	0 - 255	128

67-34

Purpose	Adjustment/Setup
Function (Purpose)	Set the density correction in the printer high density section (Support for the high density section tone gap)
Section	

Operation/Procedure

1) Select a target item with scroll key.
2) Enter the set value with 10-key.

0	Enable
1	Disable

3) Press [OK] key. (The set value is saved.)

Item/Display		Content	Setting range	Default value
A	K (0: ENABLE 1: DISABLE)	K engine highest density correction mode	0	1
		K engine highest density correction mode	1	
B	BLACK MAX TARGET	Scanner target value maximum density correction	0 - 999	500
C	RATIO LOW	Ratio value for high density correction	0 - 100	50
D	RATION HIGH	Ration value for high density correction	0 - 100	5
E	DITHER THRESHOLD	Dither threshold value	0 - 255	250
F	SLOPE THRESHOLD	Slope threshold value	100 - 500	400

67-36

Purpose	Adjustment/Setup
Function (Purpose)	Adjust the density in the low density section
Section	

Operation/Procedure

1) Enter the adjustment value using the 10-key.
2) Press [OK] key.

When the adjustment value is increased, the low density images are strongly reduced. When the adjustment value is decreased, the low density are images are weakly reproduced.

When tone gap is generated in the low density section (highlight section), changing this adjustment value may improve the trouble.

Item/Display		Content	Setting range	Default value
A	A PATCH INPUT	A patch input value	0 - 13	1

67-45

Purpose	Adjustment/Setup
Function (Purpose)	Adjust the printer image filter
Section	

Operation/Procedure

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

Item/Display		Content	Setting range	Default value
A	SHARPNESS: B/W PRINT	Monochrome print	0 - 4	2
B	BOLD B/W PRINT	Bold text	0 - 4	1

67-52

Purpose	Adjustment/Setup
Function (Purpose)	Set the default of the gamma of the printer screen
Section	

Operation/Procedure

1) Select a target default setting mode with the touch panel.
   Press [ALL] key to select all the modes.
2) Press [EXECUTE] key and press [YES] key.

When the printer screen gamma was changed by SIM 67-33, SIM67-54, it is reset to the default.

Item/Display		Content
Screen	HEAVYPAPER	Heavy paper screen
	600DPI 1BIT	SCREEN1 (6000dpi 1bit)
	4BIT HIGH	SCREEN3 (600dpi 4bit graphic
	1200DPI LOW	SCREEN4 (1200dpi 1bit Photo)
	1200DPI HIGH	SCREEN5 (1200dpi 1bit Graphics)

67-54

Purpose	Adjustment
Function (Purpose)	Printer halftone balance adjustment
Section	

Operation/Procedure

This simulation is used to adjust the halftone 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. (A4 11”x8.5” or A3 11" x 17" paper is automatically selected.)
   The patch image (adjustment pattern) is printed out.
2) Set the patch image (adjustment pattern) printed in the procedure 1) on the document table so that the thin lines on the printed patch image (adjustment pattern) are on the left side. Place 5 sheets of white paper on the printed patch image (adjustment pattern).
3) Press [EXECUTE] key.
   The halftone balance adjustment is automatically performed.
   The adjustment pattern is printed out. Check it for any abnormality.
4) Press [OK] key.
   The list of the adjustment items (for each dither) is displayed.
5) Select an adjustment item (for each dither).
6) Press [EXECUTE] key. (A4 11”x8.5” or A3 11" x 17" paper is automatically selected.)
   The patch image (adjustment pattern) is printed out.
7) Set the patch image (adjustment pattern) printed in the procedure 6) on the document table so that the thin lines on the printed patch image (adjustment pattern) are on the left side. Place 5 sheets of white paper on the printed patch image (adjustment pattern).
8) Press [EXECUTE] key.
   The halftone balance adjustment is automatically performed, and the halftone 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.

[6] 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.

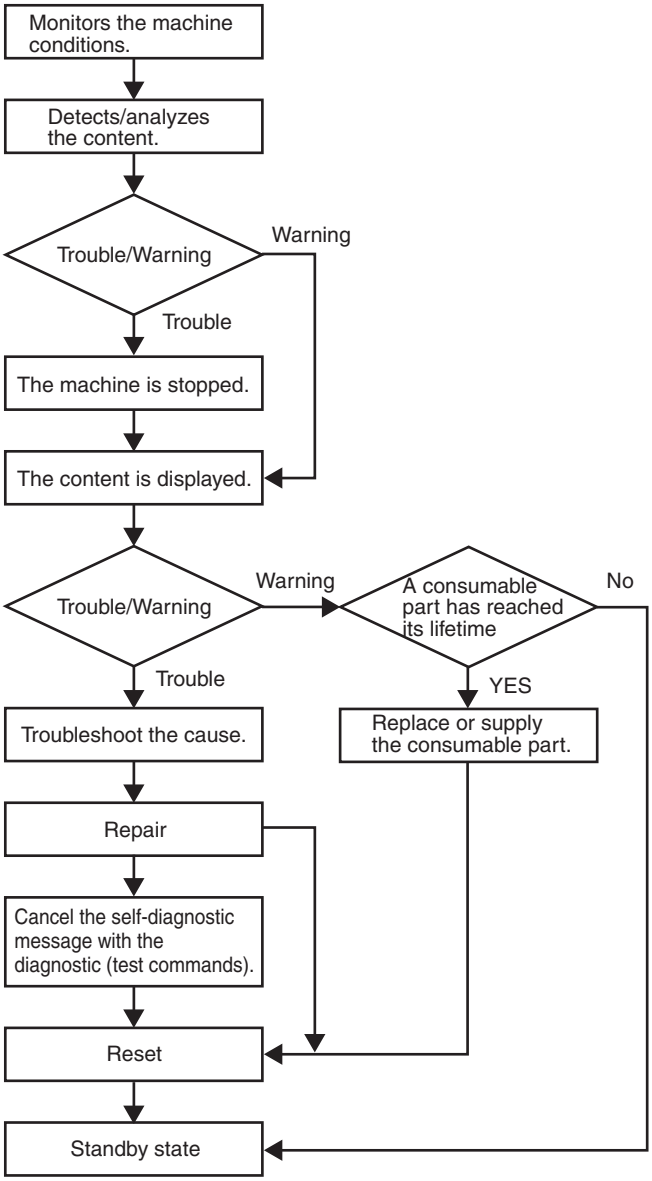
A warning message is displayed when a consumable part life is nearly expired or is expired.

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

Kind of trouble	Judgment block	Trouble code	Operatable mode							
			Copy scan (including interruption)	Scan (Push)	Scan (Pull)	Scan-To HDD	Print	List print	FAX Send	FAX print
FAX board trouble	MFP	F6 (00,01,04,21,30,97,98)	○	○	○	○	○	○	x	x
CF card trouble		E7 (A6)	x	x	x	x	x	x	x	x
SD card trouble		E7 (07)	x	x	x	x	x	x	x	x
HDD trouble		E7 (03,A5)	x	x	x	x	x	x	x	x
HDD-ASIC trouble		E7 (04)	x	x	x	x	x	x	x	x
SCU communication trouble		E7 (80) A0 (02)	x	x	x	x	○	○	x	○
PCU communication trouble		E7 (90) A0 (01)	x	x	x	x	x	x	x	x
ACU communication trouble		A0 (04)	x	x	x	x	x	x	x	x
Printer port system trouble		F9 (91, 92)	〇	x	x	〇	x	△	〇	〇
Backup battery voltage fall		U1 (01)	x	x	x	x	x	x	x	x
External communication disable (RIC)		U7 (50,51)	x	x	x	x	x	x	x	x
Memory error (included not installed the expansion RAM)		U2 (00,11,40,41,42)	x	x	x	x	x	x	x	x
Connection trouble (MFP detection)		A0 (15,17,20,60,61) E7 (89)	x	x	x	x	x	x	x	x
Serial number discrepancy		U2 (30)	x	x	x	x	x	x	x	x
HDD registration data sum error		U2 (50)	x	x	x	x	x	x	x	x
Memory check error when booting		E7 (95, 96)	x	x	x	x	x	x	x	x
Image memory trouble, decode error		E7 (01,49,91,92,93,94)	x	x	x	x	x	x	x	x
Image memory trouble, decode error (ACRE-related 1)		E7 (42,46,47,48)	x	△ 17	x	x	x	○	○	○
Personal counter installation trouble		PC (00)	x	x	x	x	x	x	x	x
Power controller trouble		L8 (20)	x	x	x	x	x	x	x	x
Special function error		P1 (00,01,02) U2 (60)	○	○	○	○	○	○	○	○
Laser trouble	PCU	L6 (10)	x	x	x	x	x	x△ 10	x	x
Connection trouble (PCU detection)		E7 (50,55) A0 (21) F1 (50)	x	x	x	x	x	x	x	x
PCU section troubles (motor, fusing, etc.)		C1 (10), C4 (20) F2 (40,64,70,74,91), H2 (00,01,02), H3 (00,01,02), H4 (00,02), H5 (01), H7 (10), L4 (02,03,04,11,31,32,34,35,40,43,44,50), L8 (01,02), U2 (90,91),	x	x	x	x	x	x△ 10	x	x
Paper feed tray 1 trouble		F3 (12)	△ 3	○	○	○	△ 3	△ 3/10	○	△ 3
Paper feed tray 2 trouble		F3 (22)	△ 3	○	○	○	△ 3	△ 3/10	○	△ 3
Paper feed tray 3 trouble		U6 (01)	△ 3	○	○	○	△ 3	△ 3/10	○	△ 3
Paper feed tray 4 trouble		U6 (02)	△ 3	○	○	○	△ 3	△ 3/10	○	△ 3
Paper feed tray 5 trouble		U6 (09,20,21,22,51)	△ 3	○	○	○	△ 3	△ 3/10	○	△ 3
Paper feed tray other troubles		U6 (00,10,50,52)	△ 11	○	○	○	△ 11	△ 10/11	○	△ 11
Staple trouble		F1 (08,10)	△ 4	△ 4	△ 4	△ 4	△ 4	△ 4/10	△ 4	△ 4
Saddle stitch section trouble		F1 (41,42,43,44,45,46,47,51)	△ 4	△ 4	△ 4	△ 4	△ 4	△ 4/17	△ 4	△ 4
After-process trouble	PCU	F1 (00,03,11,15,19,20,21,22,23,30,32,33,34,36,37,38,39,52)	△ 4	△ 4	△ 4	△ 4	△ 4	△ 4/10	△ 4	△ 4
Other troubles		EE (EC,EL,EU)	○	○	○	○	○	○	○	○
Process control trouble (PCU detection)		F2 (22,39,50,58,78)	○ △ 12	○	○	○	○	○	○	○

Kind of trouble	Judgment block	Trouble code	Operatable mode							
			Copy scan (including interruption)	Scan (Push)	Scan (Pull)	Scan-To HDD	Print	List print	FAX Send	FAX print
Connection trouble (SCU detection)	SCU	A0 (22)	x	x	x	x	x	x	x	x
SCU color system troubles (SCU detection)		UC (02)	△ 9	△ 9	△ 9	△ 9	○	○	△ 9	○
Anti copy system		UC (20)	x	x	x	x	○	○	x	○
EEPROM faction		U2 (80,81)	x	x	x	x	○	○	x	○
Multi touch panel error		U9 (01)	x	x	x	x	○	○	x	○
Scanner section troubles (mirror motor, lens, copy lamp)		L1 (00), L3 (00)	x	x	x	x	○	○	x	○
CCD troubles (shading, etc.)		E7 (10,11,14)	x	x	x	x	○	○	x	○
DSPF/DF trouble		U5 (00,16,30,31)	△ 6	△ 6	△ 6	△ 6	○	○	△ 6	○
General troubles in the DSPF back surface scanning section		E6 (10, 11, 14)	△ 7	△ 7	△ 7	△ 7	○	○	△ 7	○

 : Operation enabled, ?: Operation disabled

△ 3 : When detected during other than a job, the operation is enabled with a tray other than the trouble tray.

△ 4 : When detected during other than a job, the operation is enabled in a section other than the trouble paper exit section.
However it is valid only when the escape tray setting has been made.

△ 9 : When detected during other than a job, the operation is enabled in the monochrome mode.

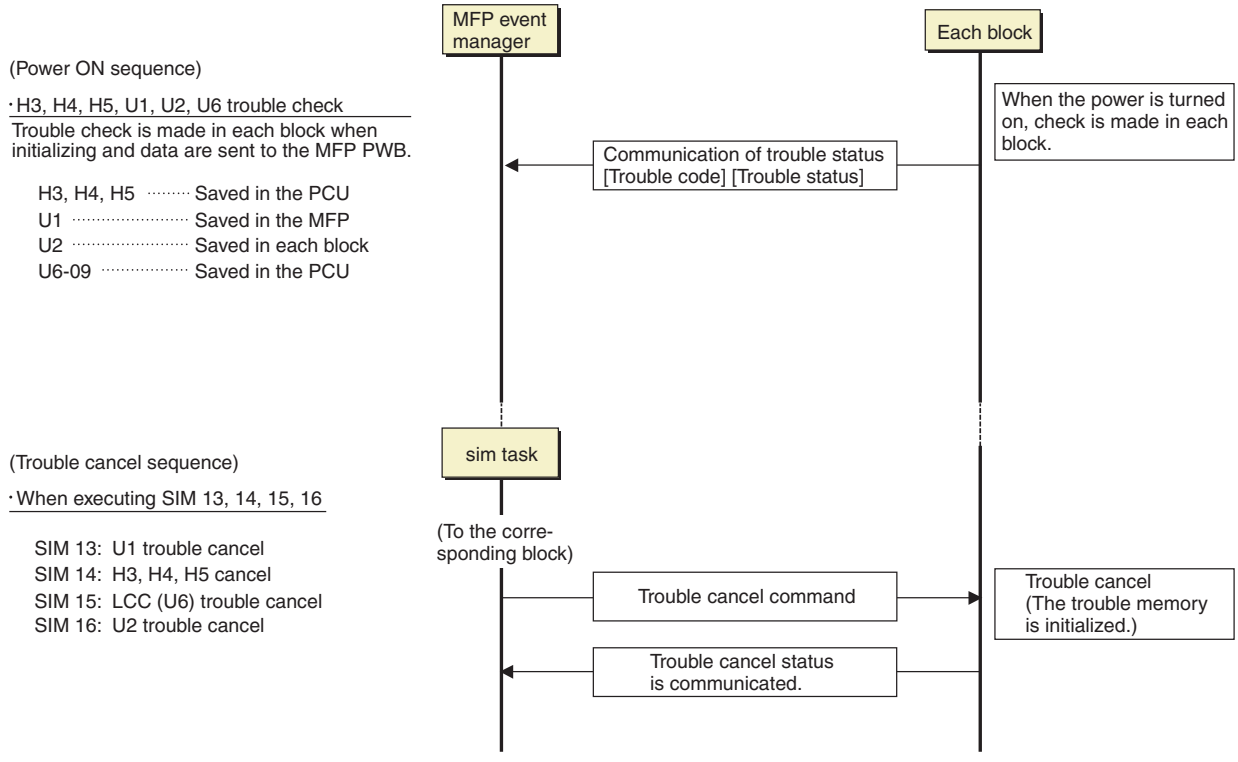
△ 10: Since communication is enabled, reception can be transferred.

△ 11: When detected during other than a job, the operation is enabled in other than the DESK and the LCC.

△ 12: Trouble message is displayed (Example: Ready to copy. F2 trouble)

△ 17 : Job execution enable only in a format other high compression PDF.

(2) Power ON trouble detection sequence.



2. Trouble code list

Trouble code		Trouble code content	Trouble detection	Mecha-nism	Option	Electricity	FAX	Supply
Main code	Sub code							
C1	10	Main charger trouble	PCU			○		
C4	20	Transfer output trouble	PCU			○		
E6	10	DSPF (CCD) shading error (Black correction)	SCU			○		
	11	DSPF (CCD) shading error (White correction)	SCU			○		
	14	CCD-ASIC error	SCU			○		
E7	01	MFP image data error	MFP			○		
	02	HDD trouble when the mirroring kit is installed	MFP			○		
	03	HDD trouble / Mirroring kit error	MFP			○		
	04	HDD-ASIC error	MFP			○		
	07	SD card error	MFP			○		
	10	Shading error (Black correction)	SCU			○		
	11	Shading error (White correction)	SCU			○		
	14	CCD-ASIC error	SCU			○		
	20	LSU laser detection error	PCU			○		
	21	LSU laser deterioration trouble	PCU			○		
	24	LSU LD driver error	PCU			○		
	28	LSU-PCU connection error	PCU			○		
	29	LSU ASIC frequency error	PCU			◯		
	42	Image data error (ACRE ASIC)	MFP			○		
	46	Image data decode error (ACRE ASIC)	MFP			○		
	47	Combination error between MFP PWB and ACRE firmware	MFP			○		
	48	Scanner expansion PWB (ACRE) ASIC memory error	MFP			○		
	49	Water mark data error	MFP			◯		
	50	Engine connection trouble	PCU			○		
	55	PWB information sum error (Engine detection)	PCU			○		
	60	Combination error between the MFP PWB and other PWB, firmware	MFP			○		
	61	Combination error between the MFP PWB and the PCU PWB	MFP			○		
	80	MFP-SCU PWB communication error	MFP			○		
	89	Communication error between MFP PWB CPU and energy-saving NIC controller	MFP			◯		
	90	MFP-PCU PWB communication error	MFP			○		
	91	FAX reception image data error	MFP			○		
	92	Copy image data error	MFP			○		
	93	Copy, image send, FAX, filing, print image data process error	MFP			○		
	94	Image file data process error (when importing file data)	MFP			○		
	95	MFP PWB DIMM memory check error (Soc)	MFP			◯		
	96	MFP PWB DIMM memory check error (ASIC)	MFP			◯		
	A0	LSU LD PWB EEPROM read/write error	PCU			○		
	A5	Installation error of HDD which was used in the mirroring kit	MFP			○		
	A6	Compact flash memory trouble	MFP			○		
EE	EC	Automatic toner density adjustment error	PCU			○		
	EL	Automatic toner density adjustment error (Over toner)	PCU			○		
	EU	Automatic toner density adjustment error (Under toner)	PCU			○		
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		○			
	30	Finisher - saddle unit communication 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		○			
	42	Saddle guide motor trouble	PCU		○			
	43	Saddle alignment operation trouble	PCU		○			

Trouble code		Trouble code content	Trouble detection	Mecha-nism	Option	Electricity	FAX	Supply
Main code	Sub code							
F1	44	Saddle staple motor R trouble	PCU		○			
	45	Saddle staple trouble	PCU		○			
	46	Saddle pushing plate motor trouble	PCU		○			
	47	Saddle paper transport motor trouble	PCU		○			
	50	Main unit - Finisher combination error	PCU		○			
	51	Saddle sensor connection trouble	PCU		○			
	52	Finisher micro switch trouble	PCU		○			
F2	22	Discharge lamp trouble	PCU					○
	39	Process thermistor trouble	PCU					○
	40	Toner density sensor trouble	PCU					○
	45	Image density sensor trouble	PCU					○
	50	Drum phase sensor trouble	PCU					○
	58	Process humidity sensor trouble	PCU					○
	64	Toner supply operation trouble	PCU					○
	70	Improper toner cartridge detection	PCU					○
	74	Toner cartridge CRUM error	PCU					○
	78	Registration image density sensor trouble	PCU					○
	91	High density process control high voltage error	PCU					○
F3	12	Paper feed tray 1 lift operation trouble	PCU	○				
	22	Paper feed tray 2 lift operation trouble	PCU	○				
F6	00	MFP-FAX communication trouble	MFP				○	
	01	FAX board EEPROM read/write error	FAX				○	
	04	FAX MODEM operation trouble	FAX				○	
	21	Combination error between the TEL/LIU PWB and the FAX soft switch	FAX				○	
	30	Access error to 1-chip microprocessor on the FAX board (FAX detection)	FAX				○	
	97	The FAX PWB does not match with the machine model.	FAX				○	
	98	Combination error between the FAX-BOX destination information and the machine destination information.	FAX				○	
H2	00	Thermistor open trouble (TH_UM)	PCU	○				
	01	Thermistor open trouble (TH_LM)	PCU	○				
	02	Thermistor open trouble (TH_US)	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	○				
H4	00	Fusing section low temperature trouble (TH_UM)	PCU	○				
	02	Fusing section low temperature trouble (TH_US)	PCU	○				
H5	01	5 times continuous POD1 not-reach jam	PCU	○				
H7	10	Recovery error from low fuser temp. (TH_UM)	PCU	○				
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	Drum motor trouble	PCU			○		
	11	Shift motor trouble	PCU			○		
	31	Paper exit cooling fan (POFM1/2) trouble	PCU			○		
	32	Power source cooling fan trouble	PCU			○		
	34	LSU cooling fan trouble	PCU			○		
	35	Paper exit cooling fan 2 trouble	PCU			○		
	40	Ozone fan trouble	PCU			○		
	43	Paper exit cooling fan (POFM3) trouble	PCU			○		
	44	Ozone exhaust fan trouble	PCU			○		
	50	Process fan 1 trouble	PCU			○		
L6	10	Polygon motor trouble	PCU			○		
L8	01	Full wave signal detection error	PCU			○		
	02	Full wave signal error	PCU			○		
	20	Communication error of MFP PWB/Mother board	MFP			○		
P1	00	PCI communication error	MFP		○			
	01	PCI fan error	MFP		○			
	02	Plasma generating device error	MFP		○			
PC	-	Personal counter not detected	MFP	○				
U1	01	Battery trouble	MFP			○		
U2	00	MFP EEPROM read/write error	MFP			○		
	05	Erroneous detection of account management data /HDD internal authentication DB table error	MFP			○		
	11	MFP PWB EEPROM counter check sum error	MFP			○		
	30	MFP PWB and PCU PWB manufacturing No. data inconsistency	MFP			○		
	40	SD card system storage data area error	MFP			○		
	41	HDD system storage data area error	MFP			○		
	42	Machine adjustment data (system storage data area) error	MFP			○		

Trouble code		Trouble code content	Trouble detection	Mecha-nism	Option	Electricity	FAX	Supply
Main code	Sub code							
U2	50	HDD user authentication data check sum error	MFP			○		
	60	Watermark check error	MFP			○		
	80	SCU PWB EEPROM read/write error	SCU			○		
	81	SCU PWB EEPROM check sum error	SCU			○		
	90	PCU PWB EEPROM read/write error	PCU			○		
	91	PCU PWB EEPROM check sum error	PCU			○		
U5	00	Document feed unit communication error	SCU			○		
	16	Document feed unit fan motor trouble	SCU			○		
	30	Document feed unit tray lift up trouble	SCU			○		
	31	Document feed unit tray lift down trouble	SCU			○		
U6	00	Communication error of PCU PWB/Desk paper feed unit	PCU			○		
	01	Desk paper feed tray 1 lift trouble	PCU		○			
	02	Desk paper feed tray 2 lift trouble	PCU		○			
	09	LCC lift motor 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		○			
	50	Desk - Main unit combination trouble	PCU		○			
	51	LCC - Main unit combination trouble	PCU		○			
	52	PCU - Paper feed desk communication trouble	PCU		○			
U7	50	MFP PWB - Vendor machine communication error	MFP			○		
	51	Vendor machine error	MFP			○		
U9	01	Touch panel trouble	SCU			○		
UC	02	IPD/DOCC ASIC IPD section error	SCU			○		
	20	IPD/DOCC ASIC DOCC section error	SCU			○		
A0	01	PCU PWB ROM error	MFP			○		
	02	SCU PWB ROM error	MFP			○		
	04	ACU PWB ROM error (when scanner expansion kit is installed)	MFP			○		
	15	DSK BOOT version disagreement	MFP			○		
	17	Inconsistency between the UI data and the CPU firmware version	MFP			○		
	20	Conflict firmware and EEPROM data version (MFP)	MFP			○		
	21	Conflict firmware and EEPROM data version (PCU)	PCU			○		
	22	Conflict firmware and EEPROM data version (SCU)	SCU			○		

3. Details of trouble code

C1-10 Main charger trouble

Section	PCU
Cause	The main charger unit is not installed properly. There is an abnormality in the main charger unit. Disconnection of the high voltage PWB connector. MC/DV high voltage PWB trouble. PCU PWB trouble
Check & Remedy	Check the output of the main charger with SIM8-2. Check disconnection of the main charger./Replace. Check disconnection of the high voltage PWB connector./Replace. Replace the MC/DV high voltage PWB. Replace the PCU PWB.

C4-20 Transfer output trouble

Section	PCU
Cause	Transfer unit abnormality. Transfer unit insertion trouble. TC output harness disconnection, breakage. OPC drum abnormality (does not rotate). High voltage PWB trouble PCU PWB trouble.
Check & Remedy	Replace the transfer unit. Reinsert the transfer unit. Check or replace the TC output harness Replace the high voltage PWB. Replace the PCU PWB.

E6-10 Shading error (Black correction)

Section	SCU
Cause	Installation error of the CCD unit harness. CCD unit trouble. DSPF PWB trouble.
Check & Remedy	Check the installing state of the harness to the CCD unit. Check the CCD unit / the DSPF PWB.

E6-11 Shading error (White correction)

Section	SCU
Cause	Installation error of the CCD unit harness. Copy lamp lighting trouble. Dirt on the reference white plate. CCD unit trouble. DSPF PWB trouble. Shading adjustment error
Check & Remedy	Check the installing state of the harness the CCD unit. Clean the reference white plate. Check the CCD unit / the DSPF PWB.

E6-14 CCD-ASIC error

Section	SCU
Cause	DSPF PWB trouble.
Check & Remedy	Replace the DSPF PWB.

E7-01 MFP image data error

Section	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.

E7-02 HDD trouble (when the mirroring kit is installed)

Section	MFP
Cause	When installing the mirroring kit, the HDD of the machine or the HDD of the mirroring kit breaks down or connection fails.. Defective installation of the mirroring kit. Breakdown of the HDD of the mirroring kit. Defective connection between the HDD and the mirroring kit harness. MFP PWB trouble.
Check & Remedy	Use SIM62-20 to check the trouble. Check installation of the mirroring kit and replace if necessary. Replace the broken HDD. Replace the mirroring kit. 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.

E7-07 SD card error

Section	MFP
Cause	SD card trouble or contact error. MFP PWB trouble.
Check & Remedy	Replace the SD card. Check the SD card socket. Replace the MFPC PWB.

E7-10 Shading error (Black correction)

Section	SCU
Cause	Abnormality in the CCD black scan level when the scanner lamp is turned OFF. Improper installation of the harness to the CCD unit. CCD unit abnormality. SCU PWB abnormality.
Check & Remedy	Check connection of the harness to the CCD unit. Check the CCD unit / the SCU PWB.

E7-11 Shading error (White correction)

Section	SCU
Cause	Abnormality in the CCD white reference plate scan level when the scanner lamp is turned ON. Improper installation of the harness to the CCD unit. Dirt on the mirror, lens, and the reference white plate. Scanner lamp lighting trouble. 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 / the SCU PWB.

E7-14 CCD-ASIC error

Section	SCU
Cause	SCU PWB trouble.
Check & Remedy	Check the SCU PWB. Replace the SCU PWB.

E7-20 LSU laser detection error

Section	PCU
Cause	Optical axis shift. Reduced laser power, lighting error, laser diode trouble. Harness and connector trouble between the LD/BD PWB and the LSU control PWB.
Check & Remedy	Use SIM61-1 to check the operation of the LSU. Check the PWB and connection of the harness in the LSU. Replace the LSU.

E7-21 LSU laser deterioration trouble

Section	PCU
Cause	Power reduction due to laser deterioration. Harness and connector disconnection/insertion trouble between the LD PWB and the LSU control PWB.
Check & Remedy	Use SIM61-1 to check the operation of the LSU. Check the PWB and connection of the harness in the LSU. Replace the LSU.

E7-24 LSU LD driver error

Section	PCU
Cause	Disconnection or improper connection of the harness and the connector between the LD PWB and the LSU control PWB. LD PWB/LSU control PWB trouble.
Check & Remedy	Use SIM61-1 to check the operation of the LSU. Check the harness and the connector between the LD PWB and the LSU control PWB. Replace the LD PWB / LSU control PWB.

E7-28 LSU-PCU connection error

Section	PCU
Cause	Communication error between the CPU in the PCU PWB and the LSU control ASIC. Improper connection of the communication connector between the PCU PWB and the LSU control PWB. Harness trouble between the PCU PWB and the LSU control PWB. PCU PWB or LSU control PWB trouble
Check & Remedy	Check connection of the connector and the harness between the PCU PWB and the LSU control PWB. Replace the LSU control PWB. Replace the PCU PWB.

E7-29 LSU ASIC frequency error

Section	PCU
Cause	Oscillation abnormality of the external oscillator and the internal oscillating circuit used in the LSU ASIC. LSU ASIC abnormality on the LSU ASIC PWB.
Check & Remedy	Replace the LSU control PWB.

E7-42 Data error (ACRE ASIC)

Section	MFP
Cause	Image transfer trouble.
Check & Remedy	Check the connection state of the ACRE ASIC PWB connector. Replace the ACRE ASIC PWB.

E7-46 Decode error (ACRE ASIC)

Section	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.

E7-47 Combination error between MFP PWB and ACRE firmware

Section	MFP
Cause	Connect to the scanner expansion PWB (ACRE) with the firmware which does not support MFP PWB
Check & Remedy	Update the firmware on SIM49-1 or SIM49-10.

E7-48 Memory error (ACRE ASIC)

Section	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

Section	MFP
Cause	Watermark data trouble
Check & Remedy	Use SIM49-5 to upload the watermark data. Replace the HDD.

E7-50 Engine connection trouble

Section	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)

Section	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

Section	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

Section	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.

E7-80 MFP-SCU PWB communication error

Section	MFP
Cause	SCU PWB connector connection trouble. SCU PWB - MFP PWB connection trouble. SCU PWB mother board connection trouble. SCU PWB trouble. MFP PWB trouble. Mother board trouble.
Check & Remedy	Check connection of the SCU PWB, the MFP PWB, and the mother board. Check the ground. Replace the SCU PWB. Replace the MFP PWB. Replace the mother board.

E7-89 Communication error between MFPc PWB CPU and energy-saving NIC controller

Section	MFP
Cause	No response can be obtained from the energy-saving NIC controller
Check & Remedy	Replace the MFP PWB.

E7-90 MFP - PCU PWB communication error

Section	MFP
Cause	PCU PWB - MFP PWB connection trouble. PCU PWB trouble. MFP PWB trouble.
Check & Remedy	Check connection of the PCU PWB, the MFP PWB, Check the ground. Replace the PCU PWB. Replace the MFP PWB.

E7-91 FAX reception image data error

Section	MFP
Cause	Image data process abnormality. HDD trouble. SD card trouble or contact error. Image compression data corruption. MFP PWB trouble. FAX control PWB trouble.
Check & Remedy	Use SIM60-1 to check the read/write operations of the memory. Replace the HDD. Replace or check installation of the SD card. Replace the MFP PWB. Replace the FAX control PWB.

E7-92 Copy image data error

Section	MFP
Cause	Image data process abnormality. HDD trouble. Image compression data corruption. MFP PWB trouble.
Check & Remedy	Use SIM60-1 to check the read/write operations of the memory. Replace the HDD. Replace the MFP PWB.

E7-93 Copy, image send, filing, print image data process error

Section	MFP
Cause	Image data process abnormality. HDD trouble. Image compression data corruption. MFP PWB trouble.
Check & Remedy	Use SIM60-1 to check the read/write operations of the memory. Replace the HDD. Replace the MFP PWB.

E7-94 Image file data process error (when importing file data)

Section	MFP
Cause	Image data process abnormality. HDD trouble. Image compression data corruption. MFP PWB trouble.
Check & Remedy	Use SIM60-1 to check the read/write operations of the memory. Replace the HDD. Replace the MFP PWB.

E7-95 MFP PWB DIMM memory check error (Soc)

Section	MFP
Cause	Memory data corruption occurs MFP PWB trouble. DIMM memory trouble or contact error
Check & Remedy	Use SIM60-1 to check the read/write operations of the memory. DIMM memory socket check. Replace the DIMM memory.

E7-96 MFP PWB DIMM memory check error (ASIC)

Section	MFP
Cause	Memory data corruption occurs. DIMM memory trouble or contact error MFP PWB trouble.
Check & Remedy	Use SIM60-1 to check the read/write operations of the memory. Replace the HDD. Replace the MFP PWB.

E7-A0 LSU LD PWB EEPROM read/write error

Section	PCU
Cause	EEPROM/LD driver trouble. EEPROM/LD driver access circuit trouble.
Check & Remedy	Check connection of the connector and the harness of the LD PWB and the PCU PWB. Replace the PCU PWB. If the above remedies cannot delete the trouble replace the LSU.

E7-A5 Installation error of HDD which was used in the mirroring kit

Section	MFP
Cause	HDD which was used in the mirroring kit is installed to the MFP without the mirroring kit.
Check & Remedy	Replace the HDD with one which has not been used in the mirroring kit.

E7-A6 Compact flash memory trouble

Section	MFP
Cause	Compact flash memory trouble. MFP PWB trouble. File system control area data trouble.
Check & Remedy	Replace the compact flash memory. Replace the MFP PWB.

EE-EC Automatic toner density adjustment error

Trouble content	The sampling level in the automatic toner density adjustment is outside of 128±3.
Section	PCU
Cause	Toner density sensor trouble. Developing unit trouble. PCU PWB trouble.
Check & Remedy	Replace the toner density sensor. Replace the developing unit. Replace the PCU PWB.

EE-EL Automatic toner density adjustment error (Over toner)

Trouble content	The sampling level in the automatic toner density adjustment is 77 or less or the control voltage is 207 or above.
Section	PCU
Cause	Toner density sensor trouble. Charging voltage/ developing voltage trouble, toner density trouble, or developing unit trouble. PCU PWB trouble.
Check & Remedy	Replace the toner density sensor. Replace the developing unit. Replace the PCU PWB.

EE-EU Automatic toner density adjustment error (Under toner)

Trouble content	The sampling level in the automatic toner density adjustment is 177 or above or the control voltage is 52 or less.
Section	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

Section	PCU
Cause	Connection trouble of the connector and the harness between the finisher and the PCU PWB. Finisher control PWB trouble. PCU PWB trouble. 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

Section	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

Section	PCU
Cause	Stapler shift motor trouble. Finisher control PWB trouble. Home position sensor trouble.
Check & Remedy	Use SIM3-3 to check the operation of the stapler shift motor. 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

Section	PCU
Cause	Staple motor trouble. Finisher control PWB trouble. Home position sensor trouble.
Check & Remedy	Use SIM3-3 to check the operation of the staple motor. 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

Section	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

Section	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

Section	PCU
Cause	Finisher paper alignment motor lock. Motor speed abnormality. Over-current 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

Section	PCU
Cause	Finisher paper alignment motor lock. Motor speed abnormality. Over-current 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

Section	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

Section	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

Section	PCU
Cause	Motor lock trouble. Control PWB trouble, home position sensor trouble. Connection harness/connector connection trouble.
Check & Remedy	Check the operation of the rear edge assist motor with SIM3-3. Check connection from the control PWB to the motor. Replace the control PWB.

F1-30 Finisher - saddle unit communication trouble

Section	PCU
Cause	Connector and harness connection trouble. Finisher control PWB trouble.
Check & Remedy	Check connection of the connector and the harness. Turn OFF/ON the power. Replace the finisher control PWB.

F1-31 Saddle paper folding trouble

Section	PCU
Cause	Motor lock trouble. Control PWB trouble, home position sensor trouble. Connection harness/connector connection trouble.
Check & Remedy	Check the operation of the 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

Section	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

Section	PCU
Cause	Punch shift motor trouble. Finisher control PWB trouble. Home position sensor trouble. Harness and connector connection trouble.
Check & Remedy	Use SIM3-3 to check the operation of the punch shifting. 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

Section	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

Section	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

Section	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

Section	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

Section	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

Section	PCU
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.

F1-42 Saddle guide motor trouble

Section	PCU
Cause	Saddle roller guide motor trouble. Finisher control PWB trouble. Home position sensor trouble. Harness and connector connection trouble.
Check & Remedy	Use SIM3-3 to check the operation of the saddle roller guide motor. 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

Section	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.

F1-44 Saddle staple motor R trouble

Section	PCU
Cause	Saddle staple motor R trouble. Finisher control PWB trouble. Home position sensor trouble. Harness and connector connection trouble.
Check & Remedy	Use SIM3-3 to check the operation of the Saddle staple motor R. Check connection from the control PWB to the motor. Turn OFF/ON the power. Replace the control PWB. Replace the sensor.

F1-45 Saddle staple trouble

Section	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.

F1-46 Saddle pushing plate motor trouble

Section	PCU
Cause	Saddle motor trouble. Finisher control PWB trouble. Home position sensor trouble. Harness and connector connection trouble.
Check & Remedy	Use SIM3-3 to check the operation of the saddle motor. Check connection from the control PWB to the motor. Turn OFF/ON the power. Replace the control PWB. Replace the sensor.

F1-47 Saddle paper transport motor trouble

Section	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

Section	PCU
Cause	The finisher which is not supported by the main unit model is installed. Finisher control PWB trouble.
Check & Remedy	Install a proper finisher. Replace the finisher control PWB.

F1-51 Saddle sensor connection trouble

Section	PCU
Cause	Firmware control PWB trouble. Home position sensor trouble. Harness and connector connection trouble.
Check & Remedy	Use SIM3-2 to check the operations of the guide HP sensor and the push plate lead edge sensor. Check connection from the control PWB to the sensor. Replace the control PWB. Replace the sensor.

F1-52 Finisher micro switch trouble

Section	PCU
Cause	Finisher control PWB trouble. Each micro switch trouble. Harness and connector connection trouble.
Check & Remedy	Use SIM3-2 to check the operations of the front door/ upper door open detection and the oscillation guide close detection. Check connection from the control PWB to the sensor. Replace the control PWB. Replace the sensor.

F2-22 Discharge lamp trouble

Section	PCU
Cause	Contact trouble between the discharge lamp PWB and the PCU PWB. Discharge lamp PWB trouble. PCU PWB trouble.
Check & Remedy	Replace the discharge lamp PWB. Check the harness and connector. Replace the PCU PWB.

F2-39 Process thermistor trouble

Section	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

Section	PCU
Cause	Toner density sensor output abnormality (Sample level 35 or less, or 220 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 Image density sensor trouble

Section	PCU
Cause	Image density sensor trouble. Sensor harness and connector connection trouble. Image density sensor dirt. PCU PWB trouble.
Check & Remedy	Replace the image density sensor . Check connection of the sensor harness and connector. Clean the image density sensor. Replace the PCU PWB.

F2-50 Drum phase sensor trouble

Section	PCU
Cause	Drum phase sensor trouble. Drum phase sensor harness and connector connection trouble. Drum drive section trouble. PCU PWB trouble.
Check & Remedy	Replace the drum phase sensor. Check connection of the drum phase sensor harness and the connector. Repair the drum drive section. Replace the PCU PWB.

F2-58 Process humidity sensor trouble

Section	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

Section	PCU
Cause	Toner clutch trouble. Toner density sensor trouble. Connector/harness trouble. PCU PWB trouble. Toner cartridge trouble. Developing unit trouble.
Check & Remedy	Replace the toner clutch. Replace the toner density sensor. Connector and harness check. Replace the PCU PWB. Replace the toner cartridge. Replace the developing unit.

F2-70 Improper toner cartridge detection

Section	PCU
Cause	An improper toner cartridge is inserted. (The main unit detects a toner cartridge of a different specification.) Toner cartridge trouble. PCU PWB trouble
Check & Remedy	Replace the toner cartridge. Replace the PCU PWB.

F2-74 Toner cartridge CRUM error

Section	PCU
Cause	Toner cartridge (CRUM) trouble. PCU PWB trouble. Connector/harness trouble.
Check & Remedy	Replace the toner cartridge. Replace the PCU PWB. Connector and harness check.

F2-78 Registration image density sensor trouble

Section	PCU
Cause	Image density sensor trouble. Connection trouble of the harness between the PCU PWB and the image density sensor. Dirt on the image density sensor
Check & Remedy	Check the sensor and the harness. Replace the registration image sensor. Replace the PCU PWB.

F2-91 High density process control high voltage error

Section	PCU
Cause	Image density sensor trouble. Harness connection trouble between the PCU PWB and image density sensor. Dirt on the image density sensor. Developing tank abnormality.
Check & Remedy	Use SIM44-2 to execute the gain adjustment of the process control sensor. Check the drum surface. Replace the developing tank.

F3-12 Paper feed tray 1 lift operation trouble

Section	PCU
Cause	LUD1 is not turned ON within the specified time. CLUD1 sensor trouble Paper feed tray 1 lift unit trouble. PCU PWB trouble. 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

Section	PCU
Cause	LUD2 does not turn ON within the specified time. CLUD2 sensor trouble. Paper feed tray 2 lift unit trouble. PCU PWB trouble. Harness and connector connection trouble.
Check & Remedy	Check the harness and the connector of LUD2. Replace the lift-up unit. Replace the PCU PWB.

F6-00 MFP-FAX communication trouble

Trouble content		Communication establishment error/Framing/Parity/ Protocol error
Section		MFP
Case 1	Cause	FAX unit PWB connector connection error
	Check/ remedy	Check the connector connection between the FAX unit PWB and the MFPcnt PWB.
Case 2	Cause	FAX unit PWB - MFPcnt PWB harness trouble
	Check/ remedy	Check the connector harness between the FAX unit PWB and the MFPcnt PWB.
Case 3	Cause	FAX unit PWB mother board connector pin breakage
	Check/ remedy	Check the machine grounding.
Case 4	Cause	FAX unit ROM trouble/ROM pin breakage
	Check/ remedy	Check the FAX unit PWB ROM.

F6-01 FAX board EEPROM read/write error

Trouble content		EEPROM access error (read/write)
Section		FAX
Case 1	Cause	EEPROM trouble
	Check/ remedy	Check that no trouble occurs after replacement of EEPROM. Execute the memory check of SIM66-3 to insure that EEPROM can be accessed.
Case 2	Cause	FAX PWB EEPROM access circuit trouble
	Check/ remedy	Replace the PWB. In this case, not need to execute the simulation.

F6-04 FAX MODEM operation trouble

Trouble content		FAX PWB MODEM chip operation trouble
Section		FAX
Case 1	Cause	FAX PWB MODEM chip operation trouble
	Check/ remedy	Replace the FAX PWB MODEM chip.
Case 2	Cause	The FAX PWB MODEM chip cannot be accessed.
	Check/ remedy	Replace the FAX PWB.

F6-21 Combination error between the TEL/LIU PWB and the FAX soft switch

Trouble content		Combination error between the TEL/LIU PWB and the FAX PWB information (soft switch)
Section		FAX
Case 1	Cause	The destination of the installed TEL/LIU PWB differs.
	Check/ remedy	Check the destination of the installed TEL/LIU PWB.
Case 2	Cause	The FAX PWB information (soft switch) differs.
	Check/ remedy	Check the FAX PWB information (soft switch).
Case 3	Cause	TEL/LIU PWB trouble
	Check/ remedy	Replace the TEL/LIU PWB.

F6-30 Access error to 1-chip microprocessor on the FAX board (FAX detection)

Trouble content		Access error (read/write) to 1-chip microprocessor on the FAX board
Section		FAX
Case 1	Cause	Program writing error (or no writing) to the 1-chip microprocessor
	Check/ remedy	Use SIM66-24 to rewrite the 1-chip microprocessor program.
Case 2	Cause	1-chip microprocessor trouble
	Check/ remedy	Replace the 1-chip microprocessor chip. When replacing, use SIM66-42 to rewrite the 1-chip microprocessor program.
Case 3	Cause	FAX PWB 1-chip microprocessor access circuit trouble
	Check/ remedy	Replace the FAX PWB.

F6-97 The FAX PWB does not match with the machine model.

Trouble content		The FAX PWB identification model does not match with the machine model.
Section		FAX
Case 1	Cause	An improper type of FAX PWB is installed to the machine.
	Check/ remedy	Replace the FAX PWB with a proper one.

F6-98 Combination error between the FAX-BOX destination information and the machine destination information.

Trouble content		Combination error between the FAX PWB destination information and the machine destination information.
Section		FAX
Case 1	Cause	Combination error between the destination information written in EEPROM on the FAX PWB and the destination information of the machine (set with SIM26-6).
	Check/ remedy	1) Check the destination of the FAX PWB. 2) Check the destination of the machine. (SIM26-6) 3) Use a proper combination of the machine and the FAX PWB.

F9-91 Communication error between MFP and the Printer section when booting

Section	MFP
Cause	MFP section PWB trouble. Printer section PWB trouble Printer flash ROM trouble. MFP PWB-printer section PWB connection trouble.
Check & Remedy	Replace the MFP PWB. Replace the printer flash ROM. Check connection between the MFP PWB and the printer section PWB

F9-92 Printer (section) PWB hardware error

Section	MFP
Cause	MFP PWB trouble.
Check & Remedy	Replace the MFP PWB.

H2-00 Thermistor open trouble (TH_UM)

Section	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)

Section	PCU
Cause	Thermistor trouble. PCU PWB trouble Thermistor connector and harness connection trouble. Fusing section connector connection trouble. Fusing unit not installed.
Check & Remedy	Use SIM44-14 to check the state of the thermistor. Replace the thermistor. Replace the PCU PWB. Check connection of the thermistor connector and harness. Check the connector in the fusing section.

H2-02 Thermistor open trouble (TH_US)

Section	PCU
Cause	Thermistor trouble. PCU PWB trouble. Connection trouble of the connector and the harness. Fusing unit not installed.
Check & Remedy	Replace the thermistor. Replace the PCU PWB. Check connection of the connector and the harness.

H3-00 Fusing section high temperature trouble (TH_UM)

Section	PCU
Cause	The fusing temperature exceeds the specified level. Thermistor trouble. PCU PWB trouble Connection trouble of the fusing section connector and the harness. HL PWB trouble.
Check & Remedy	Use SIM5-2 to check the flashing operation of the heater lamp. Use SIM14 to cancel the trouble. Replace the thermistor. Replace the PCU PWB. Check connection of the connector and the harness. Replace the HL PWB.

H3-01 Fusing section high temperature trouble (TH_LM)

Section	PCU
Cause	The fusing temperature exceeds the specified level. Thermistor trouble. PCU PWB trouble Thermistor connector and harness connection trouble. HL control PWB trouble.
Check & Remedy	Use SIM5-2 to check the flashing operation of the heater lamp. Use SIM14 to cancel the trouble. Replace the thermistor. Replace the PCU PWB. Check connection of the connector and the harness. Replace the HL PWB.

H3-02 Fusing section high temperature trouble (TH_US)

Section	PCU
Cause	The fusing temperature exceeds the specified level. Thermistor trouble. PCU PWB trouble. HL PWB trouble. Fusing section connector connection trouble. HL PWB trouble.
Check & Remedy	Use SIM5-2 to check the flashing operation of the heater lamp. Use SIM14 to cancel the trouble. Check connection of the thermistor and the harness. Check the PCU PWB thermistor input circuit section. (When the lamp is ON:) Check the HL PWB and the PCU PWB lamp circuit. Replace the thermistor, the HL PWB, and the PCU PWB.

H4-00 Fusing section low temperature trouble (TH_UM)

Section	PCU
Cause	The fusing temperature does not reach the specified level within the specified time from turning ON the power relay. Thermistor trouble. Heater lamp trouble. PCU PWB trouble. Thermostat trouble. Connector, harness connection trouble. HL PWB trouble. Interlock switch trouble.
Check & Remedy	Replace the thermistor. Replace the heater lamp. Replace the PCU PWB. Replace the thermostat. Check connection of the connector and the harness. Replace the HL PWB. Replace the interlock switch. Use SIM5-2 to check the flashing operation of the heater lamp. Use SIM14 to cancel the trouble.

H4-02 Fusing section low temperature trouble (TH_US)

Section	PCU
Cause	The fusing temperature does not reach the specified level within the specified time from turning ON the power relay. Thermistor trouble. Heater lamp trouble. PCU PWB trouble Thermostat trouble. Connector, harness connection trouble. HL PWB trouble. Interlock switch trouble.
Check & Remedy	Replace the thermistor. Replace the heater lamp. Replace the PCU PWB. Replace the thermostat. Check connection of the connector and the harness. Replace the HL PWB. Replace the interlock switch. Use SIM5-2 to check the flashing operation of the heater lamp. Use SIM14 to cancel the trouble.

H5-01 5 times continuous POD1 not-reach jam

Section	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)

Section	PCU
Cause	The fusing temperature does not reach the specified level within the specified time from stopping a job due to fall in the fusing temperature. Thermistor trouble. Heater lamp trouble. PCU PWB trouble Thermostat trouble. Connector, harness connection trouble. HL PWB trouble.
Check & Remedy	Replace the thermistor. Replace the heater lamp. Replace the PCU PWB. Replace the thermostat. Check connection of the connector and the harness. Replace the HL PWB. Use SIM5-2 to check the flashing operation of the heater lamp.

L1-00 Scanner feed trouble

Section	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

Section	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

Section	PCU
Cause	A lock signal is detected during ON period of the paper feed motor in warming up or 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

Section	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 Drum motor trouble

Section	PCU
Cause	The motor lock signal is detected during rotation of the drum motor. Drum motor trouble. Drum unit trouble. Harness and connector connection trouble. PCU PWB trouble Developing unit trouble.
Check & Remedy	Use SIM25-1 to check the operation of the drum motor. Replace the drum motor. Check connection of the connectors and the harness. Replace the PCU PWB. Replace the drum unit. Replace the developing unit.

L4-11 Shift motor trouble

Section	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.

L4-31 Paper exit cooling fan (POFM1) trouble

Section	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 (PSFM1) trouble

Section	PCU
Cause	The fan operation signal is not detected within the specified time in the power cooling fan operation. Power cooling fan trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Use SIM6-2 to check the operation of the fan motor. Replace the power cooling fan. Replace the PCU PWB. Check/replace the connector or the harness.

L4-34 LSU cooling fan (LSUCFM) trouble

Section	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 the operation of the fan motor. Replace the LSU cooling fan. Replace the PCU PWB. Replace the LSU control PWB. Check connection of the connector and the harness.

L4-35 Paper exit cooling fan (POFM2) trouble

Section	PCU
Cause	Paper exit cooling fan trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Use SIM6-2 to check the operation of the fan motor. Replace the paper exit cooling fan. Replace the PCU PWB. Check connection of the connector and the harness.

L4-40 Ozone fan (OZFM1) trouble

Section	PCU
Cause	Harness/connector trouble between the PCU PWB and the fan motor. PCU PWB trouble. Fan motor trouble. The fan does not rotate because of the other trouble (No power supply to the fan motor)
Check & Remedy	Use SIM6-2 to check the operation of the fan motor. Replace the fan motor / the PCU PWB. Check connection of the connector and the harness.

L4-43 Paper exit cooling fan (POFM3) trouble

Section	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 connector and the harness. Use SIM6-2 to check the operation of the fan motor. Replace the paper exit cooling fan. Replace the PCU PWB.

L4-44 Power source cooling fan (PSFM2) trouble

Section	PCU
Cause	Harness/connector trouble between the PCU PWB and the fan motor. PCU PWB trouble. Fan motor trouble. The fan does not rotate because of the other trouble (No power supply to the fan motor)
Check & Remedy	Use SIM6-2 to check the operation of the fan motor. Check the harness and the connector between the PCU PWB and the fan motor.. Replace the fan motor / the PCU PWB.

L4-50 Process cooling fan (PROFM1) trouble

Section	PCU
Cause	Harness/connector trouble between the PCU PWB and the fan motor. PCU PWB trouble. Fan motor trouble. The fan does not rotate because of the other trouble (No power supply to the fan motor)
Check & Remedy	Use SIM6-2 to check the operation of the fan motor. Check the harness and the connector between the PCU PWB and the fan motor.. Replace the fan motor / the PCU PWB.

L6-10 Polygon motor trouble

Section	PCU
Cause	The motor does not reach the specified rpm in 8 sec after starting rotation of the polygon motor. Polygon motor trouble. LSU control PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Use SIM61-1 to check the operation of the polygon motor. Check connection of the connector and the harness. Replace the polygon motor. Replace the LSU. Replace the LSU control PWB.

L8-01 Full wave signal detection error

Section	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

Section	PCU
Cause	An abnormality in the full wave signal frequency is detected. (The frequency is detected as 65Hz or above, or 45Hz or less.) PCU PWB trouble. Power unit trouble. Connection trouble of the connector and the harness. Power frequency, waveform abnormality.
Check & Remedy	Replace the PCU PWB. Replace the power unit. Check connection of the connector and the harness. Check the power waveform.

L8-20 Communication error of MFP PWB/ Mother board

Section	MFP
Cause	Mother board PWB - MFP PWB connection trouble. MFP PWB trouble. Mother trouble.
Check & Remedy	Check connection between the mother board and the MFP PWB. Check the ground of the main unit. Replace the MFPC PWB. Replace the mother board.

P1-00 PCI Communication error

Section	MFP
Cause	Communication error between the MFP PWB and the PCI. Connection failure of connectors and harness between the MFP PWB and the PCI. MFP PWB trouble. PCI control PWB trouble.
Check & Remedy	Check connection of the harness and connectors between the MFO PWB and the PCI. Check the MFP PWB and replace if necessary. Check the PCI control PWB and replace if necessary

P1-01 PCI fan error

Section	MFP
Cause	The PCI fan operation signal is not deleted. PCI fan trouble. PCI control PWB trouble.
Check & Remedy	Check connection of the connectors and harness between the PCI fan and the PCI control PWB. Check the PCI control PWB and replace if necessary Replace the PCI fan.

P1-02 Plasma generating device error

Section	MFP
Cause	Connection failure of connectors and garness between the plasma generating device and the PCI control PWB. Plasma generating device trouble. PCI control PWB trouble.
Check & Remedy	Check connection of the connectors and harness between the plasma generating device and PCI control PWB. Replace the plasma generating device. Check the PCI control PWB and replace if necessary

PC-- Personal counter not detected

Section	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

Section	MFP
Cause	Battery life Battery circuit abnormality
Check & Remedy	Check to confirm that the battery voltage is about 2.0V or above.

U2-00 MFP EEPROM read/write error

Section	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

Section	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.

U2-11 MFP PWB EEPROM counter check sum error

Section	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.

U2-30 MFP PWB and PCU PWB manufacturing No. data inconsistency

Section	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.

U2-40 SD card system storage data area error

Section	MFP
Cause	File error occurs in the SD card system storage data partition. SD card trouble. MFP PWB trouble.
Check & Remedy	Turn OFF/ON the power and the backup data in the HDD are written into the SD card and the machine is automatically booted. Check the MFP PWB and replace if necessary. Check the SD card and replace if necessary.

U2-41 HDD system storage data area error

Section	MFP
Cause	File error occurs in the HDD system saved data area disabling backup of the saved file of the machine adjustment value in the SD card. HDD trouble. MFP PWB trouble.
Check & Remedy	Check the HDD, and replace if necessary. Check the MFP PWB, and replace if necessary. When replacing the HDD and MFP PWB, refer to the chapter of “necessary procedures of HDD and MFP PWB replacement.

U2-42 Machine adjustment data (system storage data area) error

Section	MFP
Cause	The saved file of the machine adjustment values in the SD card and the HDD cannot be found or is broken . Both of the SD card set data and HDD system saved data area are corrupted. HDD trouble. MFP PWB trouble. SD card trouble.
Check & Remedy	Check the HDD, and replace if necessary. Check the MFP PWB, and replace if necessary. Check the SD card, and replace if necessary. Use SIM to adjust the machine again and set the adjustment values.

U2-50 HDD user authentication data check sum error

Section	MFP
Cause	HDD trouble. MFP PWB trouble. Strong external noises
Check & Remedy	Check the data related to the check sum error (address book, image send system registration data) Use SIM16 to cancel U2 trouble. Replace the HDD. Replace the MFP PWB.

U2-60 Water Mark check error

Section	MFP
Cause	Watermark data trouble
Check & Remedy	Use SIM49-5 to upload the watermark data.

U2-80 SCU PWB EEPROM read/write error

Section	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

Section	SCU
Cause	SCU PWB EEPROM trouble. Installation of non-initialized EEPROM. SCU PWB trouble. EEPROM socket contact trouble.
Check & Remedy	Replace the SCU PWB EEPROM. Replace the SCU PWB. Check contact of the EEPROM socket. 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

Section	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

Section	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

Section	SCU
Cause	Connector, harness connection trouble. SCU PWB trouble. DSPF PWB trouble.
Check & Remedy	Turn OFF/ON the power. Check connection of the connector and the harness. Replace the SCU PWB. Replace the DSPF PWB.

U5-16 Document feed unit fan (SPFFAN) trouble

Section	SCU
Cause	Fan motor trouble. Connection trouble of the connector and the harness.
Check & Remedy	Use SIM2-3 to check the operation. Check the DSPF PWB and the driver PWB connection of the connector and the harness.

U5-30 Document feed unit tray lift up trouble

Section	SCU
Cause	STUD does not turn ON 5 times continuously within the specified time. STUD/STLD sensor trouble. Connection trouble of the connector and harness. DSPF PWB trouble.
Check & Remedy	Replace the STUD/STLD sensor. Check connection of the connector and the harness. Replace the DSPF PWB.

U5-31 Document feed unit tray lift down trouble

Section	SCU
Cause	STLD does not turn OFF within the specified time. STUD/STLD sensor trouble. Connection trouble of the connector and the harness. DSPF PWB trouble.
Check & Remedy	Replace the STUD/STLD sensor. Check connection of the connector and the harness. Replace the DSPF PWB.

U6-00 Communication error of PCU PWB/ Desk paper feed unit

Section	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

Section	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 DLDU1 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

Section	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 DLDU2 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

Section	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

Section	PCU
Cause	Desk paper feed motor trouble (motor lock, motor rpm abnormality, over-current 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

Section	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

Section	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

Section	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 Desk - Main unit combination trouble

Section	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

Section	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.

U6-52 PCU - Paper feed desk communication trouble

Section	PCU
Cause	Connection failure between the machine and the paper feed tray 2 (desk unit). PCU PWB trouble.
Check & Remedy	Check connection of the connector and the harness. Replace the PCU PWB.

U7-50 MFP PWB - Vendor machine communication error

Section	MFP
Cause	Improper setting of the vendor machine specifications (SIMI26-3). Vendor machine trouble. MFP PWB trouble. Connector, harness connection trouble. Strong external noises.
Check & Remedy	Cancel the error by turning OFF/ON the power. Check the connector and the harness in the communication line. Change the specifications of the vendor machine (SIM26-3). Replace the MFP PWB.

U7-51 Vendor machine error

Section	MFP (Notification of a trouble from the serial vendor)
Cause	Serial vendor machine trouble. Connector, harness connection trouble.
Check & Remedy	"Err.XX" is displayed on the operation panel of the vendor. (XX is the detail code.) Repair the vendor machine referring to the detail code. Check the connector and the harness in the communication line.

U9-01 Touch panel trouble

Section	SCU
Cause	SCU PWB trouble. Connector and harness related with the touch panel connection trouble.
Check & Remedy	Replace the SCU PWB. Check the connector and the harness related with the touch panel in the communication line.

UC-02 IPD/DOCC ASIC IPD section error

Section	SCU
Cause	SCU PWB trouble (IPD/DOCC ASIC trouble).
Check & Remedy	Replace the SCU PWB.

UC-20 IPD/DOCC ASIC DOCC section error

Section	SCU
Cause	SCU PWB trouble (IPD/DOCC ASIC trouble).
Check & Remedy	Replace the SCU PWB.

A0-01 PCU PWB ROM error

Section	MFP
Cause	The firmware version-up is not completed properly by interruption of the power during the version-up operation, etc. ROM trouble.
Check & Remedy	Use SIM49-1 to perform the version-up procedure again. Replace the ROM.

A0-02 SCU PWB ROM error

Section	MFP
Cause	The firmware version-up is not completed properly by interruption of the power during the version-up operation, etc. ROM trouble.
Check & Remedy	Use SIM49-1 to perform the version-up procedure again. Replace the ROM.

A0-04 ACU PWB ROM error (when scanner expansion kit is installed)

Section	MFP
Cause	The firmware update is failed because of turning OFF the power during the firmware update operation, etc. ROM trouble.
Check & Remedy	Use SIM49-1 to execute update of the firmware. Replace the ROM.

A0-15 DSK BOOT version disagreement

Section	MFP
Cause	Firmware combination error between the DSK and the BOOT.
Check & Remedy	Check the combination between the DSK and the BOOT.

A0-17 Inconsistency between the UI data and the CPU firmware version

Section	MFP
Cause	Combination error between the UI contents data and the CPU UI firmware version.
Check & Remedy	Install the firmware in the all firmware version up mode.

A0-20 Conflict firmware and EEPROM data version (MFP)

Section	MFP
Cause	Inconsistency between the MFP firmware version and the EEPROM data version.
Check & Remedy	Check the combination of the firmware.

A0-21 Conflict firmware and EEPROM data version (PCU)

Section	PCU
Cause	Inconsistency between the PCU firmware version and the EEPROM data version.
Check & Remedy	Check the combination of the firmware.

A0-22 Conflict firmware and EEPROM data version (SCU)

Section	SCU
Cause	Inconsistency between the SCU firmware version and the EEPROM data version.
Check & Remedy	Check the combination of the firmware.

4. Paper JAM code

A. JAM cause code list

(1) Main unit/Desk

JAM code	JAM content
APPD1_N	APPD1 not-reached JAM
APPD1_S	APPD1 remaining JAM
APPD2_N	APPD2 not-reached JAM
APPD2_S	APPD2 remaining JAM
CPFD1_N2	CPFD1 not-reached JAM (Main tray 2 feed paper)
CPFD1_N3	CPFD1 not-reached JAM (Desk upper tray feed paper)
CPFD1_N4	CPFD1 not-reached JAM (Desk lower tray feed paper)
CPFD1_NT1	CPFD1 not-reached JAM (Tandem left tray feed paper)
CPFD1_NT2	CPFD1 not-reached JAM (Tandem right tray feed paper)
CPFD1_S1	CPFD1 remaining JAM (Main tray 1 feed paper)
CPFD1_S2	CPFD1 remaining JAM (Main tray 2 feed paper)
CPFD1_S3	CPFD1 remaining JAM (Desk upper tray feed paper)
CPFD1_S4	CPFD1 remaining JAM (Desk lower tray feed paper)
CPFD1_ST1	CPFD1 remaining JAM (Tandem left tray feed paper)
CPFD1_ST2	CPFD1 remaining JAM (Tandem right tray feed paper)
CPFD2_DESK	CPFD2 JAM (Desk communication abnormality detection)
CPFD2_N3	CPFD2 not-reached JAM (Desk upper tray feed paper)
CPFD2_N4	CPFD2 not-reached JAM (Desk lower tray feed paper)
CPFD2_NT1	CPFD2 not-reached JAM (Tandem left tray feed paper)
CPFD2_NT2	CPFD2 not-reached JAM (Tandem right tray feed paper)
CPFD2_S2	CPFD2 remaining JAM (Main tray 2 feed paper)
CPFD2_S3	CPFD2 remaining JAM (Desk upper tray feed paper)
CPFD2_S4	CPFD2 remaining JAM (Desk lower tray feed paper)
CPFD2_ST1	CPFD2 remaining JAM (Tandem left tray feed paper)
CPFD2_ST2	CPFD2 remaining JAM (Tandem right tray feed paper)
D1PPD1_ST1	D1PPD1 remaining JAM (Tandem left tray feed paper)
D1PPD2_NT1	D1PPD2 not-reached JAM (Tandem left tray feed paper)
D1PPD2_ST1	D1PPD2 remaining JAM (Tandem left tray feed paper)
DPFD1_N4	DPFD1 not-reached JAM (Desk lower tray feed paper)
DPFD1_NT1	DPFD1 not-reached JAM (Tandem left tray feed tray)
DPFD1_S3	DPFD1 remaining JAM (Desk upper tray feed paper)
DPFD1_S4	DPFD1 remaining JAM (Desk lower tray feed paper)
DPFD1_ST1	DPFD1 remaining JAM (Tandem left tray feed paper)
DPFD1_ST2	DPFD1 remaining JAM (Tandem right tray feed paper)
DPFD2_S4	DPFD2 remaining JAM (Desk lower tray feed paper)
MFT	Manual feed tray paper feed JAM (PPD1 not-reached)
MPFD_S	MPFD remaining JAM
MTR_ILG	Motor driver trouble JAM
NO_MATCH	Parameter inconsistency
P_FPFD_NM	FPFD not reached JAM (Manual tray feed paper)
P_FPFD_N1	FPFD not reached JAM (Tray 1 feed paper)
P_FPFD_N2	FPFD not reached JAM (Tray 2 feed paper)
P_FPFD_N3	FPFD not reached JAM (Desk 1 feed paper)
P_FPFD_N4	FPFD not reached JAM (Desk 2 feed paper)
P_FPFD _NL	FPFD not reached JAM (LCC feed paper)
P_FPFD_NT1	FPFD not reached JAM (Tandem left feed paper)
P_FPFD_NT2	FPFD not reached JAM (Tandem right feed paper)
P_FPFD_NA	FPFD remaining JAM (ADU refeed paper)
P_FPFD_SM	FPFD remaining JAM (Manual tray feed paper)
P_FPFD_S1	FPFD remaining JAM (Tray 1 feed paper)
P_FPFD_S2	FPFD remaining JAM (Tray 2 feed paper)
P_FPFD_S3	FPFD remaining JAM (Desk 1 feed paper)
P_FPFD_S4	FPFD remaining JAM (Desk 2 feed paper)
P_FPFD_SL	FPFD remaining JAM LCC feed paper)
P_FPFD_ST1	FPFD remaining JAM (Tandem left feed paper)
P_FPFD_ST2	FPFD remaining JAM (Tandem right feed paper)
P_FPFD_SA	FPFD remaining JAM (ADU refeed paper)
POD1_FUS	POD1 JAM (Fusing winding detection)
POD1_N	POD1 not-reached JAM
POD1_S	POD1 remaining JAM
POD2_N	POD2 not-reached JAM
POD2_S	POD2 remaining JAM
POD3_N	POD3 not-reached JAM
POD3_S	POD3 remaining JAM
PPD1_LCC	PPD1 JAM (LCC communication abnormality detection)

JAM code	JAM content
PPD1_N1	PPD1 not-reached JAM (Main tray 1 feed paper)
PPD1_N2	PPD1 not-reached JAM (Main tray 2 feed paper)
PPD1_N3	PPD1 not-reached JAM (Desk upper tray feed paper)
PPD1_N4	PPD1 not-reached JAM (Desk lower tray feed paper)
PPD1_NA	PPD1 not-reached JAM (ADU refeed paper)
PPD1_NL	PPD1 not-reached JAM (LCC feed paper)
PPD1_NM	PPD1 not-reached JAM (Manual tray feed paper)
PPD1_NT1	PPD1 not-reached JAM (Tandem left tray feed paper)
PPD1_NT2	PPD1 not-reached JAM (Tandem right tray feed paper)
PPD1_S1	PPD1 remaining JAM (Main tray 1 feed paper)
PPD1_S2	PPD1 remaining JAM (Main tray 2 feed paper)
PPD1_S3	PPD1 remaining JAM (Desk upper tray feed paper)
PPD1_S4	PPD1 remaining JAM (Desk lower tray feed paper)
PPD1_SA	PPD1 remaining JAM (ADU refeed paper)
PPD1_SL	PPD1 remaining JAM (LCC refeed paper)
PPD1_SM	PPD1 remaining JAM (Manual tray feed paper)
PPD1_ST1	PPD1 remaining JAM (Tandem left tray feed paper)
PPD1_ST2	PPD1 remaining JAM (Tandem right tray feed paper)
PPD2_DRUM	PPD2 JAM (Drum lock detection)
PPD2_FIN	PPD2 JAM (Finisher communication abnormality detection)
PPD2_N1	PPD2 not-reached JAM (Main tray 1 feed paper)
PPD2_N2	PPD2 not-reached JAM (Main tray 2 feed paper)
PPD2_N3	PPD2 not-reached JAM (Desk upper tray feed paper)
PPD2_N4	PPD2 not-reached JAM (Desk lower tray feed paper)
PPD2_NA	PPD2 not-reached JAM (ADU refeed paper)
PPD2_NL	PPD2 not-reached JAM (LCC feed paper)
PPD2_NM	PPD2 not-reached JAM (Manual tray feed paper)
PPD2_NT1	PPD2 not-reached JAM (Tandem left tray feed paper)
PPD2_NT2	PPD2 not-reached JAM (Tandem right tray feed paper)
PPD2_PRI	PPD2 JAM (Image preparation wait timeout)
PPD2_S1	PPD2 remaining JAM (Main tray 1 feed paper)
PPD2_S2	PPD2 remaining JAM (Main tray 2 feed paper)
PPD2_S3	PPD2 remaining JAM (Desk upper tray feed paper)
PPD2_S4	PPD2 remaining JAM (Desk lower tray feed paper)
PPD2_SA	PPD2 remaining JAM (ADU refeed paper)
PPD2_SL	PPD2 remaining JAM (LCC feed paper)
PPD2_SM	PPD2 remaining JAM (Manual tray feed paper)
PPD2_ST1	PPD2 not-reached JAM (Tandem left tray feed paper)
PPD2_ST2	PPD2 not-reached JAM (Tandem right tray feed paper)
SIZE_ILG	Size irregular JAM
STOP_JAM	Emergency stop JAM
TRAY1	CPFD1 not-reached JAM (Main tray 1 feed paper)
TRAY2	CPFD2 not-reached JAM (Main tray 2 feed paper)
TRAY3	Paper feed JAM (Desk upper tray/Tandem left tray)
TRAY4	Paper feed JAM (Desk lower tray/Tandem right tray)

(2) DSPF

JAM code	JAM content
ICU_REQ	ICU factor stop JAM
P_SHORT	Short size JAM
SDFS_S	Paper JAM
SPOD_N	SPOD not-reached JAM
SPOD_S	SPOD remaining JAM
SPPD1_N	SPPD1 not-reached JAM
SPPD1_S	SPPD1 remaining JAM
SPPD2_N	SPPD2 not-reached JAM
SPPD2_NR	SPPD2 reverse not-reached JAM
SPPD2_S	SPPD2 remaining JAM
SPPD2_SR	SPPD2 reverse remaining JAM
SPPD3_N	SPPD3 not-reached JAM
SPPD3_S	SPPD3 remaining JAM
SPPD4_N	SPPD4 not reached JAM
SPPD4_S	SPPD4 remaining JAM
SPPD5_N	SPPD5 not-reached JAM
SPPD5_S	SPPD5 remaining JAM
SPSD_SCN	Exposure start notification timer end
STOP_JAM	Emergency stop request JAM

(3) LCC

JAM code	JAM content
LCC	LCC paper feed JAM (LPFD not reached)
LPFD_SL	LPFD remaining JAM (LCC feed paper)

(4) Inner finisher

JAM code	JAM content
FED_N	Finisher inlet port not-reached JAM
FED_S	Finisher inlet port remaining JAM
FEXIT_S	Bundle exit remaining JAM
FIN_TIME	Finisher paper early reaching JAM
FSTPD_S	Finisher paper exit remaining JAM
FSTPLJ	Staple JAM

(5) 1K finisher

JAM code	JAM content
FDRLMJ	Paper exit roller lift motor JAM
FGMJ	Gripper motor JAM
FIN_PAOF	Paper attribute data reception overflow
FIN_TIME	Finisher paper early reaching JAM
FPDD_S	Bundle exit remaining JAM
FPNCHJ	Punch JAM
FPPD1_N	Finisher inlet port not-reached JAM
FPPD1_S	Finisher inlet port remaining JAM
FPPD2_N	Saddle section not-reached JAM
FPPD2_S	Saddle section remaining JAM
FPPD3_N	Saddle paper exit not-reached JAM
FPPD3_S	Saddle paper exit remaining JAM
FSATPD_S	Saddle transport remaining JAM
FSDMJ	Saddle motor JAM
FSPTMJ	Saddle paper transport motor JAM
FSSMJ	Staple shift motor JAM
FSSTPLJ	Saddle staple JAM
FSTPLJ	Staple JAM
PDPPD1_N	Interface inlet port not-reached JAM
PDPPD1_S	Interface inlet port remaining JAM
PDPPD2_N	Interface outlet port not-reached JAM
PDPPD2_S	Interface outlet port remaining JAM

(6) 4K finisher

JAM code	JAM content
FED_N	Finisher inlet port not-reached JAM
FED_S	Finisher inlet port remaining JAM
FFPD_N	Saddle section not-reached JAM
FFPD_S	Saddle section remaining JAM
FHS_N	Finisher paper exit not-reached JAM
FHS_S	Finisher paper exit remaining JAM
FIN_TIME	Finisher paper early reaching JAM
FPNCHJ	Punch JAM
FSFS_N	Saddle paper exit not-reached JAM
FSFS_S	Saddle paper exit remaining JAM
FSHS_N	Saddle transport not-reached JAM
FSHS_S	Saddle transport remaining JAM
FSSTPLJ	Saddle staple JAM
FSTPLJ	Staple JAM
PDPPD1_N	Interface inlet port not-reached JAM
PDPPD1_S	Interface inlet port remaining JAM
PDPPD2_N	Interface outlet port not-reached JAM
PDPPD2_S	Interface outlet port remaining JAM

[7] 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 ROMs installed in the other PWBs including options. Some combinations of each ROMs versions may cause malfunctions of the machine.

C. Update procedures and kinds of firmware

There are following methods of update of the firmware.

1) Update method using SIM 49-1
2) Update method using FTP
3) Update method using the Web page
4) Update method using the CN update function (There are three methods.)

   Normally, one of 1) - 3) is used to update the firmware.

   When any one of 1) - 3) is interrupted by an error such as power-off during updating, etc., and when retries of these methods are failed, the method 4) is employed.

Firmware types

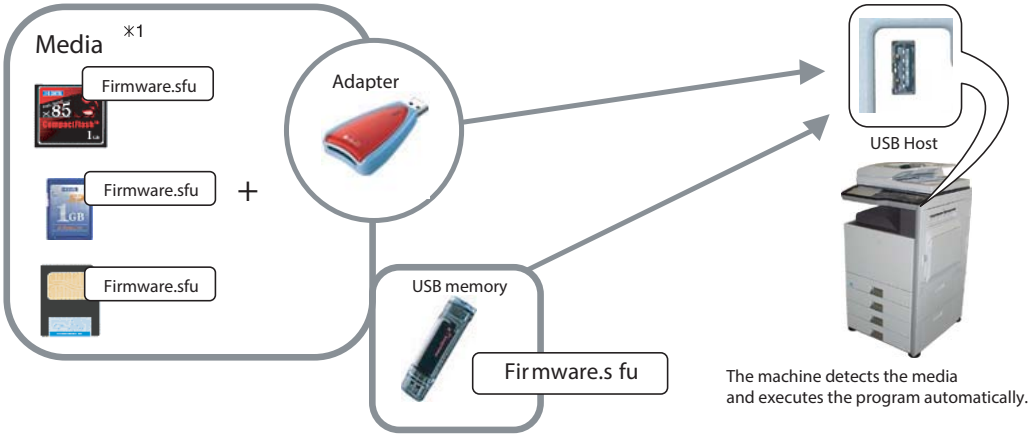
The firmware type can be displayed by SIM22-5.

Use SIM22-5 to check the firmware type.

2. Update procedure

A. Update method using SIM 49-1

For the update, connect the media or USB memory to the USB port that exists in the main body, and select the firmware data in the media or USB memory by simulation screen in the main unit.



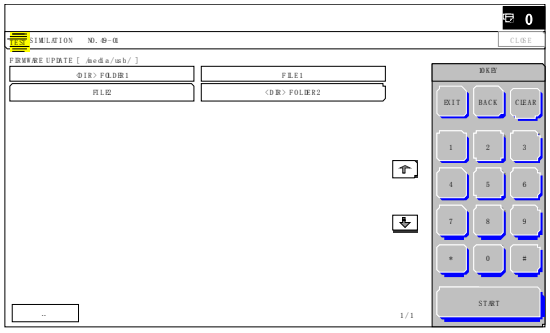
*1:

- Store the firmware data (XXX.sfu) to the media or USB memory beforehand.
- The media used for the update must have an enough capacity for storing the firmware data.
- The USB memory equipped with the security (secure) function cannot be used.

Execution of the firmware by SIM49-01

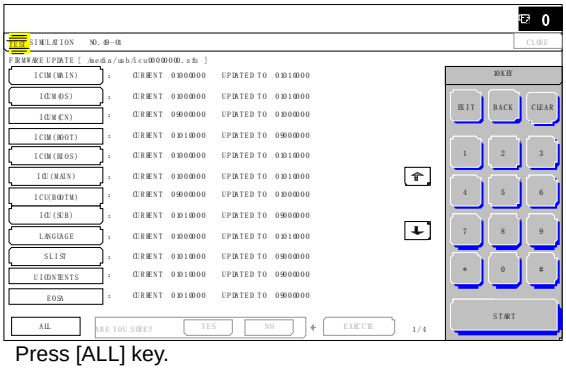
1) Insert the media or USB memory which stores the firmware into the main unit. (Be sure to use the USB I/F on the operation panel.)
2) Enter the SIM49-01.

   Press the key of the file to be updated. The screen transfers to the update screen.



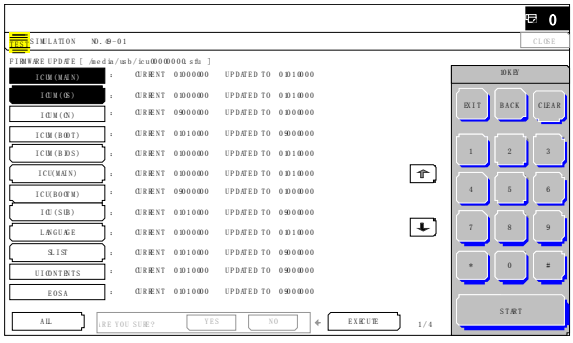
   * The number of key changes according to the number of the sfu file in the media or USB memory inserted.
   * If the media or USB memory was not inserted when entry to the SIM49-01 screen, "INSERT A USB MEMORY DEVICE CONTAINING MFP FIRMWARE [OK]" is displayed on the screen. Insert the media or USB memory and push the [OK] key to open the file. If the media have not been inserted and [OK] key is pushed, the next screen does not appear and the screen waits the entry. Conversely, if the media or USB memory is pulled out on the file list screen, the error is detected by the [FILE] key pressing, and the first screen appears.

3) Current version number and the version number to be updated will be shown for each firmware respectively.



4) Press [ALL] key.

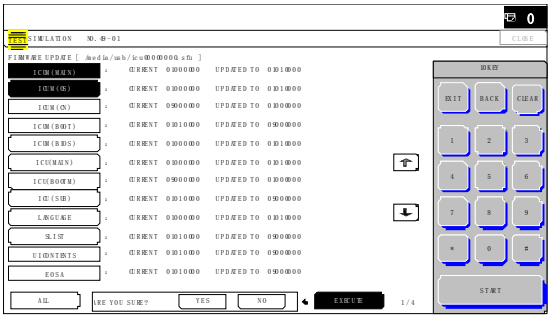
   All the firmware programs are selected.



   * Normally select all the firmware and execute updating.
   * In this case, firmware which does not exist on the machine side are ignored.

     To update a certain firmware only, select the firmware with the firmware display key.
   * If firmware's key is not selected, [EXECUTE] key is gray out and cannot be pressed.

5) Press [EXECUTE] key. “ARE YOU SURE? [YES] [NO]” becomes clear. Press [YES] key to start the update of selected firmware.



   The progress is displayed on right side of "FIRMWARE UPDATE" title by 20 steps.



   At this time, only the progress gauge is displayed on the screen, and the version and the firmware selection key are not displayed.

6) If the update is normal completion, following screen is displayed.



   Press [OK] key. (The machine is rebooted.)

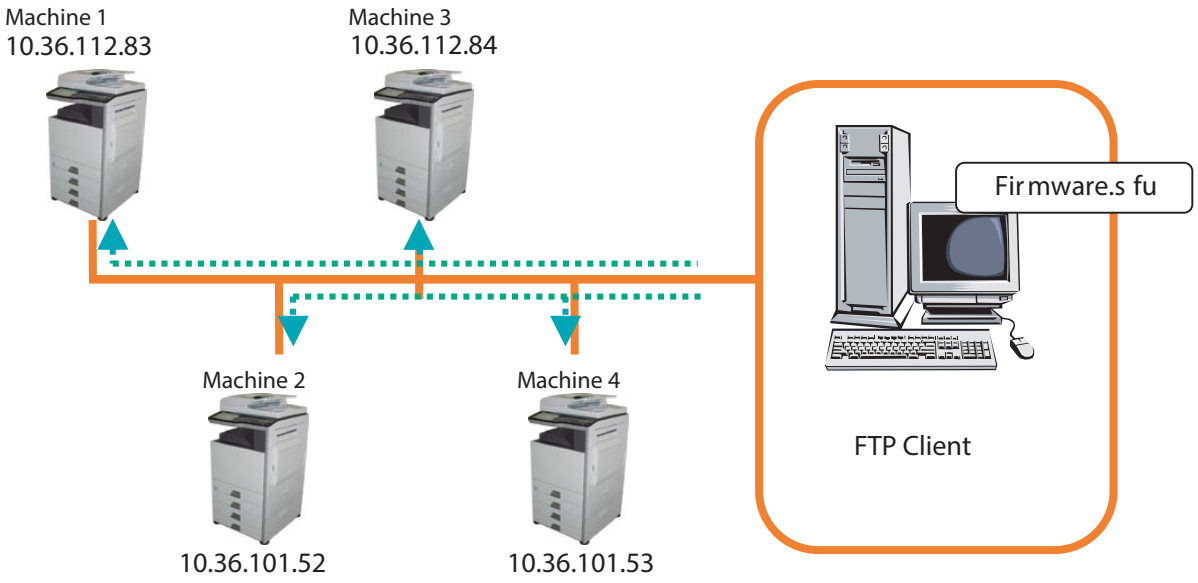
   Go to SIM22-05 and confirm the firmware has upgraded successfully.

7) If the update is not normal completion, following screen is displayed.



B. Firmware update using FTP

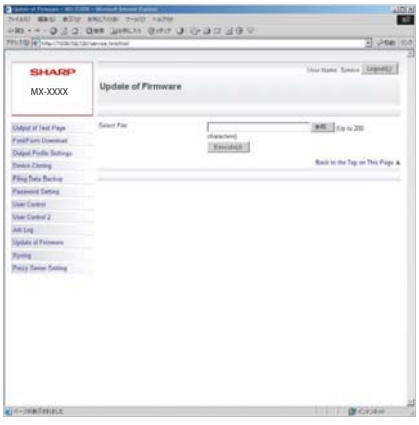
FTP software is used to transfer the firmware data (extension ".sfu") from the PC to the machine. The controller recognizes the firmware identifier and the machine automatically switches to firmware write mode. After the firmware is updated, the machine automatically resets.



C. Firmware update using the Web page

A Web browser (service technician's Web page) is used to update the firmware.

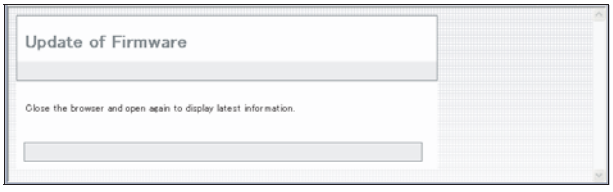
1) Start the Web browser on a PC and enter the specified URL. A special firmware upgrade page appears.
2) Click the "Update of Firmware" key in the Web page. Click the [Browse] key and select the firmware for the update.



3) After selecting the file, click the [Submit] key to send the firmware to the machine. Update processing begins. While processing takes place, "Firmware Update, now processing..." appears.



4) When the firmware update is finished, "Firmware Update completed. Please reboot the MFP." appears. Pressing the [Reboot] key, the machine will restart to complete the update. The browser will shift to the following screen.



"Close the browser and open again to display latest information." will be displayed.

5) Check the firmware version of machine again.

D. Firmware update using the CN update function (There are three methods.)

(1) Outline

The update method using the DIP SW of the MFP PWB is called the CN update.

a. Function

There are the following three functions in the CN update mode.

1) Firmware update function

   This function is used to update the firmware by transferring data from the PC which is connected to the MFP PWB, the SCU PWB, the PCU PWB, the FAX PWB, and various options by means of a USB memory or USB cable.

   This is basically the same as SIM49-01, but differs in the following points:

   When the power is shut down or an abnormality occurs in a section other than the boot program for some reasons during firmware update operation of other method than the CN update, this method can be used to update the firmware.

   If, however, an abnormality occurs in the boot program, the SD card must be replaced with a new one having the normal boot program.

   If the boot animation is not displayed, there is an abnormality in the boot program.

   If the boot animation is displayed but "Copying is enabled" is not displayed on the copier basic menu, there is an abnormality in the main program.

2) Firmware version check function

   (The method to check the firmware version by using SIM22-5 is easier than this method. Therefore, it is not described in this manual.)

3) ROM making function

   (This function is not used in the market, and not described in this manual.)

b. Purpose

This function is used in the following cases:

1) When an error occurs during firmware update operation other than the CN update.

   When the power is shut down or an error occurs in a section other than the boot program for some reasons during firmware update operation of other method than the CN update, this method can be used to update the firmware.

   If, however, an abnormality occurs in the boot program, the SD card must be replaced with a new one having the normal boot program.

   If an error occurs in the boot program, this method cannot be used. In such a case, the SD card must be replaced with a new one having the normal boot program.

c. DIP-SW used in the CN update mode

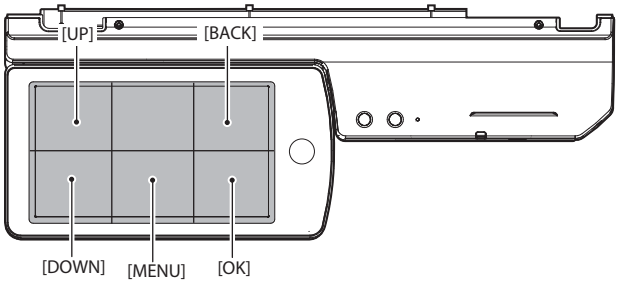
To enter the CN update mode, turn ON the UPDATE DIP-SW on the MFP PWB and boot the machine.

When terminating the CN update mode, reset UPDATE DIP-SW to OFF (normal mode).



d. Keys used in the CN update mode

The following five keys are used for operations in the CN update mode. Be careful that the functions of the keys differ those in the normal mode.



Key name	Functions in the CN update mode
[OK] key	Executes the selected function or item.
[MENU] key	Selects a menu.
[BACK] key	Selects a menu. (Serves as a cancel key in the execution check screen.)
[UP] key	Selects an item.
[DOWN] key	Selects an item.

(2) Operating procedures

a. Firmware update function

This function is used to revise the firmware by using the USB memory for the MFP PWB, the SCU PWB, the PCU PWB, the FAX PWB, and each option.

It is basically same as SIM 49-01, but differs in the following points.

1) The update target ROM is automatically selected.
2) When the power is shut down or an abnormality occurs in a section other than the boot program for some reasons during firmware update operation of other method than the CN update.

   If, however, an abnormality occurs in the boot program, this method cannot be used. On that case, the SD card must be replaced with a new one having the normal boot program.

When the boot animation is displayed but "Copying is enabled" is not displayed on the copier basic menu, there is an abnormality in the main program (SD card).

a-1. Necessary items

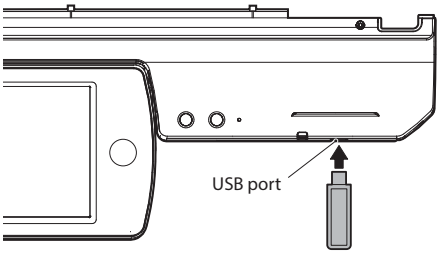
1) Insert the SD card to the MFP PWB of the machine.
2) USB memory with the firmware file (SFU) saved in it.

NOTE: Save the firmware file in the main directory or in a one-level lower directory.

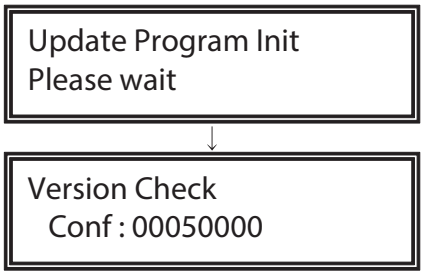
a-2. Procedures

1) Turn OFF the power, and remove the cabinet and the MFP PWB cover.
2) Turn ON the DIP SW of the MFP PWB UP DATE.
3) Install the USB memory into the USB port.

   USB memory installing position



4) Turn ON the power.
5) Check to confirm that the machine starts booting. (It takes more than ten seconds to display the menu.)



Display when booting is completed

6) Select the firmware update mode.

   Select the update mode with [MENU] key and [BACK] key.



Display of the firmware update mode

7) Press [OK] key.

   The firmware file saved in the USB memory is retrieved, and the file selection menu is displayed.



Display of file selection

8) Select the firmware file (SFU).

   Select the target firmware file (SFU) with [UP] key and [DOWN] key.

   When [OK] key is pressed with a directory name (the head: "> D") displayed, the menu goes to the one-stage lower directory.

   When [BACK] key is pressed in the lower-stage directory, the menu returns to the original upper directory.

9) Press [OK] key.

   The selected firmware file (SFU) is read. It takes about one minute.



Display of file reading

10) After completion of reading, the firmware update process is continued.



Display of the firmware update process

   * The abbreviated name of the firmware which is under update process is indicated on the right upper corner of the display.
   * During the update process, the display may flash instantaneously. It is a normal operation.

11) Check the update result.

   Use [UP] key and [DOWN] key to display the results of all the firmware programs.



Display of the firmware update result

   OK: Update is completed successfully.

   NG: Update is failed.

   Not Update: Update is not executed.

12) Turn OFF the power.
13) Turn OFF the DIP SW of the MFP PWB UP DATE. (Set the DIP-SW to the normal mode.)
14) Turn ON the power, and check to confirm that the machine boots up normally.

   Check to confirm that the boot animation is displayed.

   Check to confirm that "Copying is enabled" is displayed on the copier basic menu.

15) Check to confirm the version of each firmware with SIM22-5.
16) Attach the MFP PWB cover and the cabinet.

[8] MAINTENANCE

1. Necessary execution items in maintenance and servicing

A. Execution items before maintenance and servicing

To perform the procedures safely, refer to "NOTE FOR SERVICING" on the first page of this service manual.

Item	Simulation	
Check the developer counter value.	22	13
Check the OPC drum counter value.	22	13
Check the print count mode in each section and each operation mode.	22	1
Check the number of paper jam troubles.	22	2
Check the positions and contents of paper jams.	22	3
Check the positions and contents of paper jams (DSPF section).	22	12
Check the contents of troubles.	22	4
Print the setting values and the adjustment values.	22	6
Check the number of use of the DSPF, the scanner, the finisher, the stapler, and the punch.	22	8
Check the number of use of each paper feed section.	22	9
Check the ROM version.	22	5

B. Necessary execution items in maintenance and servicing

Perform the work items listed in the maintenance list (parts) and details of works as well as the items described below.
(The necessary execution items are marked with "○ " in the table below.)

No.	Work item	Simulation	When repairing (replacing consumable parts) / maintenance					
			Installation	When replacing the OPC drum	When replacing developer	When replacing the fusing web roller	After cleaning the scanner (read) section	Periodic maintenance
1	Toner concentration reference control level setting	25-2			○			
2	The photo-conductor counter is cleared.	24-4		○				
3	Clear the fusing web cleaning send counter.	24-4				○		
4	Copy/Printer image quality check and adjustment	46-24	○	○	○		○	○

C. Execution items after maintenance and servicing

Item	Simulation	
The paper jam / trouble data are cleared.	24	1
The use quantity counter of each paper feed section is cleared.	24	2
The numbers of use of the DSPF, the scanner, the finisher, the stapler, and the punch are cleared.	24	3
The maintenance counter is cleared. (Select MAINTENANCE ALL)	24	4
The list of setting values and adjustment values is printed.	22	6

2. Contents of the maintenance codes (Relationship between various counters values and display messages)

The message of maintenance execution timing is displayed when each counter reaches the specified value.
The relationships between the kinds of messages and counters are as shown below.

A. Maintenance counter

Counter name	Near end conditions	Message when near end over	
		Sim.26-38A "0" Print Enable	Sim.26-38A "1" Print Stop
Maintenance counter (Total)	90% of Sim.21-1 set value		Message (1)

Counter name	End conditions	Message when end over	
		Sim.26-38A "0" Print Enable	Sim.26-38A "1" Print Stop
Maintenance counter (Total)	Sim.21-1 set value	Message (1)	Message (2)

Message No.	Message	Print job Enable/Disable
(1)	Maintenance required.Code: TA	Enable
(2)	Maintenance required.Code: TA (With parentheses)	Disable

After completion of maintenance, clear the maintenance counter of SIM24-4.

B. Transfer unit section counters

Counter name	Near end conditions	Message when near end over	
		Sim.26-38A "0" Print Enable	Sim.26-38A "1" Print Stop
Waste toner	After near end detection	Message (4)	Message (4)

Counter name	End conditions	Message when end over	
		Sim.26-38A "0" Print Enable	Sim.26-38A "1" Print Stop
Transfer unit print counter	300K sheets	Message (3)	Message (3)
Waste toner	After end detection	Message (5)	Message (5)

Message No.	Message	Print job Enable/Disable
(3)	Maintenance required Code: TK	Enable
(4)	Please replace the toner collection container. (with OK key) (Displayed with parentheses)	Enable
(5)	Please replace the toner collection container. (Displayed with parentheses)	Disable

After completion of maintenance, clear the transfer unit counter of maintenance counter of SIM24-4(transfer unit print counter, transfer unit accumulated traveling distance and transfer unit usage days).

C. Fusing section counters

Counter name	Near end conditions	Message when near end over	
		Sim.26-38B "0" Print Enable	Sim.26-38B "1" Print Stop
Fusing web cleaning send counter	300K sheets	Message (7)	Message (7)

Counter name	End conditions	Message when end over	
		Sim.26-38B "0" Print Enable	Sim.26-38B "1" Print Stop
Fusing roller print counter	300 K sheets	Message (5)	Message (5)
Fusing pressure roller print counter	300 K sheets	Message (6)	Message (6)
Fusing web cleaning send counter	Judged by the fusing web life end detection signal,	Message (7)	Message (8)

Judgment is made at the earlier timing of the fusing web print counter or the web life end detection.

Message No.	Message	Print job Enable/Disable
(5)	Maintenance required.Code: FK1	Enable
(6)	Maintenance required.Code: FK2	Enable
(7)	Maintenance required Code: FK3	Enable
(8)	Maintenance required Code: FK3	Disable

After completion of maintenance, clear the fusing unit counter of SIM24-4 (fusing roller, pressure roller, separation pawl, fusing web).

D. OPC drum section counters

Counter name	End conditions	Message when end over	
		Sim.26-38A "0" Print Enable	Sim.26-38A "1" Print Stop
Drum print counter	300K sheets	Message (9)	Message (9)
Drum accumulated rotation number	1200K rotations	Message (9)	Message (9)
Main charger print counter	300K sheets	Message (10)	Message (10)
Main charger accumulated rotation number	1150K rotations	Message (10)	Message (10)

Judgment is made at the earlier timing of the drum print counter or the drum rotations accumulated number counter.

Message No.	Message	Print job Enable/Disable
(9)	Maintenance required.Code: DK	Enable
(10)	Maintenance required Code: MC	Enable

After completion of maintenance, clear the drum counter of SIM24-7 (drum print counter and drum accumulated traveling distance).

E. Developer section counters

Counter name	End conditions	Message when end over	
		Sim.26-38A "0" Print Enable	Sim.26-38A "1" Print Stop
Developer print counter	600K sheets	Message (11)	Message (11)
Developer accumulated rotation number	2400K rotations	Message (11)	Message (11)

Judgment is made at the earlier timing of the developer print counter or the developer accumulated rotation number counter.

The developer rotation number is synchronized with the drum motor rotation number.

Message No.	Message	Print job Enable/Disable
(11)	Maintenance required.Code: VK	Enable

After replacement of developer, use SIM25-2 to set the toner density control level. By this setting, the developer counters (the developer print counter and the developer accumulated traveling distance counter) are cleared.

F. Toner cartridge section counters

Sensor name	Near near end conditions	Toner preparation message	
		Sim.26-69A "0" Displayed	Sim.26-69A "1" Not displayed
Toner remaining quantity sensor (K)	Total toner supply time (Equivalent to 10% or less of toner remaining quantity)	Message (12)	

Sensor name	Near end conditions	Message when near end over	
		Sim.26-69B "0" Displayed	Sim.26-69B "1" Not displayed
Toner remaining quantity sensor (K)	When a low toner state continues for more than the specified time	Message (14)	

Counter name	End conditions	Message when end over	
		Sim.26-38A "0" Print Enable	Sim.26-38A "1" Print Stop
Toner remaining quantity sensor (K)	When the pixel count value reaches the specified level from the near end condition	Message (13)	Message (13)

Message No.	Message	Print job Enable/Disable
(12)	Toner Low (Do not replace cartridge until requested)	Enable
(13)	Change the toner cartridge	Disable
(14)	Ready to scan to copy (Change the toner cartridge)	Enable

3. Maintenance list (parts) and details of works

X: Check (Clean, replace, or adjust according to necessity.) □ : Clean ▲: Replace △: Adjust ☆ : Lubricate

Section	Part name	When calling	300k	600k	900k	1200k	1500k	1800k	2100k	2400k	Remark
Photo-conductor section	Drum	–	▲	▲	▲	▲	▲	▲	▲	▲	
	Cleaner blade	–	▲	▲	▲	▲	▲	▲	▲	▲	
	Toner reception seal	–	▲	▲	▲	▲	▲	▲	▲	▲	
	Toner reception side sheet F/R	–	▲	▲	▲	▲	▲	▲	▲	▲	
	Side seal F/R	–	▲	▲	▲	▲	▲	▲	▲	▲	
	Drum separation pawl unit	–	▲	▲	▲	▲	▲	▲	▲	▲	
	MC unit	x	▲	▲	▲	▲	▲	▲	▲	▲	
	Waste toner box	Replacement is made by the user every time when the waste toner box is full. When a serviceman calls, be sure to check.									Check when a serviceman calls. It is advisable to replace in advance if necessary.
Developing section	Developer	–		▲		▲		▲		▲	
	DV seal	–	x	x	x	x	x	x	x	x	
	DV side seal F/R	–	x	x	x	x	x	x	x	x	
	Toner filter	–		▲		▲		▲		▲	
	Connector	–	x	x	x	x	x	x	x	x	
Toner supply section	Toner cartridge	User replacement for every toner empty.									
LSU section	Dust-proof glass	○	x	x	x	x	x	x	x	x	
Transfer section	Transfer roller	x	▲	▲	▲	▲	▲	▲	▲	▲	
	Discharge plate	x	▲	▲	▲	▲	▲	▲	▲	▲	
	Transfer roller bearing F and R	–	▲	▲	▲	▲	▲	▲	▲	▲	
	Transfer roller collar	–	▲	▲	▲	▲	▲	▲	▲	▲	
	Transfer rear star ring	–	x	x	x	x	x	x	x	x	
	Pre-transfer paper guide	○	○	○	○	○	○	○	○	○	
	Process control sensor	x	○	○	○	○	○	○	○	○	Air cleaning

Section	Part name	When calling	300k	600k	900k	1200k	1500k	1800k	2100k	2400k	Remark
Fusing section	Lower heat roller	x	▲	▲	▲	▲	▲	▲	▲	▲	Apply grease(UKOG-0235FCZZ) to specific position
	Lower heat roller bearing	x	x	x	x	x	x	x	x	x	
	Upper separation pawl	x	▲	▲	▲	▲	▲	▲	▲	▲	
	Thermistor	x	x	x	x	x	x	x	x	x	Replace as needed
	Lower separation pawl	x	▲	▲	▲	▲	▲	▲	▲	▲	
	Web pressure roller bearing	x	▲	▲	▲	▲	▲	▲	▲	▲	
	Web pressure roller	x	▲	▲	▲	▲	▲	▲	▲	▲	
	Web roller	x	▲	▲	▲	▲	▲	▲	▲	▲	
	Fusing paper exit roller	x	○	○	○	○	○	○	○	○	
	Gears	☆	☆	☆	☆	☆	☆	☆	☆	☆	Apply grease(UKOG-0235FCZZ) to specific position
	Paper guides	○	○	○	○	○	○	○	○	○	
	Upper heat roller	x	▲	▲	▲	▲	▲	▲	▲	▲	Apply grease when replacing 36 cpm (UKOG-0323FCZ1) 46/56 cpm (UKOG-0235FCZZ)
	Upper heat roller bearing	x	x	x	x	x	x	x	x	x	
	Upper heat roller gear	x	x	x	x	x	x	x	x	x	
	Upper heat roller heat-insulation bush	x	x	x	x	x	x	x	x	x	
Filter section	Ozone filter	x	▲	▲	▲	▲	▲	▲	▲	▲	
Paper feed section	Paper pick-up roller	x	○	○	○	○	○	○	○	○	Replace 100K of each paper feed counter.
	Paper feed roller	x	○	○	○	○	○	○	○	○	
	Separation roller	x	○	○	○	○	○	○	○	○	
	Torque limiter	x	x	x	x	x	x	x	x	x	
Paper transport section	Resist roller (Idle)	x	☆	☆	☆	☆	☆	☆	☆	☆	Apply grease
	Paper dust removing unit	○	○	○	○	○	○	○	○	○	
	Transport rollers	x	☆	☆	☆	☆	☆	☆	☆	☆	Apply grease
	Transport paper guides	○	○	○	○	○	○	○	○	○	
Duplex/ paper exit section	Discharge brush	x	x	x	x	x	x	x	x	x	
	Transport rollers	x	○	○	○	○	○	○	○	○	
	Sensors	x	x	x	x	x	x	x	x	x	
	Gears	x	x	x	x	x	x	x	x	x	
	Transport paper guides	○	○	○	○	○	○	○	○	○	
Drive section	Gears (Grease)	–	x	x	x	x	x	x	x	x	When checking, apply to the necessary positions.
	Shaft earth sections (Conduction grease)	–	x	x	x	x	x	x	x	x	
	Belts	–	x	x	x	x	x	x	x	x	
Scanner section	Mirror/Lens/Reflection sheet/CCD	○	○	○	○	○	○	○	○	○	
	Table glass/SPF glass	○	○	○	○	○	○	○	○	○	
	Scanner lamp	x	x	x	x	x	x	x	x	x	Air cleaning for the LED section
		○	○	○	○	○	○	○	○	○	
	Rails	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	Drive belt/drive wire	x	x	x	x	x	x	x	x	x	
	Sensors	x	x	x	x	x	x	x	x	x	
DSPF section	Paper feed roller	○	○	○	○	○	○	○	○	○	Replace at 100K of the SPF paper feed counter
	Pickup roller	○	○	○	○	○	○	○	○	○	
	Separation roller	○	○	○	○	○	○	○	○	○	
	Torque limiter SPF (for separation)	-	x	x	x	x	x	x	x	x	
	Call-in torque limiter (for PIC)	-	x	x	x	x	x	x	x	x	
	Transport rollers	○	○	○	○	○	○	○	○	○	
	No. 1 scanning plate	○	○	○	○	○	○	○	○	○	
	No. 2 scanning section, scanning glass	○	○	○	○	○	○	○	○	○	
	No. 2 scanning section, white reference glass	○	○	○	○	○	○	○	○	○	
	Paper exit roller	○	○	○	○	○	○	○	○	○	
	Discharge brush	x	x	x	x	x	x	x	x	x	
	OC mat	○	○	○	○	○	○	○	○	○	
	Belts	-	x	x	x	x	x	x	x	x	

Option

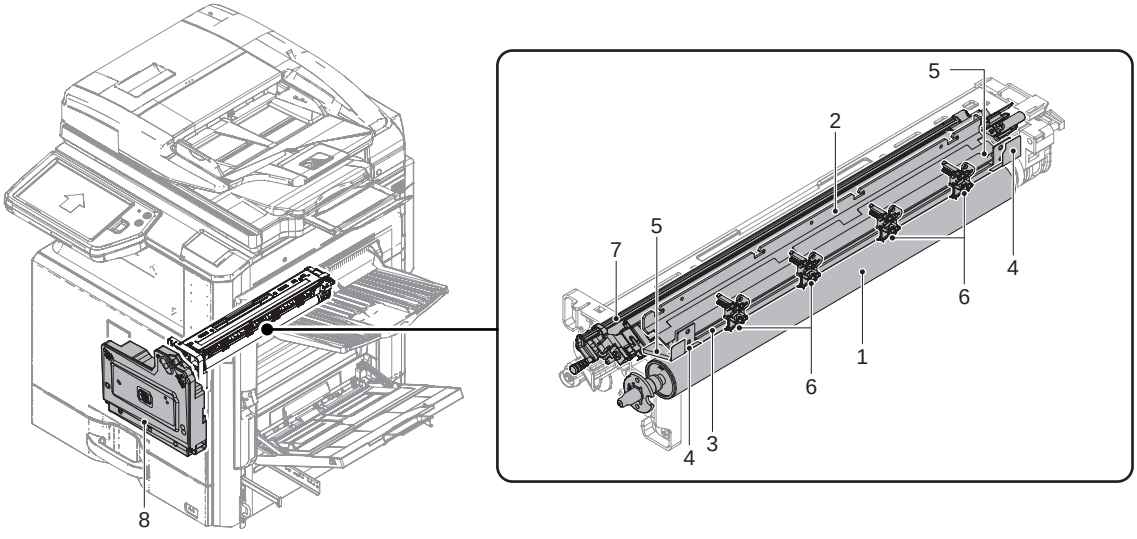
X: Check (Clean, replace, or adjust according to necessity.) □ : Clean ▲: Replace △: Adjust ☆ : Lubricate

Section	Part name	When calling	300k	600k	900k	1200k	1500k	1800k	2100k	2400k	Remark
Inner finisher/ Punch unit for Inner finisher	Transport rollers	x	○	○	○	○	○	○	○	○	
	Transport paper guides	x	○	○	○	○	○	○	○	○	
	Gears	x	x	x	x	x	x	x	x	x	When checking, apply to the necessary positions.
	Belts		x	x	x	x	x	x	x	x	
	Knurling belt	x	○	○	○	○	○	○	○	○	Replace at every 1000K of the finisher paper exit count value.
	Paddle	x	○	○	○	○	○	○	○	○	
	Sensors	x	x	x	x	x	x	x	x	x	
	Discharge brush	x	x	x	x	x	x	x	x	x	
	Stapler unit	Replacement reference: Replace the unit at every 200K staple.									
	Punch unit	Replacement reference: Replace the unit at every 1000K.									
	Staple cartridge	Replacement is made by the user at every 5,000 pcs.									
Saddle stitch finisher (1K)/Punch unit for Saddle stitch finisher (1K)	Transport rollers	○	○	○	○	○	○	○	○	○	
	Transport paper guides	○	○	○	○	○	○	○	○	○	
	Gears	x	x	x	x	x	x	x	x	x	When checking, apply to the necessary positions.
	Belts	x	x	x	x	x	x	x	x	x	
	Knurling belt	x	○	○	○	○	○	○	○	○	Replace at every 1000K of the finisher paper exit count value.
	Sensors	x	x	x	x	x	x	x	x	x	
	Discharge brush	x	x	x	x	x	x	x	x	x	
	Stapler unit	Replacement reference: Replace the unit at every 200K staple.									
	Stapler unit (For saddle finisher)	Replacement reference: Replace the unit at every 100K staple.									
	Punch unit	Replacement reference: Replace the unit at every 1000K.									
	Staple cartridge	Replacement is made by the user at every 5,000 pcs.									
	Staple cartridge (For saddle finisher)	Replacement is made by the user at every 2,000 pcs.									
Finisher (4K)/Punch unit for Finisher (4K)	Transport rollers	○	○	○	○	○	○	○	○	○	
	Transport paper guides	○	○	○	○	○	○	○	○	○	
	Gears	x	x	x	x	x	x	x	x	x	When checking, apply to the necessary positions.
	Belts	x	x	x	x	x	x	x	x	x	
	Sensors	x	x	x	x	x	x	x	x	x	
	Discharge brush	x	x	x	x	x	x	x	x	x	
	Stapler unit	Replacement reference: Replace the unit at every 100K staple.									
	Punch unit	Replacement reference: Replace the unit at every 1000K.									
	Staple cartridge	Replacement is made by the user at every 5,000 pcs.									
Paper pass unit	Transport rollers	○	○	○	○	○	○	○	○	○	
	Transport paper guides	○	○	○	○	○	○	○	○	○	
	Sensors	x	x	x	x	x	x	x	x	x	
A4 large capacity tray	Pickup roller/ Paper feed rollers	x	○	○	○	○	○	○	○	○	Replace at 100K of paper feed counter
	Torque limiter	x	x	x	x	x	x	x	x	x	
	Transport rollers	x	○	○	○	○	○	○	○	○	
	Transport paper guides	○	○	○	○	○	○	○	○	○	
	Gears	x	x	x	x	x	x	x	x	x	When checking, apply to the necessary positions.
	Belts		x	x	x	x	x	x	x	x	
	Sensors	x	x	x	x	x	x	x	x	x	
Paper feed tray (Desk)	Pickup roller	x	○	○	○	○	○	○	○	○	Replace at 100K of paper feed counter
	Paper feed roller	x	○	○	○	○	○	○	○	○	
	Separation roller	x	○	○	○	○	○	○	○	○	
	Torque limiter	x	x	x	x	x	x	x	x	x	
	Transport rollers	x	○	○	○	○	○	○	○	○	
	Transport paper guides	○	○	○	○	○	○	○	○	○	
	Gears	x	x	x	x	x	x	x	x	x	

A. Photo-conductor section

X: Check (Clean, replace, or adjust according to necessity.) □ : Clean ▲: Replace △: Adjust ☆ : Lubricate

No.	Part name	When calling	300k	600k	900k	1200k	1500k	1800k	2100k	2400k	Remark
1	Drum	–	▲	▲	▲	▲	▲	▲	▲	▲	
2	Cleaner blade	–	▲	▲	▲	▲	▲	▲	▲	▲	
3	Toner reception seal	–	▲	▲	▲	▲	▲	▲	▲	▲	
4	Toner reception side sheet F/R	–	▲	▲	▲	▲	▲	▲	▲	▲	
5	Side seal F/R	–	▲	▲	▲	▲	▲	▲	▲	▲	
6	Drum separation pawl unit	–	▲	▲	▲	▲	▲	▲	▲	▲	
7	MC unit	x	▲	▲	▲	▲	▲	▲	▲	▲	
8	Waste toner box	Replacement is made by the user every time when the waste toner box is full. When a serviceman calls, be sure to check.									Check when a serviceman calls. It is advisable to replace in advance if necessary.



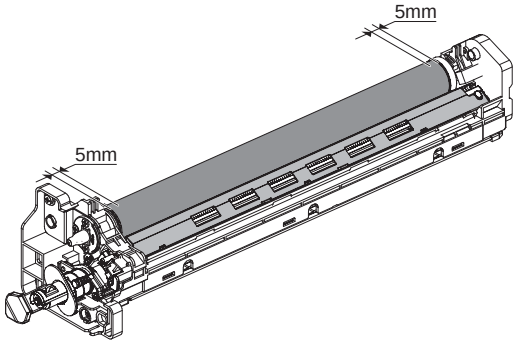
(Note for servicing the OPC drums)

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.)
* Apply the yellow toner powder (CKOG-0345DS51) on the OPC drum surface



[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.
3) Apply yellow toner powder.

[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]

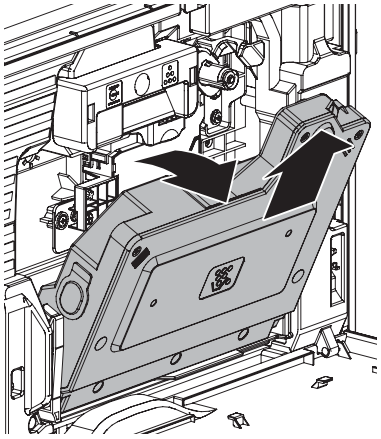
If the OPC drum is erroneously exposed to light too much (prior exposure), perform the following countermeasures.

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) Waste toner box replacement

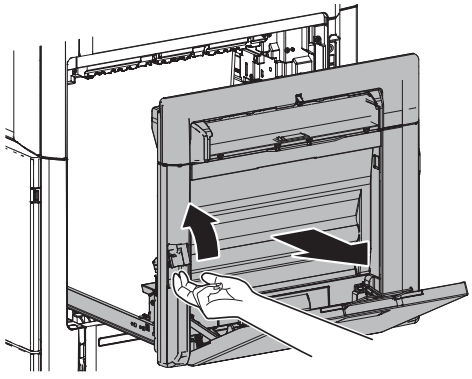
1) Open the front cover.
2) Tilt the waste toner box forward to remove it.

   Maintenance: Replace the waste toner box with a new one every time when it is full (By the user). Check it every-time when a serviceman calls. (Replace it in advance if necessary.)

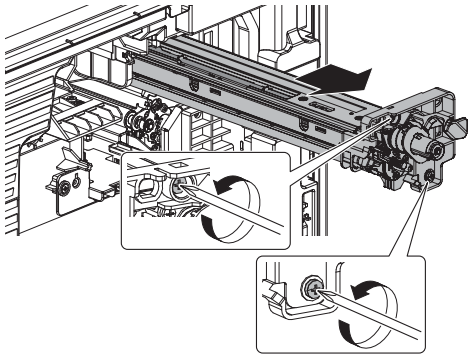


(2) Photo-conductor unit removal

1) Remove the toner cartridge.
2) Remove the developing unit.
3) Pull the lock lever, and open the right door.



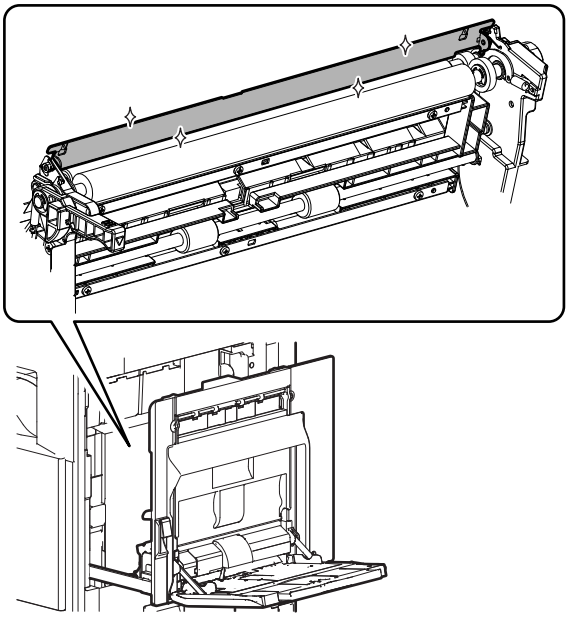
4) Remove the cover and disconnect connector. Remove the blue screw. Pull the photo-conductor unit, and hold the handle to remove the unit.



NOTE: Before installing the photo-conductor unit, clean the both surfaces of the resist unit paper guide.

Clean the metal section of the paper guide with alcohol, and clean the cushion section without alcohol.

At that time, be careful not to deform the paper guide.



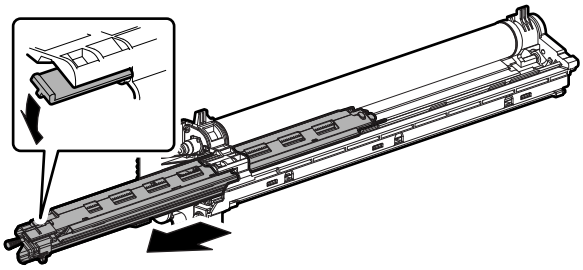
(3) MC unit replacement

1) Disengage the pawl, and remove the MC unit.

* Maintenance

Replace at every 300K.

NOTE: When inserting the MC unit, be careful not to scratch the drum.



(4) Drum replacement

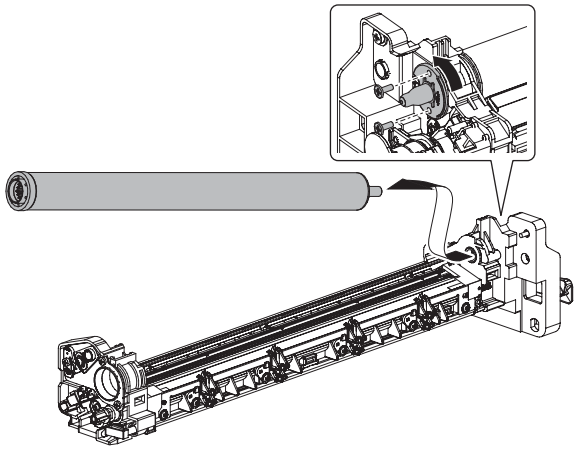
1) Remove the blue screw, and rotate the fixing shaft to remove. Slide the drum to the front side to remove.

* Maintenance

Replace at every 300K.

NOTE: When removing and installing, be careful not to scratch the drum by making it into contact with the separation pawl.

Before installing the drum to the process unit, apply the yellow toner (UKOG-0345DS51) over the stearic acid (white) which is applied to the photoconductor drum for replacement in advance. then rotate the drum once to make it collect the yellow toner. Apply the stearic acid powder (UKOG-0312FCZZ) within 40mm - 50mm from the both ends of the drum.(Be sure to apply the powder while rotating the drum for 3 times or so)



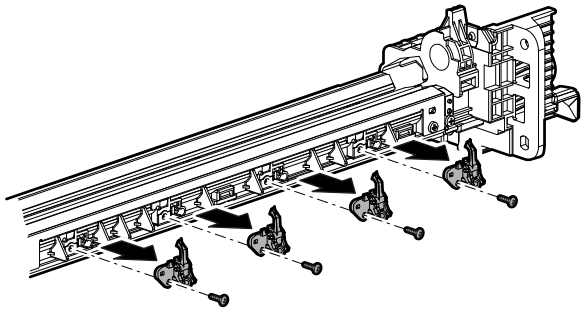
(5) Drum separation pawl unit replacement

1) Remove the blue screw, and remove the drum separation pawl unit.

* Maintenance

Replace at every 300K.

NOTE: Be careful not to scratch or put dirt on the tip of the separation pawl.

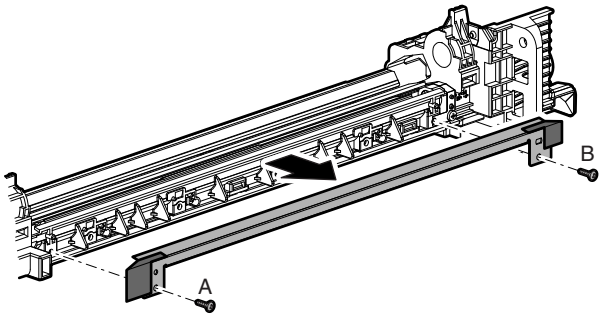


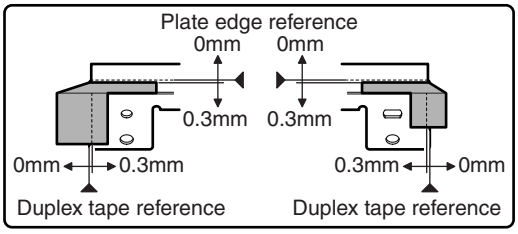
(6) Toner reception seal, toner reception side sheets F and R replacement

1) Remove the blue screw, and remove the toner reception seal.
   * Maintenance
     Replace at every 300K.

NOTE: When installing, tighten the blue screws in the sequence of A and B.

NOTE: Attach the toner reception side sheets F and R according to the reference.

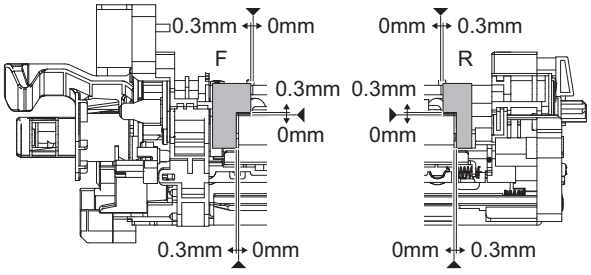




(7) Side seals F and R replacement

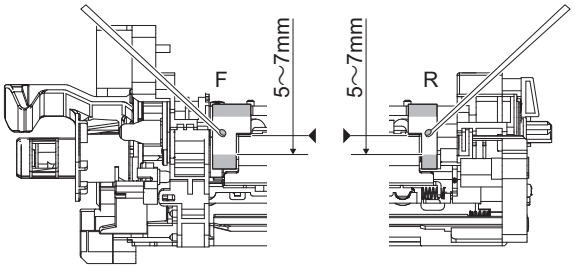
1) Remove the side seals F and R.
   * Maintenance
     Replace at every 300K.

NOTE: Attach with the cleaner blade edge as the reference so that the clearance is within 0 - 0.3mm. Press to secure attachment.



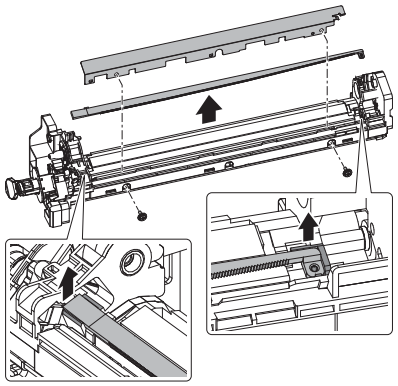
2) After replacement of the side seals F and R, apply stearic acid (UKOG-0309FCZZ) evenly to the side seals F and R by using the micro-spatula (UKOG-0311FCZZ).

NOTE: Be careful not to apply excessively to the parts on the periphery.



(8) Cleaner blade replacement

1) Remove the screw, MC case and lens.

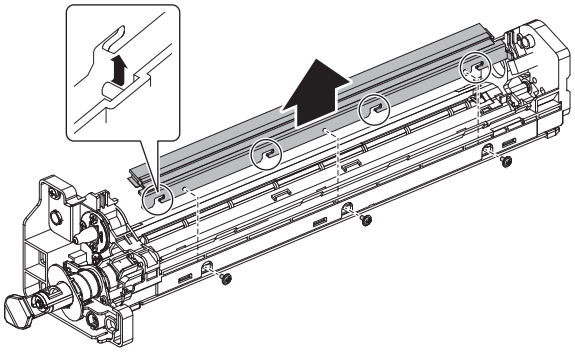


2) Remove the blue screw, and slide the cleaner blade to the rear side to remove.
   * Maintenance
     Replace at every 300K.

NOTE: Before removing the cleaner blade, remove the side seals F and R in advance. When, therefore, the cleaner blade is replaced, replace the side seals F and R with new ones as well.
If this note is ignored, a trouble such as improper cleaning or toner leakage may occur.

NOTE: Be careful not to touch or scratch the tip of the cleaner blade.

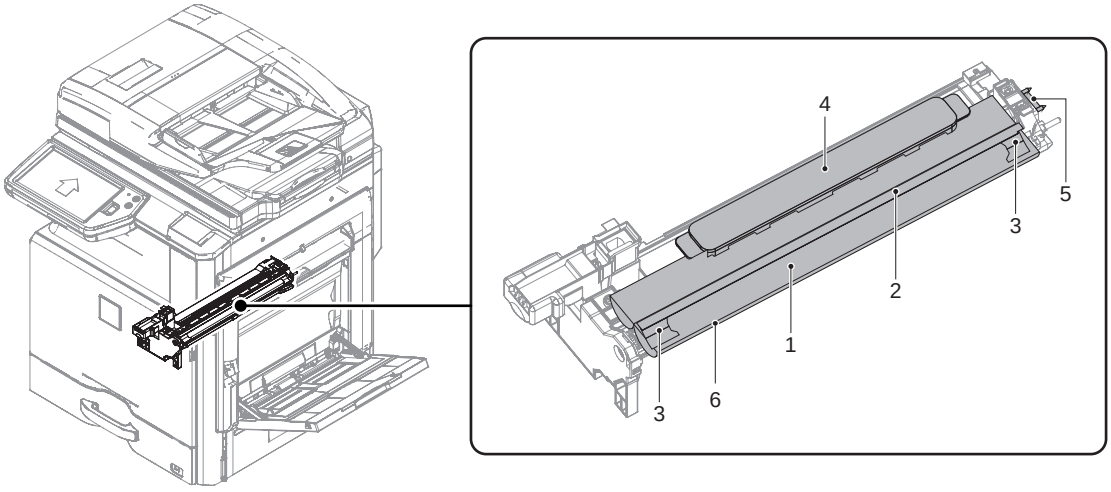
NOTE: When installing, tighten the blue screws in the sequence of A -> B -> C.



B. Developing section

X: Check (Clean, replace, or adjust according to necessity.) □ : Clean ▲: Replace △: Adjust ☆ : Lubricate

No.	Part name	When calling	300k	600k	900k	1200k	1500k	1800k	2100k	2400k	Remark
1	Developer	–		▲		▲		▲		▲	
2	DV seal	–	x	x	x	x	x	x	x	x	
3	DV side seal F/R	–	x	x	x	x	x	x	x	x	
4	Toner filter	–		▲		▲		▲		▲	
5	Connector	–	x	x	x	x	x	x	x	x	
6	DV MG seal	-	○	○	○	○	○	○	○	○	

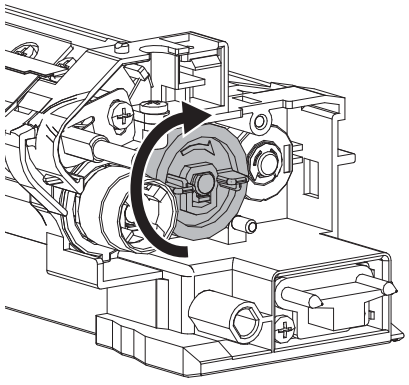


(Note for servicing the DV roller)

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. and it is difficult to rotate, use handle (UKOG-0341FCZZ)



[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.

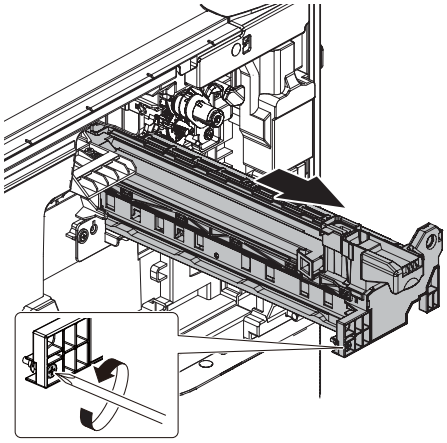
[Check method]

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) Developing unit removal

1) Remove the waste toner box.
2) Remove the toner cartridge.
3) Remove the blue screw, and pull the developing unit to remove.

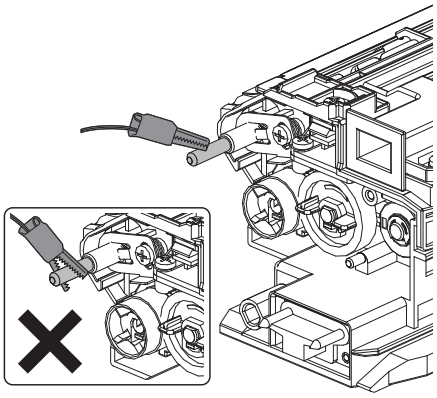


(Note for cleaning the developing unit)

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. (Do not pinch the grounding wire with a crocodile clip connector in order to prevent against damage on the cored bar.)

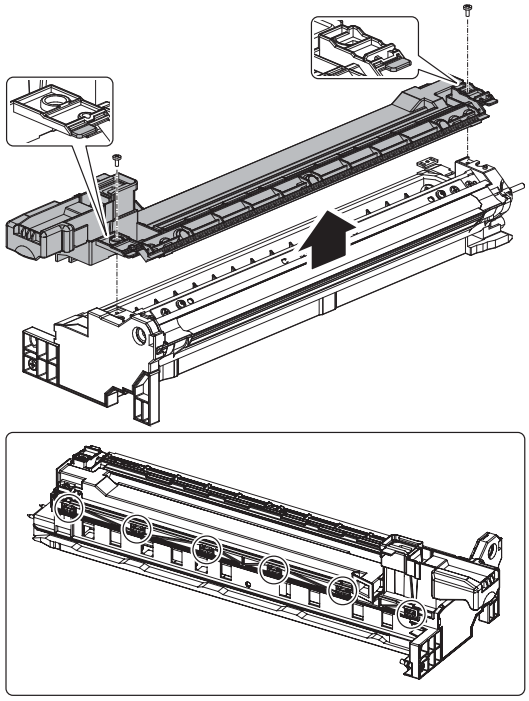


(2) Developer replacement

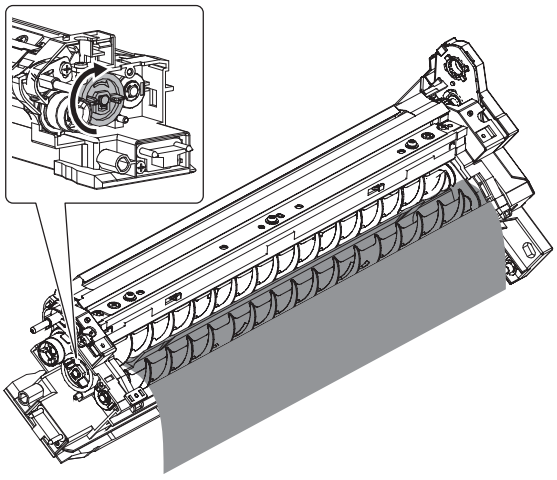
NOTE: Supply of developer must be performed after completion of all the maintenance works of the developing unit.

1) Remove the screw, and hold the rib to remove the cover.

NOTE: After installing, check to confirm that the cover is securely engaged with the frame pawl.



2) While rotating the mixing roller, discharge developer from the unit.



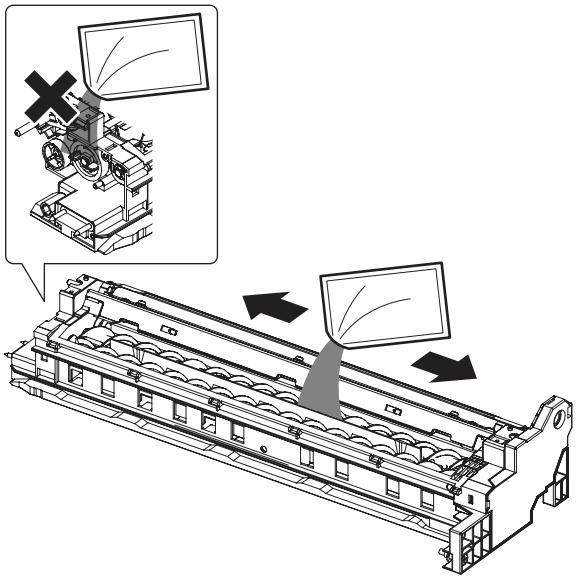
3) Supply new developer.

□ Maintenance

Replace at every 600K.

NOTE: When supplying developer, use care not to spill it. Especially, take a great care not to spill developer on the drive section.

NOTE: After supplying developer, do not tilt the developing unit.

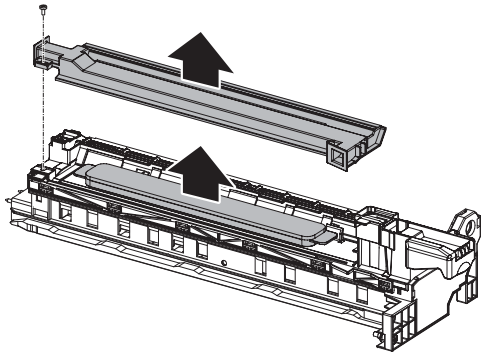


(3) Toner filter replacement

1) Remove the cover and the toner filter.

□ Maintenance

Replace at every 600K.



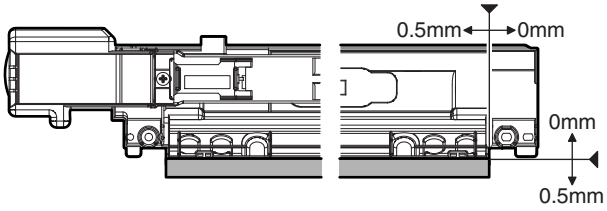
(4) DV seal replacement

1) Remove the DV seal.

□ Maintenance

Replace as needed.

NOTE: Attach the seal according to the reference, and press and hold securely after attachment.



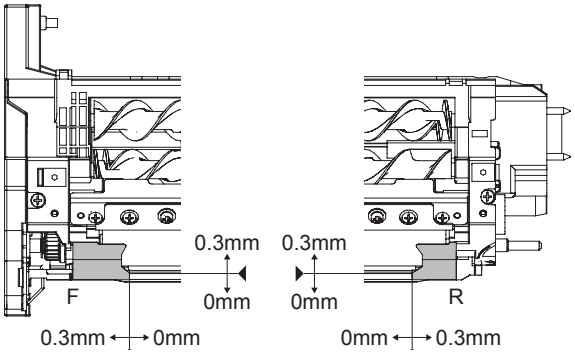
(5) DV side seal F and R replacement

1) Remove the DV side seal F and R.

□ Maintenance

Replace as needed.

NOTE: Attach the seal according to the reference, and press and hold securely after attachment.

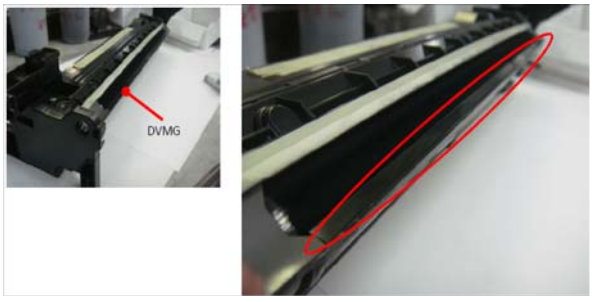


(6) DV MG seal cleaning

1) Remove the DV side seal F and R.

□ Maintenance

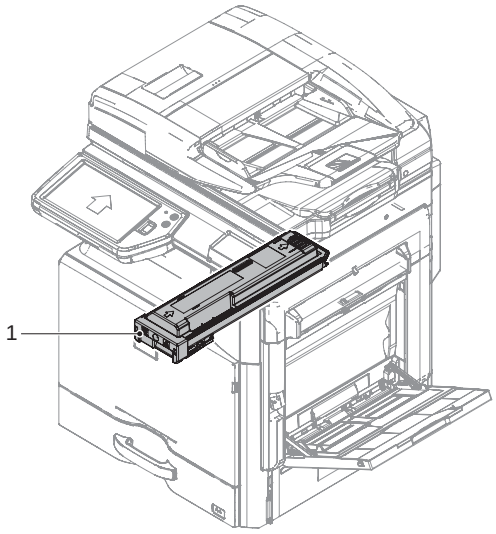
Cleaning at every 300K.



C. Toner supply section

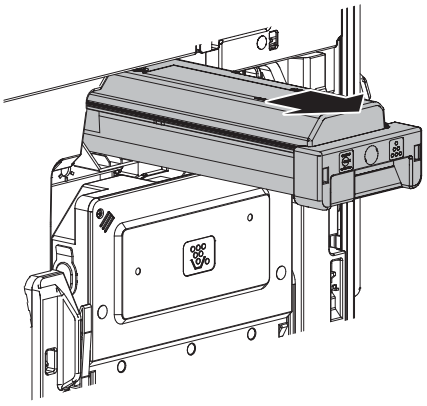
X: Check (Clean, replace, or adjust according to necessity.) ○ : Clean ▲: Replace △: Adjust ☆ : Lubricate

No.	Part name	When calling	300k	600k	900k	1200k	1500k	1800k	2100k	2400k	Remark
1	Toner cartridge	User replacement for every toner empty.									



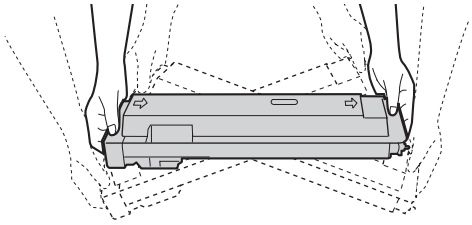
(1) Toner cartridge replacement

1) Open the front cover.
2) Pull out the toner cartridge to remove.
   Maintenance: Replace every-time when toner empty. (By the user)



NOTE: When installing, hold the toner cartridge horizontally and inset it slowly.

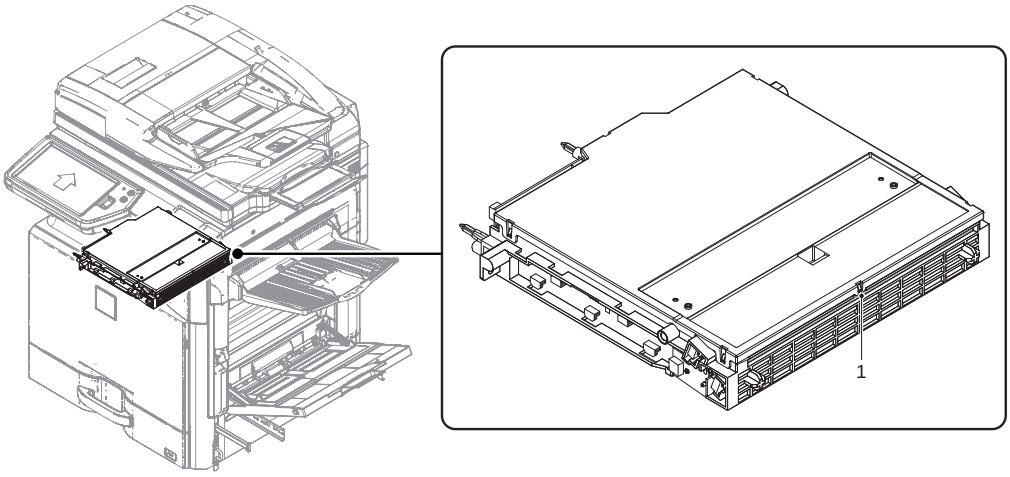
NOTE: Shake the toner cartridge several times.



D. LSU section

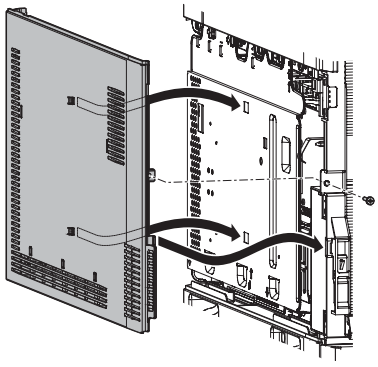
X: Check (Clean, replace, or adjust according to necessity.) ○ : Clean ▲: Replace △: Adjust ☆ : Lubricate

No.	Part name	When calling	300k	600k	900k	1200k	1500k	1800k	2100k	2400k	Remark
1	Dust-proof glass	○	x	x	x	x	x	x	x	x	

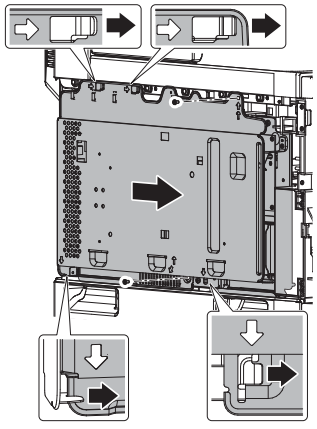


(1) LSU removal

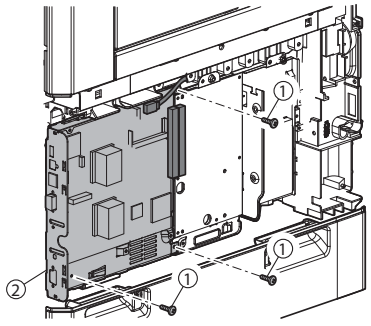
1) Turn OFF the machine power and disconnect the power plug.
2) Remove the lef cabinet.



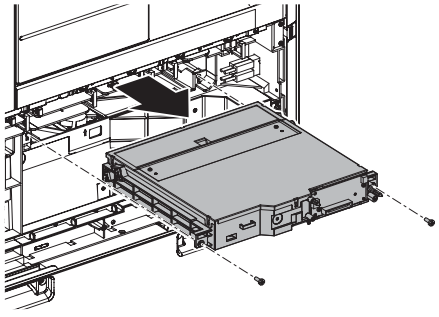
3) Remove the shield plate.



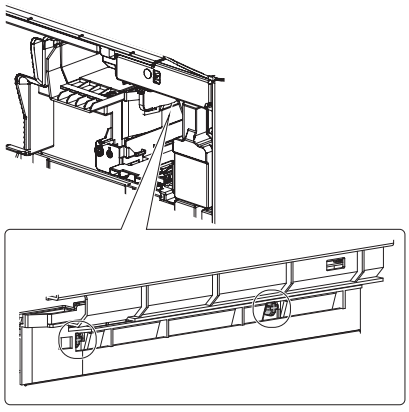
4) Remove the MFP control PWB unit.
   Since the MFP control PWB and the LSU mother PWB are connected together, use care when removing and attaching them.



5) Remove the LSU mother PWB unit and the HDD unit.
6) Disconnect the LSU connector and remove the securing screws to remove the LSU.



NOTE: Lift the LSU tip and insert it so that the LSU boss comes in the frame hole. After insertion, remove the toner cartridge and check.



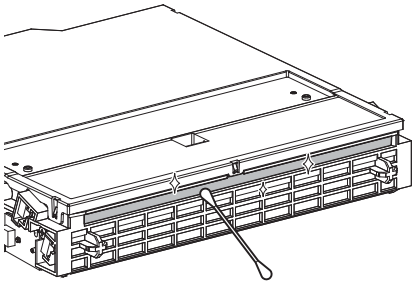
(2) Dust-proof glass cleaning

1) Clean the dust-proof glass.

□ Maintenance

Clean at needed.

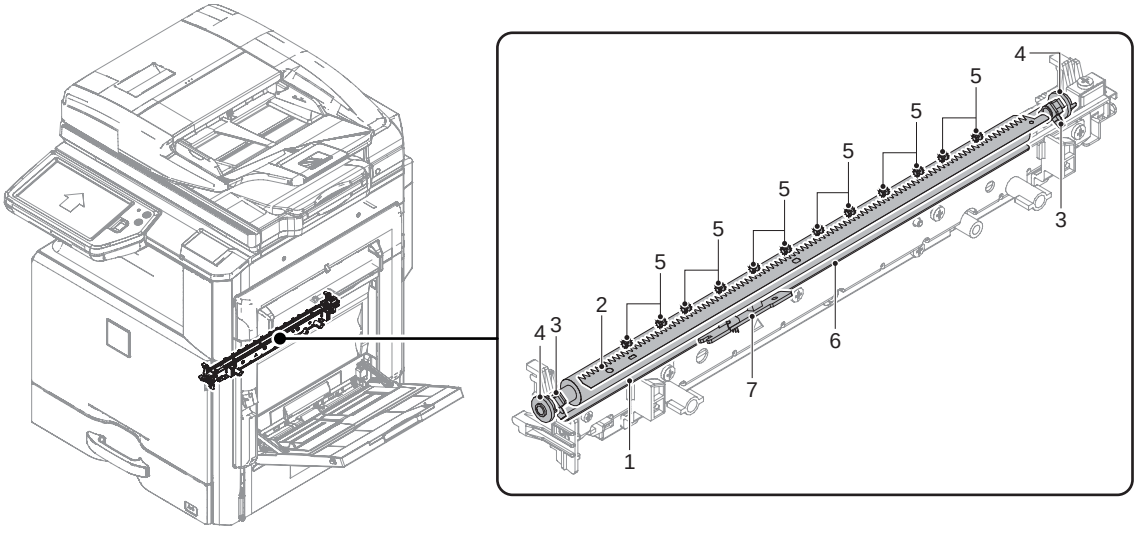
NOTE: Do not touch the dust-proof glass with bare hands.



E. Transfer section

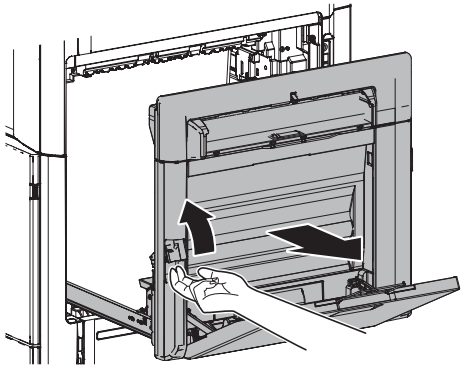
X: Check (Clean, replace, or adjust according to necessity.) ○ : Clean ▲: Replace △: Adjust ☆ : Lubricate

No.	Part name	When calling	300k	600k	900k	1200k	1500k	1800k	2100k	2400k	Remark
1	Transfer roller	x	▲	▲	▲	▲	▲	▲	▲	▲	
2	Discharge plate	x	▲	▲	▲	▲	▲	▲	▲	▲	
3	Transfer roller bearing F and R	–	▲	▲	▲	▲	▲	▲	▲	▲	
4	Transfer roller collar	–	▲	▲	▲	▲	▲	▲	▲	▲	
5	Transfer rear star ring	–	x	x	x	x	x	x	x	x	
6	Pre-transfer paper guide	○	○	○	○	○	○	○	○	○	
7	Process control sensor	x	○	○	○	○	○	○	○	○	Air cleaning

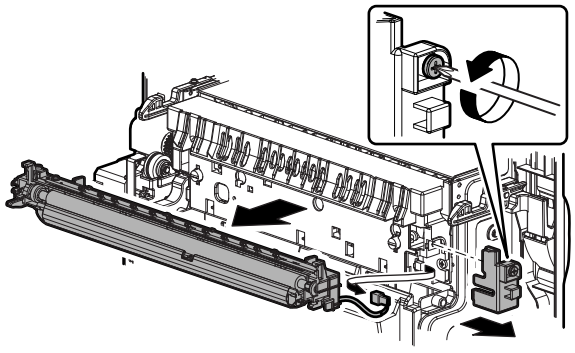


(1) Transfer unit removal

1) Pull the lock lever, and open the right door.



2) Remove the blue screw, and remove the cover. Disconnect the connector, and remove the transfer unit.



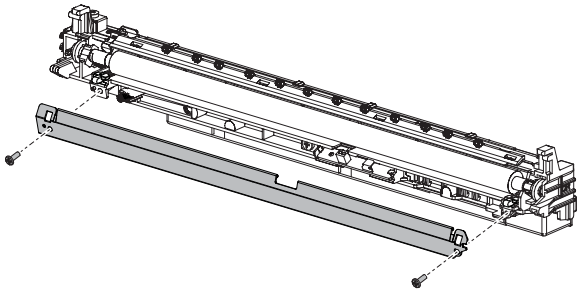
(2) Pre-transfer paper guide and process control sensor cleaning

1) Remove the pre-transfer paper guide. Clean the pre-transfer paper guide and the process control sensor.

□ Maintenance

Clean at every 300K.

NOTE: When installing, engage the boss in the rear side, and then engage the boss in the front side.



(3) Transfer roller, transfer roller bearing F and R, and transfer roller collar replacement

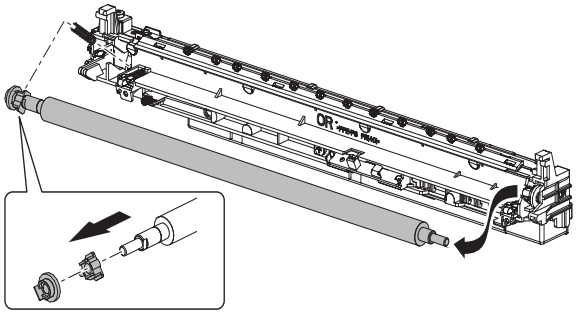
1) Disengage the pawl, and remove the transfer roller. Remove the transfer roller bearing R, the transfer roller collar, and the transfer roller from the transfer roller.

□ Maintenance

Replace at every 300K.

NOTE: When installing, be sure to insert the spring into the transfer roller bearing R and the holder boss securely.

NOTE: Be careful of the installing direction of the transfer roller gear and the transfer roller collar.



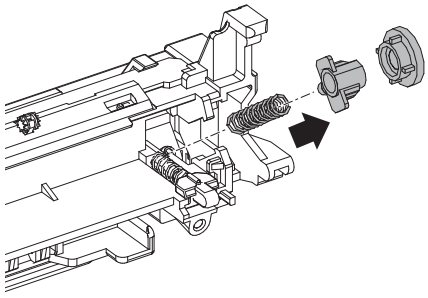
2) Remove the transfer roller collar and the transfer roller bearing F from the holder.

□ Maintenance

Replace at every 300K.

NOTE: When installing, be sure to insert the spring into the transfer roller bearing F and the holder boss securely.

NOTE: Be careful of the installing direction of the transfer roller collar.



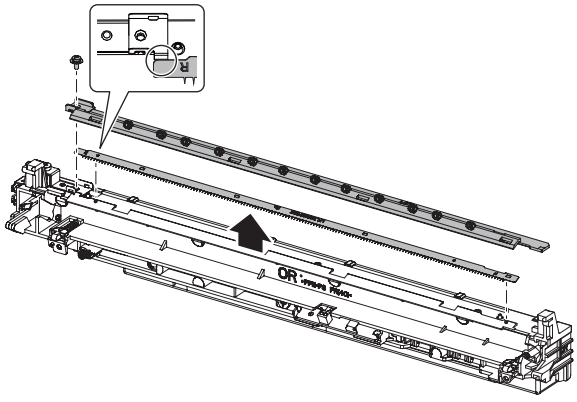
(4) Discharge plate replacement

1) Remove the blue screw, and remove the discharge plate holder. Remove the discharge plate.

□ Maintenance

Replace at every 300K.

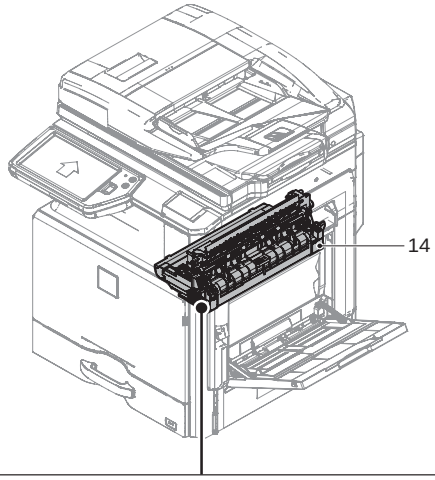
NOTE: When installing, insert the discharge plate into the boss and check to confirm that it is securely on the ground electrode.



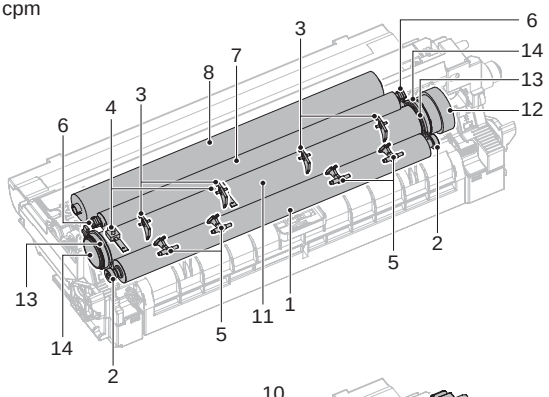
F. Fusing section

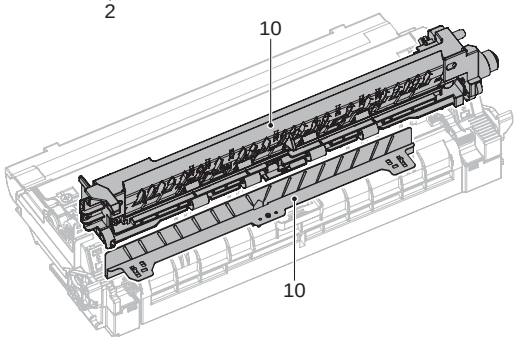
X: Check (Clean, replace, or adjust according to necessity.) □ : Clean ▲: Replace △: Adjust ☆ : Lubricate

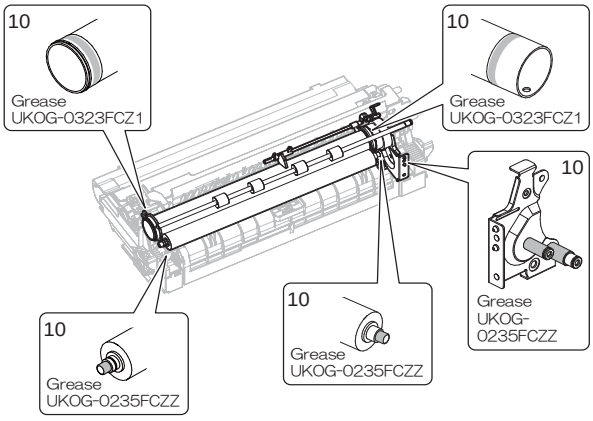
No.	Part name	When calling	300k	600k	900k	1200k	1500k	1800k	2100k	2400k	Remark
1	Lower heat roller	x	▲	▲	▲	▲	▲	▲	▲	▲	Apply grease (UKOG-0235FCZZ) to specific position
2	Lower heat roller bearing	x	x	x	x	x	x	x	x	x	
3	Upper separation pawl	x	▲	▲	▲	▲	▲	▲	▲	▲	
4	Thermistor	x	x	x	x	x	x	x	x	x	Replace as needed
5	Lower separation pawl	x	▲	▲	▲	▲	▲	▲	▲	▲	
6	Web pressure roller bearing	x	▲	▲	▲	▲	▲	▲	▲	▲	
7	Web pressure roller	x	▲	▲	▲	▲	▲	▲	▲	▲	
8	Web roller	x	▲	▲	▲	▲	▲	▲	▲	▲	
9	Fusing paper exit roller	○	○	○	○	○	○	○	○	○	
10	Gears	☆	☆	☆	☆	☆	☆	☆	☆	☆	Apply grease (UKOG-0235FCZZ) to specific position
11	Paper guides	○	○	○	○	○	○	○	○	○	
12	Upper heat roller	x	▲	▲	▲	▲	▲	▲	▲	▲	Apply grease when replacing 36 cpm machine (UKOG-0323FCZ1) 45/56 cpm machine (UKOG-0235FCZZ)
13	Upper heat roller gear	x	x	x	x	x	x	x	x	x	
14	Upper heat roller bearing	x	x	x	x	x	x	x	x	x	Apply grease when replacing 36 cpm machine (UKOG-0323FCZ1) 45/56 cpm machine (UKOG-0235FCZZ)
15	Upper heat roller heat-insulation bush	x	x	x	x	x	x	x	x	x	



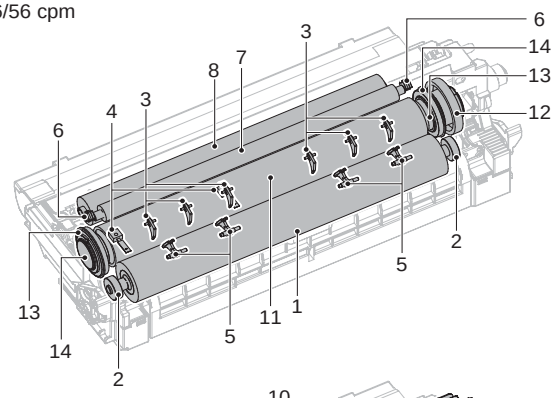
36 cpm

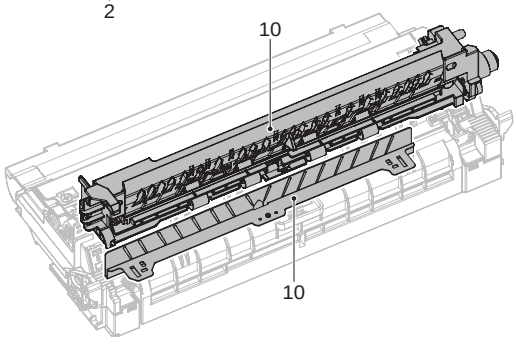


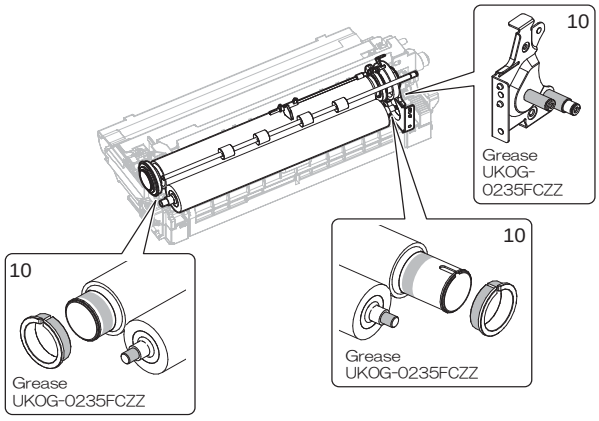




46/56 cpm

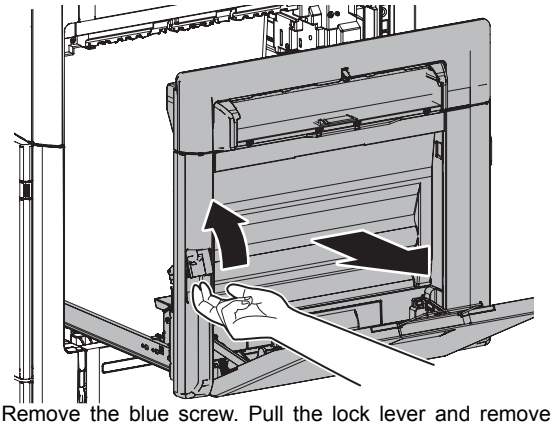




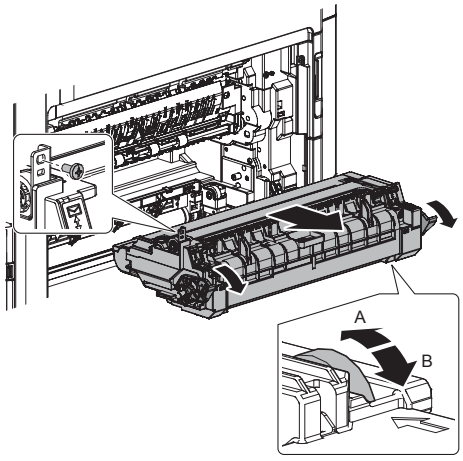


(1) Fusing unit replacement

1) Pull the lock lever, and open the right door.

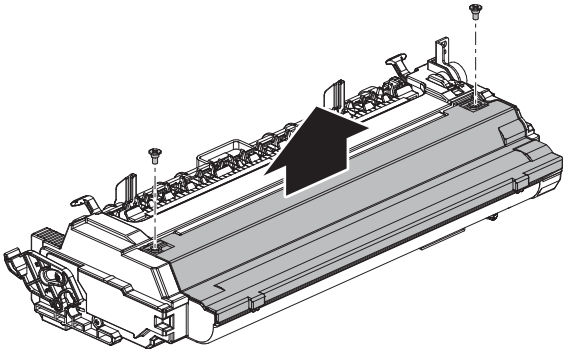


2) Remove the blue screw. Pull the lock lever and remove the fusing unit. Do not rotate B direction



(2) Web pressure roller bearing and web pressure roller replacement

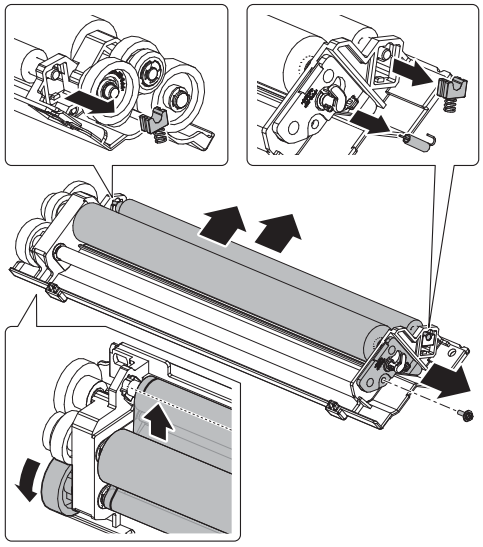
1) Remove the screw, and remove the web unit.



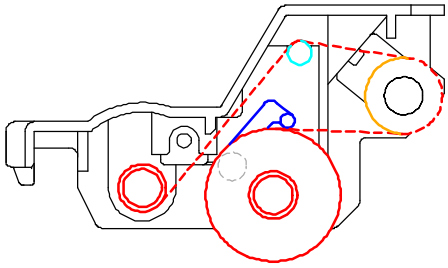
2) Remove the web spring, the web pressure roller bearing. and the web pressure roller

□ Maintenance

Replace at every 300K. and life end

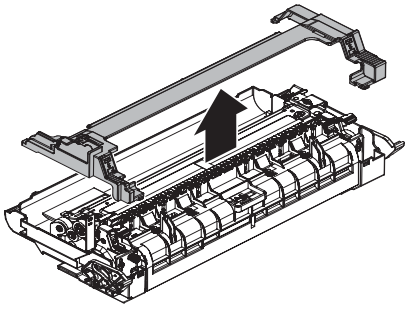


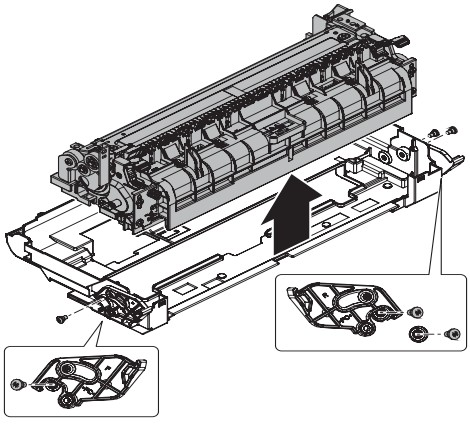
[Route diagram]



(3) Thermistor replacement

1) Release pressure lever and remove the screw and the cover.



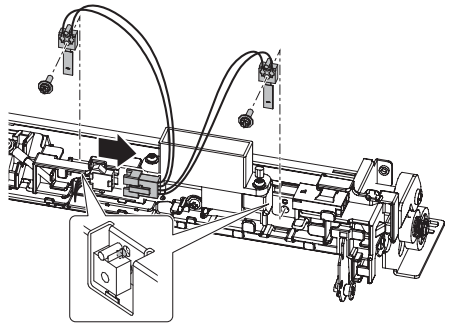


2) Disconnect the connector, and remove the harness, the screw, and the thermistor.

□ Maintenance

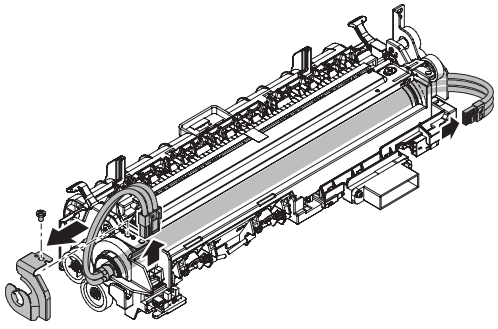
Check and clean at every 300K and replace as needed.

NOTE: When installing, be sure to insert into the thermistor boss.

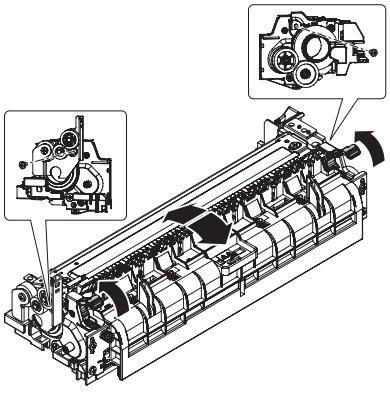


(4) Upper heat roller, upper heat roller gear, upper heat roller insulation bush, upper heat roller bearing, and heater lamp replacement

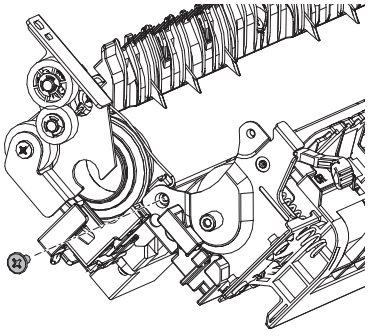
1) Disconnect the connector. Remove the screw, and heater lamp.



2) Remove the screw, and release the pressure of the heat roller and open the fusing unit.

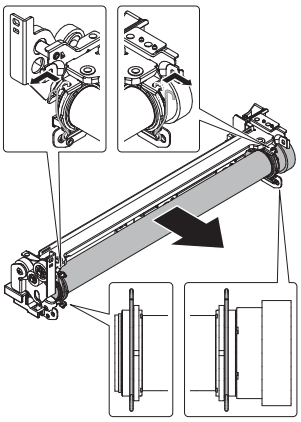


3) Put the screw to keep opened.

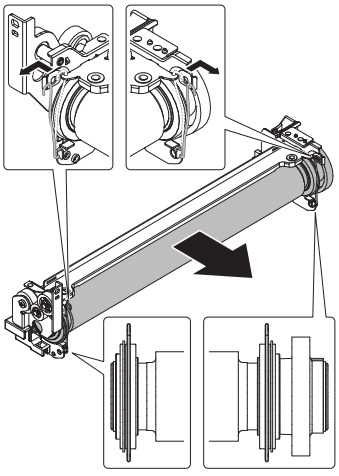


4) Remove the stopper and upper heat roller unit.

36 cpm machine



46/56 cpm machine

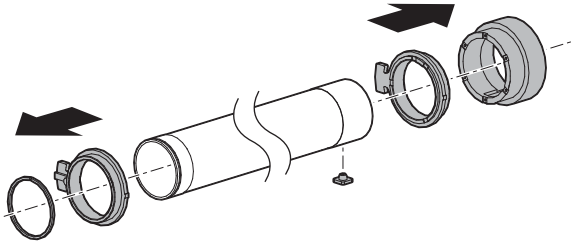


5) Remove the roller stopper from the upper heat roller, and remove the upper heat roller gear, the upper heat roller insulation bush, and the upper heat roller bearing.

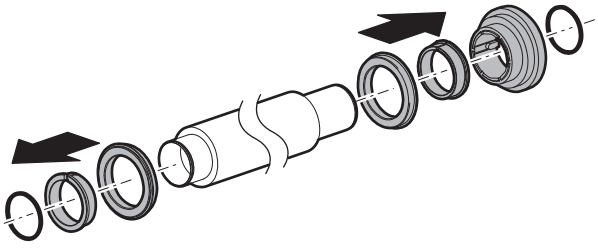
□ Maintenance

Replace at every 300K.

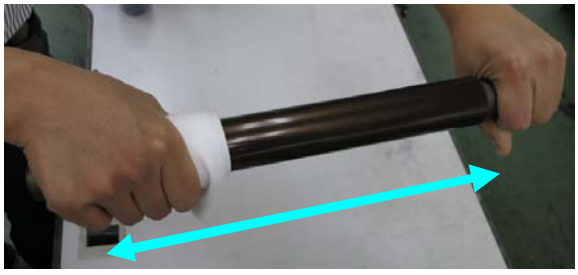
36 cpm machine



46/56 cpm machine



6) When replace an upper heat roller, take off a protection sheet and soak alcohol into cloth enough and clean the heat roller surface well

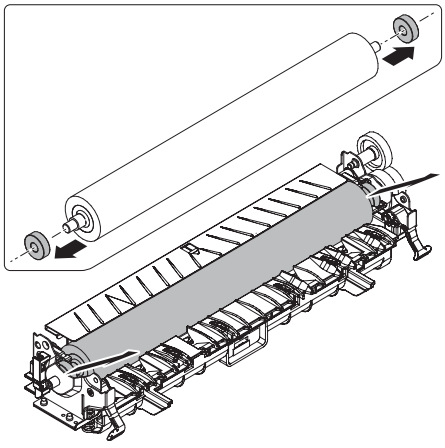


(5) Lower heat roller and lower heat roller bearing replacement

1) Remove the lower heat roller unit. Remove the lower heat roller bearing from the lower heat roller.

□ Maintenance

Replace at every 300K.



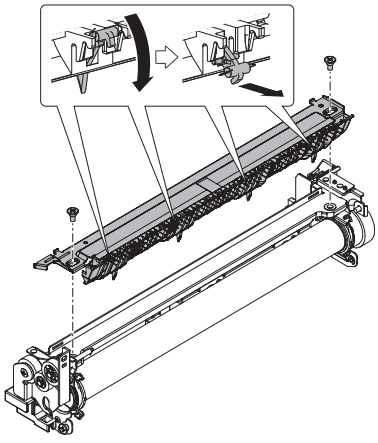
(6) Upper separation pawl replacement

1) Remove the screw, the upper separation pawl unit, and the upper separation pawl.

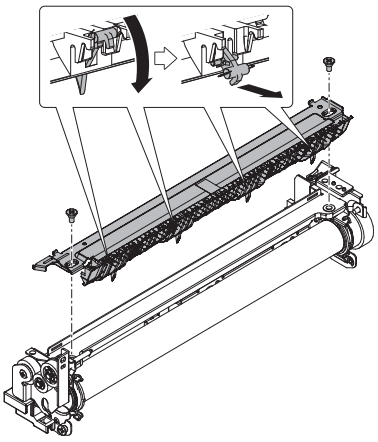
□ Maintenance

Replace at every 300K.

36 cpm machine



46/56 cpm machine



(7) Lower separation pawl replacement

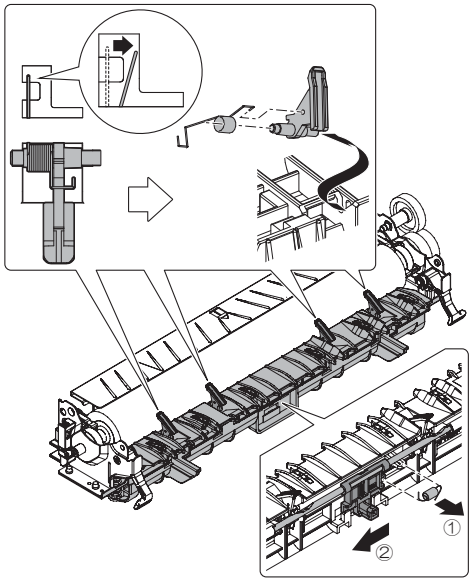
1) Release the spring edge on the paper guide side from the paper guide spring stopper. Precisely speaking, slide the spring edge and push it down to the back surface of the paper guide. In addition, disengage the lower separation pawl from the lower separation pawl shaft side where the spring is attached. Remove the spring from the lower separation pawl.

□ Maintenance

Replace at every 300K.

NOTE: When installing the spring, pass the spring hook through the hole in the lower separation pawl.

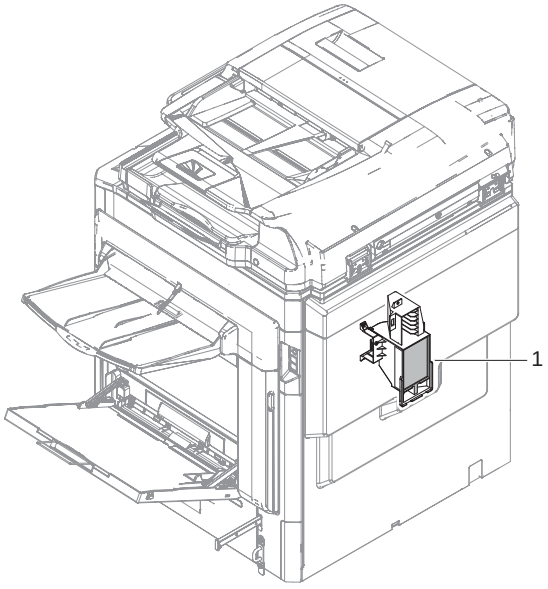
NOTE: When installing the lower separation pawl, first install the shaft which is not provided with the spring to the paper guide.



G. Filter section

X: Check (Clean, replace, or adjust according to necessity.) □ : Clean ▲: Replace △: Adjust ☆ : Lubricate

No.	Part name	When calling	300k	600k	900k	1200k	1500k	1800k	2100k	2400k	Remark
1	Ozone filter	x	▲	▲	▲	▲	▲	▲	▲	▲	



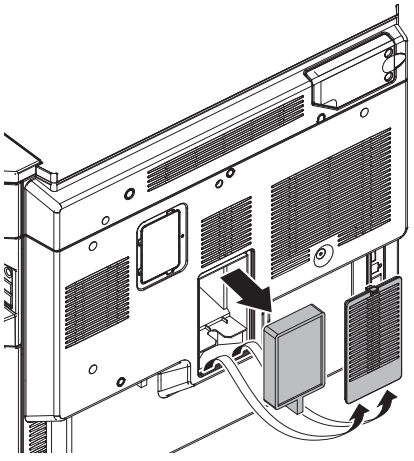
(1) Ozone filter replacement

1) Remove the screw, and remove the cover. Remove the ozone filter.

□ Maintenance

Replace at every 300K.

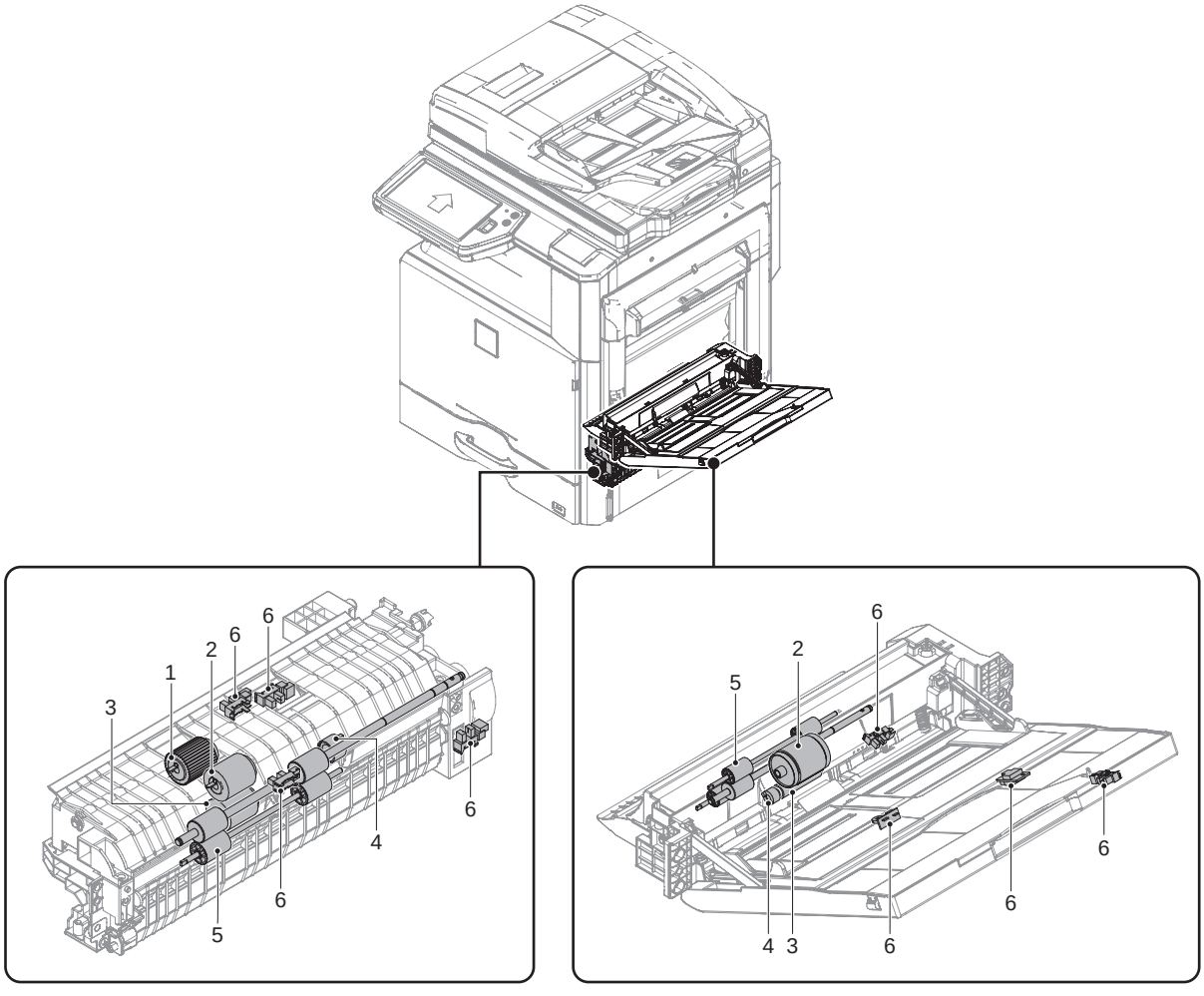
When installing the filter, be careful not to turn out the peripheral molt and to insert the filter straight.



H. Paper feed section

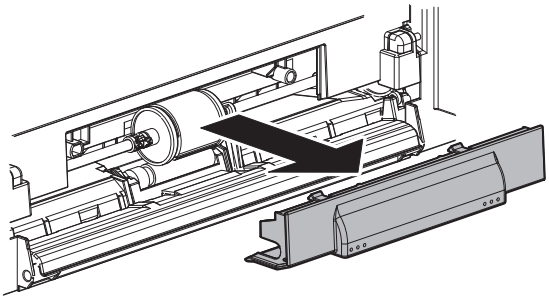
X: Check (Clean, replace, or adjust according to necessity.) □ : Clean ▲: Replace △: Adjust ☆ : Lubricate

No.	Part name	When calling	300k	600k	900k	1200k	1500k	1800k	2100k	2400k	Remark
1	Paper pick-up roller	x	○	○	○	○	○	○	○	○	Replacement reference: Replace according to each paper feed counter value. Paper feed tray: Replace at 100K or 1 year of use. Manual feed: Replace at 100K or 1 year of use.
2	Paper feed roller	x	○	○	○	○	○	○	○	○	
3	Separation roller	x	○	○	○	○	○	○	○	○	
4	Torque limiter	x	x	x	x	x	x	x	x	x	Replacement reference: Replace according to each paper feed counter value. Paper feed tray: 100K Manual feed: 100K
5	Transport rollers	x	○	○	○	○	○	○	○	○	
6	Sensors	x	x	x	x	x	x	x	x	x	

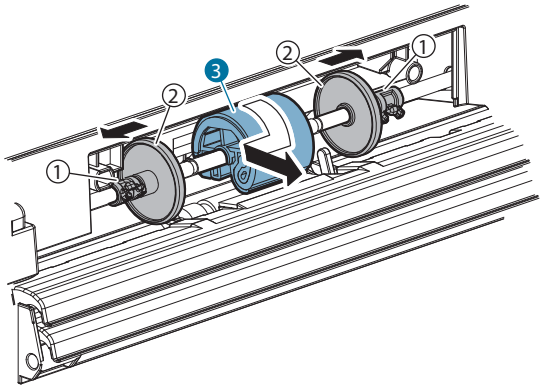


(1) Manual paper feed roller, separation roller, and torque limiter replacement

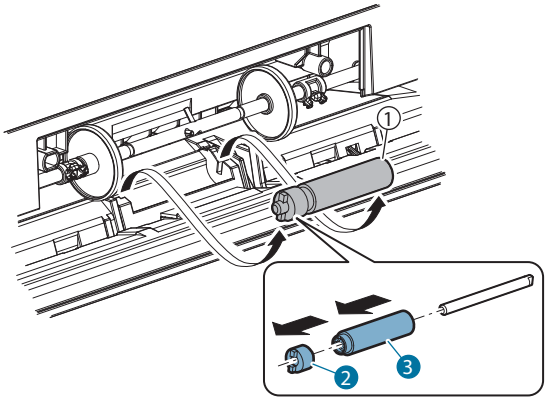
1) Remove the cover.



2) Slide the stopper and the collar and remove the paper feed roller

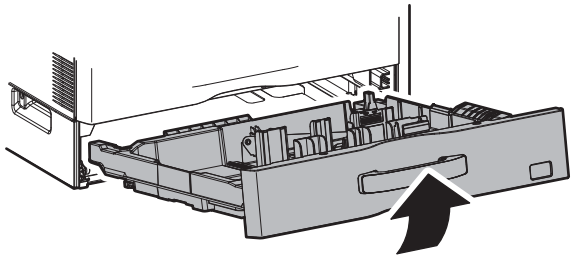


3) Remove tha separation roller and the torque limiter.



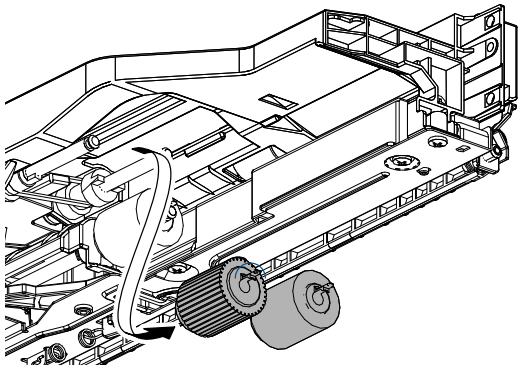
(2) Tray paper feed unit paper pickup roller, paper feed roller, and separation roller replacement

1) Remove the tray 1.



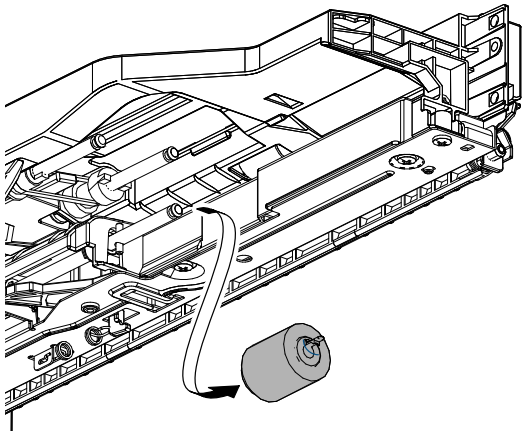
2) Remove the paper pickup roller and the paper feed roller.

Maintenance: Replace at every 100K of each paper feed counter.



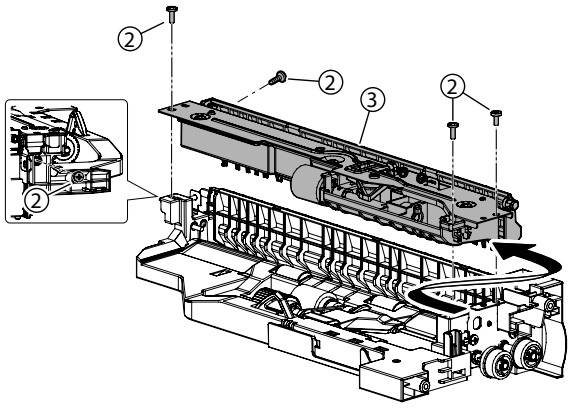
3) Remove the separation roller.

Maintenance: Replace at every 100K of each paper feed counter.

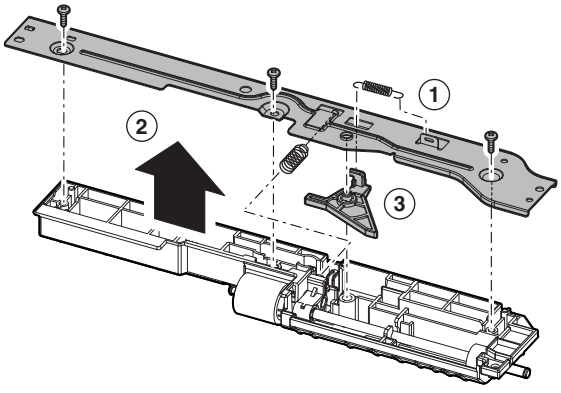


(3) Tray paper feed unit torque limiter replacement

1) Remove the E-ring, the bearing, and the paper feed lower PG unit.

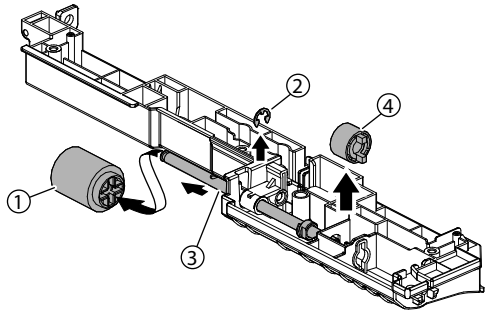


2) Remove the pressure release spring, and remove the paper feed lower PG supporting plate. Remove the separation pressure spring, and the separation pressure release plate.



3) Remove the separation roller. Remove the E-ring and the separation shift. Remove the torque limiter.

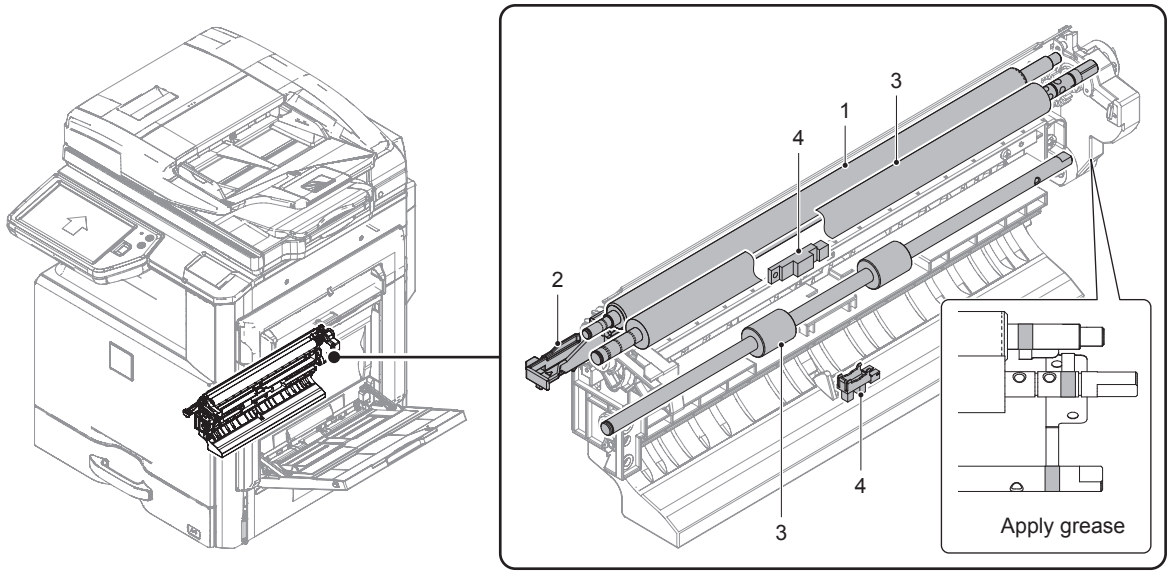
   Maintenance: Replace at every 100K of each paper feed counter.



I. Paper transport section

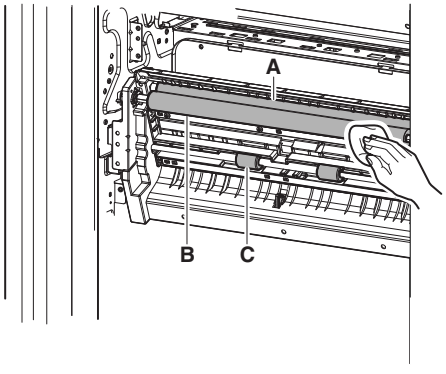
X: Check (Clean, replace, or adjust according to necessity.) □ : Clean ▲: Replace △: Adjust ☆ : Lubricate

No.	Part name	When calling	300k	600k	900k	1200k	1500k	1800k	2100k	2400k	Remark
1	Resist roller (Idle)	x	☆	☆	☆	☆	☆	☆	☆	☆	Apply grease (UKOG-0012QSZZ)
2	Paper dust removing unit	O	○	○	○	○	○	○	○	○	
3	Transport rollers	x	☆	☆	☆	☆	☆	☆	☆	☆	Apply grease (UKOG-0012QSZZ)
4	Sensors	x	x	x	x	x	x	x	x	x	
5	Transport paper guides	O	O	O	O	O	O	O	O	O	



(1) Resist roller (idle), and each transport roller cleaning

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 300K.



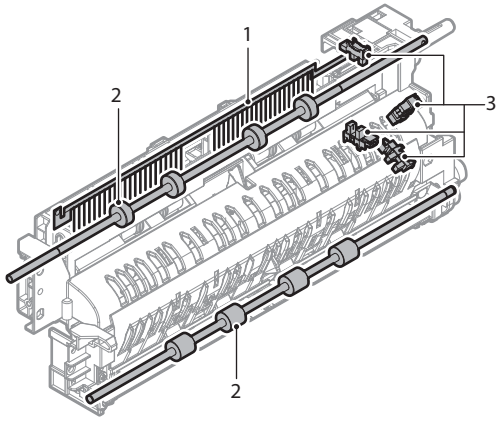
(2) Resist roller (idle), and transport roller applying grease

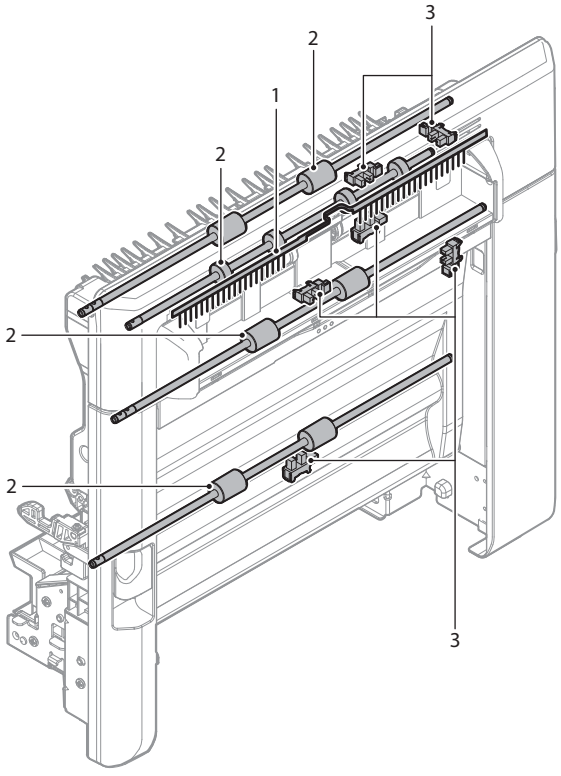
1) Open the right door.
2) Applygrease the resist roller (Idle), resist roller (Drive) and the transport roller 8 (Drive).
   □ Maintenance
   Apply grease at every 300K.

J. Duplex/Paper exit section

X: Check (Clean, replace, or adjust according to necessity.) □ : Clean ▲: Replace △: Adjust ☆ : Lubricate

No.	Part name	When calling	300k	600k	900k	1200k	1500k	1800k	2100k	2400k	Remark
1	Discharge brush	x	x	x	x	x	x	x	x	x	
2	Transport rollers	x	○	○	○	○	○	○	○	○	
3	Sensors	x	x	x	x	x	x	x	x	x	
	Gears	x	x	x	x	x	x	x	x	x	When checking, apply to the necessary positions.
	Transport paper guides	○	○	○	○	○	○	○	○	○	



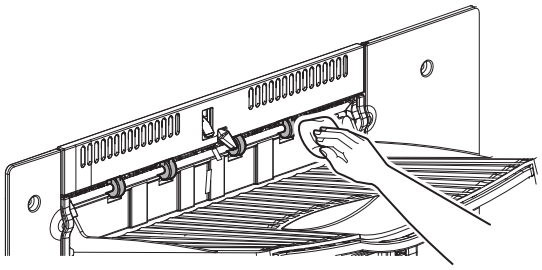


(1) Each transport roller cleaning

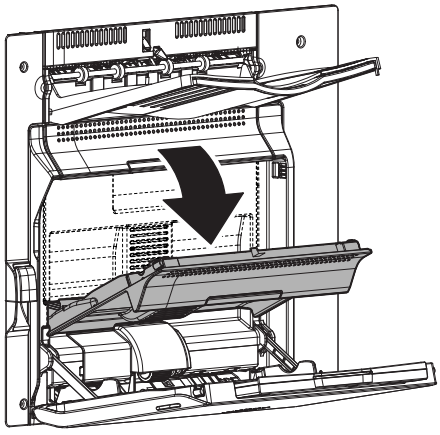
1) Clean the paper exit roller 2 (Drive).

□ Maintenance

Clean at every 300K.



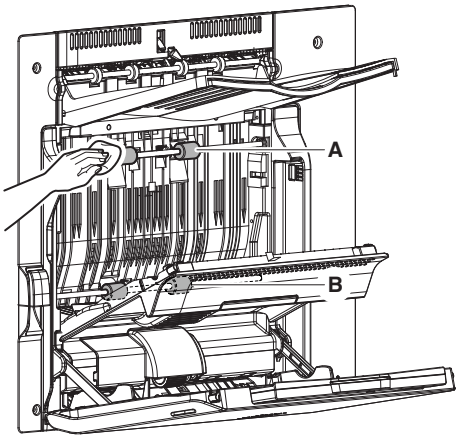
2) Open the ADU open/close door.



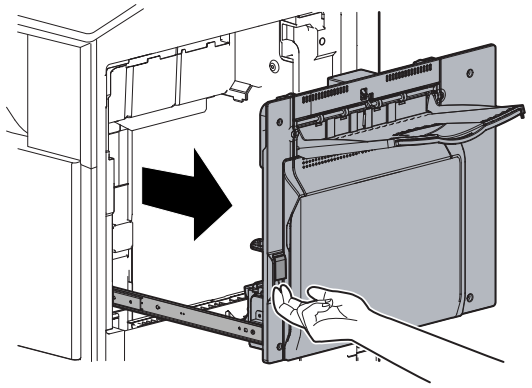
3) Clean the transport roller (Drive) (A), and the transport roller (Drive) (B).

□ Maintenance

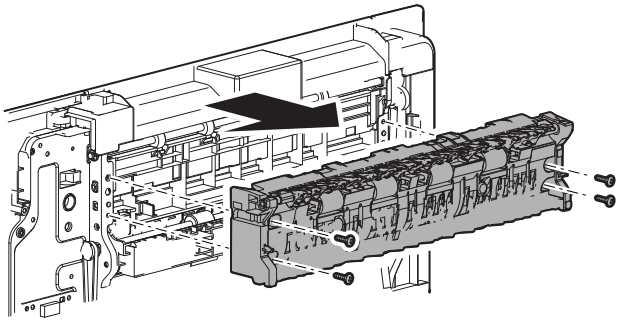
Clean at every 300K.



4) Open the right door.



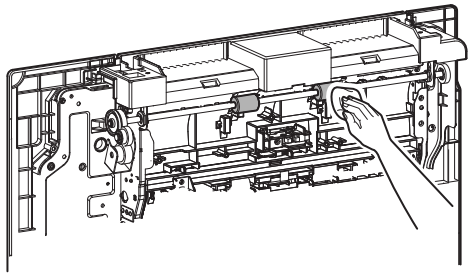
5) Remove the reverse PG unit.



6) Clean the transport roller (Drive).

□ Maintenance

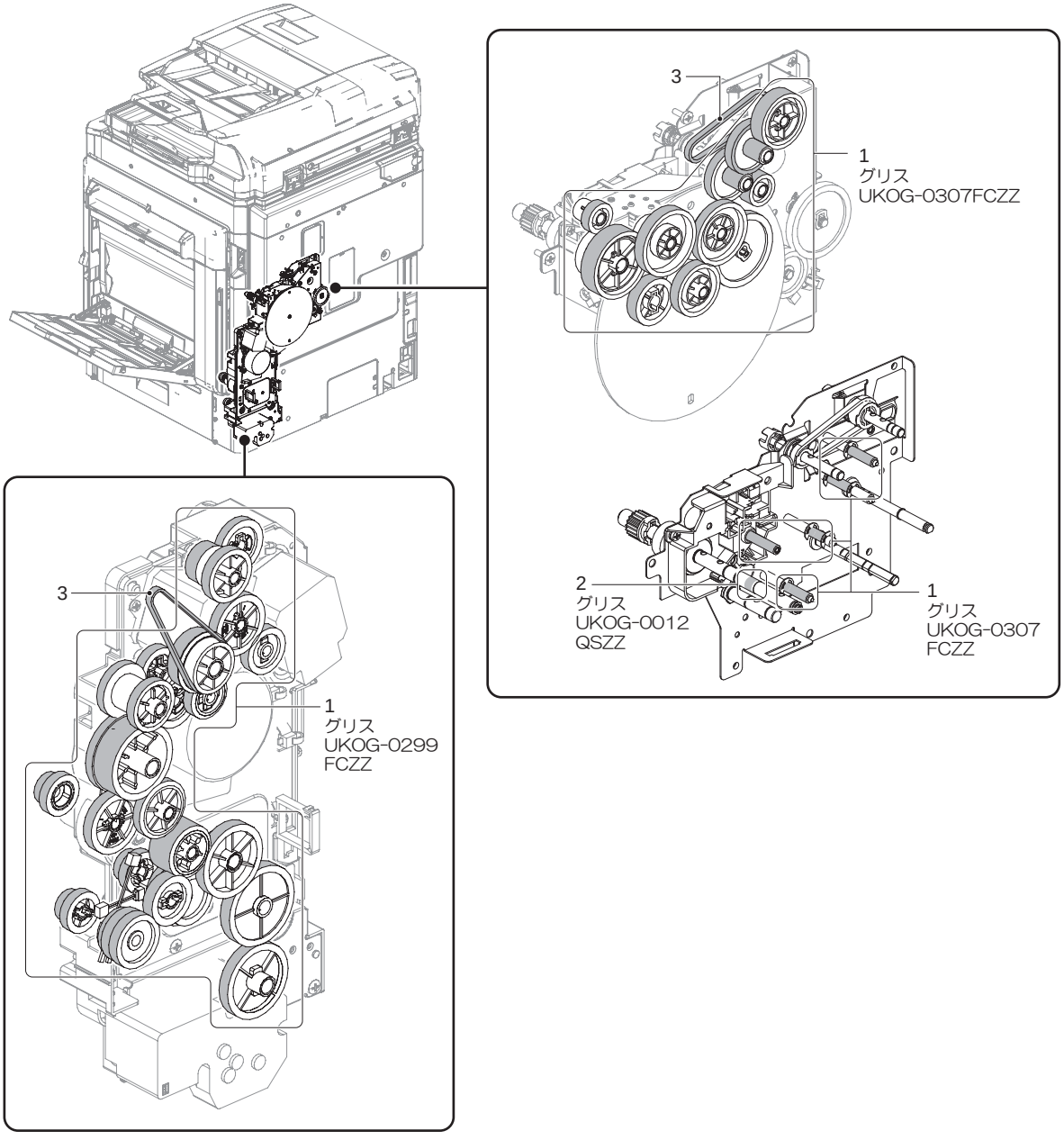
Clean at every 300K.



K. Drive section

X: Check (Clean, replace, or adjust according to necessity.) □ : Clean ▲: Replace △: Adjust ☆ : Lubricate

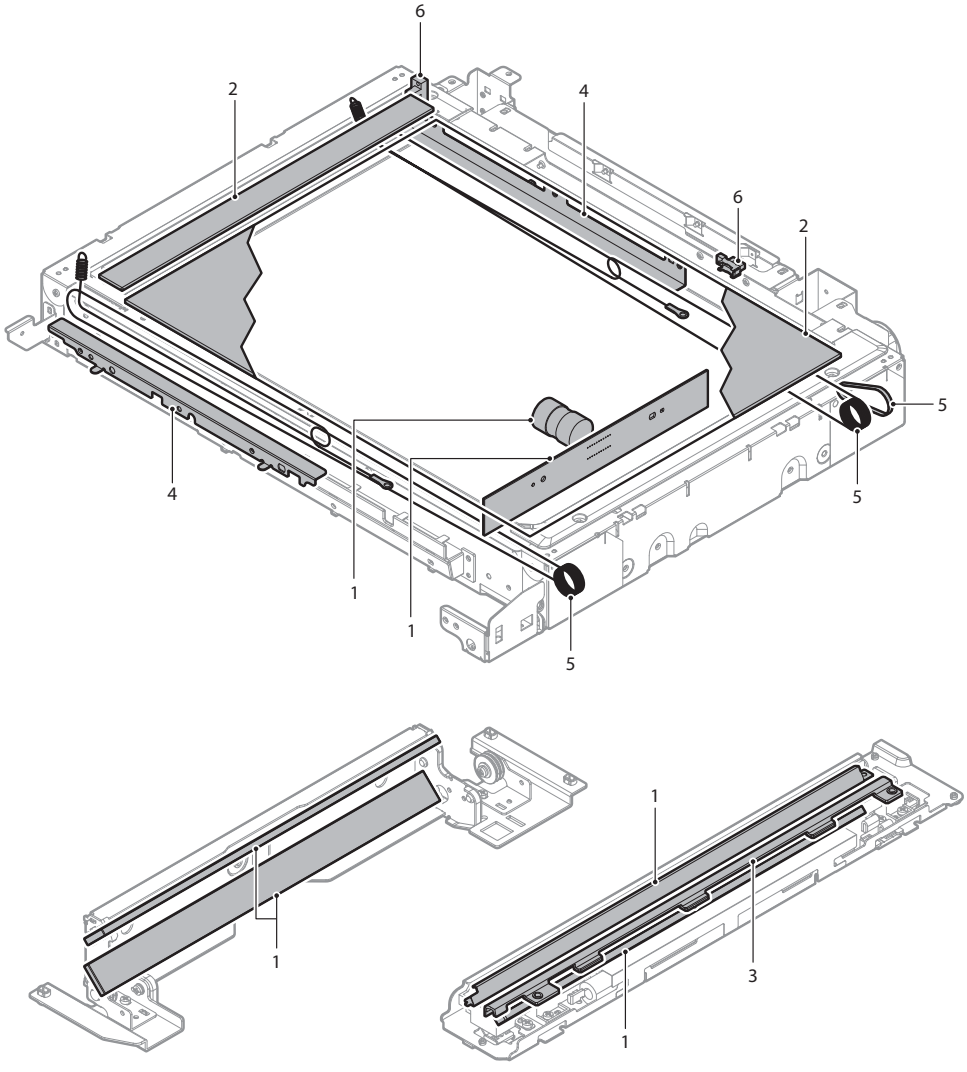
No.	Part name	When calling	300k	600k	900k	1200k	1500k	1800k	2100k	2400k	Remark
1	Gears (Grease)	–	x	x	x	x	x	x	x	x	When checking, apply to the necessary positions.
2	Shaft earth sections (Conduction grease)	–	x	x	x	x	x	x	x	x	
3	Belts	–	x	x	x	x	x	x	x	x	



L. Scanner section

X: Check (Clean, replace, or adjust according to necessity.) □ : Clean ▲: Replace △: Adjust ☆ : Lubricate

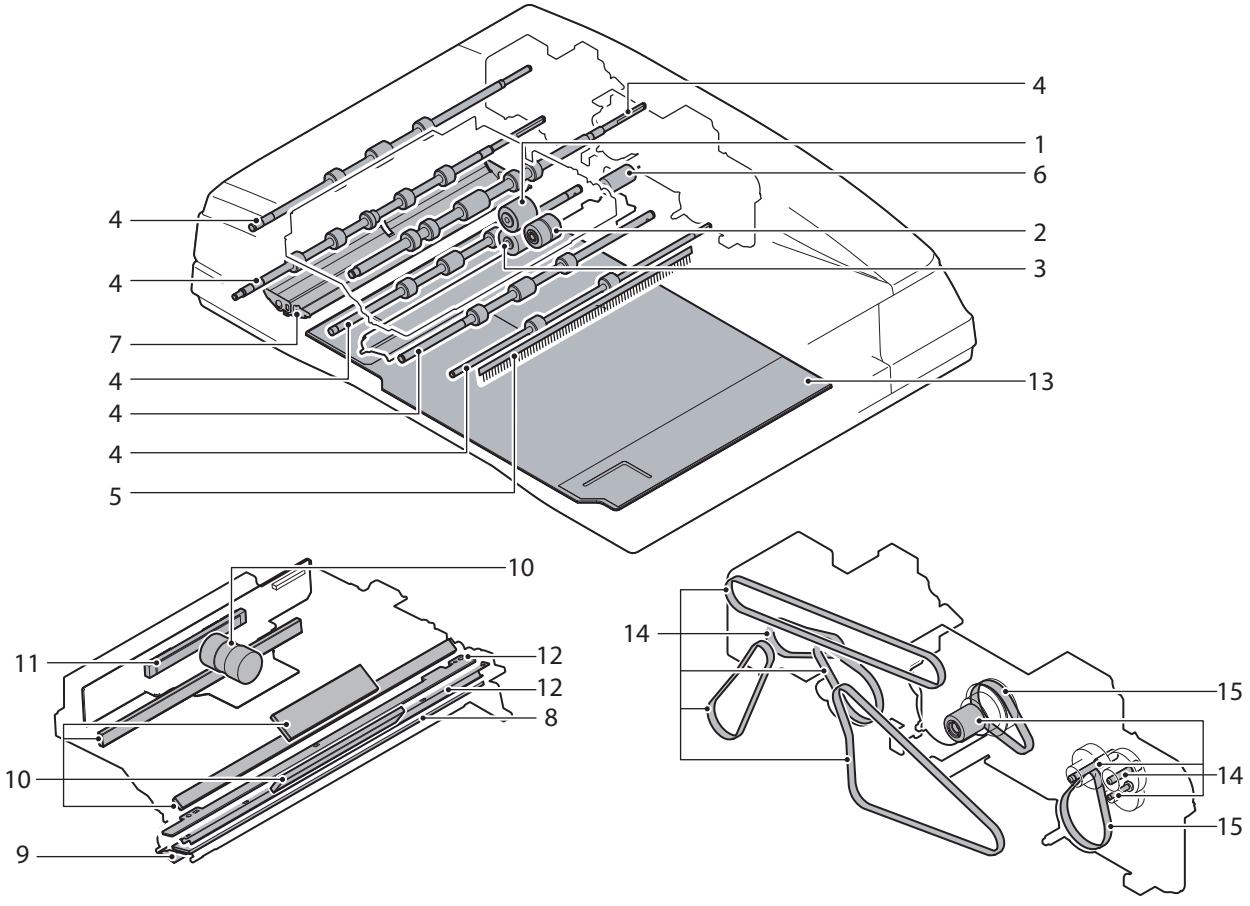
No.	Part name	When calling	300k	600k	900k	1200k	1500k	1800k	2100k	2400k	Remark
1	Mirror/Lens/ Reflection sheet (Reflector)/CCD	○	○	○	○	○	○	○	○	○	
2	Table glass/SPF glass	○	○	○	○	○	○	○	○	○	
3	Scanner lamp	x	x	x	x	x	x	x	x	x	Air cleaning for the LED section
4	Rails	☆	☆	☆	☆	☆	☆	☆	☆	☆	
5	Drive belt/drive wire	x	x	x	x	x	x	x	x	x	
6	Sensors	x	x	x	x	x	x	x	x	x	



M. DSPF section

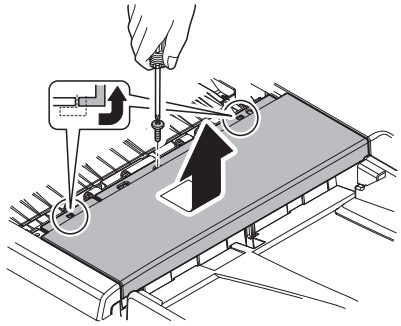
X: Check (Clean, replace, or adjust according to necessity.) □ : Clean ▲: Replace △: Adjust ☆ : Lubricate

No.	Part name	When calling	300k	600k	900k	1200k	1500k	1800k	2100k	2400k	Remark
1	Paper feed roller	○	○	○	○	○	○	○	○	○	Replace at 100K of paper feed counter
2	Pickup roller	○	○	○	○	○	○	○	○	○	
3	Separation roller	○	○	○	○	○	○	○	○	○	
4	Transport rollers	○	○	○	○	○	○	○	○	○	
5	Discharge brush	x	x	x	x	x	x	x	x	x	
6	Torque limiter	x	○	○	○	○	○	○	○	○	
7	No. 1 scanning plate	○	○	○	○	○	○	○	○	○	
8	No. 2 scanning section, scanning glass	○	○	○	○	○	○	○	○	○	
9	No. 2 scanning section, white reference glass	○	○	○	○	○	○	○	○	○	
10	Mirror	○	○	○	○	○	○	○	○	○	
11	Lens/CCD	○	○	○	○	○	○	○	○	○	
12	Scanner lamp/Reflector	○	○	○	○	○	○	○	○	○	
13	OC mat	○	○	○	○	○	○	○	○	○	
14	Gears	x	x	x	x	x	x	x	x	x	
15	Belts	x	x	x	x	x	x	x	x	x	

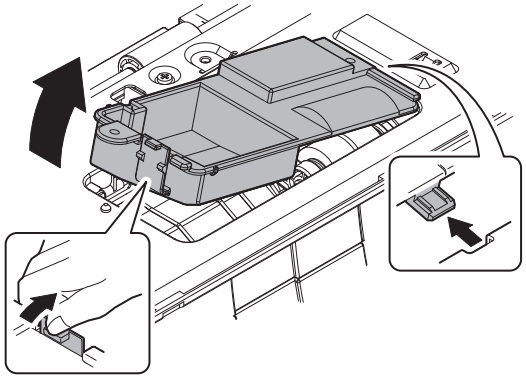


(1) Pickup roller, paper feed roller replacement

1) Open the upper door.Remove the screw and the paper feed cover.

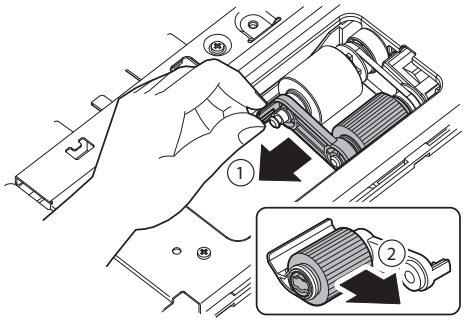


2) Remove the pawl and the paper feed PG upper cover.



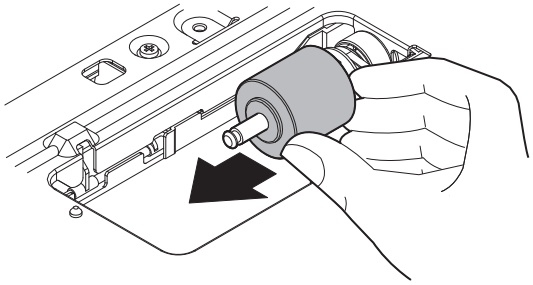
3) Disengage the pawl, and remove the holder guide, the pickup roller and the paper feed roller.

Maintenance: Replace at every 100K of each paper feed counter.



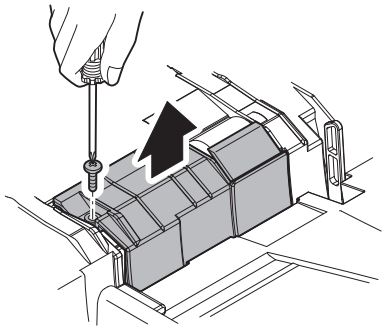
4) Remove the paper feed roller.

Maintenance: Replace at every 100K of each paper feed counter.



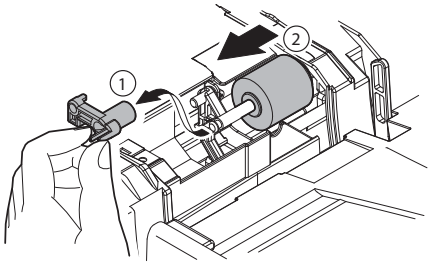
(2) Separation roller replacement

1) Remove the screw and the paper feed PG lower cover.



2) Disengage the pawl, and remove the reverse pressure release lever and separation roller.

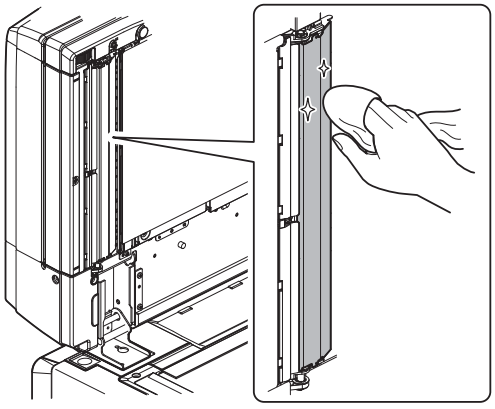
Maintenance: Replace at every 100K of each paper feed counter.



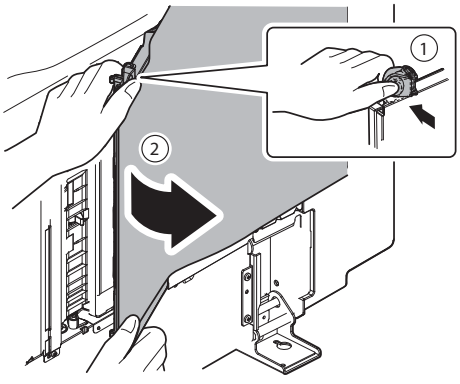
(3) Scanning plate, scanning glass and white reference glass cleaning

1) Open the DSPF unit, and clean the No.1 scanning plate.

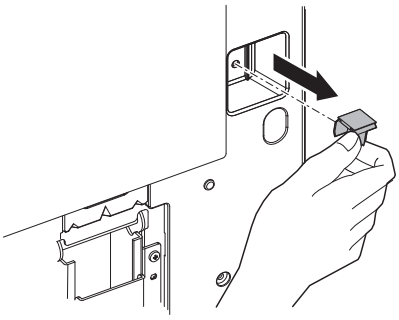
Maintenance: Clean at every 300K.



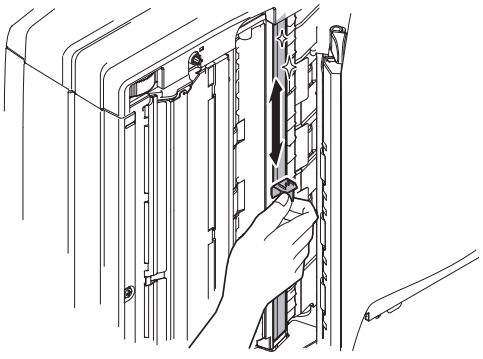
2) Open the lower door.



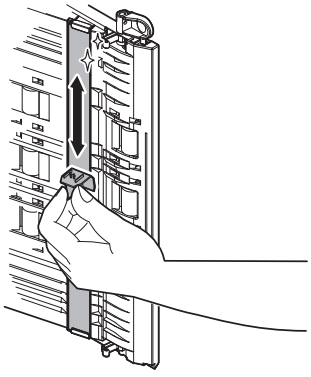
3) Remove the cleaner.



4) Use the cleaner to clean the scanning glass (surface).
Maintenance: Clean at every 300K.

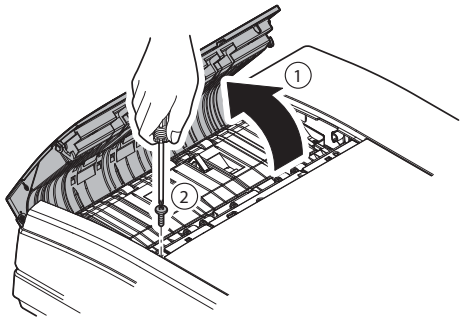


5) Use the cleaner to clean the white reference glass.
Maintenance: Clean at every 300K.

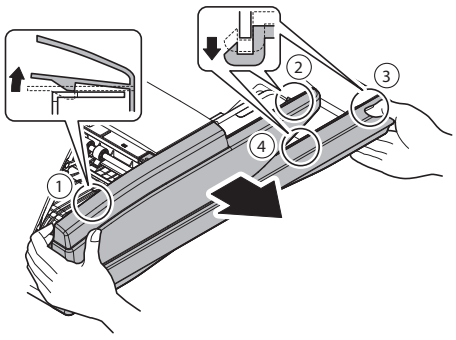


(4) Mirror, Lens/CCD, scanner lamp, OC mat cleaning

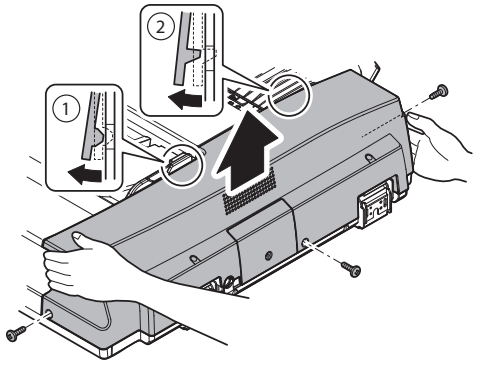
1) Open the upper door, and remove the screw.



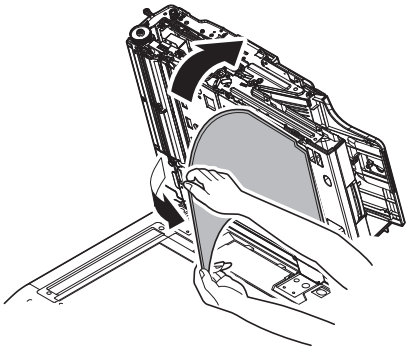
2) Remove the pawl, and remove the front cabinet.



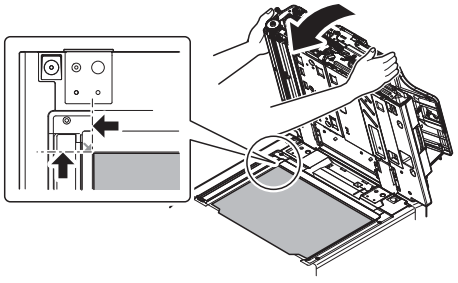
3) Remove the screw. Remove the pawl. Remove the rear cabinet.



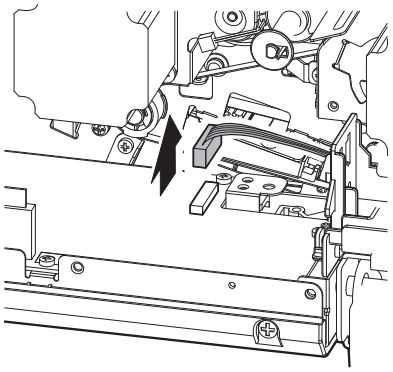
4) Open the DSPF unit, and remove the OC mat from the left edge.
Maintenance: Clean at every 300K.



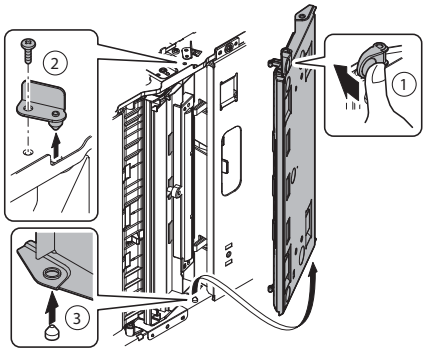
* When assembling, place the OC mat on the document table to fit with the reference and close the DSPF unit.



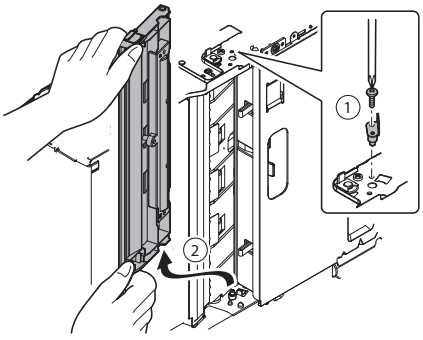
5) Remove the connector from the DSPF CL inverter PWB.



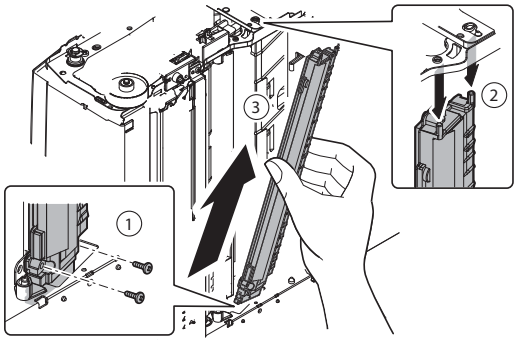
6) Remove the screw, and remove the intersecting point plate. Remove the lower door.



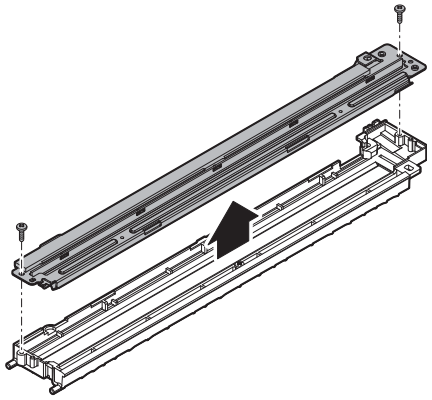
7) Remove the screw, and remove the intersecting point plate. Remove the white reference plate.



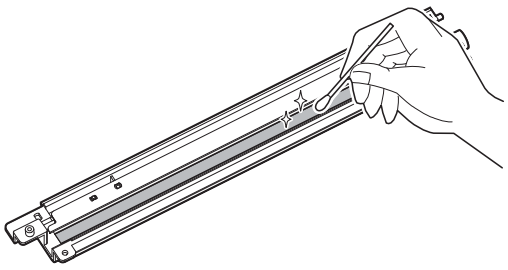
8) Remove the screw, and remove the scanning section cover. Remove the screw, and remove the lamp unit.



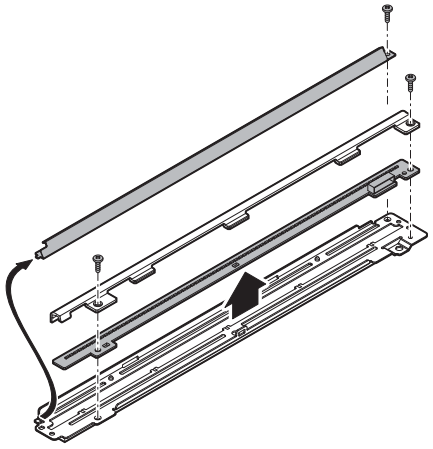
9) Remove the screw, and remove the lamp mounting plate.



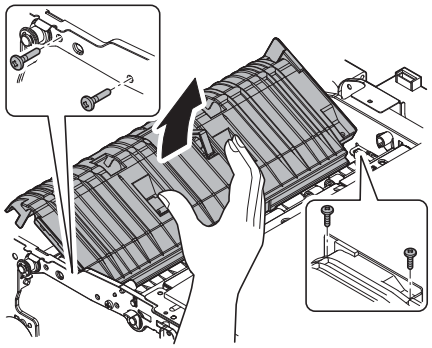
10) Clean the scanning glass (back surface).
Maintenance: Clean at every 300K.



11) Remove the screw, and remove the reflector and the DSPF copy lamp.
Maintenance: Clean at every 300K.

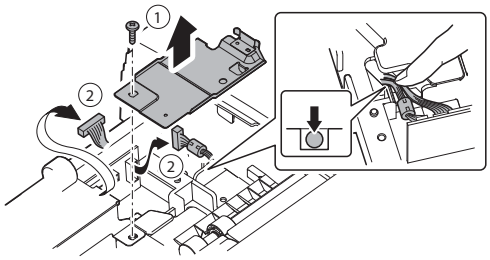


12) Remove the screw, and remove the transport PG upper.

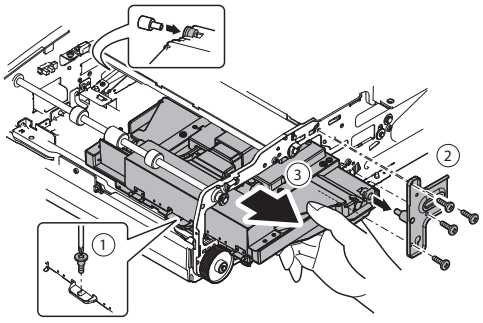


13) Remove the screw, and remove the harness cover. Disconnect the connector.

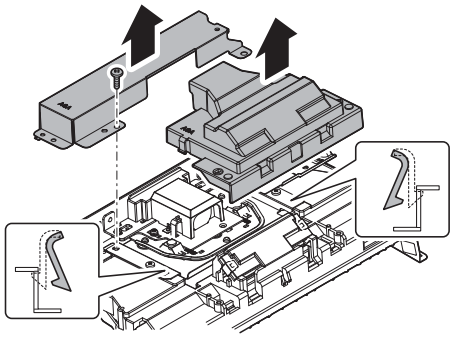
* When assembling, arrange the harness so that it is placed in the lower position than the rib height.



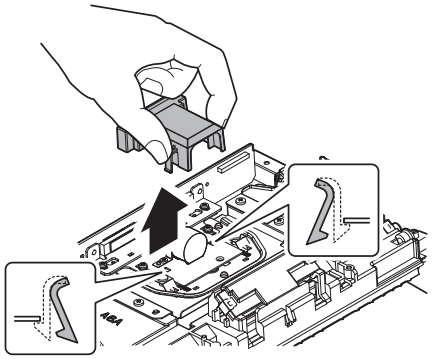
14) Remove the step screw, and remove the screw. Remove the optical fixing plate. Remove the optical unit.



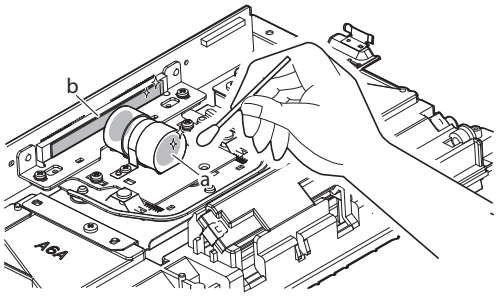
15) Remove the pawl. Remove the dust-proof cover. Remove the screw, and remove the dark box.



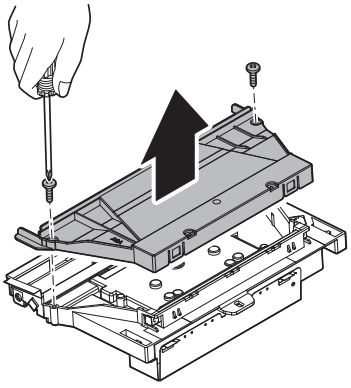
16) Remove the pawl, and remove the lens cover.



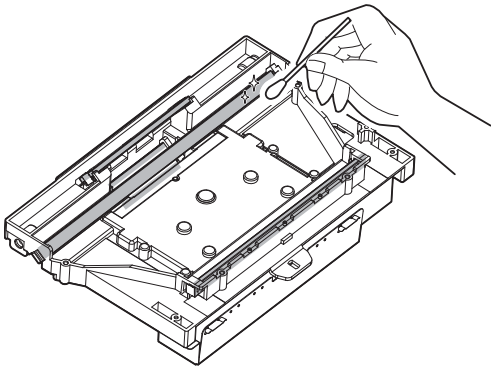
17) Clean the lens (a) and the CCD (b).
Maintenance: Clean at every 300K.



18) Remove the screw, and remove the mirror base cover.



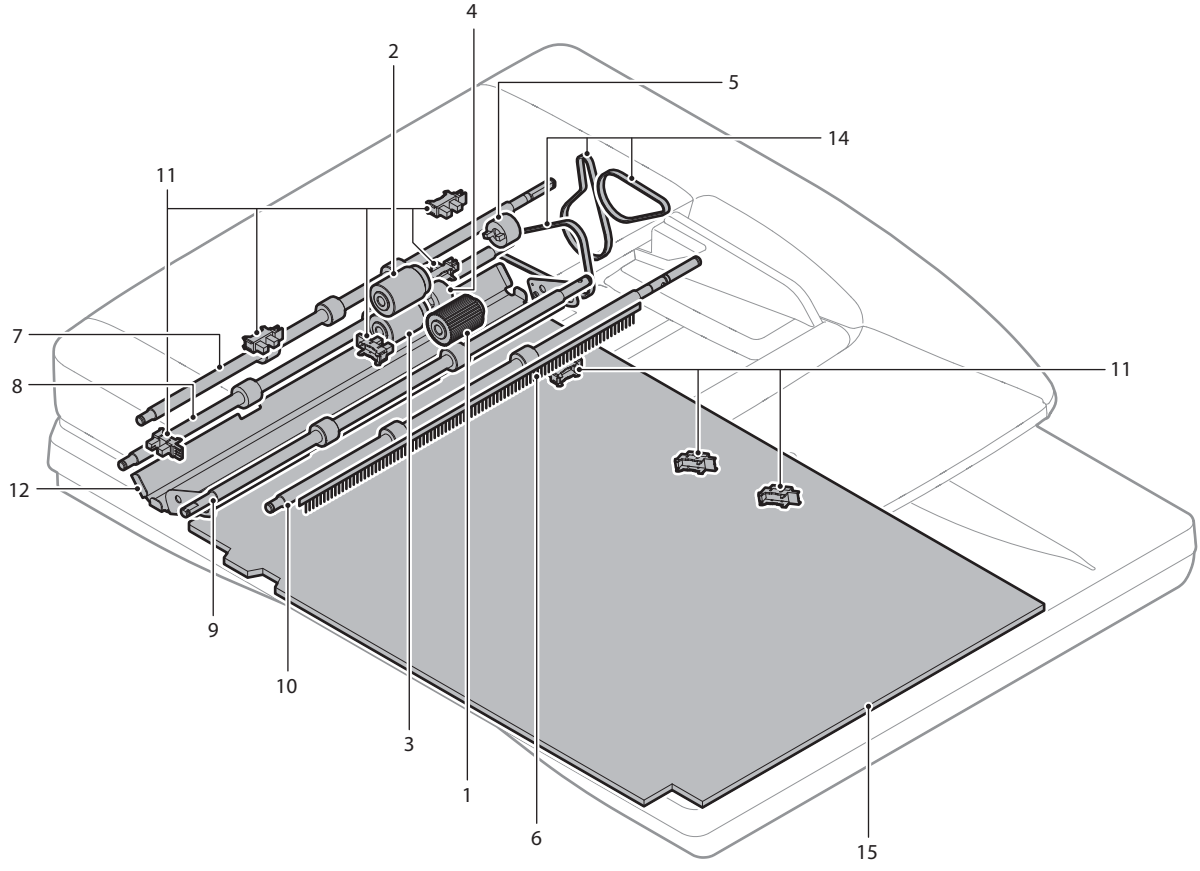
19) Clean the mirror.
Maintenance: Clean at every 300K.



N. RSPF section

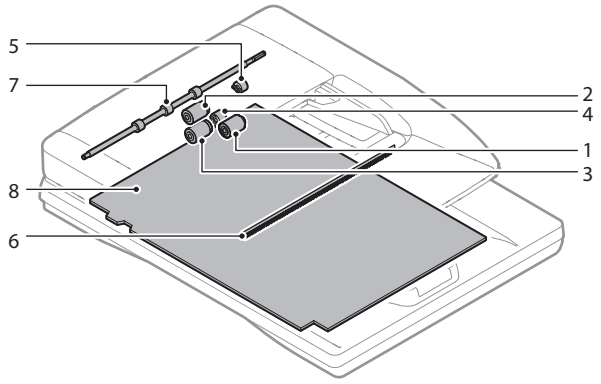
X: Check (Clean, replace, or adjust according to necessity.) □ : Clean ▲: Replace △: Adjust ☆ : Lubricate

No.	Part name	When calling	300k	600k	900k	1200k	1500k	1800k	2100k	2400k	Remark
1	Document pickup roller	○	○	○	○	○	○	○	○	○	Replace at 100K of the SPF paper feed counter
2	Paper feed roller	○	○	○	○	○	○	○	○	○	
3	Separation roller	○	○	○	○	○	○	○	○	○	
4	Torque limiter SPF	x	x	x	x	x	x	x	x	x	
5	Take-up torque limiter	x	x	x	x	x	x	x	x	x	
6	Discharge brush	x	x	x	x	x	x	x	x	x	
7	Registration roller	○	○	○	○	○	○	○	○	○	
8	Transport roller 2	○	○	○	○	○	○	○	○	○	
9	Transport roller 3	○	○	○	○	○	○	○	○	○	
10	Paper exit roller	○	○	○	○	○	○	○	○	○	
11	Sensors	x	x	x	x	x	x	x	x	x	
12	Scanner plate	○	○	○	○	○	○	○	○	○	
13	Gears	x	x	x	x	x	x	x	x	x	
14	Belts	x	x	x	x	x	x	x	x	x	
15	OC mat	○	○	○	○	○	○	○	○	○	



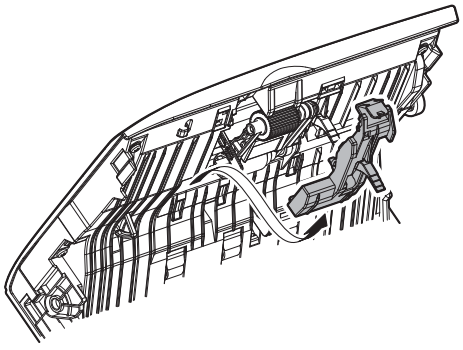
(1) RSPF unit

No.	Name
1	Document pickup roller
2	Paper feed roller
3	Separation roller
4	Torque limiter SPF
5	Take-up torque limiter
6	Discharge brush
7	Registration roller
8	OC mat

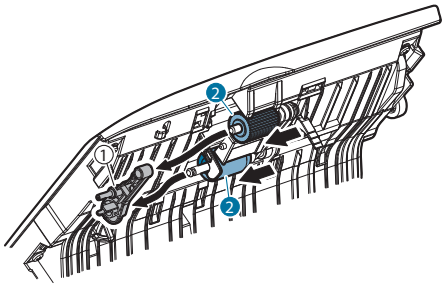


a. Document pickup roller, Paper feed roller

1) Open the paper feed unit, and remove the cover.

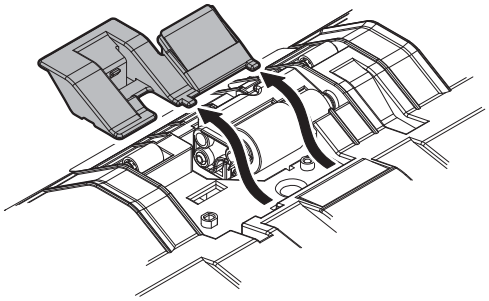


2) Remove the holder, and remove the document pickup roller, and the paper feed roller.

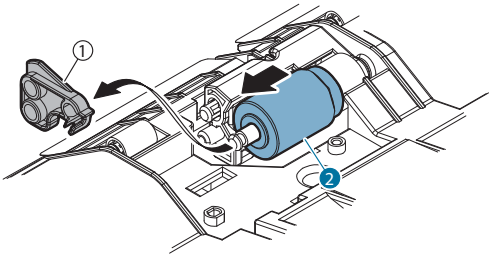


b. Separation roller, Torque limiter SPF

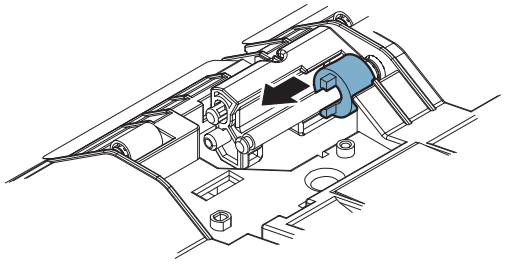
1) Open the paper feed unit, and remove the cover.



2) Remove the holder, and remove the separation roller.

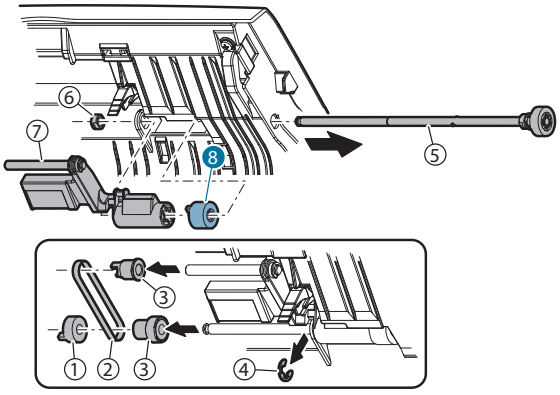


3) Remove the torque limiter SPF.



c. Take-up torque limiter

1) Remove the one-way coupling, the belt, and the pulley. Remove the E-ring. Pull out the shaft, and remove the bearing, the holder, and the take-up torque limiter.

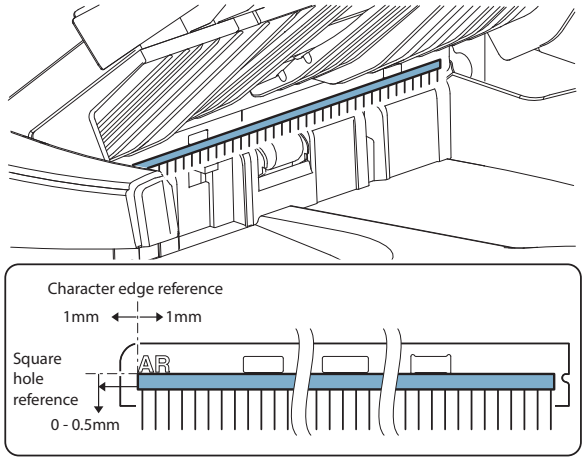


d. Discharge brush

1) Open the document tray, and remove the discharge brush.

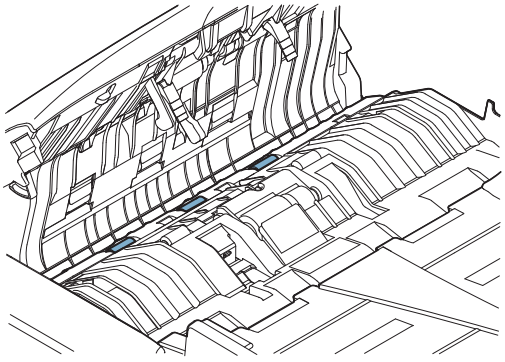
Important

When replacing the discharge brush, attach a new brush to the reference.



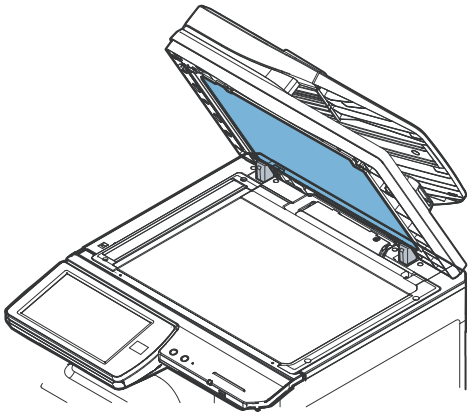
e. Registration roller

1) Open the paper feed unit, and clean the registration roller.



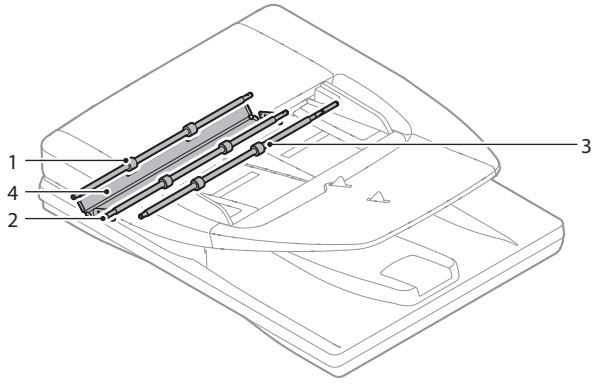
f. OC mat

1) Open the RSPF unit, and clean the OC mat.



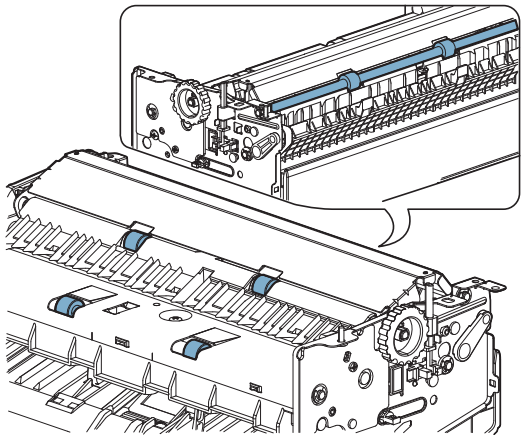
(2) RSPF transport unit

No.	Name
1	Transport roller 2
2	Transport roller 3
3	Paper exit roller
4	Scan plate



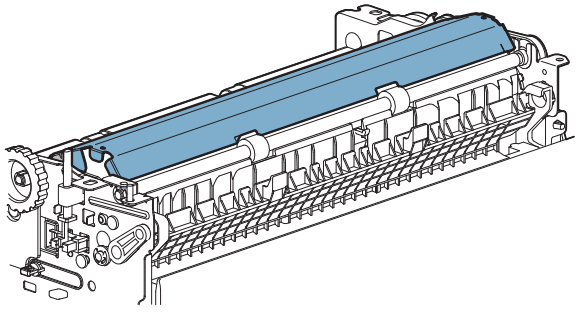
a. Transport roller 2, Transport roller 3, Paper exit roller

1) Clean the transport roller 2, the transport roller 3, and the paper exit roller



b. Scan plate

1) Clean the scan plate.

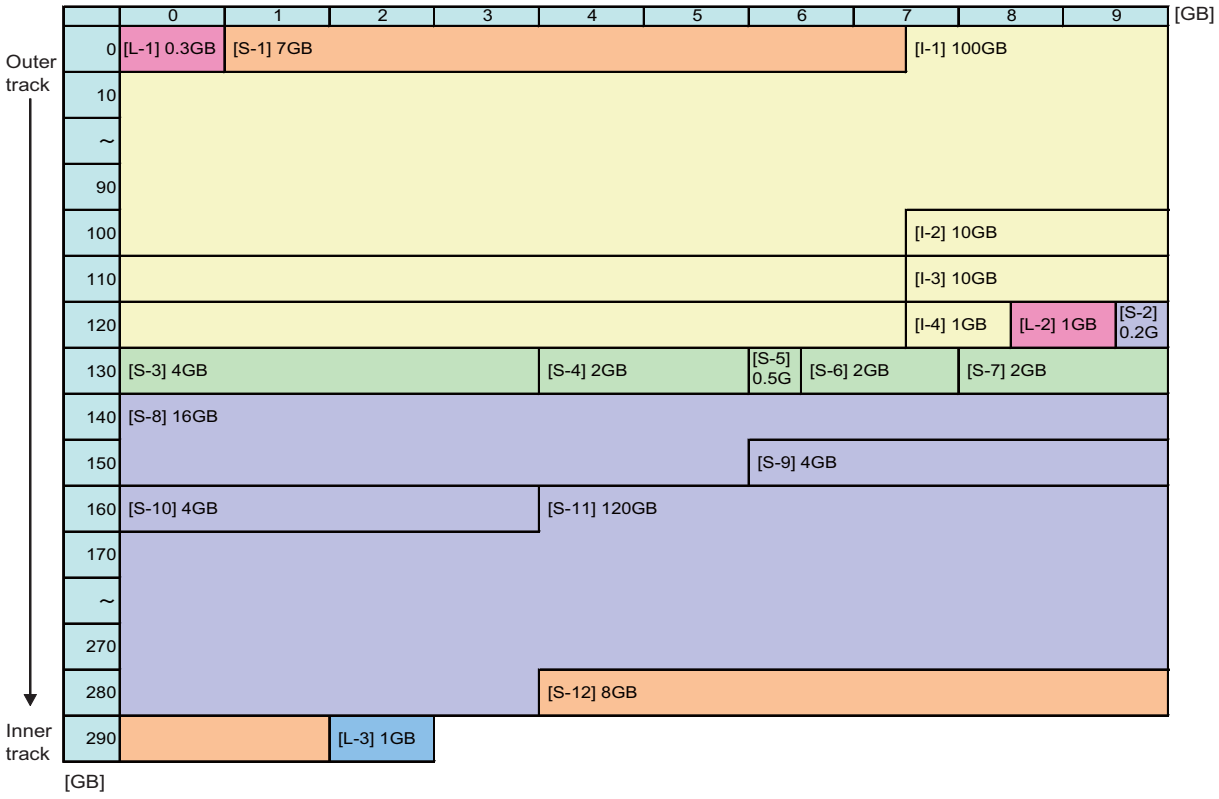


[9] VARIOUS STORAGE DATA HANDLING

1. HDD/SD card/CF card memory map

A. HDD partition

HDD size = 320GB (Actual size 289GB)

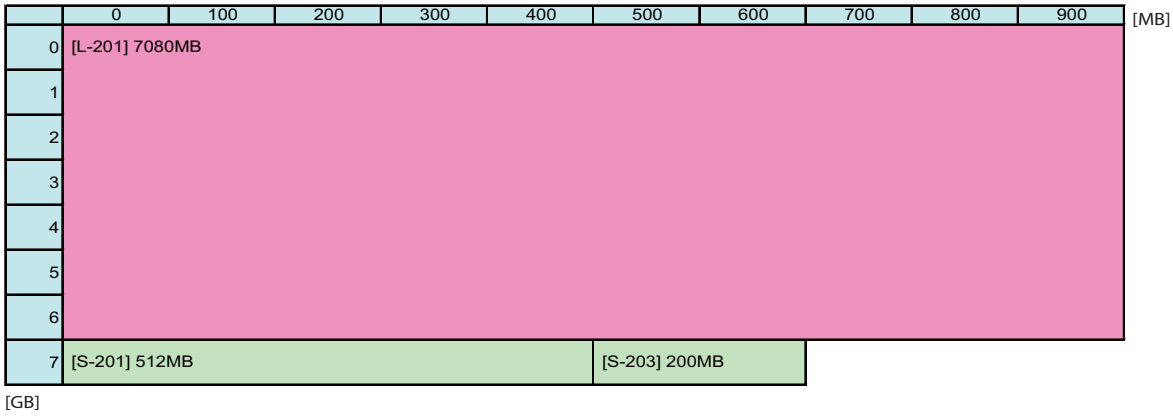


B. HDD data contents

No	File system	Stored data	NOTE
L-1	Not available	UI content data	
S-1	Universal	e-manual / html Watermark	
I-1	Image data	Image data (ERDH / Document filing)	3000 documents,20000 images
I-2	Image data	Image data (Temporary storage)	1000 documents,10000 images
I-3	Image data	User watermark / Stamp	1000 documents,10000 images
I-4	Image data	FAX / Internet FAX receive images	3000 documents,5000 images
L-2	Not available	System storage data	
L-3	Not available	RAID system information	
S-2	Universal	System storage data (for backup)	
S-3	Universal	Download font User profile User macro storage data System setting data	
S-4	Universal	System log	
S-5	Universal	Document filing (Database) Job log (Database) Job completion list	
S-6	Universal	Address book (Database) Account management information (Database) Individual setting information for direct WEB browsing Coolie file for OSA application	
S-7	Universal	Database file	
S-8	Universal	Spool area for printer	
S-9	Universal	Application work area (User file used in SMB direct print	
S-10	Universal	OSA application file	
S-11	Universal	User file saved in the SMB server	
S-12	Universal	User data of set value etc which must not be erased when installing the DSK. (Address book, account information)	

C. CF card partition

CF card size = 8GB (Actual size 7.8GB)

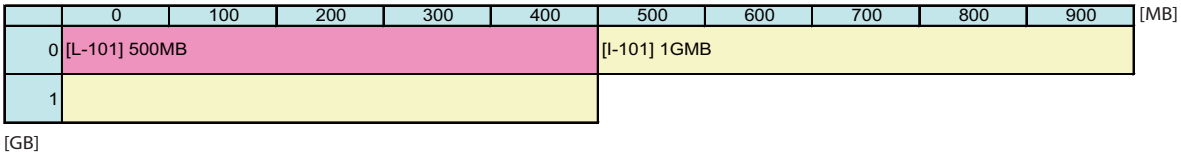


D. CF card data contents

No.	File system	Stored data	NOTE
L-201	Universal	ICU firmware (Boot/Main) Log data Snapshot Swap area	
S-201	Universal	font web help spdl Option Font ROM	
S-203	Universal	System setting value data file	

E. SD card partition

SD card size = 4GB (Actual size 3.6GB)



F. SD card data contents

No.	File system	Stored data	NOTE
L-101	Not available	ICU (Reus) firmware (Boot/Main)	
I-101	Image data	FAX/Intermet FAX receive images	

2. Necessary steps when replacing the PWB, HDD, the SD Card and the CF Card

A. MFP substrate replacement procedure (work flow)

Important

Registered user information will not be recovered if the MFP PWB is affected by U2-05 trouble. (*1)

1) Attach the memory, the EEPROM, the SD card, CF card etc. of the MFP PWB on the service parts MFP PWB and install it to the main unit.

   Important

   Ground your body with grounding band during the work.

2) When U2 trouble occurs, use SIM16 to cancel it.

3) Set as follows after restarting the main unit.

   At this time, F6-21 may occur. Whether it may occur or not, go to execute procedure 1.

   (1) Set the appropriate country code by Sim66-2 (clear the software switches related to FAX).

   Important

   Make sure to execute even if the fax option is not installed on the machine.

   Note for the handling of EEPROM

   WARNING:

   Never execute Sim16 to clear U2 trouble WITHOUT investigating the root cause of U2 trouble using the following note.

1) Make sure to put an earth band while handling PWB. EEPROM data may be garbled due to the static charge.

   (It is mentioned in Note for Serving.)

2) Never to insert EEPROM to the socket in reverse. U2 trouble occurs 100% of the time if the machine is turned on after inserting the EEPROM in reverse.

   Execution of Sim16 to clear this U2 trouble will lead to the garbled data. Data won't recover once the data is garbled.

3) Make sure that PCU, MFP, SCAN EEPROMs will not be switched. U2 trouble occurs 100% of the time if the machine is turned on while the EEPROMs are being switched. Execution of Sim16 to clear this U2 trouble will lead to the garbled data. Data won't recover once the data is garbled. To prevent

   such troubles, put a mark such as "MFP" to each EEPROM before removing from PWB so that it is easy to distinguish.

4) Please handle EEPROMs with care to prevent bending of pins.

   They will be broken if bent several of times. (This type of trouble has been reported many times.).

5) Do not use foamed styrol etc. for packing during the transportation of EEPROM. Foamed styrol easily generates static charge. In some cases, EEPROM is damaged just by sticking it into foamed styrol. Make sure to use the black sponge for packing during transportation. The black sponge is used to pack EEPROM provided as service parts.Special material is used for this black sponge so that it will not generate a static charge. Make sure that PCU, MFP, SCAN EEPROMs won't be switched. U2 trouble occurs 100% of the time if the machine is turned on while the EEPROMs are being switched. Execution of Sim16 to clear this U2 trouble will lead to the garbled data. Data won't recover once the data is garbled. To prevent such troubles, put a mark such as "MFP" to each EEPROM before removing from PWB so that it is easy to distinguish.

   CAUTION: Please note that counter data and machine adjustment values are recorded in the EEPROM.

   If the data in EEPROM is garbled, it is impossible to recover. In such cases, the only solution will be the initialization of the EEPROM.

   Counter data and adjustment values will be reset to "0" or "default" once the data are initialized.

   Once all the adjustment values are set to default, it will be necessary to readjust all the adjustment values, which requires tremendous workload.

   Caution to prevent damage on EEPROM

   ? In case any trouble other than U2 trouble occurs to the machine, replace PWB (remove and install EEPROM) to fix, and U2 trouble occurs right after power on, never execute Sim16 under the condition.

     As previously mentioned, the data in EEPROM will be garbled after the execution of Sim16.

   ? In such cases, EEPROM may have been inserted in reverse or MFP and PCU EEPROM may have been switched.

   ? Turn off the machine without execution of Sim16, install proper EEPROM in proper position (on PWB), turn on the machine again, and then execute Sim16. This way U2 error will be cleared.

   ? Sim16 is executed to clear U2 errors if it occurred without performing any services (such as machine repair or maintenance).

     As previously mentioned, execution of Sim16 won't clear artificially-generated U2 errors. Instead, it actually damages the EEPROM.HDD storage data and backup

B. Procedures necessary for HDD replacement

Note for HDD replacement

- Data of the following list are saved in the HDD of the complex machine. If the HDD operates normally and data back up is possible before replacement. perform data back up and then replace the HDD.
- If the HDD does not operate normally, data cannot be backed up.
- The HDD replacement procedures with a broken HDD differs from that with a normal HDD.

Contents of this chapter

- HDD storage data and back up.
- Replacement procedures when HDD storage data can be back up.
- Replacement procedures when HDD storage data cannot be backed up due to breakdown of HDD.
- Re-install and update procedures of operation manual data saved in HDD.
- Re-install and update procedures of watermark data.

(1) HDD storage data and backup

Some HDD storage data can be backed up, and some other data cannot. Some HDD storage data can be reinstalled, and some other storage data cannot.

If the HDD operates normally before replacement and data can be backed up, back up the data before replacement of the HDD referring to the HDD storage data list. Then reinstall the data after replacement of the HDD.

a. HDD storage data list

No.	Data kind	Before installation (When shipping from the factory)	After installation (After use by users)	Enable/ Disable of data backup	Backup means	Enable/ Disable of data reinstall	Data reinstall procedures	Reinstall operator
1	e-Manual	Available	Available	Disable	*1	Enable	Sim49-3	Service
2	Address book	Not available	Available	Enable	Sim56-2 / Device cloning / Storage backup	Enable	Sim56-2 / Device cloning / Storage backup	Service
3	Image send series registration data (Sender's information, meta data, etc.)	Not available	Available	Enable	Sim56-2 / Device cloning / Storage backup	Enable	Sim56-2 / Device cloning / Storage backup	Service
4	User authentication Account management	Not available	Available	Enable	Sim56-2	Enable	Sim56-2	Service
5	Japanese FEP dictionary (Learning)	Not available	Available	Disable	Not available	Disable		—
6	Chinese FEP dictionary (Learning)	Not available	Available	Disable	Not available	Disable		—
7	JOB LOG	Not available	Available	Enable	Perform with WEB PAGE.	Disable		—
8	JOB completion list	Not available	Available	Disable	Not available	Disable		—
9	New N/A (FSS) information	Not available	Available	Disable	Not available	Disable		—
10	User font (Added)	Not available	Available	Disable	Not available	Enable	Perform with WEB PAGE.	Service or User
11	User macro	Not available	Available	Disable	Not available	Enable		
12	Document filing	Not available	Available	Enable	Perform with WEB PAGE.	Enable		
13	Some of system setting data	Not available	Available	Enable	Sim56-2 / Device cloning / Storage backup	Enable	Sim56-2 / Device cloning / Storage backup	Service
14	Watermark	Available	Available	Disable	*2	Enable	Sim49-5	Service
15	Mirroring information (When the mirroring kit is installed, the mirroring information is written.)	Not available	Available (After installation of the mirroring kit)	Disable	Not available	Enable	The mirroring information is erased by forcible build or RIB BUSTER.	Service
16	Individual setting information for direct WEB browsing	Not available	Available	Disable		Disable		Service
17	Cookie file for OSA application	Not available	Available	Disable		Disable		Service
18	eOSA application file	Not available	Installation of application	Disable		Enable	Reinstallation of application	Service
19	User file saved in the SMB server (NAS)	Not available	Available	Disable		Disable		Service

*1: The e-Manual cannot be backed up, but can be reinstalled by using Sim49-3 and USB memory.

*2: Watermark data cannot be backed up, but can be reinstalled by using Sim49-5 and USB memory.

(2) Replacement procedures when HDD data can be backed up

a. Work contents and procedures

Procedures	When a new HDD (blank HDD, service part) is used, or when a HDD which is normal but a program error occurs in it is used.	When a used HDD (used in the same model) is used *
Step 1	Back up the HDD storage data before replacement. (Servicing) Use SIM56-2 or the device cloning, or the storage backup function to backup the data. (Back up the data to the USB memory.) (Backup enable data: HDD storage data list No. 2, 3, 4 (Address book, Image send series registration data, User authentication data))	
Step 2	Back up the HDD storage data before replacement. (User or servicing). Back up the data to PC with Web page. (Backup enable data: HDD storage data list No. 7, 10, 14 (Document filing data, JOB LOG data))	
Step 3	When there are some FAX or Internet Fax data, use SIM66-62 to backup the image data from the SD card to the USB memory. (The backup image data are of PDF file type, and cannot be restored to the machine. The backup data are given to the user.)	
Step 4	Replace the HDD.	
Step 5	Boot the complex machine. → Formatting is automatically performed.	Boot the complex machine.
Step 6		The trouble code, U2-05, is displayed. → Cancel with SIM16.
Step 7	Since a blank HDD is automatically formatted, there is no need to perform formatting procedure with SIM.	Use SIM62-1 to format the HDD.
Step 8	Use SIM66-10 to clear the FAX image memory. The memory is cleared in order to keep compliance between the HDD data and the image related memory and to prevent malfunctions. (The memory must be cleared not only in the FAX model but in the scanner and the Internet Fax models.)	
Step 9	Use SIM49-3 to install the manual data to the HDD.	
Step 10	The trouble code, U2-60, is displayed. → Use SIM49-5 to install the watermark data to the HDD. → After booting the machine, use SIM16 to cancel the "U2-60" trouble.	
Step 11	Import the data backed up in Step 1. Use SIM56-2, or the device cloning, or the storage backup to import. (Import enable data: HDD storage data list No. 2, 3, 4 (Address book, Image send series registration data, User authentication data))	
Step 12	Import the data backed up with the Web page function in Step 2.Import enable data: Document filing data, User font, Use macro (The JOB LOG data can be backed up but cannot be imported.)	

(3) Replacement procedures when the HDD storage data cannot be backed up due to breakdown

a. Display when HDD breakdown

When a trouble occurs in the HDD, the error code display of E7-03 is appears.

In this case, the main power must be turned OFF and the HDD must be replaced.

b. Work contents and procedures

Procedures	When a new HDD (blank HDD, service part) is used, or when a HDD which is normal but a program error occurs in it is used.	When a used HDD (used in the same model) is used *
Step 1	Install a HDD to the machine, and boot the complex machine. → Formatting is automatically performed.	Install a HDD to the machine, and boot the complex machine.
Step 2		The trouble code, U2-05, is displayed. → Cancel with SIM16.
Step 3	Since a blank HDD is automatically formatted, there is no need to perform formatting procedure with SIM.	Use Sim62-1 to format the HDD.
Step 4	When there are some FAX or Internet Fax data, use SIM66-62 to backup the image data from the SD card to the USB memory. (The backup image data are of PDF file type, and cannot be restored to the machine. The backup data are given to the user.)	
Step 5	Use SIM66-10 to clear the FAX image memory. The memory is cleared in order to keep compliance between the HDD data and the image related memory and to prevent malfunctions. (The memory must be cleared not only in the FAX model but in the scanner and the Internet Fax models.)	
Step 6	Use SIM49-3 to install the manual data to the HDD.	
Step 7	The trouble code, U2-60, is displayed. → Use SIM49-5 to install the watermark data to the HDD. → After booting the machine, use SIM16 to cancel the "U2-60" trouble.	

With the above procedures, the HDD is reset to the state of factory shipping.

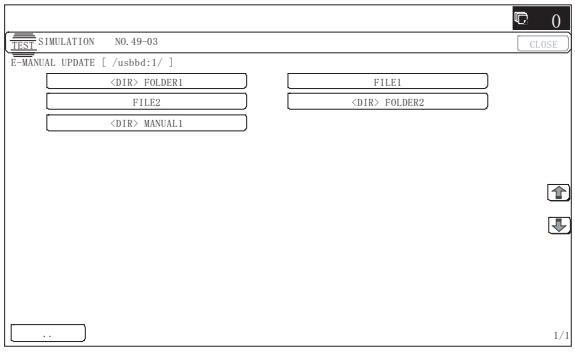
(4) Reinstall and update procedures of the HDD storage Operation Manual data

1) Obtain the Operation Manual data.

   Download the Operation Manual data (**.uar) from the utility menu on the web site (Tech-DS home page).

   Copy the downloaded file to the USB device without changing the file hierarchy.

2) Enter the SIM49-3 mode.



3) Insert the USB memory into the machine.
   - When the USB memory is not inserted, “INSERT A STORAGE E-MANUAL STORED ON” is displayed. When [OK] button is pressed, the screen shifts to the folder select menu 1.

4) Select the file of the Operation Manual data. (The screen shifts to the Operation Manual data install menu.)

   The current version and the update version are displayed.

5) Press [EXECUTE] button.

   [EXECUTE] button is highlighted, and [YES] and [NO] buttons are changed from gray-out to active display.

6) When [YES] button is pressed, the selected Operation Manual is installed.

   When install is completed, "COMPLETE" is displayed. In case of an abnormality, "ERROR" is displayed.

(5) Watermark data reinstall and update procedures

1) Obtain the watermark data.

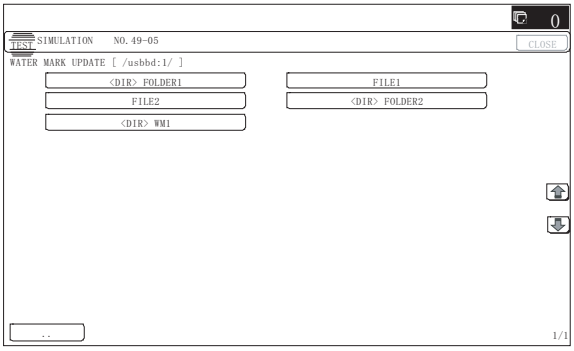
   Download the watermark data from the utility menu on the web site (Tech-DS home page).

   Copy the downloaded files to the USB device without changing the file hierarchy.

   Note

   When data are uploaded from the USB memory to the HDD, if there are some data in the HDD, the files in the memory are compared with the files in the HDD and only the files which satisfy the following conditions are written into the HDD.
   - The file size is different.
   - The time stamp is different
   - The file exists only in the USB memory.

2) Enter the SIM49-5 mode.



3) Insert the USB memory into the machine.
   - When the USB memory is not inserted, “INSERT A STORAGE E-MANUAL STORED ON” is displayed. When [OK] button is pressed, the screen shifts to the folder select menu 1.

4) Select the folder of the watermark data. (The screen shifts to the watermark data install menu.)

   The current version and the update version are displayed.

5) Press [EXECUTE] button.

   [EXECUTE] button is highlighted, and [YES] and [NO] buttons are changed from gray-out to active display.

6) When [YES] button is pressed, the selected watermark data are installed.

   When install is completed, "COMPLETE" is displayed. In case of an abnormality, "ERROR" is displayed.

C. Procedures necessary for SD card replacement

(1) SD card data and backup

Some SD card storage data can be backed up, and some other cannot. Some SD card storage data can be reinstalled, and some other cannot.

If the SD card operates normally before replacement and data can be backed up, back up the data before replacement of the SD card referring to the storage data list. Then reinstall the data after replacement of the SD card.

The SD card includes the following data.

SD card backup

Partition number	Stored data		Enable/Disable of data backup	Backup means	Enable/Disable of data reinstall	Data reinstall procedures
L-101	ICU firmware data	ICU firmware (Boot/Main) ARM9 firmware	Disable		Enable	SIM49-1 (BOOT cannot be installed again.)
I-101	FAX reception data	FAX/Internet Fax reception image data	Enable	SIM66-62	Disable	

1) Use SIM56-2 to backup the SD card data to the USB memory.
2) When the operation panel home screen has been customized, backup the SD card data by using the device cloning function.
3) When there are some FAX/Internet Fax data received, use SIM66-62 to backup the image data to the USB memory in the PDF file type, and give the PDF file to the user. (The data cannot be restored to the machine.)
4) Replace the SD card with a new one.
5) Upgrade the firmware to the latest version.
6) Use SIM66-10 to clear the image send memory. (This is in order to obtain consistency between the HDD data and the image related memory.)
7) Use SIM56-2 to restore the data backed up in procedure 1).
8) Restore the data backed up in procedure 2) by using the device cloning function.

Important

When replacing the SD card, be sure to use only the specified SD card supplied as a service part.

The firmware required for booting must be included in the SD card used in this machine. The commercially available SD cards have no such data.

Note

When U2-40 error occurs, if the error cannot be canceled by SIM16, or when E7-07 error occurs, there may be some trouble in the SD card.

Important

The data backed up with SIM56-2 must not be installed to another machine. If installed, the adjustment data will be overwritten and a trouble may be generated.

D. Procedures necessary for CF card replacement

(1) CF card data and backup

Some CF card storage data can be backed up, and some other cannot. Some CF card storage data can be reinstalled, and some other cannot.

If the CF card operates normally before replacement and data can be backed up, back up the data before replacement of the CF card referring to the storage data list. Then reinstall the data after replacement of the CF card.

The CF card includes the following data.

CF card backup

Partition number	Stored data		Enable/Disable of data backup	Backup means	Enable/Disable of data reinstall	Data reinstall procedures
L-101	ICU firmware data	ICU firmware (Boot/Main) ARM9 firmware	Disable		Enable	SIM49-1 (BOOT cannot be installed again.)
S201	ICU firmware fixed data	font web help spdl UI content file lang (message data) Graph (graphic data) eOSA delegator Option font ROM	Disable		Enable	SIM49-1
S-203	System data	Setting value data (system setting/ SIM setting data)	Enable	SIM56-2	Enable	SIM56-2

1) Use SIM56-2 to backup the CF card data to the USB memory.
2) When the operation panel home screen has been customized, backup the CF card data by using the device cloning function.
3) Replace the CF card with a new one.
4) Update the firmware to the latest version.
5) Use SIM56-2 to restore the data backed up in procedure 1).
6) Restore the data backed up in procedure 2) by using the device cloning function.

Important

When replacing the CF card, be sure to use only the specified CF card supplied as a service part.

The firmware required for booting must be included in the CF card used in this machine. The commercially available CF cards have no such data.

Note

When E7-A6 error occurs, there may be some trouble in the CF card.

3. Necessary procedure and notes for replacement of the mirroring kit HDD

NOTE:

Terminology and contents

Mirroring information: When the mirroring kit is installed and the power is turned ON, the mirroring information is written into the L-2 partition of the both HDD's.

Rebuilding: Copying operation of the whole contents of one HDD to the other HDD.

Forcible rebuilding: Erasing the mirroring information in the HDD and rewriting new information.

When the mirroring kit is installed, the two HDD's are named HDD1 and HDD2.

HDD1: Mirroring kit HDD

HDD2: Standard HDD for the machine

The status of each HDD can be checked with SIM62-20.

Outline / Description Items

Kinds of errors and remedies	A. Causes and remedies when the icon of HDD trouble is displayed
	B. Causes and remedies when the E7-03 error display is popped up
Specified remedies for each error (Details of remedies and procedures)	C. Replacement procedures of the HDD of the mirroring kit or that of the machine
	D. Replacement procedures of both of the HDD of the mirroring kit and that of the machine
	E. Note for reuse of HDD

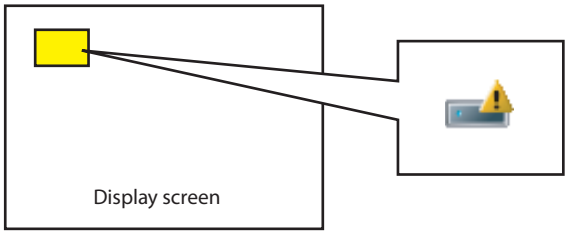
Mirroring kit status and status icons

When the mirroring kit is installed, one of the following icons is displayed on the operation panel.

Icon	Mirroring kit status
	Mirroring kit installed
	Mirroring kit/HDD trouble
	Mirroring kit/Rebuilding

A. Causes and remedies when the icon of HDD trouble is displayed

(When the icon shown below is displayed)



1) When one HDD goes into trouble, the UI icon which indicates HDD trouble of the mirroring kit is displayed.
2) Use SIM62-20 to check the HDD status, and refer to the table below to confirm the relation between the HDD status and the remedy.
   SIM62-20 status and causes of troubles (When the icon of HDD trouble is displayed)

		HDD2				
		OK	**NONE**	**REBUILDING**	**ERROR**	**TROUBLE**
HDD1	OK	-	A	-	A	A
	NONE	A	-	-	-	-
	REBUILDING	-	-	-	-	-
	ERROR	A	-	-	-	-
	TROUBLE	A	-	-	-	-

3) Refer to the table below and check to confirm the remedy.
   Table: Causes of troubles and remedies when the icon of HDD trouble is displayed

Case	State	Cause	Remedy
A	One HDD status is OK. The other HDD status is other than OK.	? The HDD which indicates the status other than OK is in trouble. ? Connection failure of the connectors and harness of the mirroring kit	? Replace the HDD. (Perform "C. Replacement procedures of the HDD of the mirroring kit or that of the machine") ? Replace the mirroring kit. (Perform "C. Replacement procedures of the HDD of the mirroring kit or that of the machine")

4) Refer to the details of the remedy and perform the necessary procedures.

B. Causes and remedies when the E7-03 error display is displayed

1) Use SIM62-20 to check the HDD status, and refer to the table below to confirm the relation between the HDD status and the remedy.
Refer to the table of "Causes of troubles and remedies when the E7-03 error occurs" and perform the necessary procedures.
Backup the data from the HDD without trouble first.

SIM62-20 status and causes of troubles

		HDD2				
		OK	**NONE**	**REBUILDING**	**ERROR**	**TROUBLE**
HDD1	OK	B	B or C	B	B	B
	NONE	B or C	C	C	C	C
	REBUILDING	B	C	F	F	F
	ERROR	B	C	F	F	F
	TROUBLE	B	C	F	F	D or E

2) Refer to the table below, and check to confirm the remedy.

Causes of troubles and remedies when the E7-03 error occurs

Case	State	Cause	Remedy
B	When at least one HDD is OK.	? Communication trouble through the SATA harness of HDD. ? Trouble of HDD which indicates the status other than OK. ? Broken data in HDD ? The mirroring side HDD is normal. The machine side HDD is in trouble or rebuild operation is not completed. ? RAID PWB trouble	? Replace the cable. Remove and connect. ? Replace the HDD which indicates other than OK. (Perform procedures of "C. Replacement procedures of the HDD of the mirroring kit or that of the machine.") ? Replace both of the HDD's of the mirroring kit and that of the machine. (Perform procedures of "D. Replacement procedures of both of the HDD of the mirroring kit and that of the machine.")
C	When at least one HDD is NONE.	? Communication trouble through the SATA harness of HDD. ? Connection failure between the RAID PWB and the HDD. ? HDD trouble ? HDD SATA harness and connector trouble ? Both the mirroring side HDD and the machine side HDD are in trouble. ? RAID PWB trouble	? Replace the cable. Remove and connect. ? Check connection between the mirroring kit and the HDD. ? Replace the HDD which indicates NONE. (Perform procedures of "C. Replacement procedures of the HDD of the mirroring kit or that of the machine.") ? Replace the mirroring kit. (Perform procedures of "C. Replacement procedures of the HDD of the mirroring kit or that of the machine.") ? Replace both of the HDD's of the mirroring kit and that of the machine. (Perform procedures of "D. Replacement procedures of both of the HDD of the mirroring kit and that of the machine.")
D	When in TROUBLE-TROUBLE.	? RAID PWB trouble ? (Both or one) HDD trouble ? Raid PWB is in trouble. The mirroring side HDD is normal. The machine side HDD is other than OK.	? Replace the mirroring kit. (Perform procedures of "C. Replacement procedures of the HDD of the mirroring kit or that of the machine.") ? Replace both of the HDD's of the mirroring kit and that of the machine. (Perform procedures of "D. Replacement procedures of both of the HDD of the mirroring kit and that of the machine.")
E	When in TROUBLE-TROUBLE. (Occurring when replacing the HDD)	? The mirroring kit is composed of HDD's which have different mirroring information each other. (A HDD which has been used in the mirroring kit of another machine is used.)	? Replace both of the HDD's of the mirroring kit and that of the machine. (Perform procedures of "D. Replacement procedures of both of the HDD of the mirroring kit and that of the machine.")

3) Refer to the details of the remedy and perform the necessary procedures.

Causes and remedies when cases B, C, D, and E are not applicable

Case	State	Cause	Remedy
F	Other than cases B, C, D, and E	? RAID PWB trouble ? Both HDD's trouble	? Replace the mirroring kit. (Perform procedures of "C. Replacement procedures of the HDD of the mirroring kit or that of the machine.") ? Replace both of the HDD of the mirroring kit and that of the machine. (Perform procedures of "D. Replacement procedures of both of the HDD of the mirroring kit and that of the machine.")

C. Replacement procedures of the HDD of the mirroring kit or that of the machine (Details of the remedies and the procedures)

? When replacing the mirroring kit, follow the replacement procedures of the HDD of the mirroring kit only.

(1) Work contents and procedures

Data backup

NOTE:

When E7-03 error code is displayed, procedures of Step 1 and Step 2 are nor required.

Step 1	Back up the data in the HDD before replacement. (By servicing) Use SIM56-2, the device cloning, or the storage backup function to save the data. (Back up the data to the PC or a USB memory.) (Data which can be backed up: Address book data, image send registration data, user authentication data)
Step 2	Back up the data in the HDD before replacement. (By the user or by servicing) Back up the data to the PC by Web page. (Data which can be backed up: Document filing data, JOB log data)
Step 3	When there is some received data of FAX and Internet FAX, use SIM66-62 to back up the image data from the SD card to a USB memory. (The backed up image data are in the PDF file type and cannot be returned to the machine.) Give the backed up data to the use.

HDD replacement procedures

Procedure	Procedure
Condition	When a new HDD (blank)(*1) (service part) is used.
Step 4	If HDD1 is in trouble, replace the HDD of the mirroring kit. If HDD2 is in trouble, replace the HDD of the machine. (*2)
Step 5	Boot the machine. → Rebuilding is automatically executed. → Check to confirm that E7-03 error (HDD trouble) does not occur, and that the UI icon which indicates rebuilding of the mirroring kit is displayed. Use SIM 62-20 to confirm that the status of the replaced HDD is displayed as REBUILDING.
Step 6	It takes about one hour to complete rebuilding.
Step 7	Check to confirm that the UI icon which indicated installation of the mirroring unit is displayed. Use SIM62-20 to confirm that the HDD status is displayed as HDD1/HDD2=OK/OK.

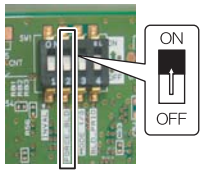
D. Replacement procedures of both of the HDD of the mirroring kit and that of the machine (Details of the remedies and the procedures)

(1) Work contents and procedures

Data backup

Step 1	When there is some received data of FAX and Internet FAX, use SIM66-62 to back up the image data from the SD card to a USB memory. (The backed up image data are in the PDF file type and cannot be returned to the machine.) Give the backed up data to the use.

HDD replacement procedures

Procedure	Procedure
Condition	When two new HDD's (blank)(*1) (service part) are used for the both.
Step 2	Replace the both HDD's (as well as the RAID PWB if necessary). (*2)
Step 3	Set DIPSW2 of the mirroring kit to ON, and turn on the main power of the machine. → Forcible rebuilding is executed. → Check to confirm that the E7-03 error (HDD trouble) does not occur and that the UI icon which indicates installation of the mirroring kit is displayed. Use SIM62-20 to confirm that the HDD status is displayed as HDD1/HDD2=OK/OK. 
Step 4	Turn OFF the main power of the machine, and set DIPSW2 to OFF. Then, turn ON the main power of the machine again. 
Step 5	Use SIM66-10 to clear the FAX image memory. The memory is cleared in order to ensure consistency between the HDD data and the image memory and to prevent against malfunctions. (Not only the FAX model, but also the scanner and the Internet FAX models require memory clearing.)
Step 6	Use SIM49-3 to install the e-Operation Manual data to the HDD.
Step 7	The trouble code "U2-60" is displayed. → Use SIM49-5 to install the watermark data to the HDD. → Use SIM16 to cancel the U2-60 error.

E. Note for reuse of HDD

When replacing the HDD for the mirroring kit, be sure to use a new HDD.

If a HDD which has been used in a mirroring kit is used for replacing the HDD, the operations and the data cannot be assured.

If a HDD which has been used in a mirroring kit is installed, the original data may be erased.

If, however, the mirroring information of the HDD is erased by RIB Buster as described later, it can be used. (*1) In addition, if the both HDD's are replaced with HDD's which have been used, SIIM62-1 must be executed to format HDD's in addition to erasing the mirroring information.

When removing the HDD after installing the mirroring kit, be sure to remove the both HDD's together.

If only one HDD is removed then it is reinstalled, the data of both HDD's may not be identical, causing an error.

When removing the HDD and performing some work, first disconnect the HDD SATA connector of the MFP PWB and perform the work.

With the above procedure, the both HDD's are brought into the status disconnected from the machine.

Put mark on the mirroring kit HDD and the machine HDD to indicate that they have been used. (*2)

*1: Refer to "5-C. Deleting the HDD mirroring information."

*2: Refer to "5-B. How to check the usage history of a HDD in a mirroring kit."

4. Note for installing and repairing the mirroring kit

When installing or repairing the mirroring kit, fully understand the following descriptions to avoid erroneous handling and procedures. When a HDD which has once been used for the mirroring kit is reused without proper preparation, it may cause an error and destruction of user data, or other troubles.

The following three cases must be strictly avoided.

- When newly installing a mirroring kit, do not use one which has been previously used.
- When replacing the HDD because of a HDD trouble, do not replace it with a HDD which has been previously used in a mirroring kit.
- When replacing the HDD because of a HDD trouble in the machine, do not replace it with a HDD which has been previously used in a mirroring kit.

NOTE:

When a HDD is once used in a mirroring kit, the mirroring information is written into the HDD. This causes a trouble by erroneous using.

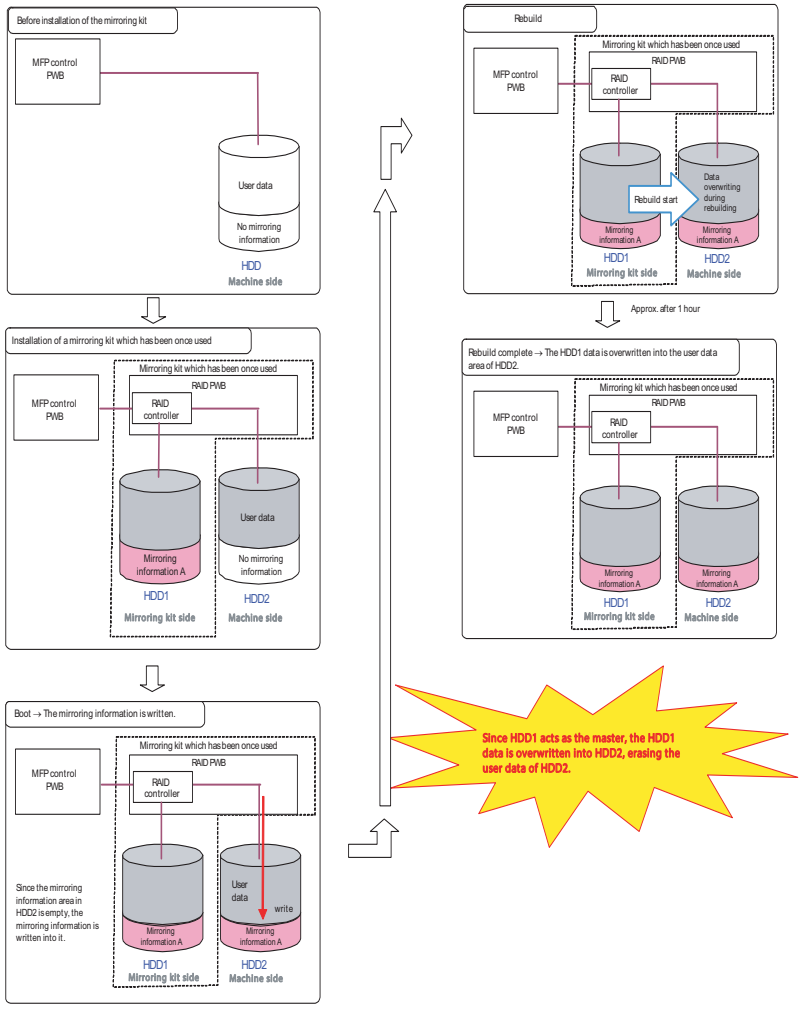
The details of inhibited items, results of erroneous procedures, and precautions for avoiding those errors are described below.

A. Details of inhibited items

(1) When newly installing a mirroring kit, do not use one which has been previously used.

Trouble contents

If HDD1 which has been previously used is used for new installation of a mirroring kit, the data in HDD1 will be written into HDD2. This causes erasure of the original user data, freeze of the machine, or other troubles. The "HDD which has been previously used" includes a HDD which was just installed and connected only.



Countermeasures

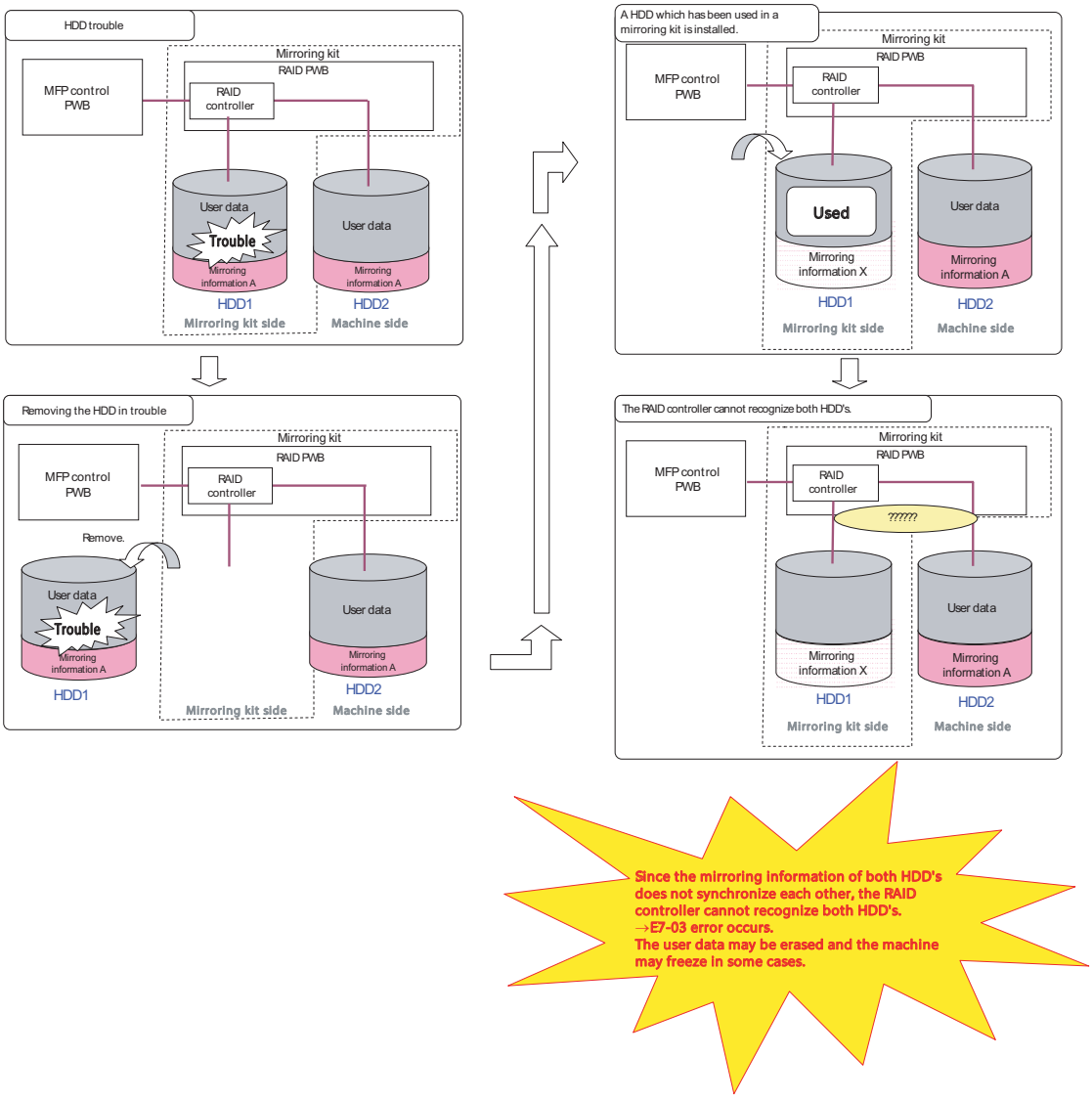
Use a new mirroring kit for installation.

If there is no choice but to use a mirroring kit which has been previously used, be sure to erase the mirroring information in the HDD before installation. (For details, refer to "5-C. Deleting the HDD mirroring information.")

(2) When replacing the HDD in case of a trouble in the HDD, do not use a HDD which has been used in another mirroring kit of another machine.

Trouble contents

If a HDD which has been used in another mirroring kit, the RAID controller cannot recognize the HDD, causing E7-03 error, and the necessary data may be destroyed in some cases.



Countermeasures

Use a new mirroring kit for installation.

If there is no choice but to use a mirroring kit which has been once used, be sure to erase the mirroring information in the HDD before installation. (For details, refer to "5-C. Deleting the HDD mirroring information.")

(3) When the HDD is replaced because of a HDD trouble, do not use a HDD which has been used in a mirroring kit of another machine.

Trouble contents

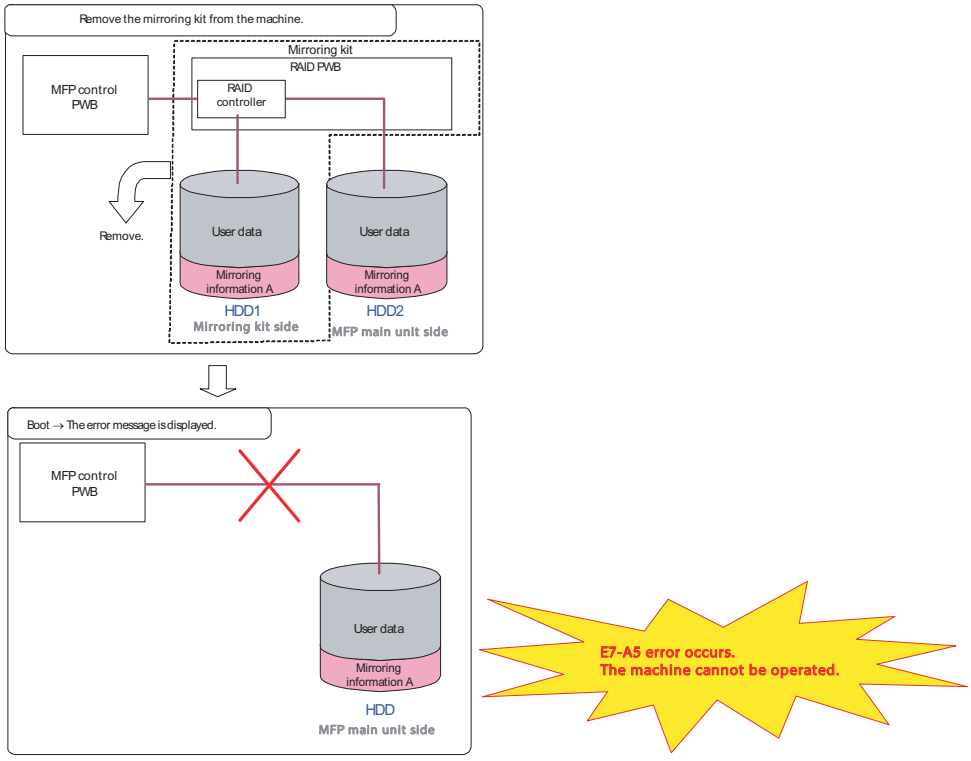
In the case of a machine produced before March/2011

If a HDD which has been used in another mirroring kit is installed, the operation and the data safety cannot be assured. If a HDD which has been used in another mirroring kit is installed, the original data may be erased.

Support from production of May/2011.

E7-A5 error occurs. If a HDD which has been used in a mirroring kit is used as the machine HDD, the machine does not operate normally.

In this case, the trouble of erasing the original data is avoided.



Countermeasures

Use a new mirroring kit for installation.

If there is no choice but to use a mirroring kit which has been once used, be sure to erase the mirroring information in the HDD before installation. (For details, refer to "5-C. Deleting the HDD mirroring information.")

When a HDD is used without any other HDD, the mirroring information must be erased before executing SIM62-1 to format.

This procedure allows the HDD being treated as a new HDD.

When removing the HDD after installation of the mirroring kit, remove both HDD's simultaneously. If only one HDD is removed and then installed again, the data of both HDD's may not match, causing a trouble.

[Simultaneous removal of both HDD's] Disconnect the HDD SATA connector of the MFP PWB, and both HDD's are brought into disconnected state from the machine.

B. How to check the usage history of a HDD in a mirroring kit

As stated before, when installing a mirroring kit or replacing a HDD, be sure to check the usage history of a HDD or a mirroring kit which is to be used.

For convenience of checking the usage history, put a mark on the mirroring kit HDD and the machine HDD when installing them to indicate that they have been used.



C. Deleting the HDD mirroring information

Be deleting the HDD mirroring information, the HDD can be used under the mirroring kit environment.

(1) Necessary tools

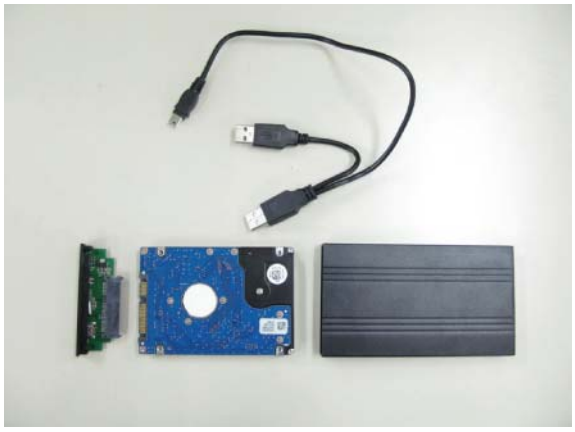
? RIB Buster software

The software is composed of the following two files. (They can be downloaded from Tech DS Web site.)

? RIB Buster{YYYYMMDD}.exe

? Setup.ini

? Commercially available USB HDD case unit (SATA support)



? USB cable

? Windows PC

(Support OS: Windows XP, Windows VISTA, Windows 7 (32/64bit)

(2) Procedures

1) Assemble the HDD (the mirroring information of which is to be deleted) to the USB HDD case unit (SATA support), and connect the USB cable.



IMPORTANT:

When removing or attaching a HDD to the HDD case, be sure to disconnect the USB cable from the PC in advance.

If this precaution is ignored, the HDD may be damaged.

2) Copy the RIB Buster software files (RIB Buster {YYYYMMDD}.exe and Setup.ini) to a same directory of the PC.

? RIB Buster{YYYYMMDD}.exe

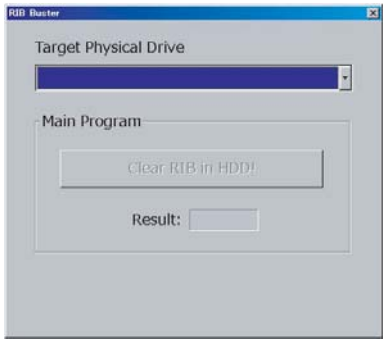
? Setup.ini

3) Connect the PC and the USB HDD case unit assembled in procedure 1) with the USB cable.

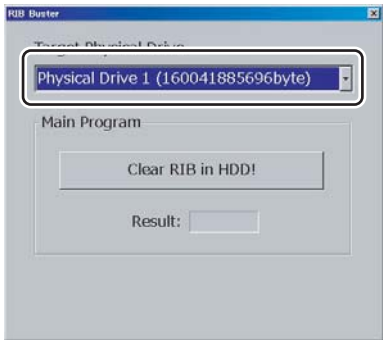


4) Double-click RIB Buster {YYYYMMDD}.exe to boot the RIB Buster software.

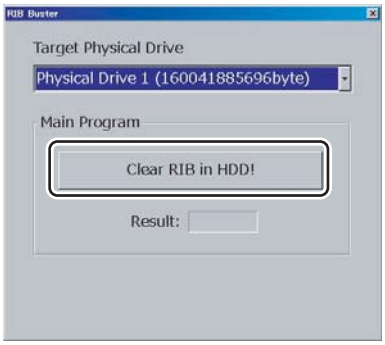
If the user account control is ON in VISTA or Windows 7 setting, the user account control menu is displayed. Click [Allow] on this menu.



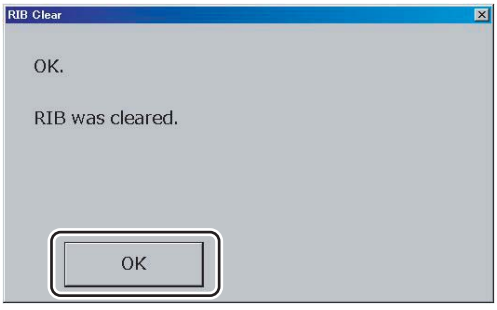
5) Select the target HDD to delete the mirroring information.



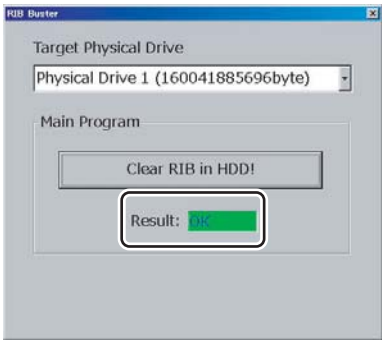
6) Click [Clear RIB in HDD] button.



7) Click [OK] button. (The mirroring information is deleted.)



8) After completion of deleting the mirroring information, "OK" is displayed.

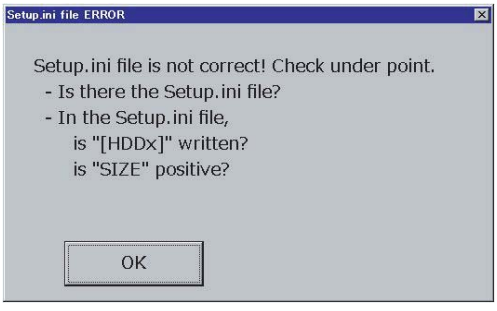


(3) Kinds of errors, causes and remedies

Phenomenon 1

An error indicating an abnormality in the Setup.ini file when booting the RIB Buster software.

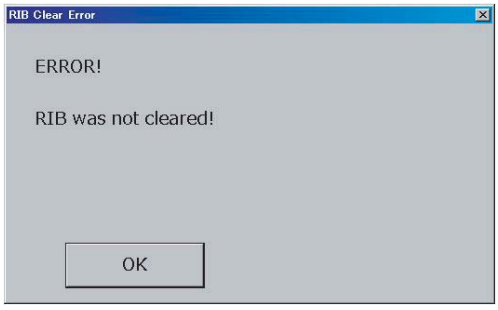
Cause	Setup.ini file does not exists, or there is any abnormality in the file.
Countermeasures	Check to confirm that there is Setup.ini file in the proper directory and that there is no abnormality in the descriptions.

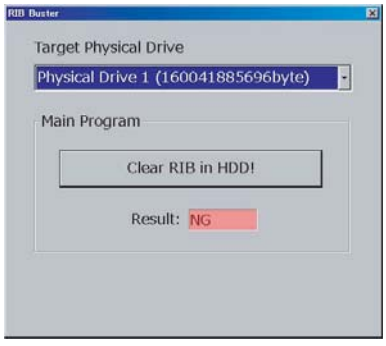


Phenomenon 2

The mirroring information has not been deleted normally.

Cause	Temporary communication trouble, cable or other device trouble, HDD trouble
Countermeasures	1. Click [Clear RIB in HDD] button again. 2. If the trouble is not solved by procedure 1. , disconnect and connect the cable, change the devices, and reboot the RIB Buster. Then execute procedure 1. .

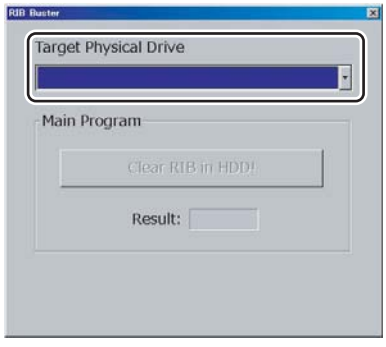




Phenomenon 3

Though the target HDD is connected, it is not displayed.

Cause	The target HDD is not registered in the Setup.ini file. Cable or other device trouble, HDD trouble
Countermeasures	1. Reboot RIB Buster, and click the frame section. 2. If the trouble is not solved by procedure 1. , replace the Setup. ini file and the RIB Buster {YYYYMMDD} with the latest version, and execute procedure 1. . 3. If the trouble is not solved by procedure 2. , disconnect and connect the cable, change the devices, and reboot the RIB Buster. Then execute procedure 1. .



[10] SERVICE WEB PAGE

1. General

The following functions are available on the Hidden Web Page exclusively used for the serviceman.

Menu/Item		Function and content
Output of Test Page		Used to print out the test page (system setting contents).
Font/Form Download		Used to download Font/Form. Font/Form of PCL and PostScript, macro, and other resources are downloaded to the HDD and controlled. (PS, PCL5 only)
Device Cloning		Used to import/export the system setting information in XML format. By importing the export file to the other device, the setting values and setting contents of the device can be copied to another device. This function is useful to set the same setting to two or more machines efficiently.
Filing Data Backup		Used to import/export the document filing data in the unit of folder.
User Control		Used to shift to the user mode. After log in, the screen is shifted to the setting screen of user management.
User Control 2		Used to set the Pages Limit Group and the Favorite Operation Group by authority of the serviceman. (Select among preset items.)
Job Log	Save Job Log	Used to save the Job Log.
	View Job Log	Used to display the Job Log.
Update of Firmware		Used to update the firmware version.
Syslog *1	Administration Settings	Used to set the Log Type. (Set to the default.)
	Storage/Send Settings	Keep all the items selected.
	Save/ Delete Syslog	Used to save or delete the log data.
	View Syslog	Used to display the log data.

*1: This may be useful for troubleshooting when a trouble occurs.
When submission of the log data file is requested in order to troubleshoot, use the log file save mode to export the log data file to the client PC.

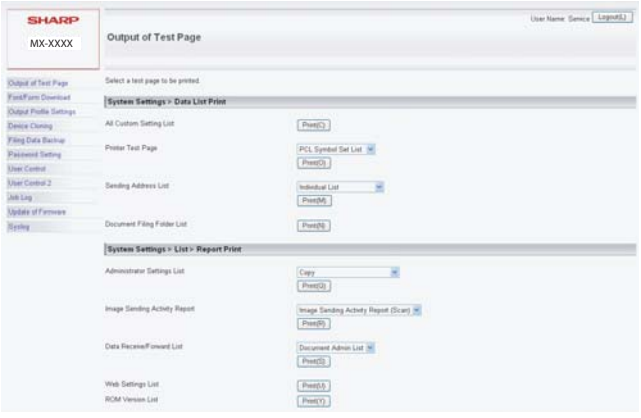
2. Details and operation procedures

A. Procedures to enter the Hidden Web page exclusively used for the serviceman

1) Boot a browser program.
2) Enter the specified URL (http://xxx.xxx.xxx.xxx/service_login.html) and enter the servicing page menu.
Default password: "service"

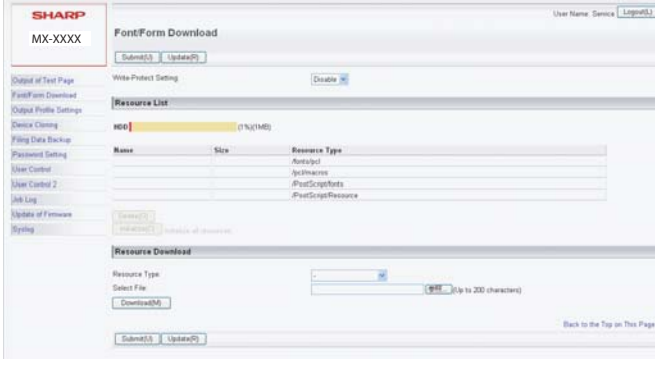


B. Output of Test Page



1) Click "Print" button of an item or report to be printed.
When there is a list of items for selection, select one of the items in the pull-down menu list, and click "Print" button.
The list is printed out.

C. Font/Form Download



(1) Download of Font, Form, and Macro

1) Select "Resource Type" from the pull-down menu list.
   (Example: PCL/PostScript Font/Form or Macro)
2) Click "Refer" button to select a target file.
3) Click "Download" button.
4) Click "Submit" (registration) button.
   The file is downloaded to the HDD.
   The list of the downloaded files and the use percentage of the HDD are displayed.

(2) Delete of downloaded font (Procedures to delete a file separately)

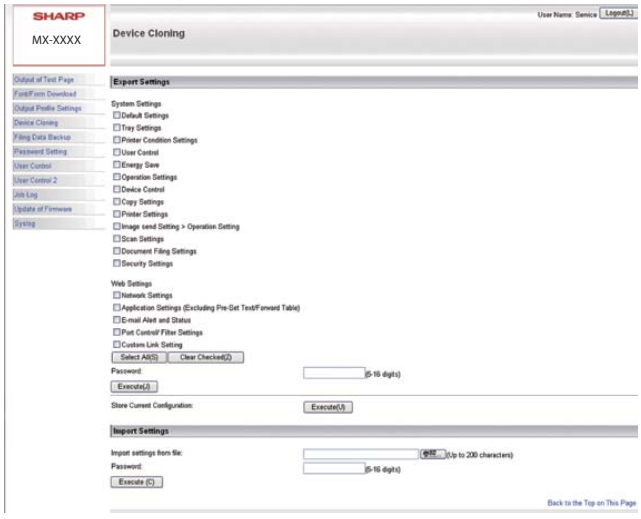
1) Select a file to be deleted from the list of the downloaded files, and click "Delete" button.
2) Check that the confirmation message is displayed, and press Yes key.
3) Click "Submit" (registration) button.
   The file in the HDD is deleted.

(3) Procedures to delete all the files at a time

1) Click "Initialize" button.
2) Check that the confirmation message is displayed, and press OK key.
3) Click "Submit" (registration) button.

NOTE: By the Write-Protect Setting function, the downloaded files can be set to write protect.

D. Device Cloning



(1) Export

1) Select an item to be backed up.
2) Click "Execute" button.
   Specify the save position of the file, and save the file. (File name: *****.bin)
   When the password is set, the set password must be entered when importing.

(2) Import

1) Import from a file: Click "Refer" button to select the back-up file. (File name: *****.bin)
2) Click "Execute" button to execute import.
   If the password is set when exporting, the password must be entered.
3) Reboot the machine.

E. Filing Data Backup



(1) Export

1) Select the folder to be backed up.
   The list display conditions can be specified by changing the index and the number of display items on the pull-down menu.
2) Click "Execute" button.
   Specify the save position of the file, and save the file. (File name: *****.bin)
3) Click "Update" button.

(2) Import

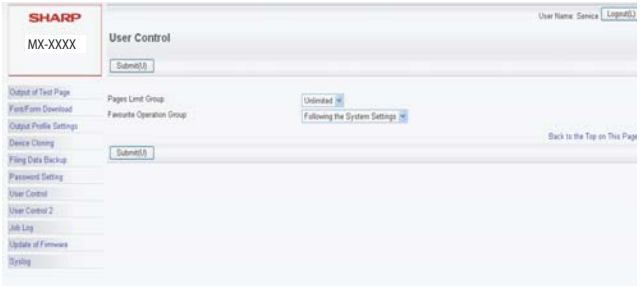
1) Click "Refer" button to select a target file. (File name: *****.bin)
2) Click "Execute" button.
   The target file is imported.
3) Click "Update" button.

F. User Control



1) Enter the password to log in.
   Default Password: admin
   The screen is shifted to the setting menu of user management.

G. User Control 2



Select the Pages Limit Group and the Favorite Operation Group. (The Pages Limit Group and the Favorite Operation Group must be set in advance.)

(Example of use)

The use sets the conditions for servicing work by using the Pages Limit Group and the Favorite Operation Group functions in advance, and the serviceman selects the set conditions in this mode for servicing work.

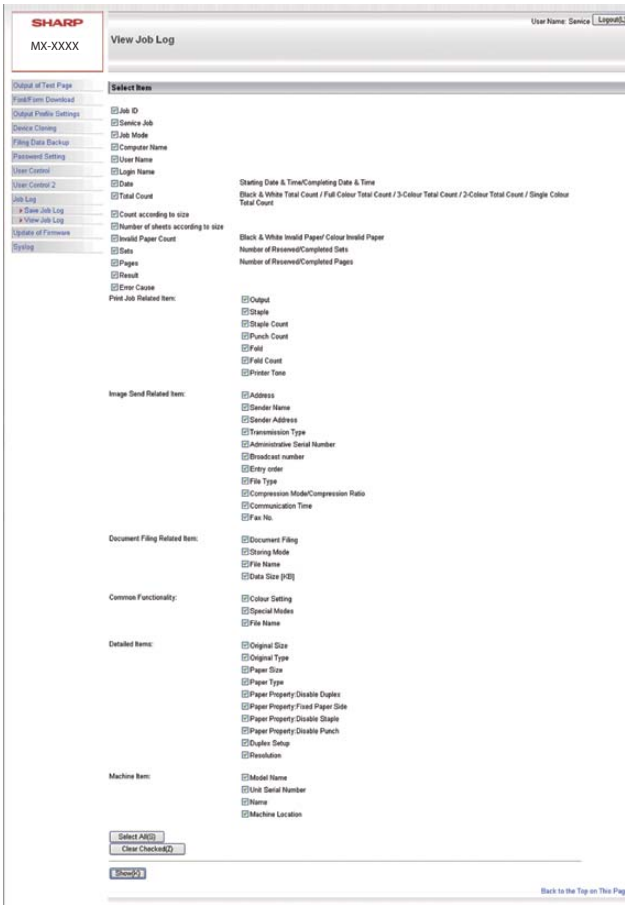
H. Job Log

(1) Save Job Log



1) Click "Save" button, and specify the save position of the Job Log to save it.

(2) View Job Log



1) Select a Jog Log item to be displayed. (In the default setting, all the items are selected. Remove check marks of the items which are not to be displayed.)
2) Click "Show" (display) button.
   The Jog Log is displayed.

I. Update of Firmware



1) Click "Refer" button to select a firmware file.
2) After selecting a firmware file, click "Execute" button.
   The firmware data are sent to the machine, and update of the firmware is processed.
   During the process, the message of "Firmware Update, now processing..." is displayed.

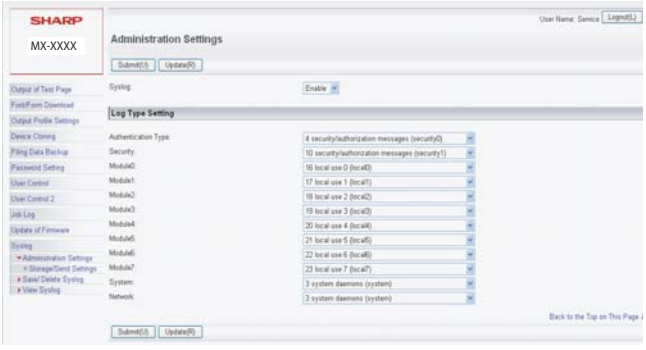
J. Syslog

There are following functions in the Syslog mode.

This function is provided to acquire the detailed Syslog to trouble-shoot when a trouble occurs.

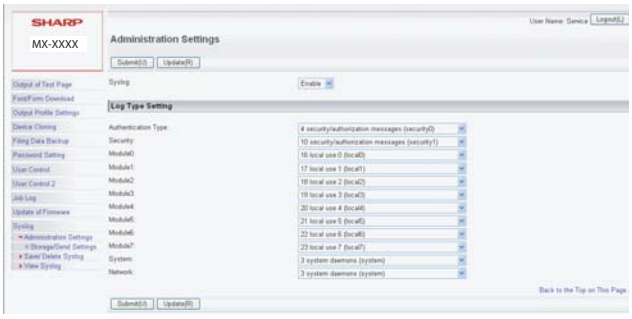
When submission of the log data file is requested for troubleshooting, use the log file save mode to export the log data file to the client PC.

Syslog	Administration Settings	Log Type Setting (Set to the default.)
	Storage/Send Settings	Set all the items selected.
	Save/ Delete Syslog	Log data save, delete
	View Syslog	Log data display



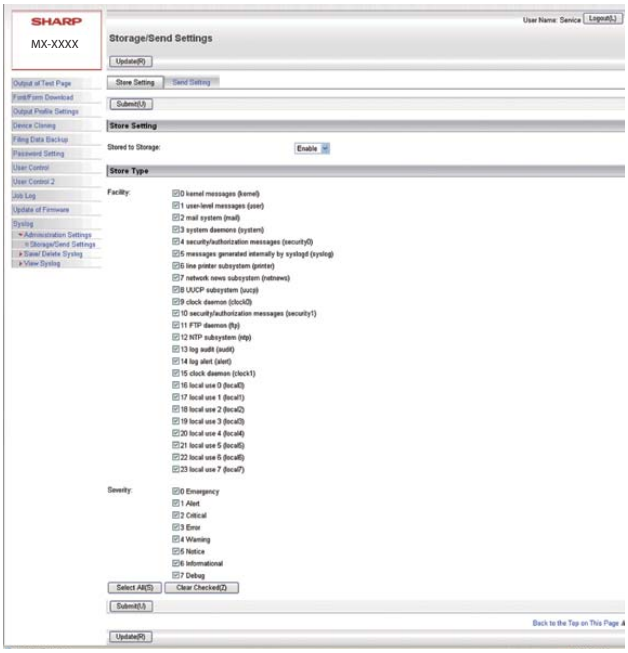
(1) Administration Settings/ Log Type Setting

Set to the default.



(2) Storage/Send Settings

Keep all the items selected.



(3) Save/ Delete Syslog

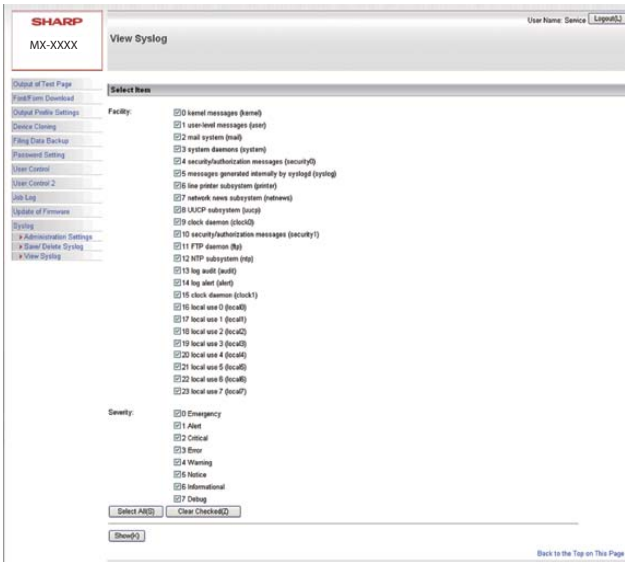


When saving the Syslog, click "Save" button and specify the save position and save it.

When deleting, click "Delete" button.

Check to confirm that the confirmation message is displayed, and press OK key.

(4) View Syslog



1) Select a Syslog item to be displayed.
2) Click "Show" button.
   The Syslog is displayed.

K. Machine ID Setting



1) Enter the machine ID.
   Max. 30 digits of numeral figures and characters can be entered.
2) Press the registration button.

NOTE: The machine ID can be set with SIM26-7 as well as this function.

L. Administration Settings (Menu display setting)

This setting is to select whether to display all the menus of Web Page on the machine display or to display only the restricted system setting menu of the default.

Setting must be executed according to the user request.

1) Press the setting execution button corresponding to the display mode.



[11] SPECIFICATIONS

1. Basic specifications

A. Base engine

(1) Type

Type	Desktop

(2) Engine composition

Photo-conductor kind	OPC (Drum diameter: ϕ30mm)
Copying method	Electronic photo (Laser)
Developing system	Dry, 2-component magnetic brush development
Charging system	Charged saw-tooth method
Transfer system	Transfer roller
Cleaning system	Counter blade
Fusing system	Heat roller
Waste toner disposal	No toner recycling system / Waste toner bottle system

(3) Dimension / Weight

Outer dimension (W x D x H)		618 x 713x x843 mm
Machine dimension with the bypass tray extended (W x D).		925 x 713 mm
Weight	Main unit (including OPC drum) (not including consumables)	Approx. 78 kg 171 lbs

(4) Warm-up

Warm-up time	12 seconds or less
Pre-heat	Yes

(5) First copy time

Engine	36 cpm machine	46 cpm machine	56 cpm machine
Platen	4.5 second	3.9 second	3.7 second
DSPF	7.4 second	7.0 second	6.6 second

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

(6) Engine resolution

	Copy	Print
Resolution *1	600 x 600dpi 9600(equivalent) x 600dpi 1200 x 1200dpi	600 x 600dpi 9600(equivalent) x 600dpi 1200 x 1200dpi
Gradation *2	600 x 600dpi 4bit 9600(equivalent) x 600dpi 1200 x 1200dpi 1bit	600 x 600dpi 1bit, 4bit 1200 x 1200dpi 1bit

*1: Default resolution (Copy)

- Printed photo, Text/Photograph, Photograph: 1200dpi
- Automatic, Text, Text/Printed photo, Map: 600dpi

*2: Equivalent to 256 gradation

(7) Printable area

A3 Wide *	297 x 420mm	12" x 18" *	279 x 432mm
A3	293 x 413mm	11" x 17"	275 x 425mm
B4	253 x 357mm	8.5" x 14"	212 x 349mm
A4	206 x 290mm	8.5" x 13.5"	212 x 336mm
B5	178 x 250mm	8.5" x 13.4"	212 x 333mm
A5	144 x 203mm	8.5" x 13"	212 x 323mm
Postcard	96 x 141mm	Executive	180 x 260mm
8K	266 x 383mm	8.5" x 11"	212 x 272mm
16K	191 x 263mm	5.5" x 8.5"	136 x 209mm

* The printable area for A3W/12" x 18" must be as large as the A3/11" x 17" page dimension (297 x 450mm) by PCL/PS driver.

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 FR total: 4mm±2mm or less

(8) Engine speed (ppm)

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

Paper type	Paper size	36 cpm machine	46 cpm machine	56 cpm machine
Plain paper	A3, 11" x 17", 8K	17	22	26
	B4, 8.5" x 14", 8.5" x 13", 8.5" x 13.4", 8.5" x 13.5"	20	26	30
	A4R, 8.5" x 11"R, 16KR	25	32	35
	B5R, 7.25" x 10.5"R			
	A5R, 5.5" x 8.5"R	18	23	28
	A4, B5, 8.5" x 11", 16K	36	46	56
	Extra, User-Extra: Paper width 150mm or less	16	20	25
	Extra, User-Extra: Paper width over 150mm			
Heavy paper	A3, 11" x 17", 8K	15	15	15
	B4, 8.5" x 14", 8.5" x 13", 8.5" x 13.4", 8.5" x 13.5"	17	17	17
	A4R, 8.5" x 11"R, 16KR	21	21	21
	B5R, 7.25" x 10.5"R			
	A5R, 5.5" x 8.5"R	18	23	25
	A4, B5, 8.5" x 11", 16K	32	32	32
	Extra, User-Extra: Paper width 150mm or less	15	15	15
	Extra, User-Extra: Paper width over 150mm			

b. In case of manual paper feed tray paper feeding

Paper type	Paper size	36 cpm machine	46 cpm machine	56 cpm machine
Plain paper	A3, 11" x 17", 8K	17	22	26
	B4, 8.5" x 14", 8.5" x 13", 8.5" x 13.4", 8.5" x 13.5"	20	26	35
	A4, 8.5" x 11", 16K, B5	32	41	48
	B5R, 7.25" x 10.5"R	23	30	35
	A4R, 16KR, 8.5" x 11"R			
	A5R, 5.5" x 8.5"R	18	23	28
	12" x 18", A3W *1	16	20	25
	Extra, User-Extra: Paper width 150mm or less			
	Extra, User-Extra: Paper width over 150mm			
Heavy paper	A3, 11" x 17", 8K	15	15	15
	B4, 8.5" x 14", 8.5" x 13", 8.5" x 13.4", 8.5" x 13.5"	17	17	17
	A4, 8.5" x 11", 16K, B5	25	25	25
	B5R, 7.25" x 10.5"R	21	21	21
	A4R, 16KR, 8.5" x 11"R			
	A5R, 5.5" x 8.5"R	18	22	22
	12" x 18", A3W *1	15	15	15
	Extra, User-Extra: Paper width 150mm or less			
	Extra, User-Extra: Paper width over 150mm			
	Envelope	17	17	17
	Postcard HIGH *2	25	25	25
	Postcard LOW *2	15	15	15
	OHP (A4, 8.5" x 11")	25	25	25
	OHP (A4R, 8.5" x 11"R)	21	21	21

*1: ppm when exiting to the finisher (A3W/12" x 18" cannot exit to the center tray)

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

(9) Power source

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

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

(10) Power consumption

	100V series	200V series
Max. Rated Power Consumption *1	1.44kW	1.84kW
Moving time to Pre-heat mode	1 minutes (default)	
Moving time to Sleep mode	1 minutes (default) 16 minutes for Europe	

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

B. Controller board

(1) MX-M365N / M465N / M565N series

a. Controller board

CPU	ARM11 600MHz ARM 9 400MHz	
SOC	Intel Atom D525 1.8GHz	
Interface		
Ethernet	1 port	
	Interface	10Base-T, 100Base-TX, 1000Base-T
	Support Protocol	TCP/IP (IPv4, IPv6), IPX/SPX, EtherTalk
USB 2.0 (Host) * Simultaneous connection is inhibited. The total current consumption must not exceed 500mA.	The ports on the front and on the side of the rear section cannot be used simultaneously. (Exclusive use)	
USB 2.0 (high speed) Device	1 port	
Scanner expansion I/F	Yes	
Memory slot	1 slots	

b. Memory, hard disk

SD card	4GB	
Compact Flash	8GB	
HDD*1	320GB	
MFP PWB	Reus	1GB (STD)
	SOC	2GB (STD)
		1GB (OPT)

*1: HDD capacity depends on procurement and sourcing status

c. Wireless LAN

Type	Built-in type
Compliance standards	Wireless LAN standard protocol IEEE802.11n/g/b
Transmission method	OFDM (IEEE802.11n/g) DS-SS (IEEE802.11b)
Transmission frequency range	IEEE802.11n/g/b 2.4GHz 11b'(1-14ch) 11n/g(1-13ch) 11ng(3-11ch)
Access method	Infrastructure mode, soft AP mode
Security	WEP, WPA-PSK, WPA-EAP, WPA2-PSK, WPA2-EAP

(2) MX-M364N / M464N / M564N series

a. Controller board

CPU	ARM11 600MHz ARM 9 400MHz
Interface	
Ethernet	1 port
	Interface: 10Base-T, 100Base-TX, 1000Base-T
	Support Protocol: TCP/IP (IPv4, IPv6), IPX/SPX, EtherTalk
USB 2.0 (Host) * Simultaneous connection is inhibited. The total current consumption must not exceed 500mA.	The ports on the front and on the side of the rear section cannot be used simultaneously. (Exclusive use)
USB 2.0 (high speed) Device	1 port
Scanner expansion I/F	Yes
Memory slot	1 slots

b. Memory, hard disk

SD card	4GB	
HDD*1	320GB	
MFP PWB	Image process	2GB (STD)
	Print	1GB (STD)
		2GB (OPT)

*1: HDD capacity depends on procurement and sourcing status

(3) AR-M460N / M560N series 2

a. Controller board

CPU	ARM11 600MHz ARM 9 400MHz	
Interface		
Ethernet	1 port	
	Interface	10Base-T, 100Base-TX, 1000Base-T
	Support Protocol	TCP/IP (IPv4, IPv6), IPX/SPX, EtherTalk
USB 2.0 (Host) * Simultaneous connection is inhibited. The total current consumption must not exceed 500mA.	The ports on the front and on the side of the rear section cannot be used simultaneously. (Exclusive use)	
USB 2.0 (high speed) Device	1 port	

b. Memory, hard disk

mSATA SSD	16GB	
MFP PWB	Image process	2GB (STD)

C. Operation panel

(1) Display device

a. 10.1 inch LCD

Size	10.1inch
Type	Dot matrix LCD, touch panel
Display dot number	1024 x 600 dot (WSVGA)
Color	Yes
LCD back-light	LED lamp back-light system
Angle/position adjustment	Yes
Touch panel method	Resistive touch display (effective 2 point touch)

b. 7 inch LCD

Size	7inch
Type	Dot matrix LCD, touch panel
Display dot number	800 x 480 dot (WVGA)
Color	Yes
LCD back-light	LED lamp back-light system

D. Scanner section

(1) Resolution/Gradation

Scanning Resolution (dpi)	Platen	600 x 600 dpi 600 x 400 dpi 600 x 300 dpi (Default)		
	DSPF	600 x 600 dpi 600 x 400 dpi 600 x 300 dpi (Default)		
	RSPF	600 x 600dpi 600 x 400dpi (Default)		
In sending Resolution (dpi)	Scanner		Internet Fax / Direct SMTP	Fax
	100dpi x 100dpi		200dpi x 100dpi (halftone not allowed)	Standard (203.2 x 97.8 dpi) (halftone not allowed)
	200dpi x 200dpi		200dpi x 200dpi	Fine (203.2 x 195.6 dpi)
	300dpi x 300dpi		200dpi x 400dpi	Super Fine (203.2 x 391 dpi)
	400dpi x 400dpi		400dpi x 400dpi	Ultra Fine (406.4 x 391 dpi)
	600dpi x 600dpi		600dpi x 600dpi	---
Exposure lamp	White LED			

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
Dehumidifying heater (Scanner section)	Supplied as a service part

(3) Automatic document feeder

Type	**DSPF** (Duplex single pass feeder):	
Scan speed	Monochrome (A4 / 8.5" x 11")	Color (A4 / 8.5" x 11")
Copy	**DSPF** Single: 85-sheet/min. (600 x 300 dpi, 4bit) 56-sheet/min. (600 x 400 dpi, 4bit) 41-sheet/min. (600 x 600 dpi, 4bit) Duplex: 170-page/min. (600 x 300 dpi, 4bit) 80-page/min. (600 x 400 dpi, 4bit) 50-page/min. (600 x 600 dpi, 4bit) RSPF Single: 56-sheet/min (600 x 400 dpi 4bit) 38-sheet/min (600 x 600 dpi 4bit) Duplex: 20-page/min (600 x 400 dpi 4bit) 17-page/min (600 x 600 dpi 4bit)	N/A
Fax / Internet Fax	**DSPF** Single: 85-sheet/min. (200 x 200 dpi, 1 bit) Duplex: 170-page/min. (200 x 200 dpi, 1 bit) RSPF Single: 56-sheet/min (200 x 200 dpi 1bit) Duplex: 20-page/min (200 x 200 dpi 1bit)	N/A
Scanner	**DSPF** Single : 85-sheet/min. (200 x 200 dpi, 1 bit) Duplex: 170-page/min. (200 x 200 dpi, 1 bit) RSPF Single: 56-sheet/min (200 x 200 dpi 1bit) Duplex: 20-page/min (200 x 200 dpi 1bit)	**DSPF** Single : 85-sheet/min. (200 x 200 dpi, 8 bit) Duplex: 170-page/min. (200 x 200 dpi, 8 bit) RSPF Single: 56-sheet/min (200 x 200 dpi 8bit) Duplex: 20-page/min (200 x 200 dpi 8bit)
Original setup direction	Upward standard (1 to N feeding standard)	
Original standard position	Center standard (Rear one-side standard for random feeding) Face Up (1 to N Feeding standard)	
Original transport method	Sheet-through method	
Original size	Standard size: (Refer to the "paper detection size") Long paper: 1000 mm (Monochrome binary only) Internet Fax 600 x 600 dpi: Max. 800 mm. When scan 400 dpi or more, long paper is not available. Mix paper feed (Same series, same width paper) enabled Random paper feed combination Mix feeding available. (same system, same width) Random feeding (feeding of different types / different widths) Only the following combinations of 2 size types are allowed: either A3 or A4 and either B4 or B5; either B4 or B5 and either A4R or A5 and 11-inch and 8.5-inch. AMS available. 2-sided scanning is disabled during random feeding (when the RSPF is used).	
Original copy weight	Single: (Thin paper) 9 - 13 lb bond (35 - 49 g/m^2), (plain paper) 13 - 32 lb bond (50 - 128 g/m^2) * Thin paper mode (46pages/minute (A4, 8.5" x 11", 600dpi)) is set up for the thin paper. Duplex: 13 - 32 lb bond (50 - 128 g/m^2)	
Max. loading capacity of documents	Max. 150 sheets (21lbs Bond, 80g/m^2), or Max. height: 50/64 inch, 19.5mm or less	

Un-acceptable originals for feeding.	OHP, second original paper, tracing paper, carbon paper, thermal paper, paper with wrinkles, folds, or breakage, pasted paper, cutout document, document printed with ink ribbon, documents with perforation other than 2- or 3-holes (Perforated document by punch unit is allowed.)
Detection	Yes
Paper detection size (Platen/DSPF/RSPF)	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 11"R, 5.5" x 8.5", A3, A4
	Inch-2	11" x 17", 8.5" x 13", 8.5" x 11", 8.5" x 11"R, 5.5" x 8.5", A3, A4
	Inch-3	11" x 17", 8.5" x 13.4", 8.5" x 11", 8.5" x 11"R, 5.5" x 8.5", A3, A4
	AB-1	A3, B4, A4, A4R, B5, B5R, A5, 11" x 17", 8.5" x 14", 8.5" x 11"
	AB-2	A3, B4, A4, A4R, B5, B5R, A5, 11" x 17", 8.5" x 13", 8.5" x 11"
	AB-3	8K, 16K, 16KR, A3, B4, A4, A4R, A5, 11" x 17", 8.5" x 13", 8.5" x 11"
	AB-4	A3, B4, A4, A4R, B5, B5R, A5, 11" x 17", 8.5" x 13.4", 8.5" x 11"
	AB-5	A3, B4, A4, A4R, B5, B5R, A5, 11" x 17", 8.5" x 13.5", 8.5" x 11"

* 5.5" x 8.5"R, A5R cannot be detected.

Paper feeding direction	Right hand feeding
Finish stamp	Option
Power source	Provided from main unit
Dimensions	W23-13/16 x D20-5/64 x H6-3/32 inch (W615 x D512 x H159 mm)

E. Paper feed section

(1) Type

Type	Standard: 1-stage paper feed tray + multi manual paper feed tray Full option: 4-stage paper feed tray + multi manual paper feed + LCC
Dehumidifying heater	Service parts

(2) Tray 1 (Main unit)

Paper capacity	Plain paper: 500 sheets (80 g/m^2)
Paper size	A3, B4, A4, A4R, B5, B5R, A5R, 11" x 17", 8.5" x 14", 8.5" x 13.5", 8.5" x 13.4", 8.5" x 13", 8.5" x 11", 8.5" x 11"R, 7.25" x 10.5"R, 5.5" x 8.5"R, 8K, 16K, 16KR
Paper type	Plain paper, printed paper, recycled paper, letter head, punched paper, colored paper, heavy paper
Paper Weight	Plain paper: 16 - 28 lb bond (60 - 105g/m^2) Heavy paper: 28 lb bond - 110 lb index (106 - 220g/m^2)
Paper size setting when shipping	AB series; Tray 1: A4 Inch series; Tray 1: 8.5" x 11",
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^2) 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 11"R, 7.25" x 10.5"R, 5.5" x 8.5"R, envelope, 8K, 16K, 16KR
Paper type	Plain paper, printed paper, recycled paper, letter head, punched paper, colored paper, heavy paper, thin paper, envelope, OHP, label sheet, tab paper
Paper Weight	Thin paper: 13 lb bond -16 lb bond (55 - 59g/m^2) Plain paper: 16 lb bond - 28 lb bond (60 - 105g/m^2) Heavy paper: 28 lb bond - 110 lb cover (106 - 300g/m^2)

(4) Tray 2, 3, 4 (MX-DE12/DE13/DE14)

Paper capacity	Plain paper: 500 sheets (80 g/m^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 10.5"R, 8K, 16K, 16KR
Paper type	Plain paper, printed paper, recycled paper, letter head, punched paper, colored paper, heavy paper
Paper Weight	Plain paper: 16 lb bond - 28 lb bond (60 - 105g/m^2) Heavy paper: 28 lb bond - 110 lb index (106 - 220g/m^2)
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)	583(W) x 577(D) x 382(H)

(5) Tray 2, 3, 4 (MX-DE20)

	Tray 2	Tray 3 (LCC left)	Tray 4 (LCC right)
Paper capacity	500 sheets (80 g/m^2)	1150 sheets (80 g/m^2)	850 sheets (80 g/m^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 10.5"R, 8K, 16K, 16KR	A4 8.5" x 11"	A4, 8.5" x 11"
Paper type	Plain paper, printed paper, recycled paper, letter head, punched paper, colored paper, heavy paper	Plain paper, printed paper, recycled paper, letter head, punched paper, colored paper	
Paper weight	Plain paper: 16 lb bond-28 lb bond (60-105g/m^2) Heavy paper: 28 lb bond-110 lb index (106-220g/m^2)	Plain paper: 16 lb bond - 28 lb bond (60 - 105g/m^2)	
Paper size setting when shipping	Maximum position of paper guide width	AB series: A4 Inch series:8.5 x 11	
Paper remaining detection	Yes (3 levels: 100%, 67%, 33%, none)	Yes (3 levels: 100%, 33%, 6%, none)	Yes (3 levels: 100%, 50%, 9%, none)
Power consumption	Power is supplied from main unit)		

Dimensions (W x D x H)	583(W) x 577(D) x 382(H)

(6) 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	AB series: A4 Inch series :8.5 x 11
Paper type setting	Yes
paper type and weight for paper feed	Plain paper, printed paper, recycled paper, letter head, punched paper, colored paper: 16 - 28 lb bond (60 - 105g/m^2)
Paper capacity	3,500 sheets (80 g/m^2) 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 575 x 520 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	Right side paper exit section of the main unit
Paper exit system	Face-down paper exit system	
Paper exit capacity	400 sheets (A4, 8.5" x 11")	100 sheets (A4, 8.5" x 11")
Paper exit paper size/ weight	Thin paper: 13 lb bond -16 lb bond (55 - 59g/m^2) Plain paper: 16 lb bond - 28 lb bond (60 - 105g/m^2) Heavy paper: 28 lb bond - 110 lb cover (106 - 300g/m^2) Envelope: 20 - 24 lb bond (75 - 90g/m^2)	
Shifter function	Yes	No
Paper exit detection	No	
Paper exit full detection	Yes	

(2) Shifter

Paper weight	15 lb bond - 110 lb index (56 - 300g/m^2)	
Paper size/type	Non-offset mode	Size: A3W and 12" x 18" are not acceptable
	Offset mode	Size: A3W, 12" x 18", envelope are not acceptable Type: Envelope, OHP, label paper, tab paper and glossy paper are not acceptable
Offset width	30 mm	

(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 position
Paper exit capacity	100 sheets (A4 / 8.5" x 11")
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% (DSPF: 25-200%)	
Preset magnification ratio	4 (Reduction 2/Enlargement 2)	
XY zoom	Yes	

(2) Density/copy image quality process

Exposure mode	Automatic, Text, Text/Printed Photo, Map (600 dpi) Printed Photo, Text/Photograph, Photograph (1200 dpi)
Number of manual steps	9 steps
Toner save mode	Yes * Available for Automatic (AE), Text/Printed Photo

(3) Duplex

System	Non stack system
Paper size	11" x 17", 8.5" x 14" (216 x 356), 8.5" x 13.5" (216 x 343), 8.5" x 13.4" (216 x 340), 8.5" x 13" (216 x 330), 8.5" x 11", 8.5" x 11"R, 5.5" x 8.5"R, A3, B4, A4, A4R, B5, B5R, A5R, 8K, 16K, 16KR
Type and weight of paper which can be passed	Plain paper: 16 lb bond - 28 lb bond (60 - 105g/m^2) Heavy paper: 28 lb bond - 110 lb index (106 - 220 g/m^2)
Paper type	Plain paper, recycled paper, colored paper, letter head, printed paper, punched paper, heavy paper

(4) Copy functions

Functions	
Automatic paper selection	Yes
Automatic magnification ratio selection	Yes
Paper type selection	Yes
Auto tray switching	Yes
Rotation copy	Yes
Large rotated copy over A4 width	Yes
Electronic sort	Yes
Rotation sort	No
Job reservation	Yes (99)
Tray installation priority	Yes
Program call / registration	Yes (48)
Program name registration	Yes
Document paper size registration	Yes
Preview function	Yes

H. Printer function

(1) Platform

- IBM PC/AT, Macintosh

(2) Support OS

OS		Custom PCL6	Custom PS	PPD
Windows	XP	Yes	Yes	Yes
	XP x 64	Yes	Yes	Yes
	Server 2003	Yes	Yes	Yes
	Server 2003 x 64	Yes	Yes	Yes
	Vista	Yes	Yes	Yes
	Vista x 64	Yes	Yes	Yes
	Server 2008	Yes	Yes	Yes
	Server 2008 x 64	Yes	Yes	Yes
	Windows 7	Yes	Yes	Yes
	Windows 7 x 64	Yes	Yes	Yes
	Windows 8	Yes	Yes	Yes
	Windows 8 x 64	Yes	Yes	Yes
	Server 2012 x 64	Yes	Yes	Yes
Mac	X 10.4	No	No	Yes
	X 10.5	No	No	Yes
	X 10.6	No	No	Yes
	X 10.7	No	No	Yes
	X 10.8	No	No	Yes

(3) PDL emulation

PCL6 compatibility	Compatible with PCL of Hewlett-Packard.
PostScript 3	PS3 of Adobe Systems.

(4) Font

Emulation	Built-in fonts	Option font
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 = 139 fonts	-

(5) Print channel

USB	USB.1.1: USB2.0 (High Speed):
PSERVER / RPRINT for NetWare environment	Print channel in PSERVER/PRINT mode to be used in netware environment
LPR	UNIX LPR/LPD command-compatible print channel
IPP	Print channel in compliance with IPP1.0
PAP: EtherTalk (AppleTalk)	Print channel to be used for Macintosh environment
FTP	Equipped with the function to print data received via built-in FTP server
Raw Port (Port9100)	9100 TCP port (Raw Port) supported
HTTP (Web Submit Print)	
POP3 (E-Mail To Print)	

IPP, HTTP and POP3 support SSL.

(6) Environment setting

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

I. Image send function

(1) Mode

Scanner	- Scan to e-mail - Scan to Desktop - Scan to FTP - Scan to Folder (SMB) - Scan to USB memory - Scan to e-mail with Meta - Scan to Desktop with Meta - Scan to FTP with Meta - Scan to SMB with Meta - Scan to e-mail/FTP/Desktop/SMB (Document Admin)
Fax	- Fax to Fax (Manual) - Fax to e-mail/Internet Fax/Fax (Relay transfer) - Fax to e-mail/FTP/Desktop/SMB (Inbound routing) - Fax to e-mail/FTP/Desktop/SMB (Inbound routing)
Internet Fax	- Internet Fax to internet FAX with (Manual) - Internet Fax to e-mail/FTP/Desktop/SMB (Inbound routing) - Internet Fax to e-mail/FTP/Desktop/SMB (Document Admin)

(2) Support system

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

(3) Support image

Mode		Support image
Scanner	File format (Monochrome)	TIFF, PDF, Encrypted PDF, XPS
	File format (Color/Grayscale)	Color TIFF, JPEG, PDF, PDF/A, Encrypted PDF, XPS
	Compression system (Monochrome)	Non-compression, G3 = MH (Modified Huffman) G4 = MMR (Modified MR)
	Compression system (Color/Grayscale)	JPEG (High/Middle/Low) High compression PDF
Internet Fax Direct SMTP	File format (Monochrome)	TIFF-FX (TIFF-F, TIFF-S)
	Compression system (Monochrome)	G3 = MH (Modified Huffman) G4 = MMR (Modified MR)
Fax	Compression system (Monochrome)	MH, MR, MMR, JBIG
Conversion for each page to a file (Available to quantity specification)		

(4) Item number of registration items

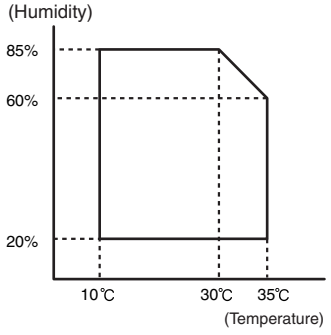
Item	No. of registration items
One-touch/Group	2000 items Max. number of registration items for one group (500 items)
Program	48 items
Memory box	Total of bulletin board / confidential letter / relay and broadcast: 100*1 / 30*2 items (Fax)
Sender registration	Fax, Internet Fax*1: 1 item
User list (Return address list)	Scanner: 1,000*1 / 200*2 items
Transfer table list	Fax, Internet Fax*1: 1 item
Sender selection	18 items
Item name	30 items
File name	30 items
Polling allow number	Fax: 10 items

(5) Image processing

Mode		Scanner	Internet Fax Direct SMTP	Fax
Original scanning color	Black-white	Yes	Yes	
	Grayscale	Yes	N/A	
	Full color	Yes	N/A	
	Auto Color Selection	Yes	N/A	
Halftone reproduction		Equivalent to 256 gradations levels		
Density adjustment	Auto	Yes		
	Manual	5 steps		
Original document type (Selectable in manual mode)	Text	Yes	N/A	
	Text/ Photograph	Yes	N/A	
	Text/ Printed photo	Yes	N/A	
	Photograph	Yes	N/A	
	Printed photo	Yes	N/A	
	Map	Yes	N/A	
Selection of image quality		N/A	Halftone (Black-white only) ON/OFF	
Resolution (depends on file format/ transmission method)		100 x 100dpi	200 x 100dpi (Halftone not allowed)	Normal text (203.2 x 97.8dpi) (Halftone not allowed)
		200 x 200dpi	200 x 200dpi	Fine (203.2 x 195.6dpi)
		300 x 300dpi	200 x 400dpi	Super Fine (203.2 x 391dpi)
		400 x 400dpi	400 x 400dpi	Ultra Fine (406.4 x 391dpi)
		600 x 600dpi	600 x 600dpi	N/A

J. Ambient conditions

(1) Working environment

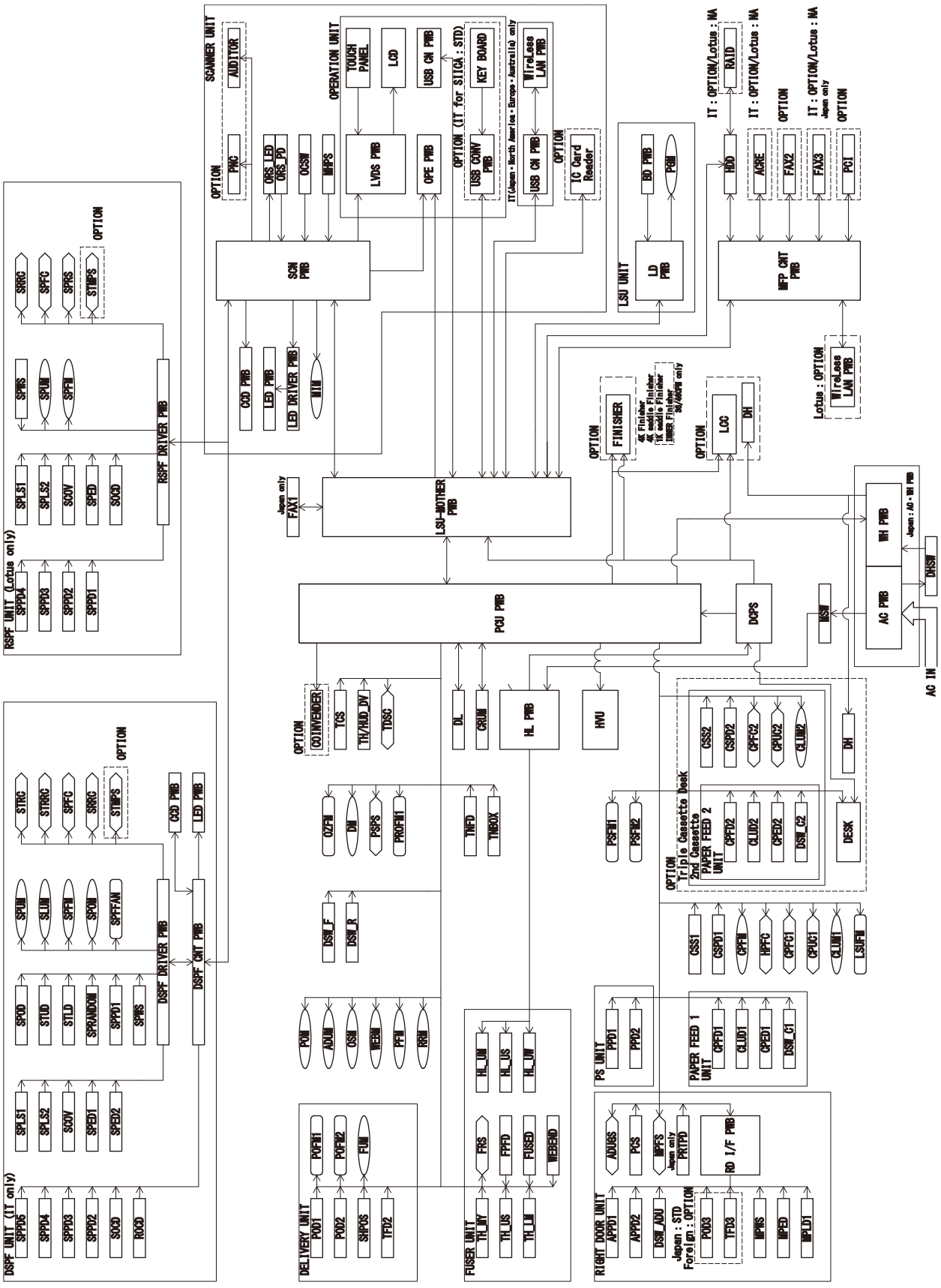


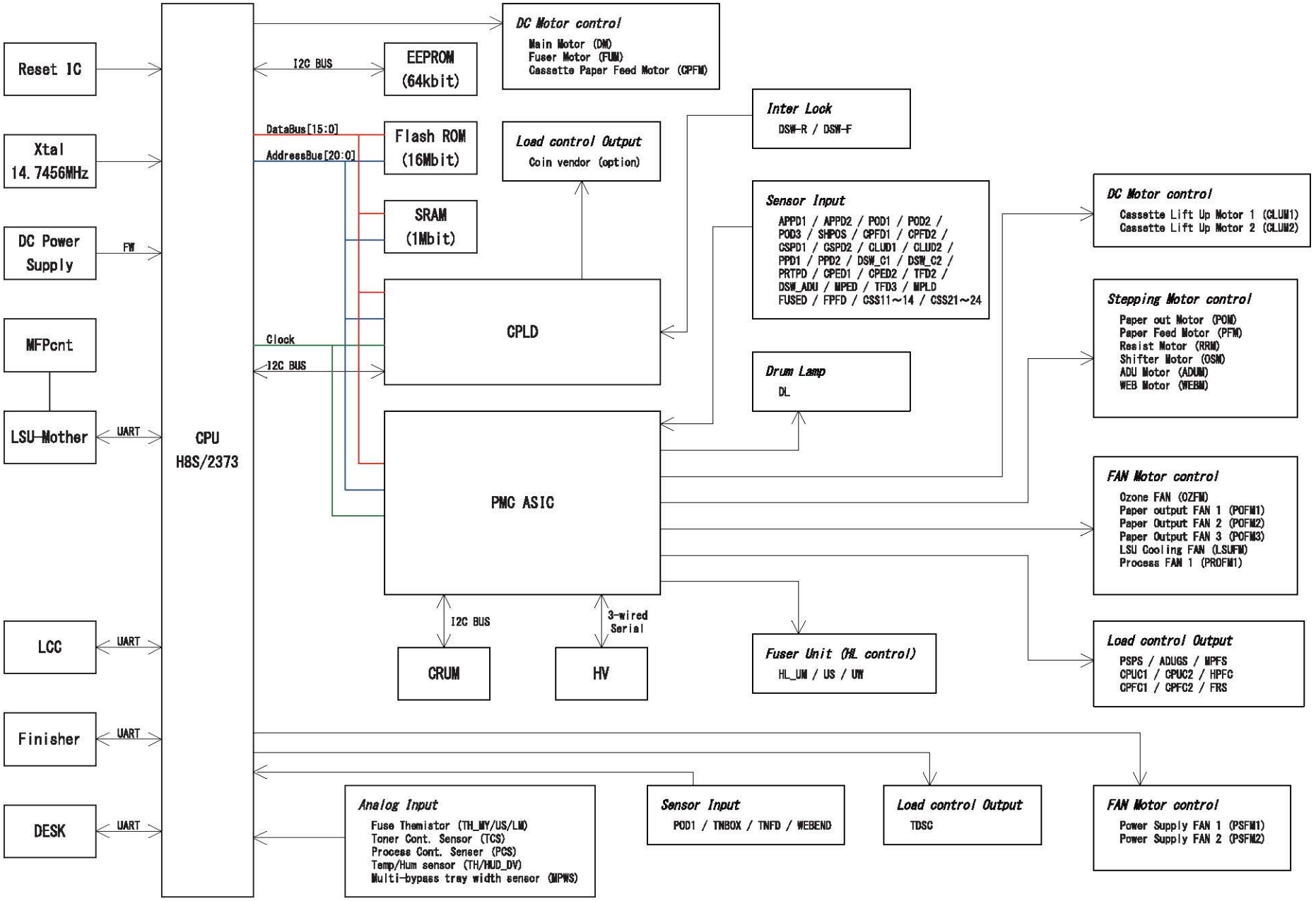
Standard environmental conditions	Temperature	20 – 25 °C
	Humidity	65 ± 5 %RH
Usage environmental conditions	Temperature	10 – 35 °C
	Humidity	20 – 85 %RH
	Atmospheric pressure	590 – 1013 hPa (height: 0 – 2000m)
Storage period	Toner/Developer: 24 months from the manufactured month (Production lot) under unsealed state Drum: 36 months from the manufactured month under unsealed state	

[12] ELECTRICAL SECTION

1. Block diagram

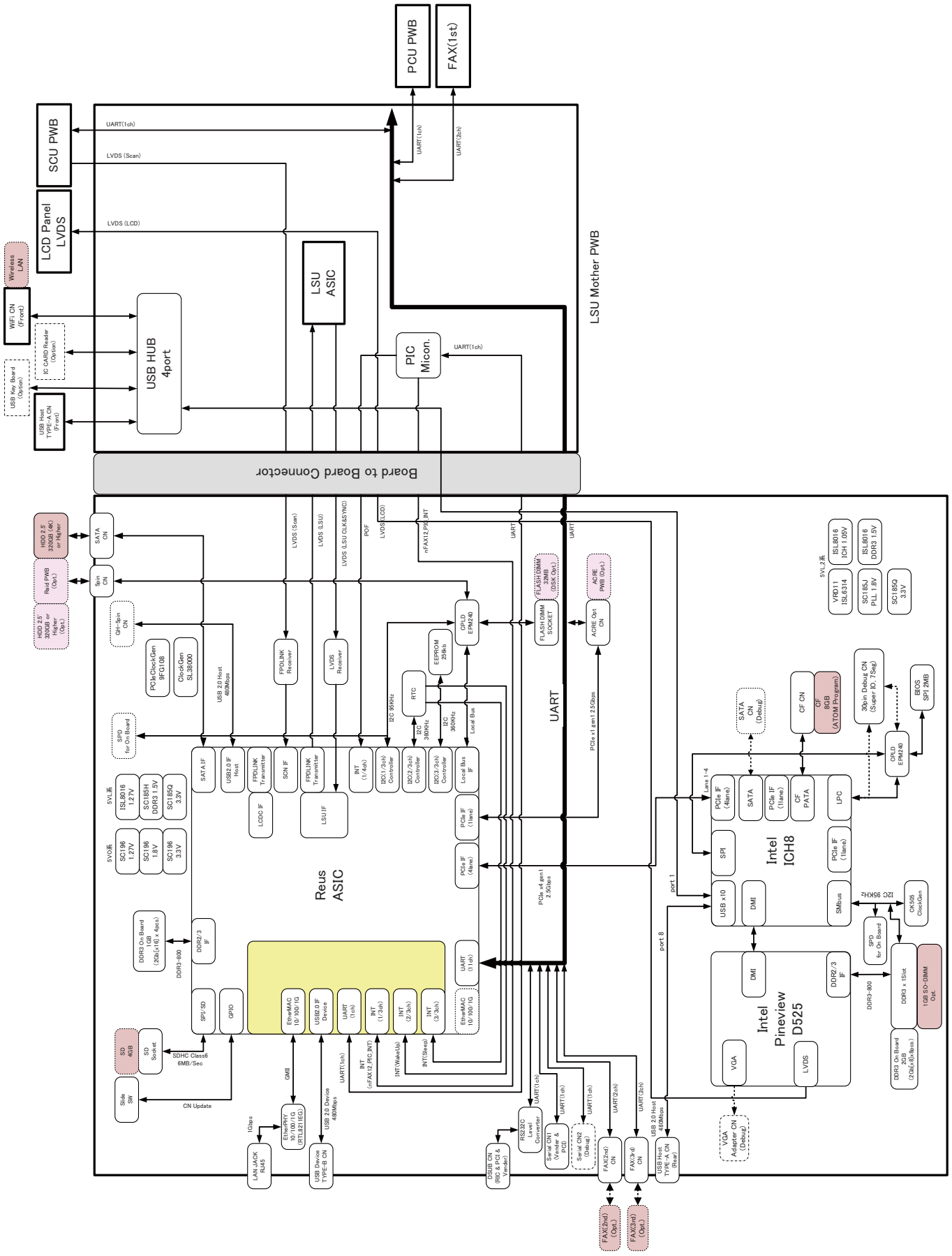
A. System block diagram

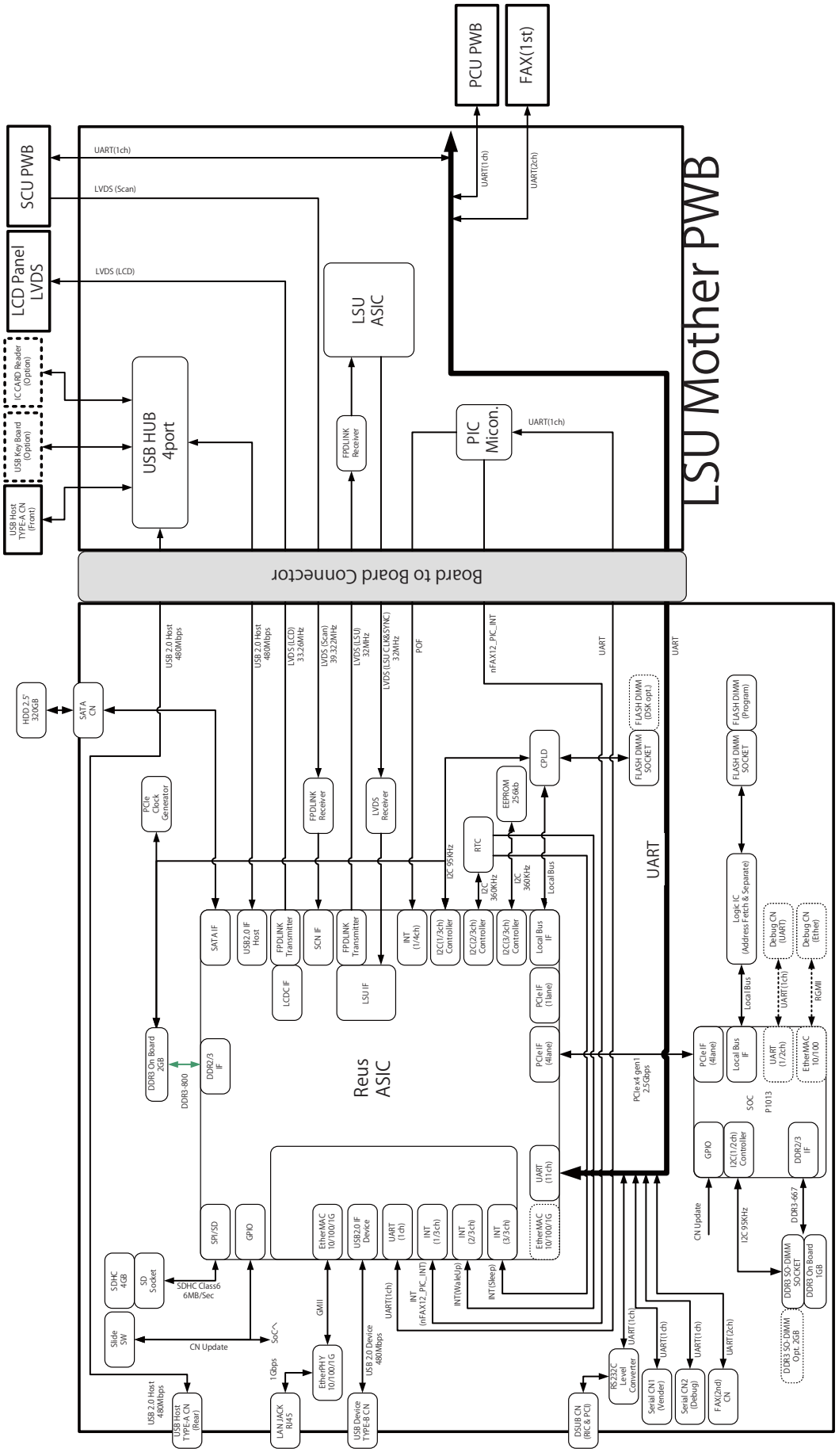



Reset IC
Xtal
14.7456MHz
DC Power Supply
FW
MFPcnt
LSU-Mother
UART
LCC
UART
Finisher
UART
DESK
UART
CPU
H8S/2373
I2C BUS
EEPROM
(64kbit)
DataBus[15:0]
AddressBus[20:0]
Flash ROM
(16Mbit)
SRAM
(1Mbit)
Clock
I2C BUS
CPLD
PMC ASIC
I2C BUS
CRUM
3-wired Serial
HV
DC Motor control
Main Motor (DM)
Fuser Motor (FUM)
Cassette Paper Feed Motor (CPFM)
Load control Output
Coin vendor (option)
Inter Lock
DSW-R / DSW-F
Sensor Input
APPD1 / APPD2 / POD1 / POD2 /
POD3 / SHPOS / CPFD1 / CPFD2 /
CSPD1 / CSPD2 / CLUD1 / CLUD2 /
PPD1 / PPD2 / DSW_C1 / DSW_C2 /
PRTPD / CPED1 / CPED2 / TFD2 /
DSW_ADU / MPED / TFD3 / MPLD
FUSED / FPFD / CSS11~14 / CSS21~24
Drum Lamp
DL
Fuser Unit (HL control)
HL_UM / US / UW
DC Motor control
Cassette Lift Up Motor 1 (CLUM1)
Cassette Lift Up Motor 2 (CLUM2)
Stepping Motor control
Paper out Motor (POM)
Paper Feed Motor (PFM)
Resist Motor (RRM)
Shifter Motor (OSM)
ADU Motor (ADUM)
WEB Motor (WEBM)
FAN Motor control
Ozone FAN (OZFM)
Paper output FAN 1 (POFM1)
Paper Output FAN 2 (POFM2)
Paper Output FAN 3 (POFM3)
LSU Cooling FAN (LSUFM)
Process FAN 1 (PROFM1)
Load control Output
PSPS / ADUGS / MPFS
CPUC1 / CPUC2 / HPFC
CPFC1 / CPFC2 / FRS
Analog Input
Fuse Themistor (TH_MY/US/LM)
Toner Cont. Sensor (TCS)
Process Cont. Senser (PCS)
Temp/Hum sensor (TH/HUD_DV)
Multi-bypass tray width sensor (MPWS)
Sensor Input
POD1 / TNBOX / TNFD / WEBEND
Load control Output
TDSC
FAN Motor control
Power Supply FAN 1 (PSFM1)
Power Supply FAN 2 (PSFM2)

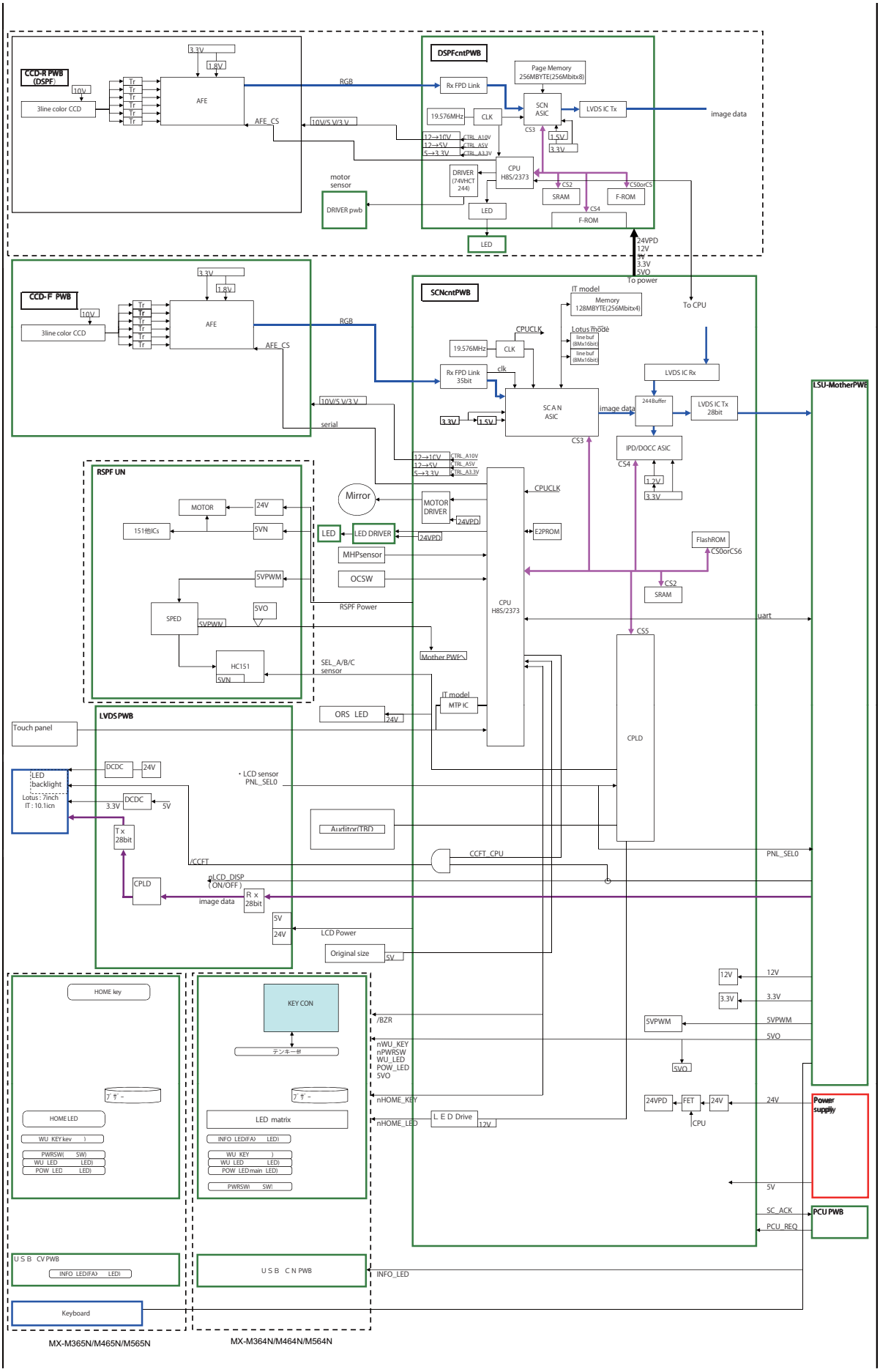
C. MFP control PWB

MX-M365N/M465N/M565N series

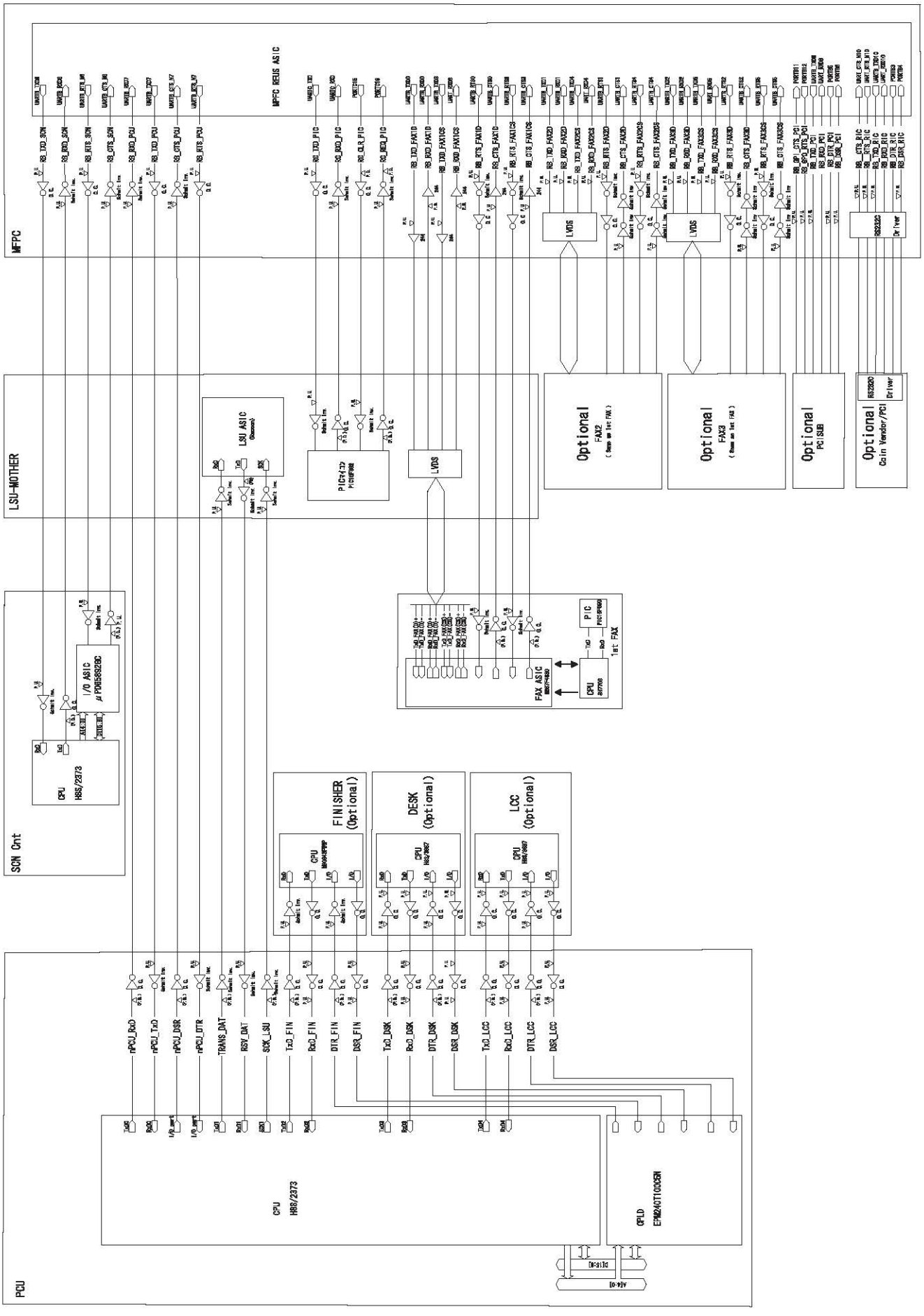



PCU PWB
FAX(1st)
SCU PWB
LCD Panel LVDS
IC CARD Reader (Option)
USB Key Board (Option)
USB Host TYPE-A CN (Front)
USB HUB 4port
LSU ASIC
PIC Micon.
LSU Mother PWB
Board to Board Connector
UART(1ch)
LVDS (Scan)
LVDS (LCD)
UART(2ch)
FPDLINK Receiver
HDD 2.5" 320GB
SATA CN
PCIe Clock Generator
DDR3 On Board 2GB
DDR3-800
DDR2/3 IF
Reus ASIC
SATA I/F
USB2.0 I/F Host
FPDLINK Transmitter
SCN I/F
LCDC I/F
LSU I/F
INT (1/4ch)
I2C1(3ch) Controller
I2C2(3ch) Controller
I2C3(3ch) Controller
Local Bus I/F
PCIe I/F (1lane)
PCIe I/F (4lane)
UART (11ch)
SPI/SD
GPIO
EtherMAC 10/100/1G
USB2.0 I/F Device
UART (1ch)
INT (1/3ch)
INT (2/3ch)
INT (3/3ch)
SDHC 4GB
SD Socket
SDHC Class6 6MB/Sec
Slide SW
CN Update
EtherPHY 10/100/1G
1Gbps
GMII
USB 2.0 Host 480Mbps
USB Host TYPE-A CN (Rear)
LAN JACK RJ45
USB Device TYPE-B CN
USB 2.0 Device 480Mbps
UART(1ch)
INT (nFAX12_PIC_INT)
INT(WakeUp)
INT(Sleep)
RS-232C Level Converter
Serial CN1 (Vender)
Serial CN2 (Debug)
FAX(2nd) CN
DSUB CN (RIC & PCI)
UART(1ch)
UART(2ch)
USB 2.0 Host 480Mbps
LVDS (LCD) 33.26MHz
LVDS (Scan) 39.322MHz
LVDS (LSU) 32MHz
LVDS (LSU CLK&SYNC) 32MHz
POF
nFAX12_PIC_INT
UART
I2C 95KHz
RTC
EEPROM 256kb
CPLD
I2C 360KHz
Local Bus
FLASH DIMM SOCKET
FLASH DIMM (DSK opt.)
FLASH DIMM (Program)
Logic IC (Address Fetch & Separate)
Debug CN (UART)
Debug CN (Ether)
UART(11ch)
RGMII
PCIe x4 gen1 2.5Gbps
SOC P1013
Local Bus I/F
UART (1/2ch)
EtherMAC 10/100
GPIO
I2C(1/2ch) Controller
DDR2/3 IF
CN Update
I2C 95KHz
DDR3-667
DDR3 SO-DIMM SOCKET
DDR3 On Board 1GB
DDR3 SO-DIMM Opt. 2GB

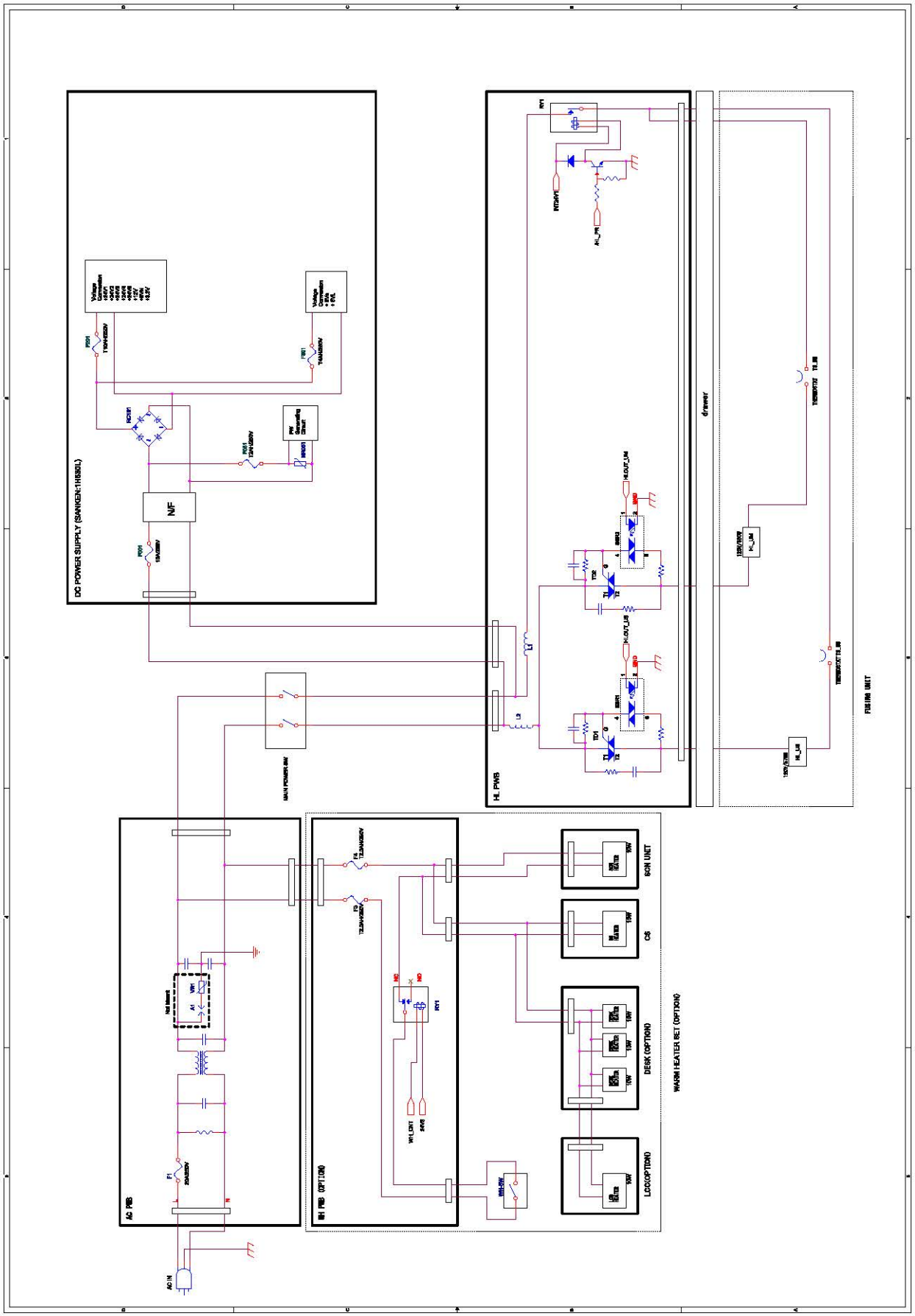
D. Scanner PWB



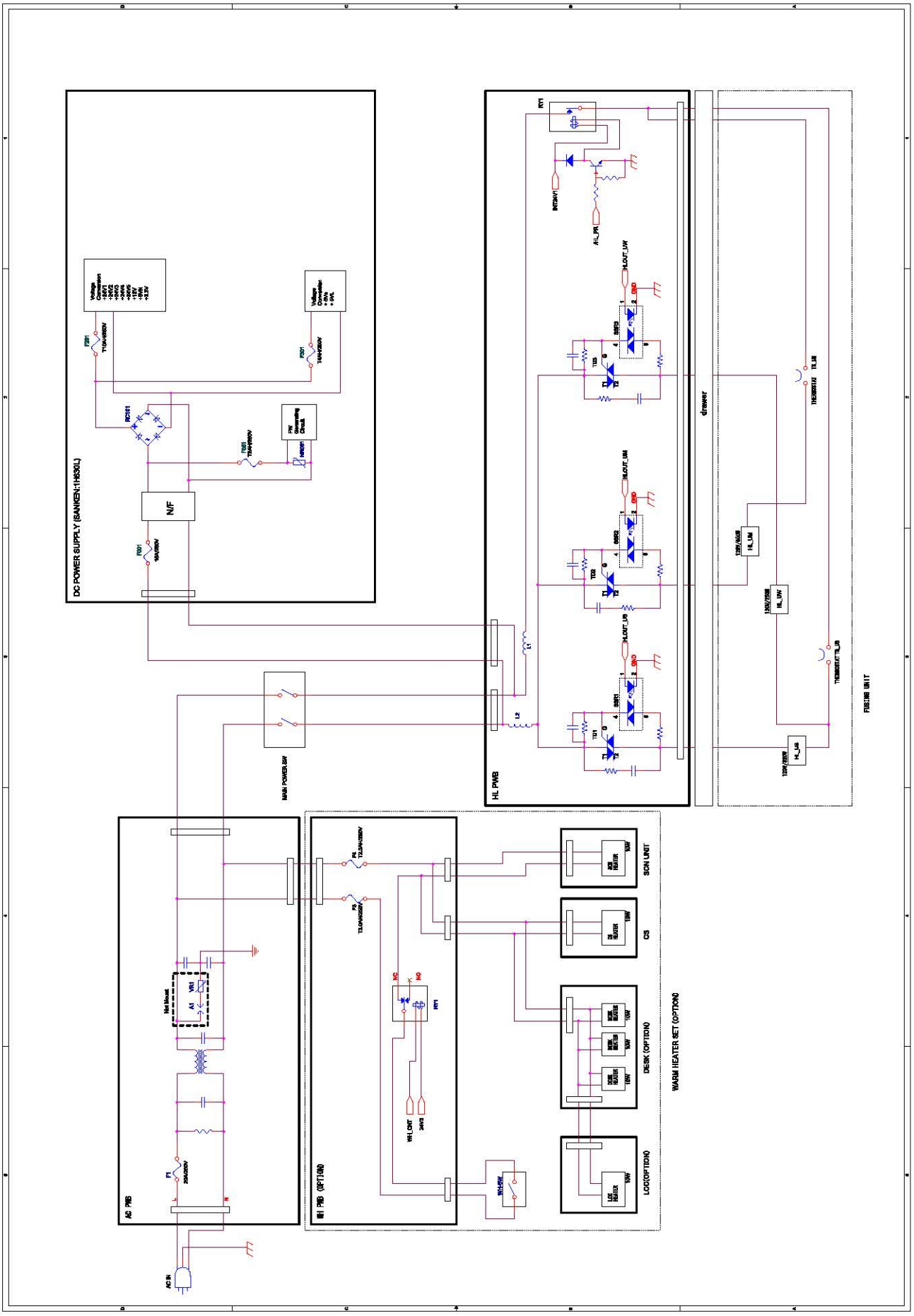
E. Serial communication



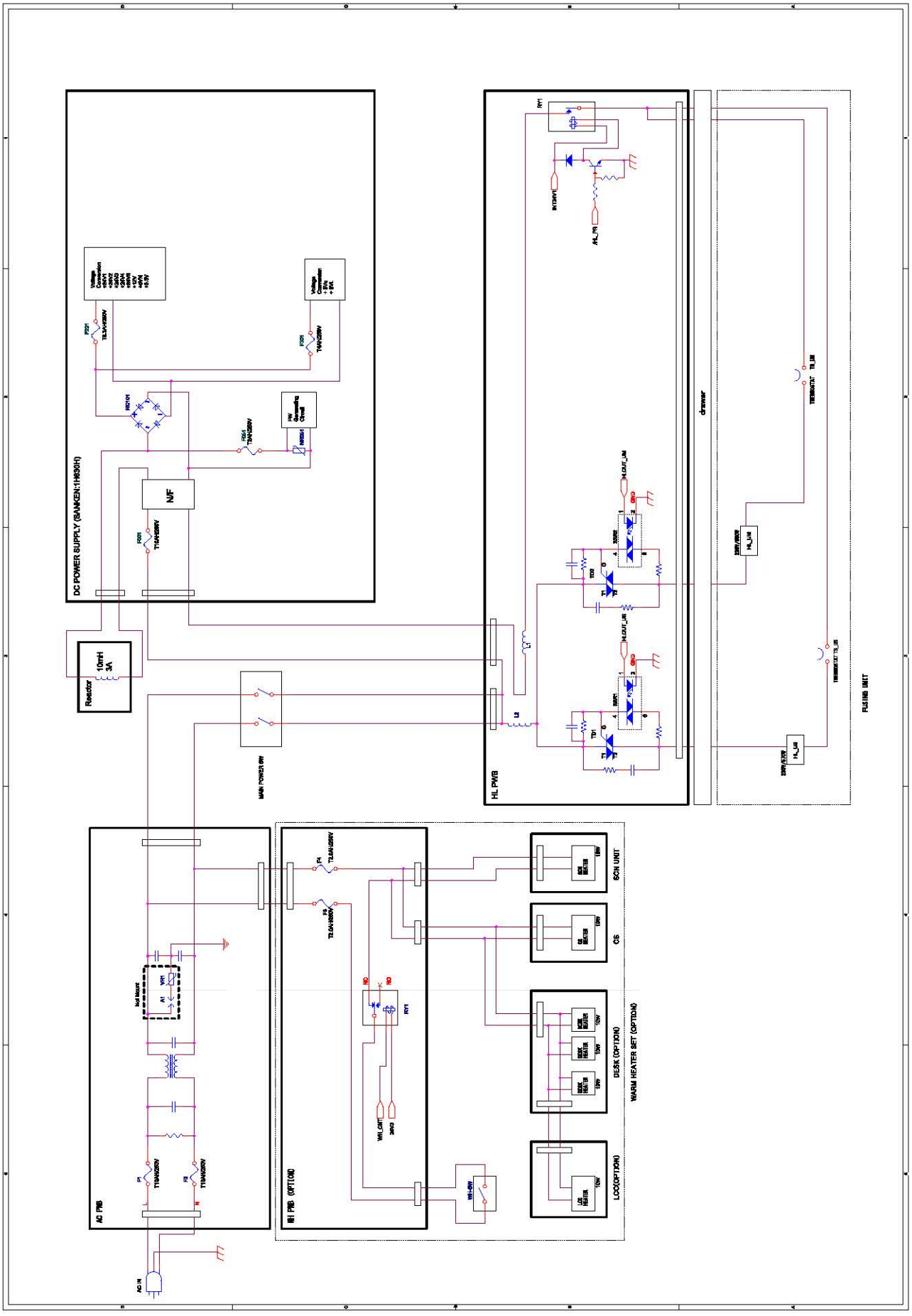
F. AC power line diagram (36cpm machine) (100V)



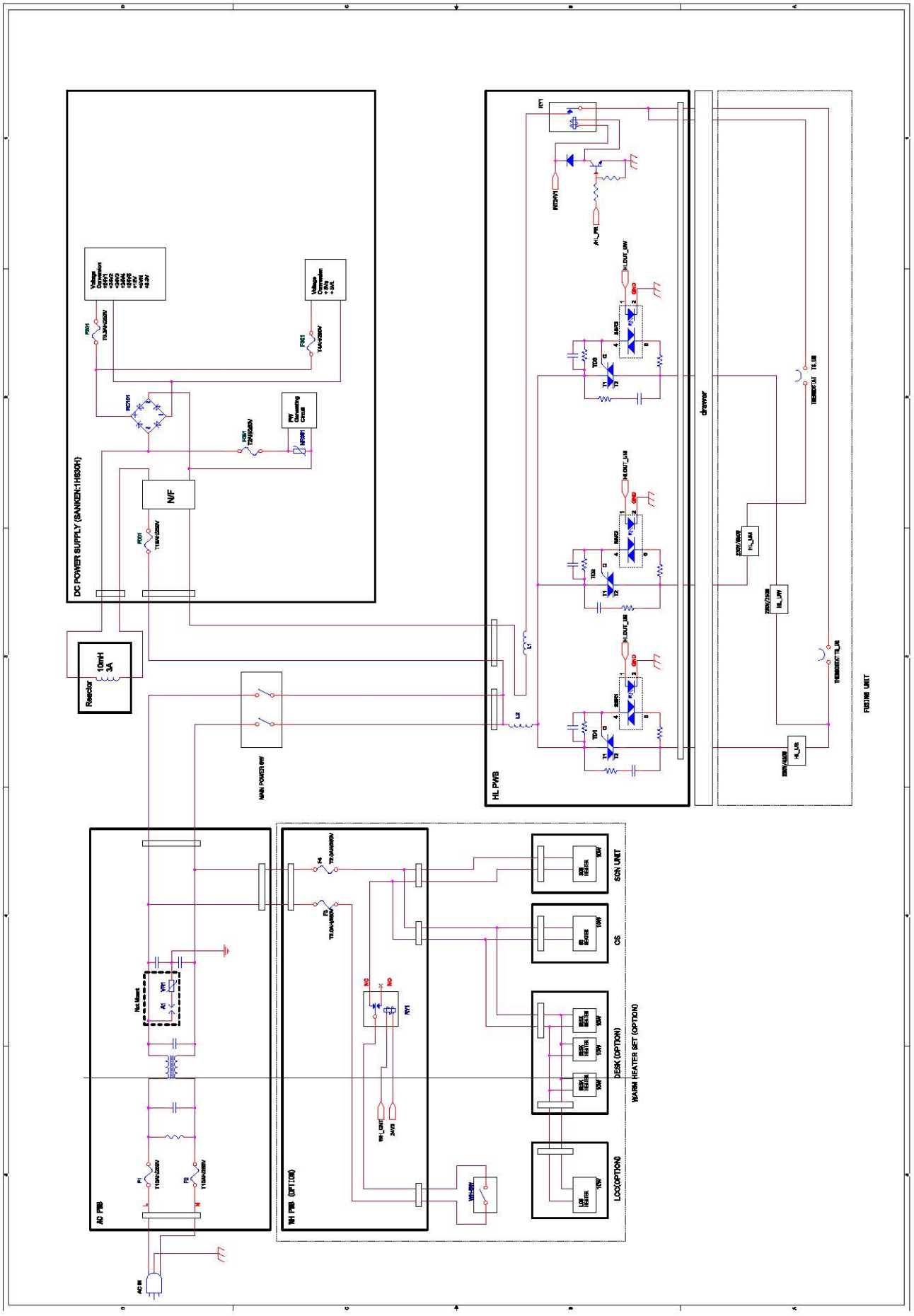
G. AC power line diagram (46/56cpm machine) (100V)



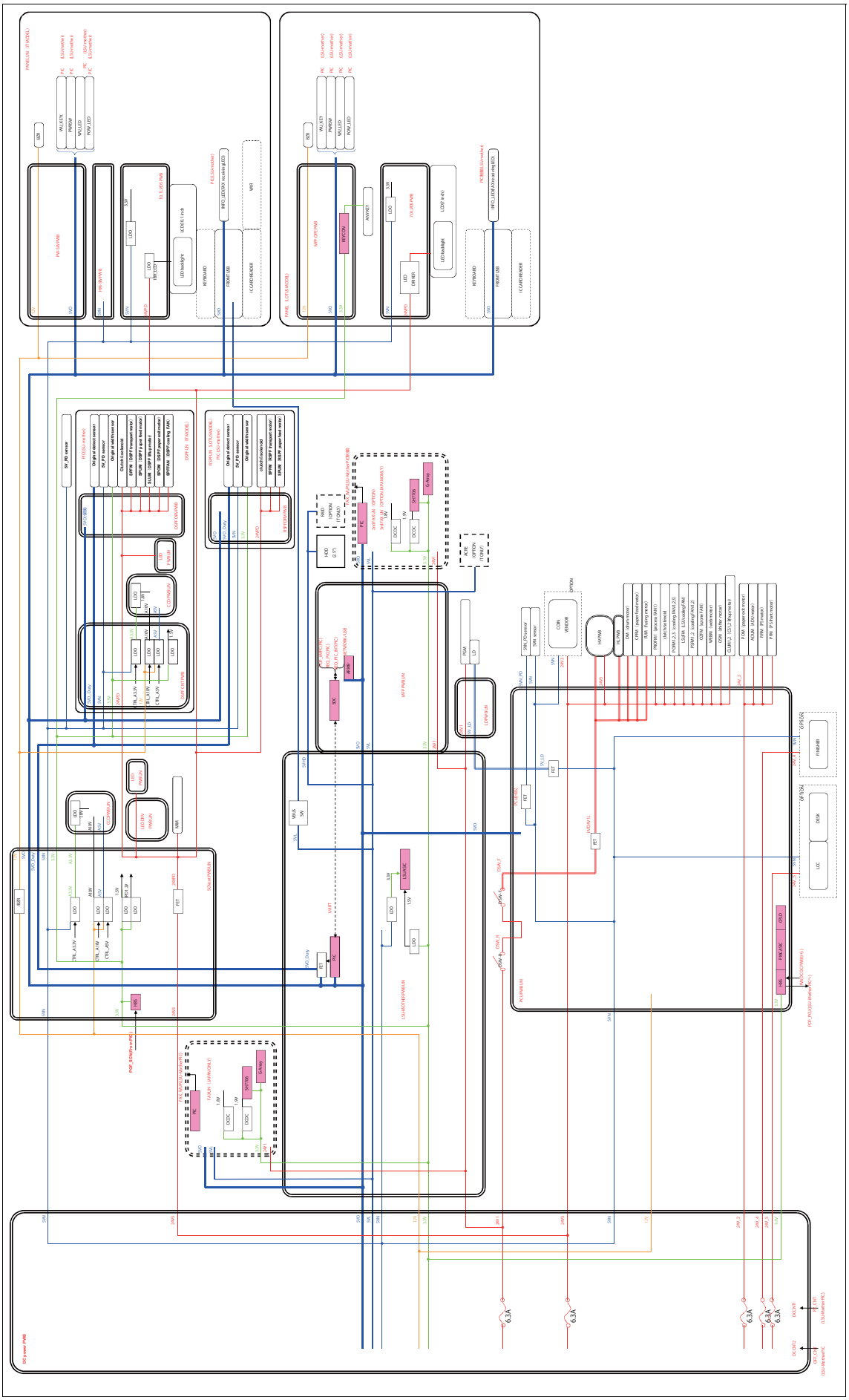
H. AC power line diagram (36cpm machine) (200V)



I. AC power line diagram (46/56cpm machine) (200V)

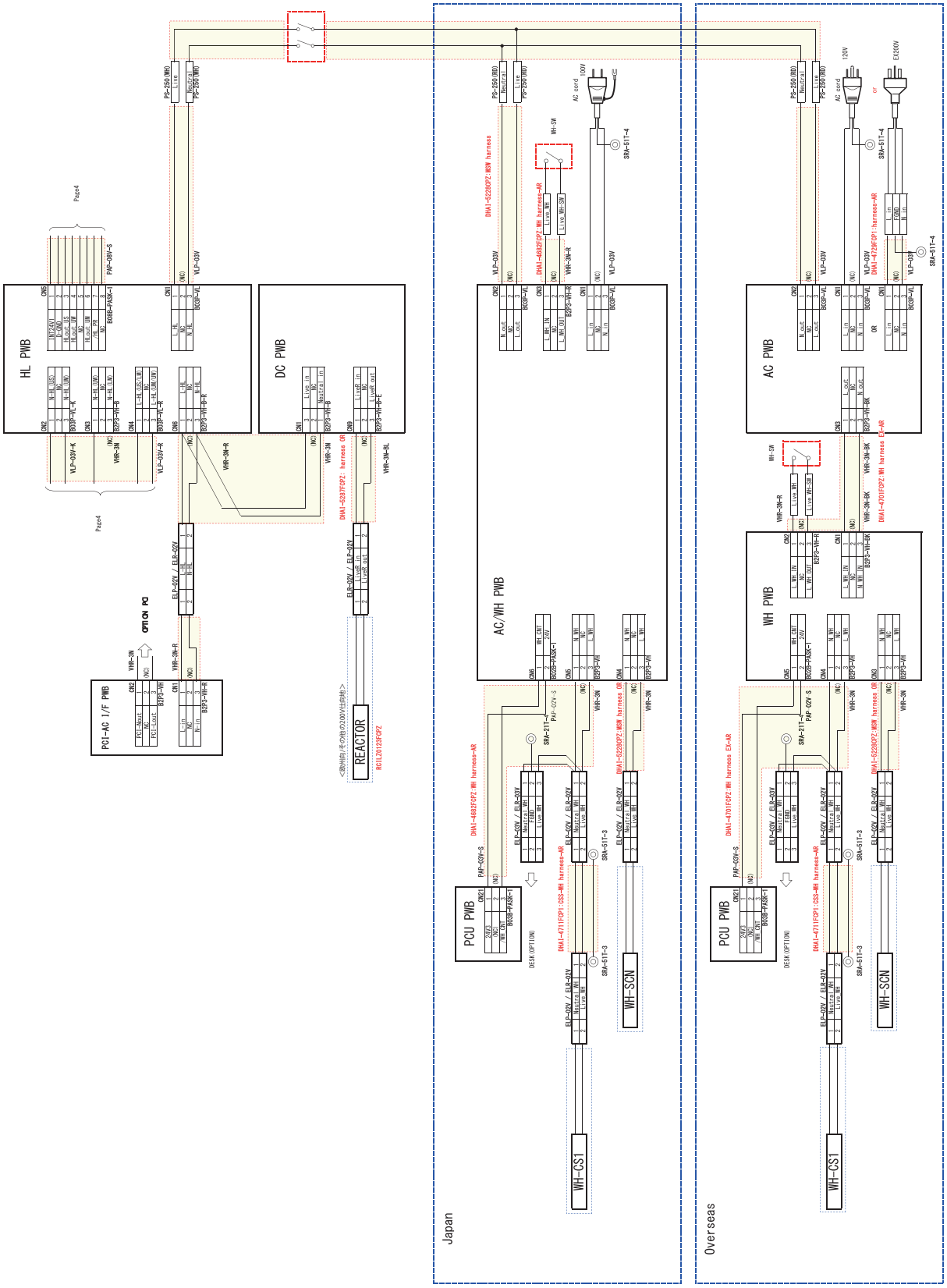


J. DC power line diagram

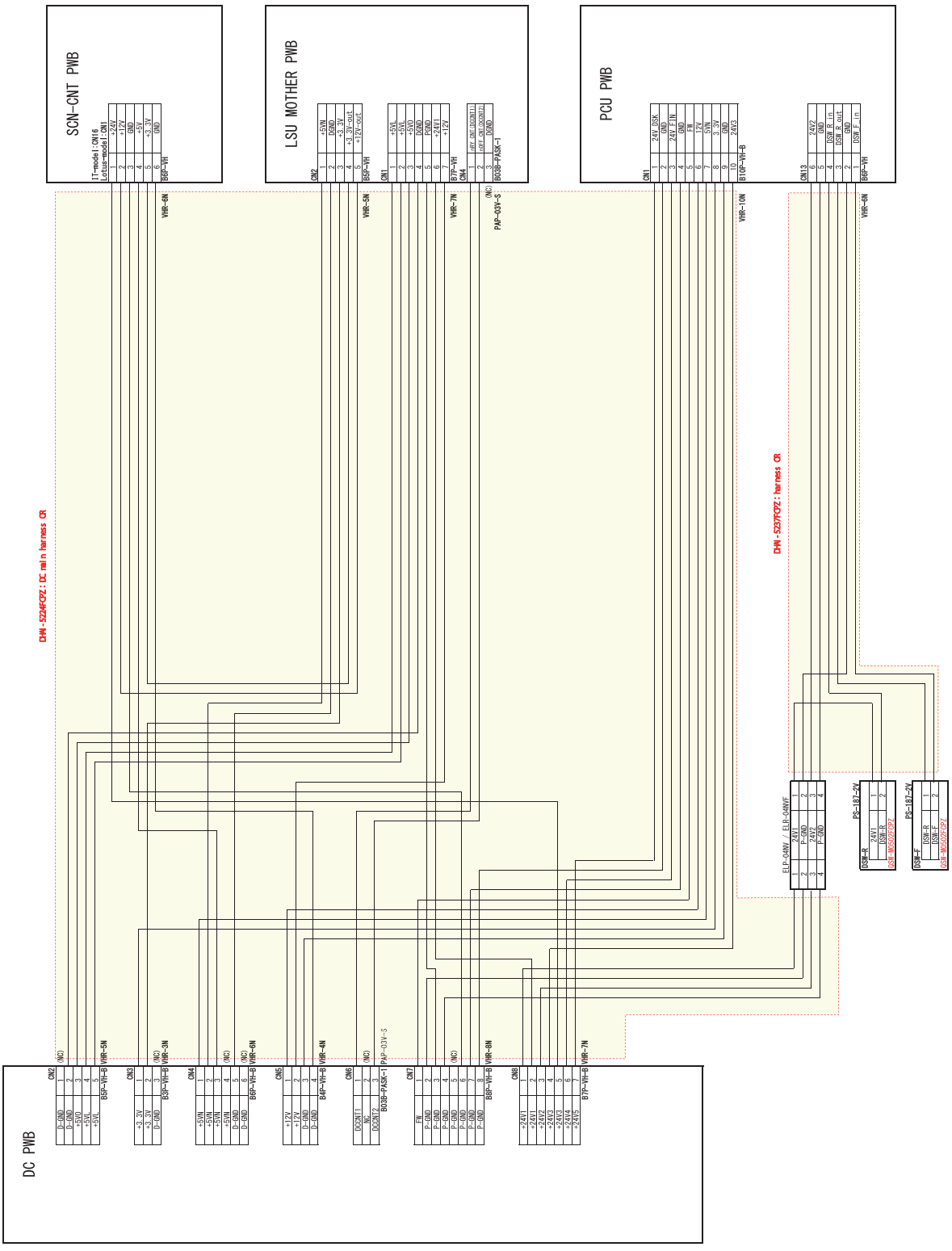


2. Actual wiring chart

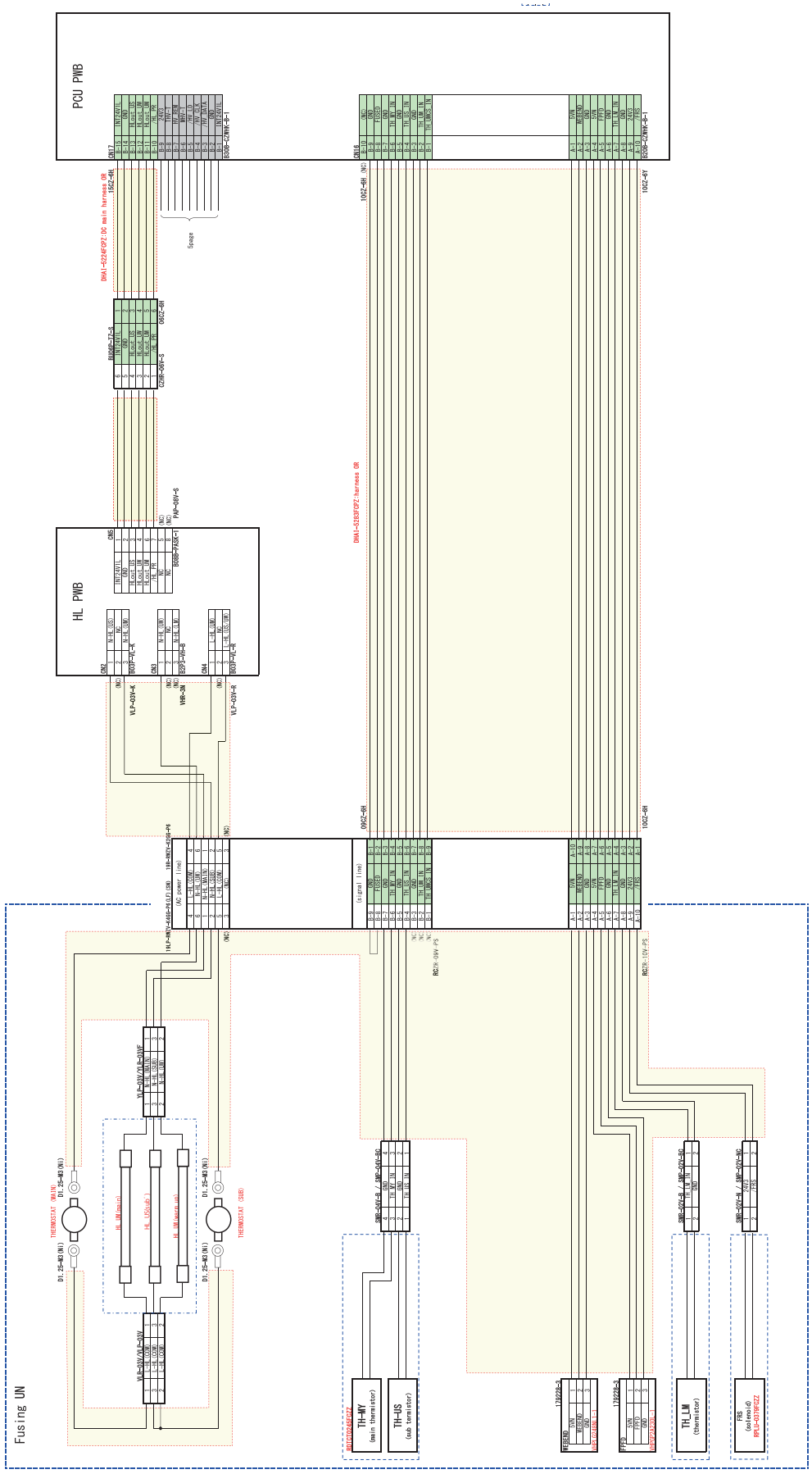
A. AC Power supply section (P1)



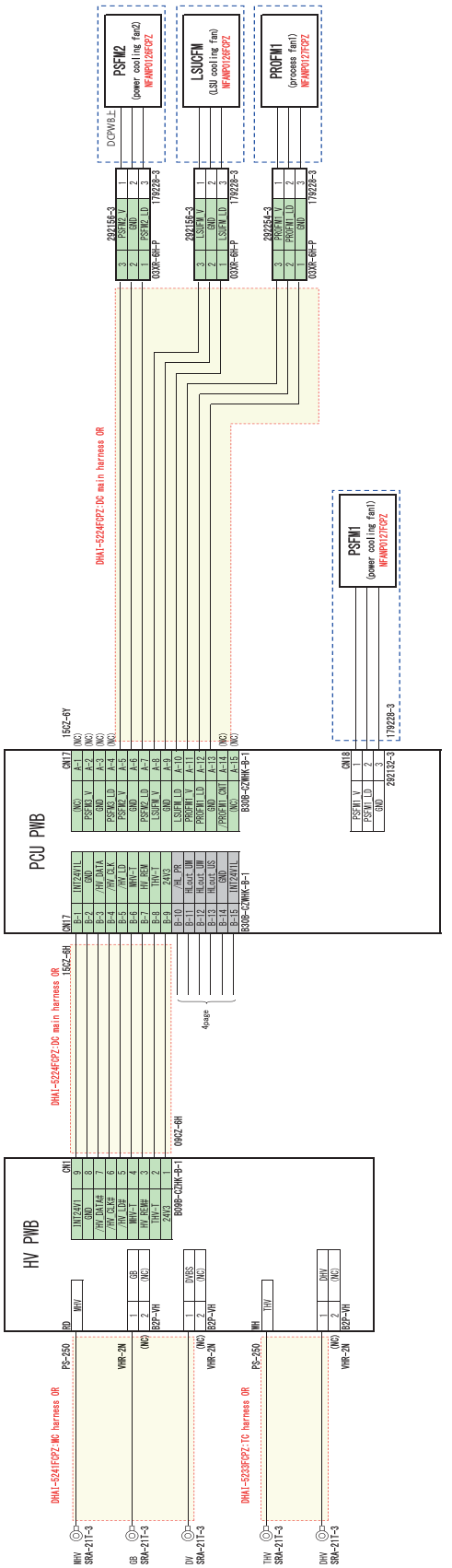
B. DC Power supply section (P2)



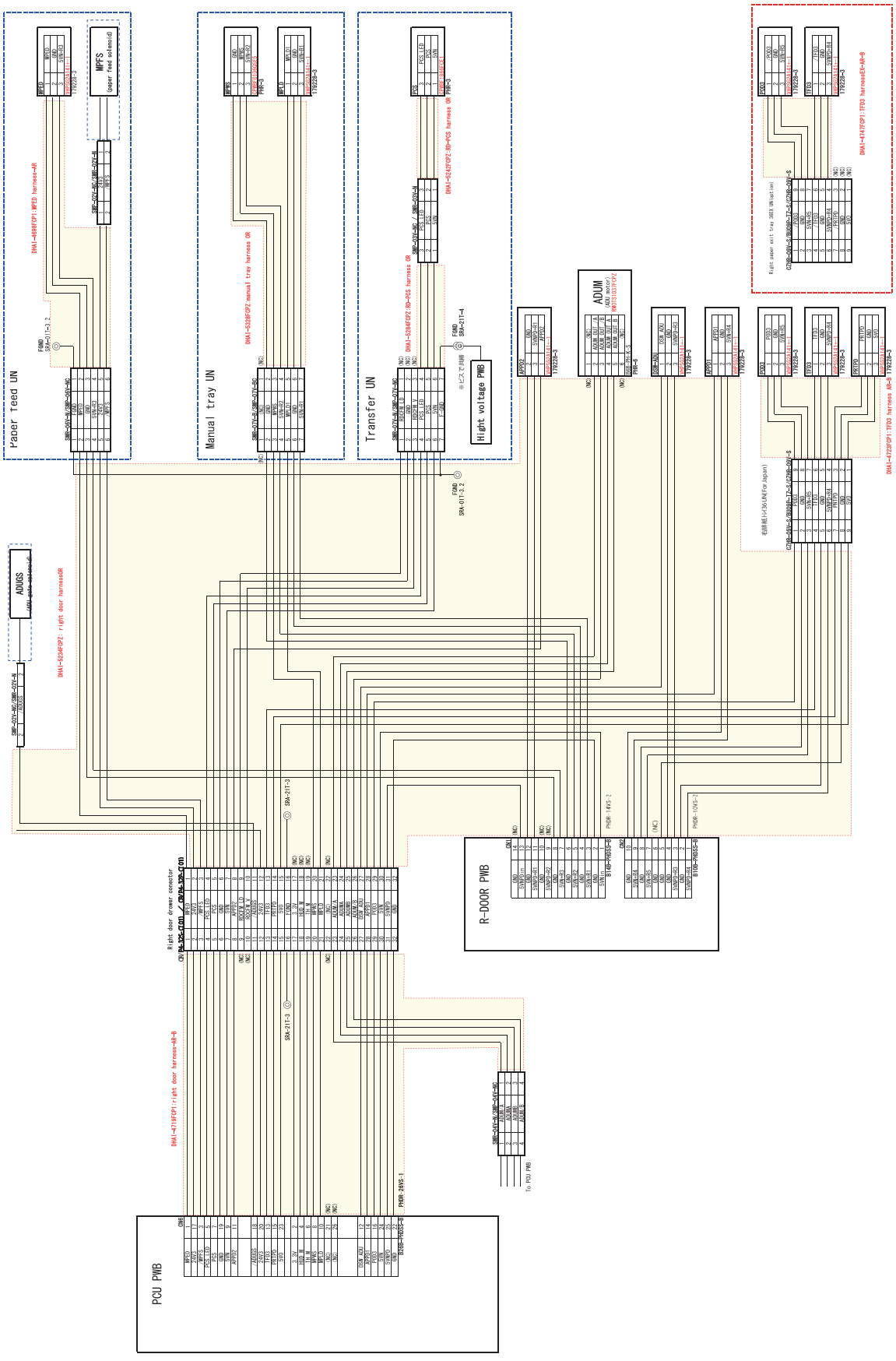
C. Fuser unit section (P3)



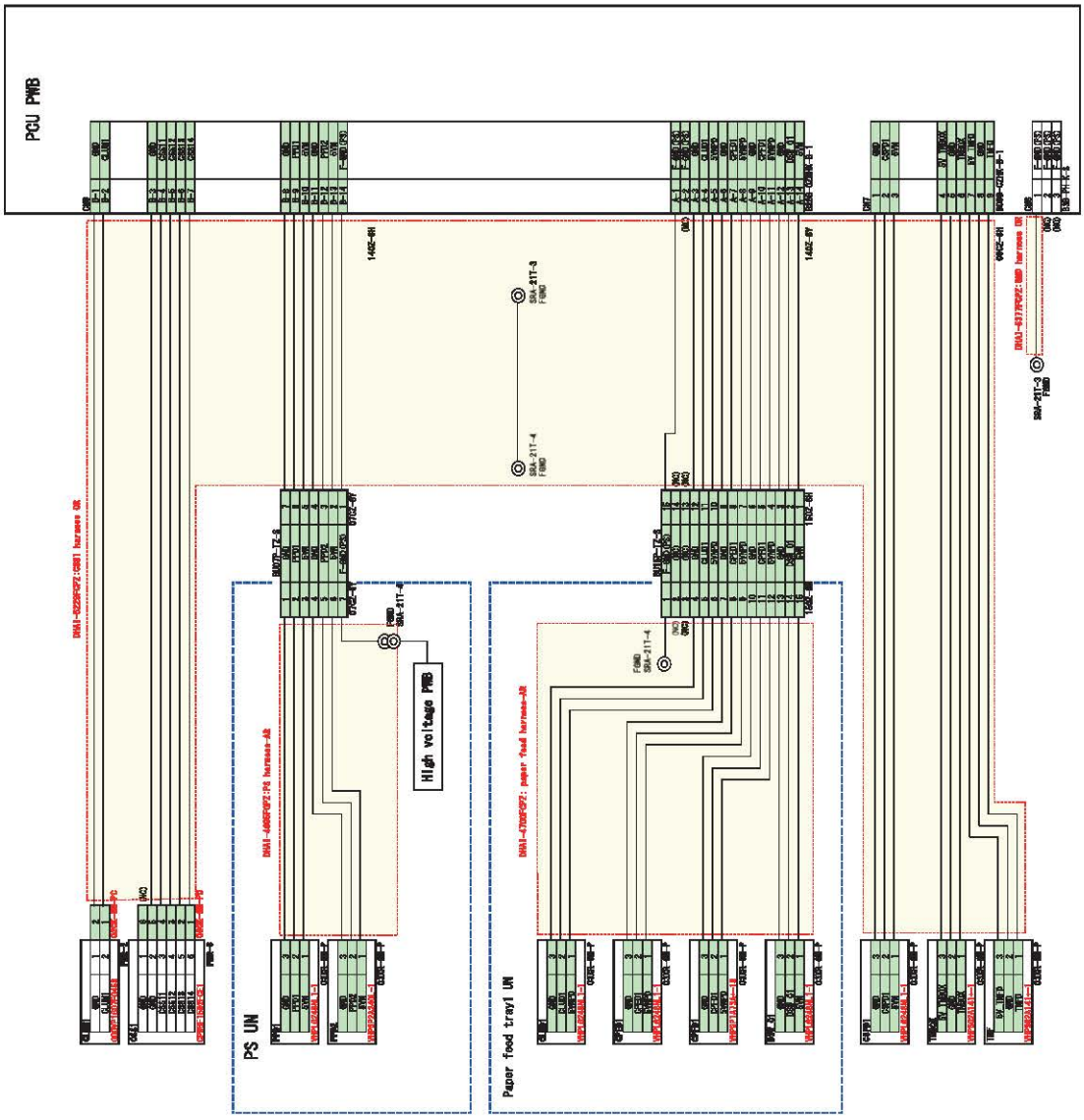
D. High voltage section, Fan section (P4)



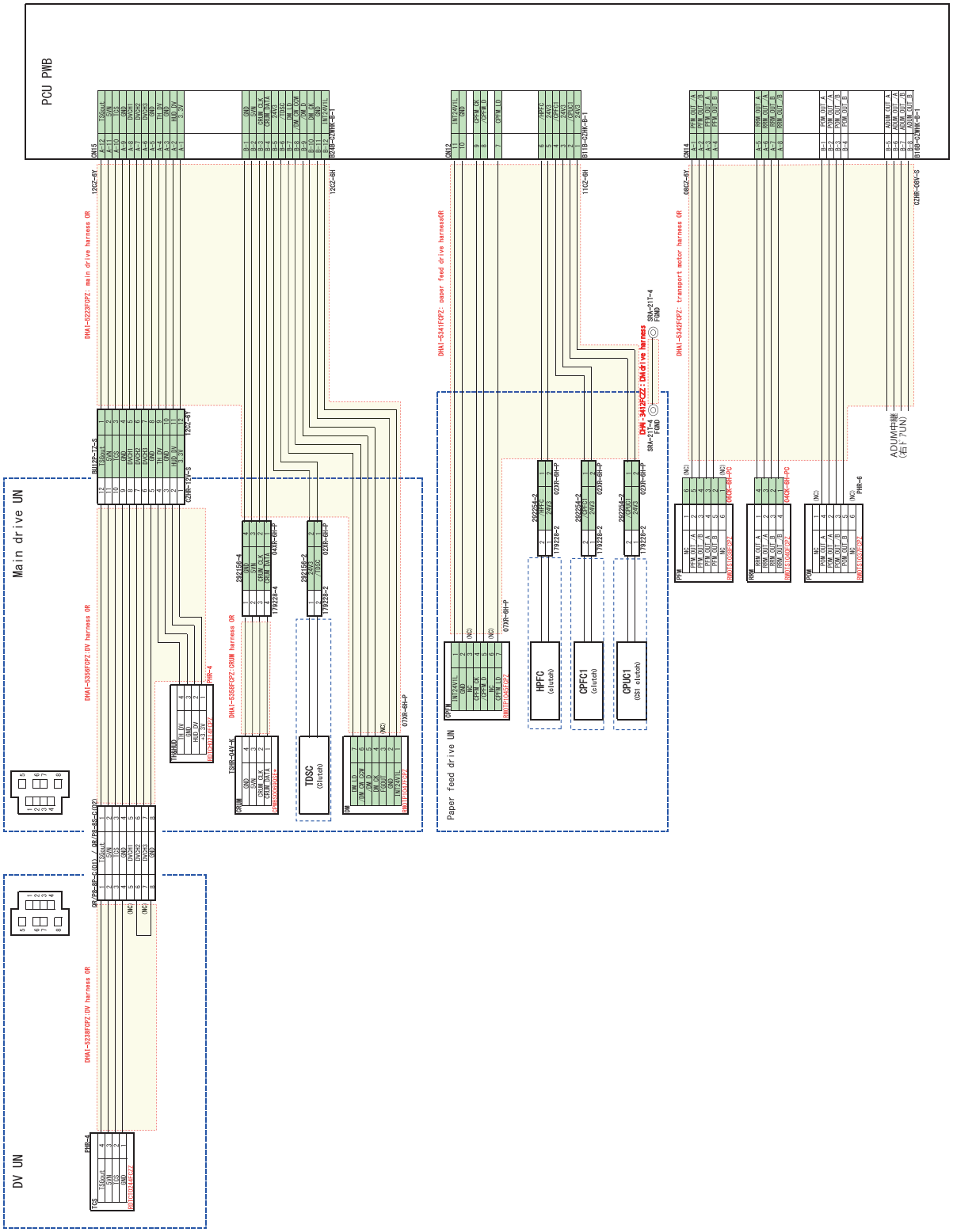
E. Right door unit section, Manual paper feed unit section (P5)



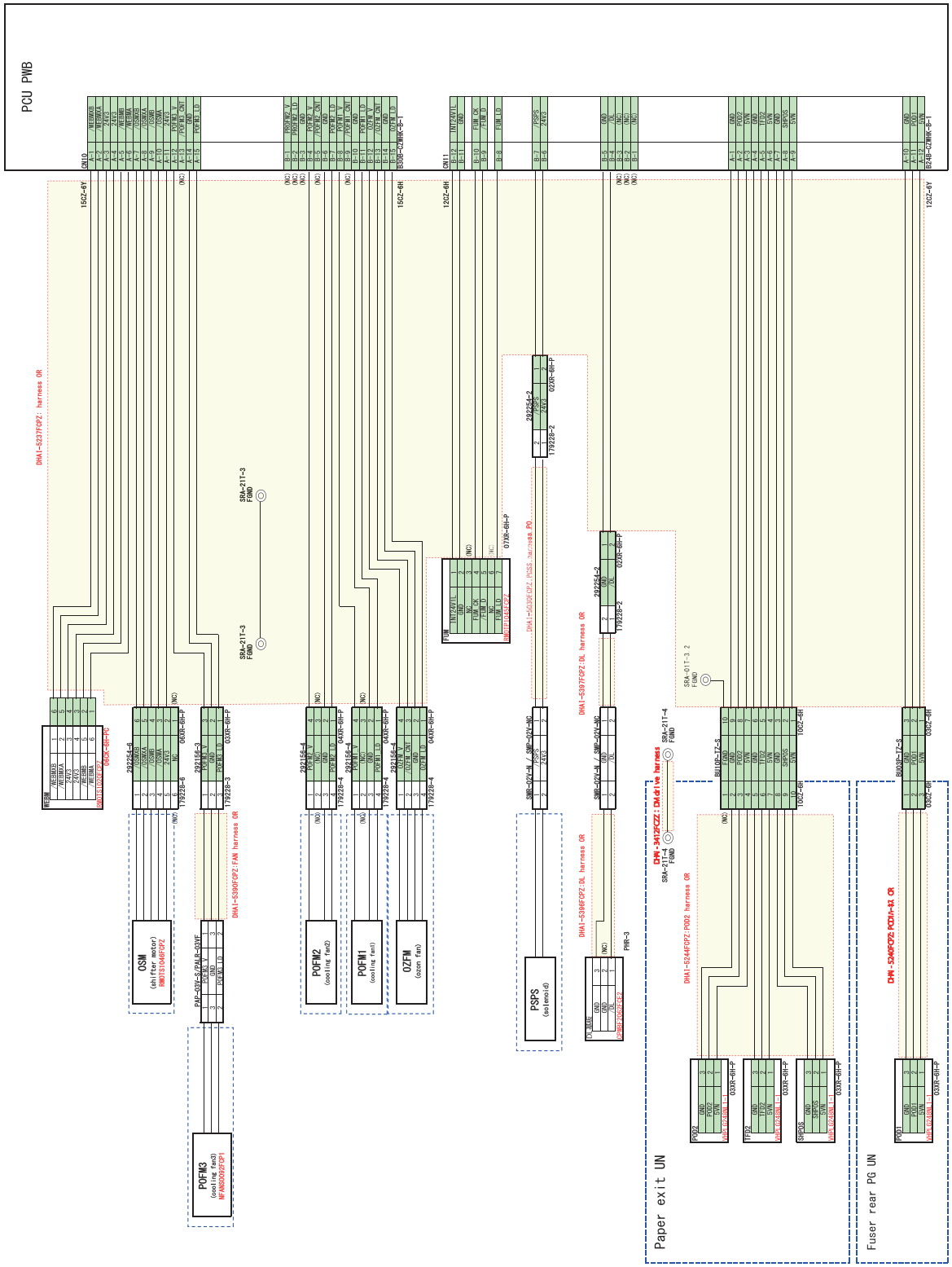
F. Paper feed unit section, PS unit section (P6)



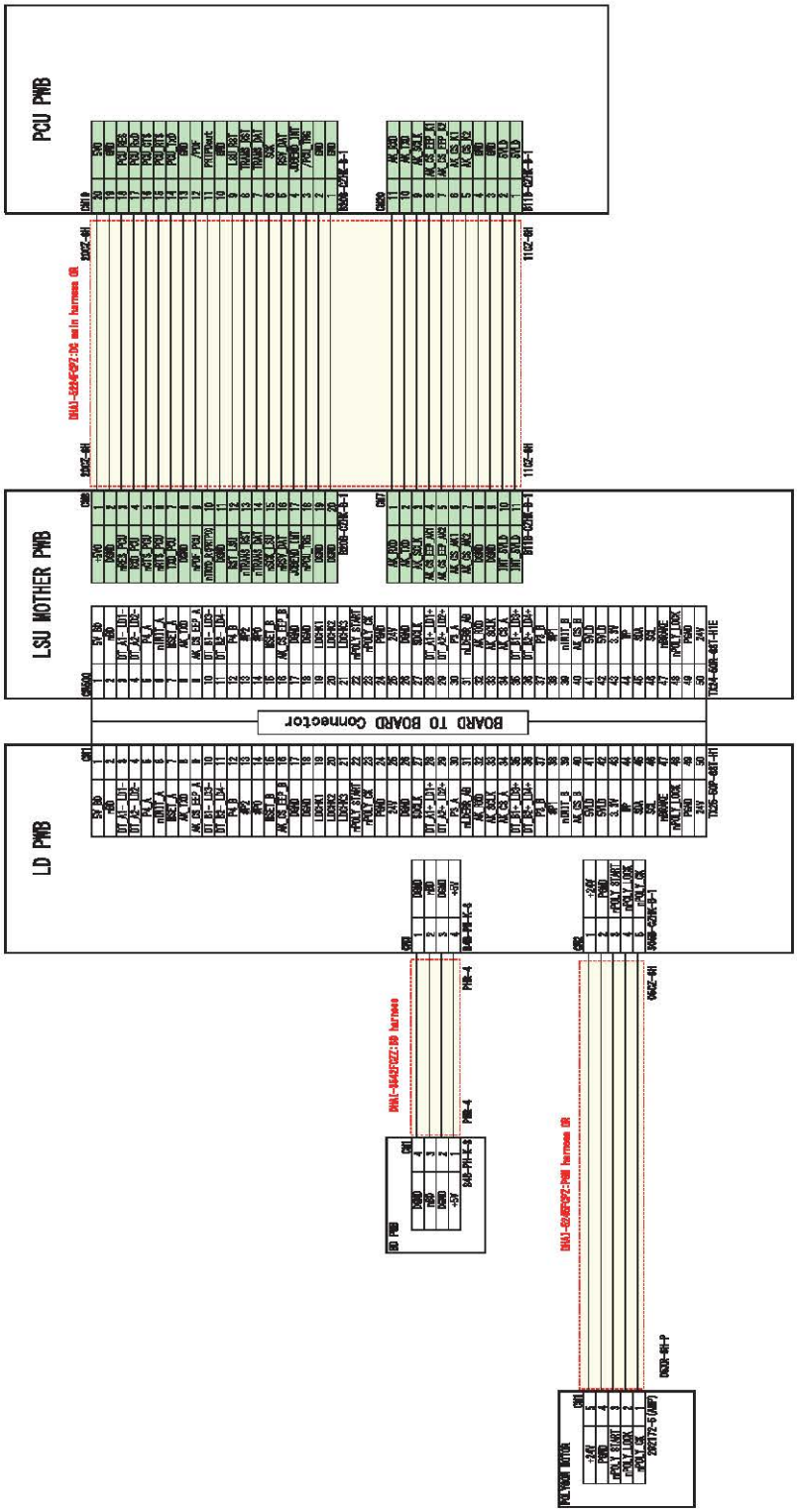
G. DV unit section, Stepping motor section (P7)



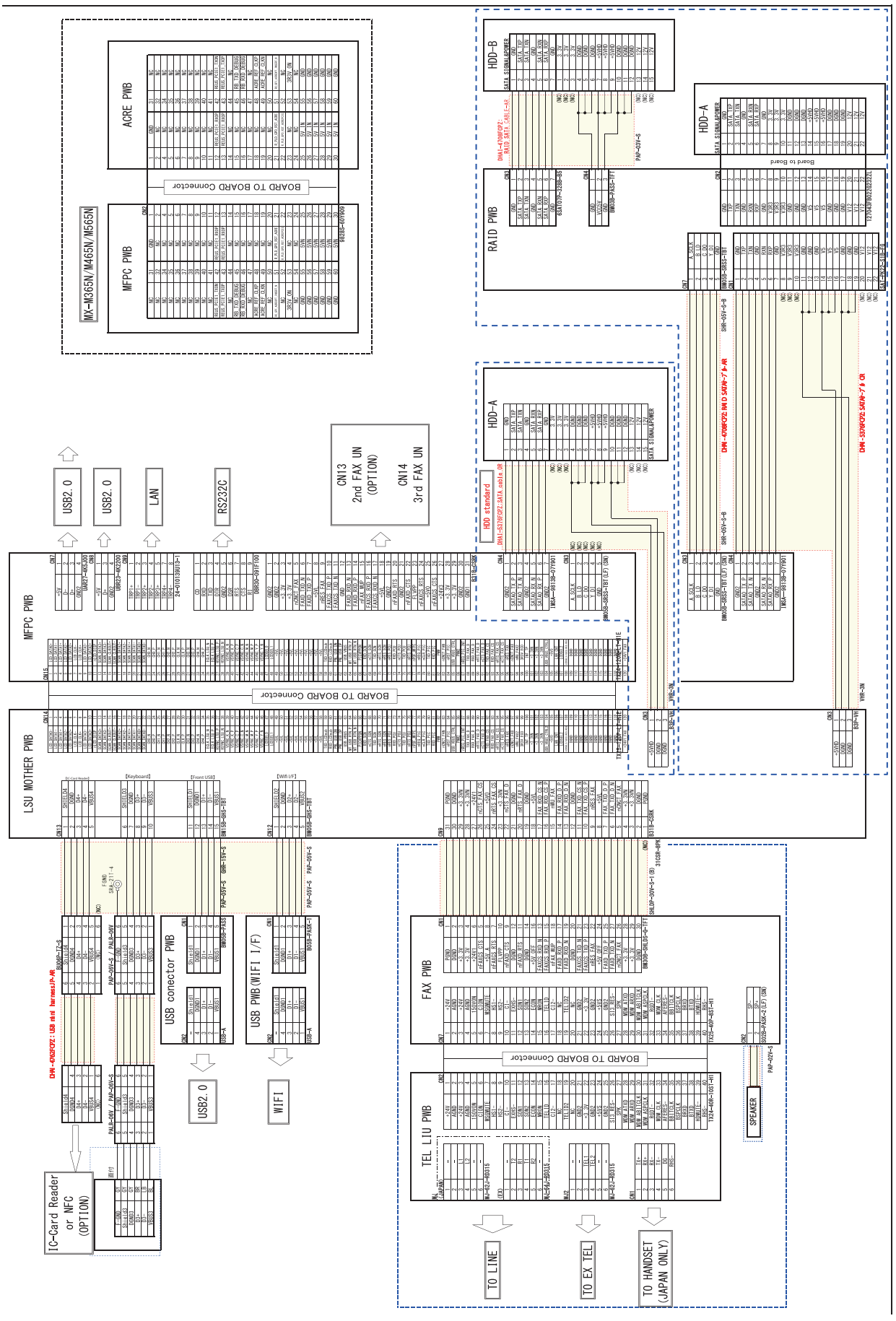
H. Paper delivery unit section (P8)



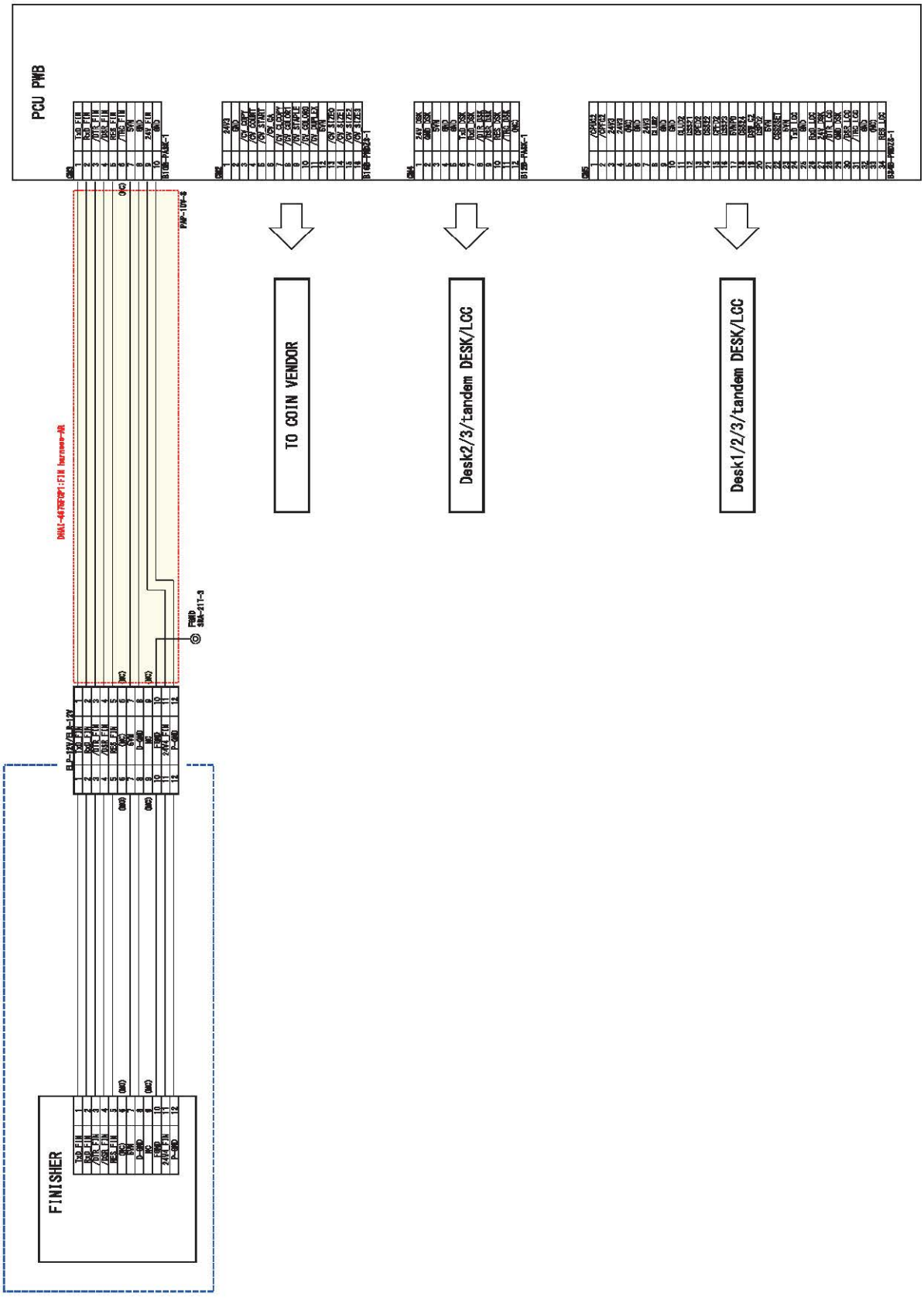
I. LSU section (P9)



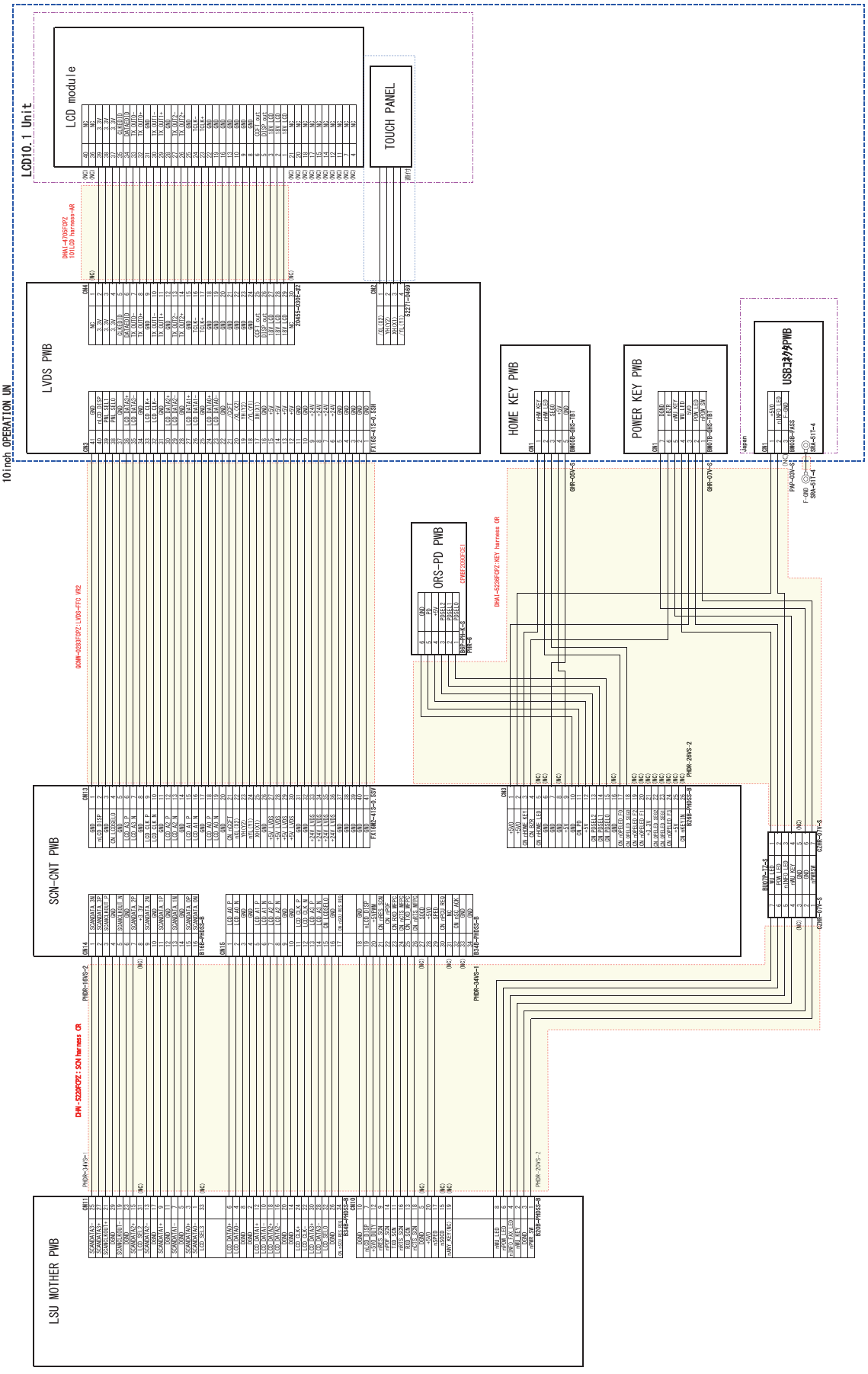
J. FAX section, MFP section, HDD section (P10)



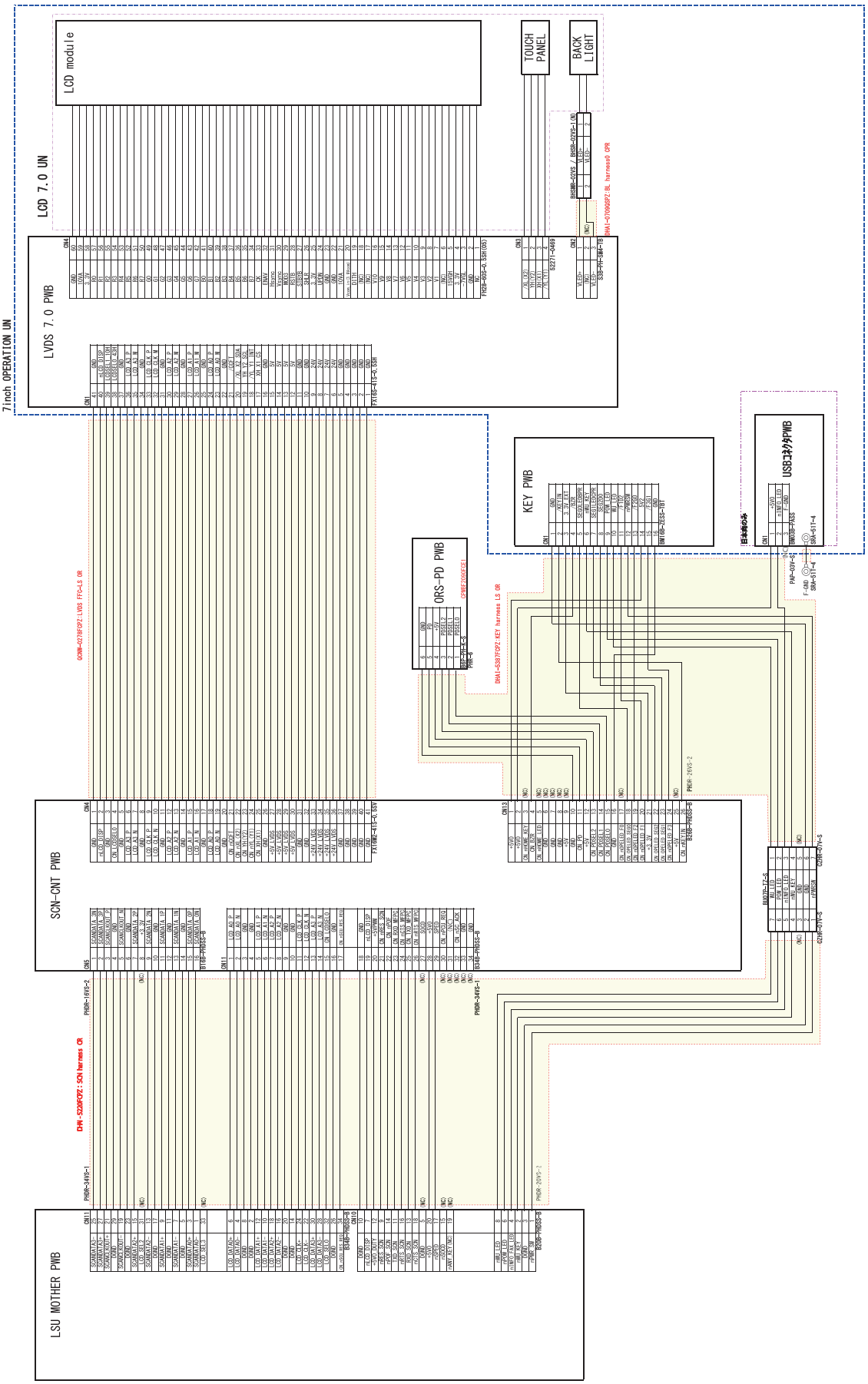
K. Finisher, Desk, LCC, Coin vender section (P10)



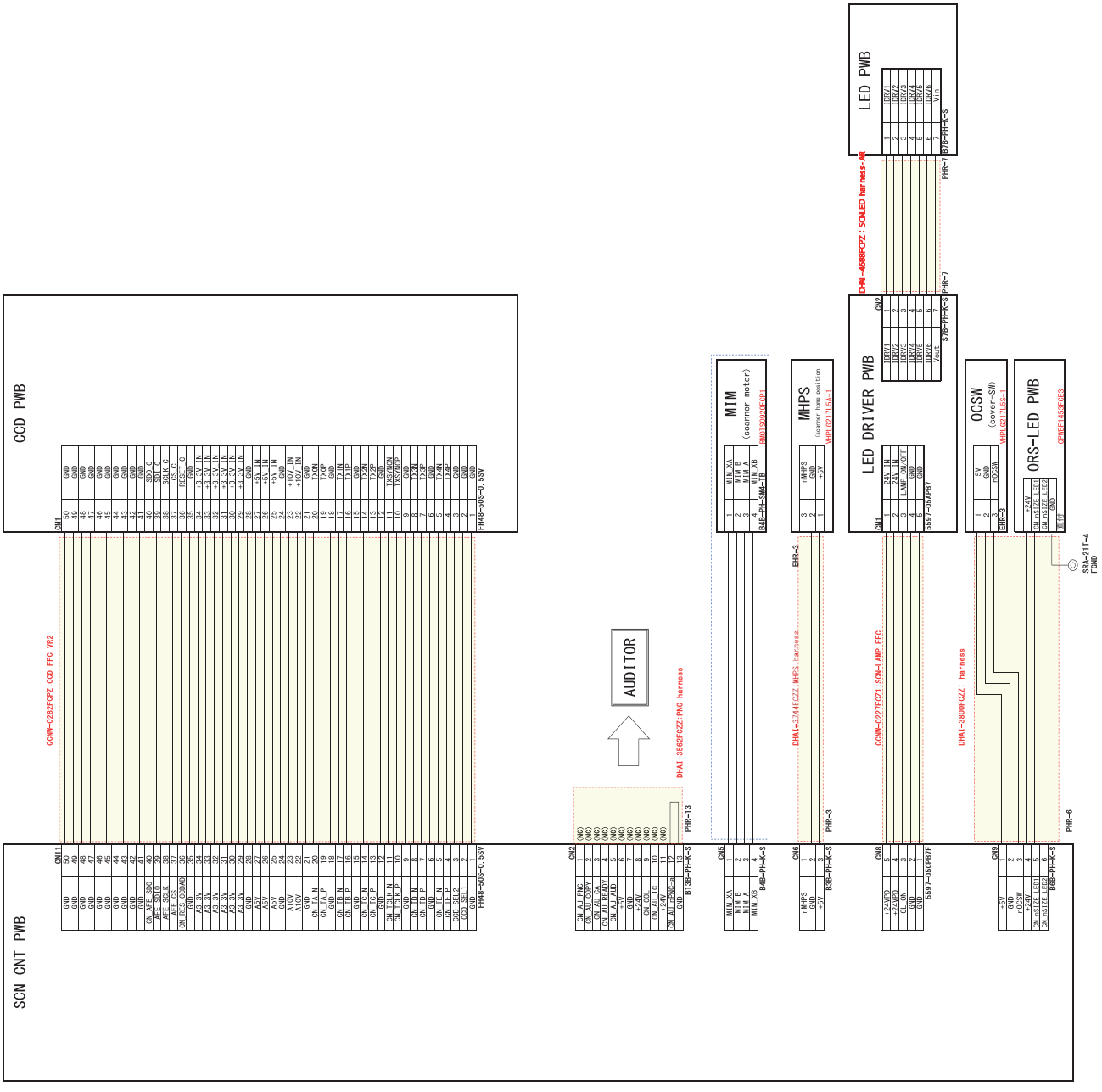
L. 10.1 inch operation system (P11A)



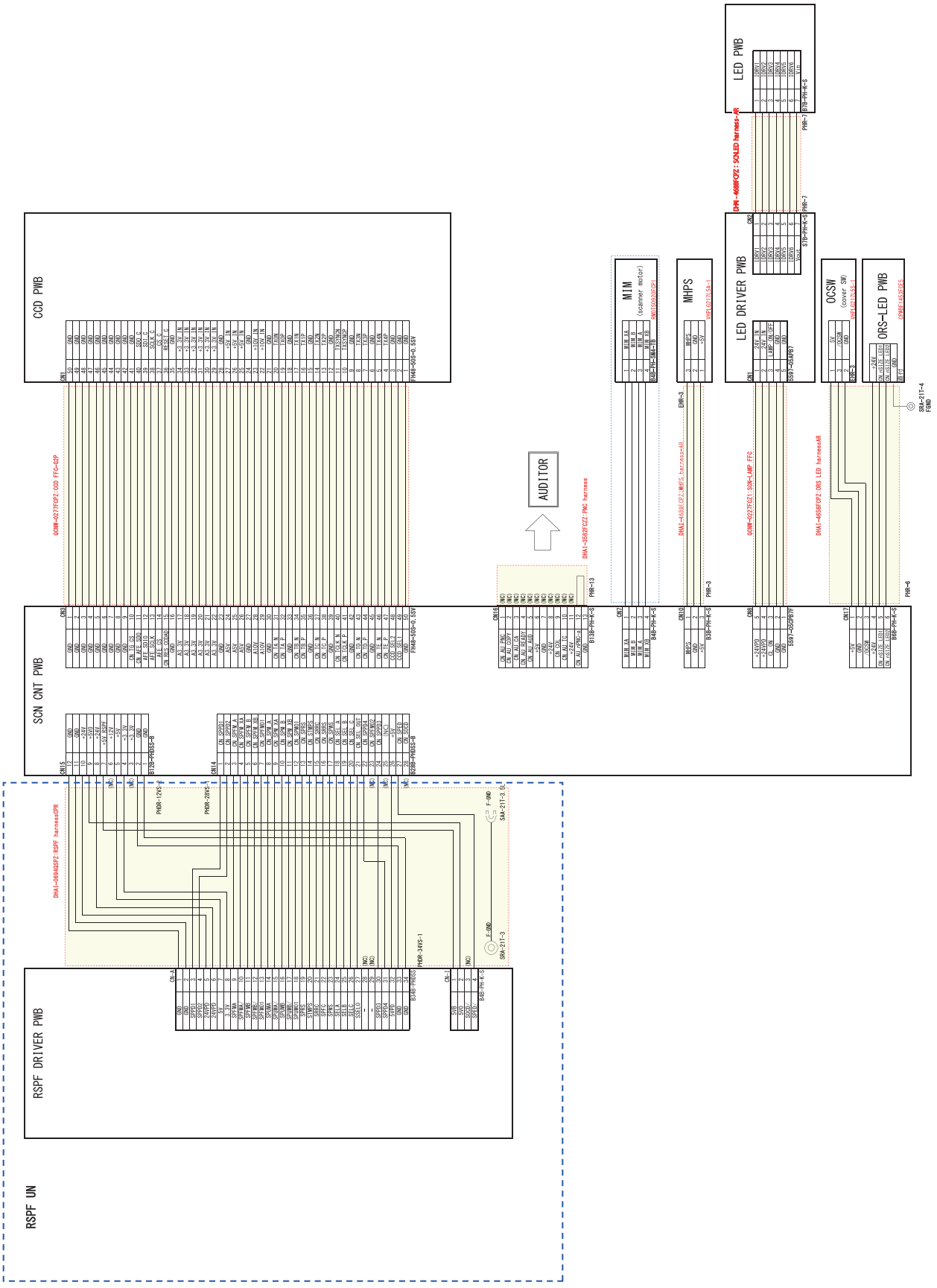
M. 7.0 inch operation system (P11B)



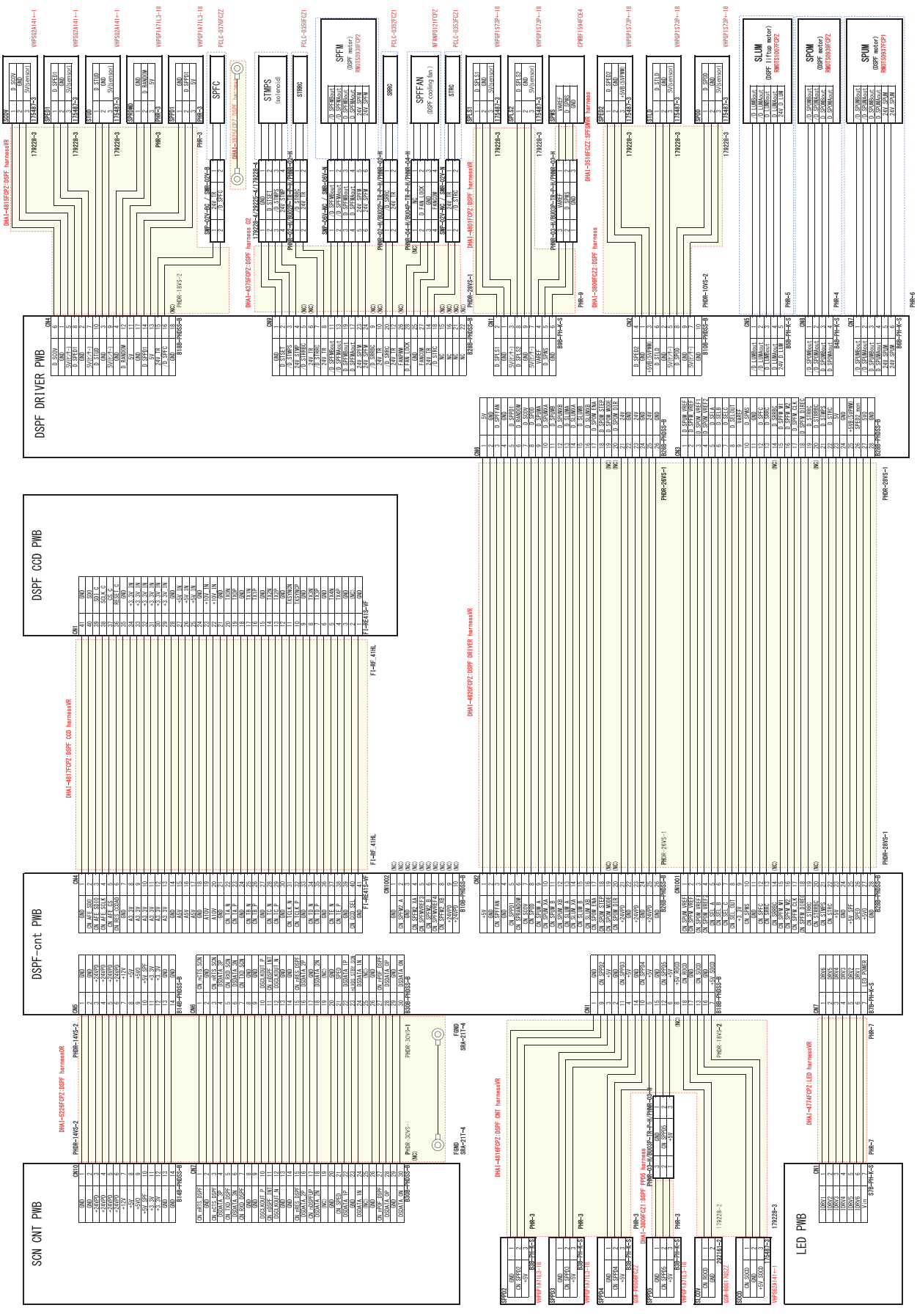
N. Scanner unit section (DSPF model) (P12A)



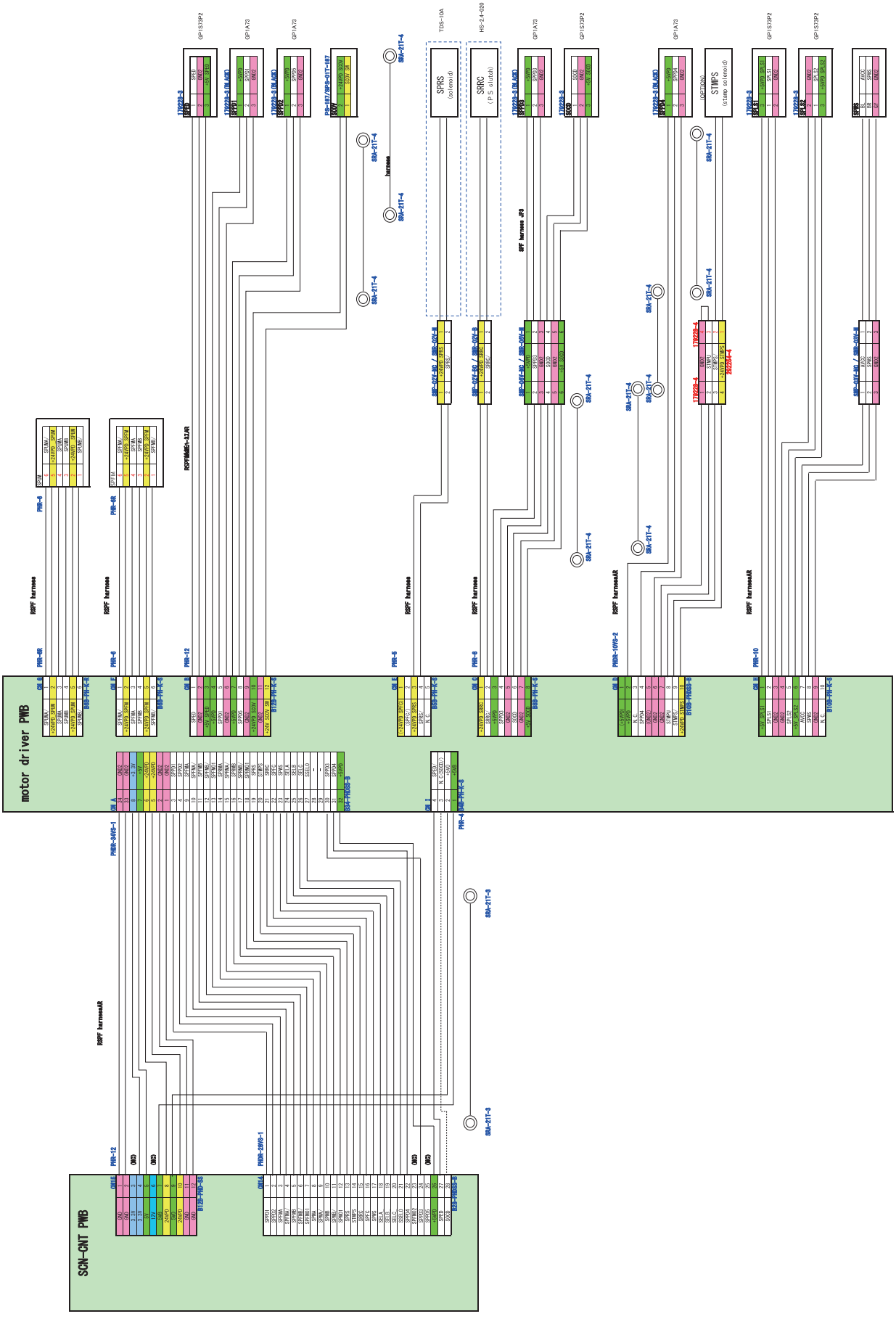
O. Scanner unit section (RSPF model) (P12B)


RSPF UN
RSPF DRIVER PWB
SCN CNT PWB
CCD PWB
LED DRIVER PWB
LED PWB
OCSW
(cover SW)
ORS-LED PWB
MIM
(scanner motor)
MHPS
AUDITOR
DHAI-A694GSPZ:RSPF harness#PWR
DHAI-A694GSPZ:RSPF harness#SCN
DHAI-A694GSPZ:RSPF harness#SNR
DHAI-A694GSPZ:RSPF harness#MOT
DHAI-A694GSPZ:RSPF harness#SOL
DHAI-A694GSPZ:RSPF harness#CL
DHAI-A694GSPZ:RSPF harness#MPS
DHAI-A694GSPZ:RSPF harness#HP
DHAI-A694GSPZ:RSPF harness#ORS
DHAI-A694GSPZ:RSPF harness#CCD
DHAI-A694GSPZ:RSPF harness#MIM
DHAI-A694GSPZ:RSPF harness#MHPS
DHAI-A694GSPZ:RSPF harness#LED
DHAI-A694GSPZ:RSPF harness#OCSW
DHAI-A694GSPZ:RSPF harness#ORS
DHAI-A694GSPZ:RSPF harness#GND
DHAI-A694GSPZ:RSPF harness#F-GND
DHAI-A694GSPZ:RSPF harness#AUDITOR
DHAI-A694GSPZ:RSPF harness#CCD FFC

P. DSPF unit section (P13)



Q. RSPF unit section (P14)



3. Signal list

Signal name	Name [Type]	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	NOTE
			"L"	"H"				
ADUGS	ADU gate solenoid [Electromagnetic solenoid]	Controls the ADU gate.	ON	OFF	CN6	18	PCU	
ADUM	ADU motor [Stepping motor]	Drives the ADU section.	–	–	CN14	B5,B6,B7,B8	PCU	Drives with the 4-phase signal.
APPD1	ADU transport path detection 1 [Transmission type]	Detects paper pass in the ADU upper stream section.	Pass	–	CN6	14	PCU	
APPD2	ADU transport path detection 2 [Transmission type]	Detects paper pass in the ADU medium stream section.	Pass	–	CN6	11	PCU	
CCFT	LCD backlight [CCFT cool cathode ray tube]	LCD backlight	ON	OFF	CN13	21	SCN	
CL_ON	Scanner lamp	Radiates lights to the document for the CCD to scan the document images.	ON	OFF	CN8	3	SCN	
CLUD1	Tray 1 paper upper limit detection [Transmission type]	Detects the tray 1 upper limit.	Upper limit	–	CN9	A4	PCU	
CLUD2	Tray 2 paper upper limit detection [Transmission type]	Detects the tray 2 upper limit.	Upper limit	–	CN5	11	PCU	
CLUM1	Paper tray lift-up motor (Paper feed tray 1) [DC brush motor]	Drives the paper tray lift plate.	Stop	Drive	CN9	B2	PCU	
CLUM2	Paper tray lift-up motor (Paper feed tray 2) [DC brush motor]	Drives the paper tray lift plate.	Stop	Drive	CN5	8	PCU	
CPED1	Tray 1 paper empty detection [Transmission type]	Detects paper empty in the tray 1.	YES	NO	CN9	A7	PCU	
CPED2	Tray 2 paper empty detection [Transmission type]	Detects paper empty in the tray 2.	YES	NO	CN5	13	PCU	
CPFC1	Tray vertical transport clutch [Electromagnetic clutch]	Controls ON/OFF of the paper transport roller in the paper feed tray section.	ON	OFF	CN12	4	PCU	
CPFC2	Tray vertical transport clutch 2 [Electromagnetic clutch]	Controls ON/OFF of the paper transport roller 2 in the paper feed tray section.	ON	OFF	CN5	2	PCU	
CPFD1	Tray 1 transport detection (Paper entry detection) [Transmission type]	Detects paper pass in the tray 1.	Pass	–	CN9	A10	PCU	
CPFD2	Tray 2 transport detection (Paper entry detection) [Transmission type]	Detects paper pass in the tray 2.	Pass	–	CN5	15	PCU	
CPFM_CK	Paper feed motor drive frequency [Brush-less motor]	Changes the paper feed section speed.	–	–	CN12	9	PCU	Pulse input
CPFM_D	Paper feed motor start/stop [Brush-less motor]	Drives the paper feed section.	Drive	Stop	CN12	8	PCU	
CPFM_LD	Paper feed motor lock detection	Detects the paper feed motor lock.	–	Lock detection	CN12	7	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	CN12	2	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	1	PCU	
CSPD1	Tray 1 remaining paper quantity detection	Detects the remaining paper quantity in the tray 1.	Remaining quantity	–	CN7	2	PCU	Detects during lifting up.
CSPD2	Tray 2 remaining paper quantity detection	Detects the remaining paper quantity in the tray 2.	Remaining quantity	–	CN5	20	PCU	Detects during lifting up.
CSS11	Tray 1 paper size detection 1	Tray 1 paper size detection 1	YES	NO	CN9	B4	PCU	
CSS12	Tray 1 paper size detection 2	Tray 1 paper size detection 2	YES	NO	CN9	B5	PCU	
CSS13	Tray 1 paper size detection 3	Tray 1 paper size detection 3	YES	NO	CN9	B7	PCU	
CSS14	Tray 1 paper size detection 4	Tray 1 paper size detection 4	YES	NO	CN9	B7	PCU	
CSS21	Tray 2 paper size detection 1	Tray 2 paper size detection 1	YES	NO	CN5	12	PCU	
CSS22	Tray 2 paper size detection 2	Tray 2 paper size detection 2	YES	NO	CN5	14	PCU	
CSS23	Tray 2 paper size detection 3	Tray 2 paper size detection 3	YES	NO	CN5	16	PCU	
CSS24	Tray 2 paper size detection 4	Tray 2 paper size detection 4	YES	NO	CN5	18	PCU	
DL	Discharge lamp	Discharge on the drum surface	OFF	ON	CN11	B4	PCU	
DM_CK	Drum motor drive frequency [Brush-less motor]	Changes the drum section speed.	–	–	CN15	B10	PCU	Pulse input
DM_D	Drum motor start/stop [Brush-less motor]	Drives the drum section.	Drive	Stop	CN15	B9	PCU	
DM_LD	Drum motor lock detection	Detects the drum motor lock.	–	Lock detection	CN15	B7	PCU	
DSW_ADU	ADU transport open/close detection [Transmission type]	Detects open/close of the ADU cover.	Open	Close	CN6	12	RD I/F	
DSW_C	Tray 1 transport cover open/close detection	Detects open/close of the tray 1 transport cover.	Open	Close	CN9	A13	PCU	

Signal name	Name [Type]	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	NOTE
			"L"	"H"				
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	CN13	1	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	CN13	4	PCU	
DVCH1	Developing check 1	Detects the destination of the developing unit 1.	Detection	–	CN15	A8	PCU	
DVCH2	Developing check 2	Detects the destination of the developing unit 2.	Detection	–	CN15	A7	PCU	
DVCH3	Developing check 3	Detects the destination of the developing unit 3.	Detection	–	CN15	A6	PCU	
FPFD	Fusing front paper pass detector	Detects paper pass in front of fusing section	Pass	-	CN16	A5	PCU	
FRS	Lower separation pawl solenoid	Controls separation pawl ON/OFF	ON	OFF	CN16	A10	PCU	
FUM_CK	Fusing motor drive frequency [Brush-less motor]	Changes the fusing section speed.	–	–	CN11	B10	PCU	Pulse input
FUM_D	Fusing motor start/stop [Brush-less motor]	Drives the fusing section.	Drive	Stop	CN11	B9	PCU	
FUM_LD	Fusing motor lock detection	Detects the fusing motor lock.	–	Lock detection	CN11	B8	PCU	
HL_PR	Heater lamp control relay	Turns ON/OFF the heater lamp control relay.	OFF	ON	CN17	B10	PCU	
HLout_UM	Heater lamp main	Turns ON/OFF the heater lamp main.	OFF	ON	CN17	B11	PCU	
HLout_US	Heater lamp sub	Turns ON/OFF the heater lamp sub.	OFF	ON	CN17	B13	PCU	
HLout_UW	Heater lamp warm-up	Turns ON/OFF the warm-up operation of the heater lamp.	OFF	ON	CN17	B12	PCU	
HPOS	Shifter home position detection	Detects the shifter home position.	–	Home position	CN15	5	PCU	
HUD_DV	Developing section humidity detection	Detects the developing section humidity.	–	–	CN15	A2	PCU	Analog detection
LSUFM_LD	LSU cooling fan lock detection	Detects cooling fan lock	–	Lock detection	CN17	A10	PCU	
LSUCFM_V	LSU cooling fan motor	Cools the LSU.	Stop	Drive	CN17	A8	PCU	
MHPS	Scanner home position sensor [Transmission type]	Detects the scanner home position.	–	Home position	CN6	1	SCN	
MIM_*	Scanner motor [Stepping motor]	Scanner (reading) section	–	–	CN5	1,2,3,4	SCN	
MPED	Manual feed paper empty detection [Transmission type]	Detects paper empty in the manual paper feed tray.	YES	NO	CN6	1	PCU	
MPFS	Paper pickup solenoid (Manual paper feed) [Electromagnetic solenoid]	Controls ON/OFF of the paper pickup roller.	Pickup	–	CN6	3	PCU	
MPLD	Manual feed paper length detector	Detects the paper length in the manual paper feed tray.	Detection	–	CN6	10	PCU	
MPWS	Manual paper feed tray paper width detector [Volume resistance]	Detects the paper width in the manual paper feed tray.	–	–	CN6	8	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	CN9	3	SCN	
OSM	Shift motor [Stepping motor]	Offsets the paper.	–	–	CN10	A7,A8,A9,A10	PCU	Drives with the 4-phase signal.
OZFM_CNT	Ozone fan motor speed control	Adjusts the rotating speed of the ozone fan motor.	–	–	CN10	B13	PCU	Pulse (Duty) drive
OZFM_LD	Ozone fan motor lock detection	Detects the ozone fan motor lock.	–	Lock detection	CN10	B15	PCU	
OZFM_V	Ozone fan motor drive	Discharges the ozone.	Stop	Drive	CN10	B12	PCU	
PCS	Process control sensor light reception [Reflection type]	Detects the toner patch density.	–	–	CN6	7	PCU	Analog detection
PCS-LED	Process control sensor light emitting [Reflection type]	Adjusts the light emitting amount of the process control sensor.	–	–	CN6	5	PCU	Analog detection

Signal name	Name [Type]	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	NOTE
			"L"	"H"				
PFM	PS front transport motor [Stepping motor]	Transports and drives the registration front roller drive system.	–	–	CN14	A1,A2,A3,A4	PCU	Drives with the 4-phase signal.
POD1	Fusing rear detection [Transmission type]	Detects the paper exit from fusing.	–	Pass	CN11	A11	PCU	
POD2	Paper exit detection [Transmission type]	Detects the discharged paper.	Pass	–	CN11	A2	PCU	
POD3	Right tray paper exit detection	Detects paper exit to the right tray.	Pass	–	CN6	16	PCU	
POFM1_LD	POFM 1 lock detection	Detects the POFM 1 lock.	–	Lock detection	CN10	B11	PCU	
POFM1_V	Paper exit cooling fan motor 1	Cools the fusing unit.	Stop	Drive	CN10	B8	PCU	
POFM2_LD	POFM 2 lock detection	Detects the POFM 2 lock.	–	Lock detection	CN10	B7	PCU	
POFM2_V	Paper exit cooling fan motor 2	Cools the fusing unit.	Stop	Drive	CN10	B4	PCU	
POFM3_LD	POFM 3 lock detection	Detects the POFM 3 lock.	–	Lock detection	CN10	A15	PCU	
POFM3_V	Paper exit cooling fan motor 3	Cools the paper exit unit.	Stop	Drive	CN10	A12	PCU	
POM	Paper exit drive motor [Stepping motor]	Drives the paper exit roller.	–	–	CN14	B1,B2,B3,B4	PCU	Drives with the 4-phase signal.
PPD1	Registration front detection [Transmission type]	Detects paper in front of the registration roller.	Pass	–	CN9	B9	PCU	
PPD2	Registration detection [Reflection type]	Detects paper at the rear of the registration roller.	Pass	–	CN9	B12	PCU	
PROFM1_LD	Lock detection	Detects the cooling fan lock	-	Lock detection	CN17	A12	PCU	
PROFM1_V	Fan motor	Cools the process section	Stop	Drive	CN17	A11	PCU	
PSFM1_LD	Power cooling fan motor 1 lock detection	Detects the power cooling fan motor 1 lock.	–	Lock detection	CN18	2	PCU	
PSFM1_V	Power cooling fan motor 1	Cools the power unit.	Stop	Drive	CN18	1	PCU	
PSFM2_LD	Power cooling fan motor 2 lock detection	Detects the power cooling fan motor 2 lock.	–	Lock detection	CN17	A7	PCU	
PSFM2_V	Power cooling fan motor 2	Cools the power unit.	Stop	Drive	CN17	A5	PCU	
PSPS	Separation solenoid [Electromagnetic solenoid]	Controls the separation solenoid.	ON	OFF	CN11	B7	PCU	
PWM_ CPUFAM	Controller cooling fan PWM control	Controller cooling fan.	–	–	CN13	3	Mother	Pulse (Duty) drive * Control is MFPC.
RRM	Registration motor transport motor [Stepping motor]	Transports and drives the registration roller drive system.	–	–	CN14	A5,A6,A7,A8	PCU	Drives with the 4-phase signal.
RRMCNT	Registration motor current select	Selects the registration motor current.	Large current	Small current	CN17	17	PCU	
SCOV	Upper cover open/close sensor	Detects the upper cover open/close.	–	Open	CN8	20	DSPFcnt	
SOCD	Cover open/close sensor	Detects the cover open/close.	Close	–	CN9	10	DSPFcnt	
SPED	Document empty sensor	Detects the document empty.	Detection	–	CN9	14	DSPFcnt	
SPFM*	Transport motor	Drives the transport motor.	–	–	CN8	6,7,8,9,10,11	DSPFcnt	
SPLS1	Document size sensor 1	Detects the document size.	Detection	–	CN7	2	DSPFcnt	
SPLS2	Document size sensor 2	Detects the document size.	Detection	–	CN7	5	DSPFcnt	
SPM*	Paper feed motor	Drives the paper feed motor.	–	–	CN8	12,13,14,15,16	DSPFcnt	
SPOD	Paper exit sensor	Detects paper pass.	Detection	–	CN2	8	DSPFcnt	
SPPD1	No. 1 paper feed sensor	Detects paper pass.	Detection	–	CN9	3	DSPFcnt	
SPPD2	No. 2 paper feed (PS front) sensor	Detects paper pass.	Detection	–	CN9	4	DSPFcnt	
SPPD3	No. 1 (front surface) scanning front sensor	Detects paper pass.	Detection	–	CN9	9	DSPFcnt	
SPPD5	No. 2 (back surface) scanning front sensor	Detects paper pass.	Detection	–	CN2	4	DSPFcnt	
SPWS	Document width sensor	Detects the document width.	–	–	CN7	8	DSPFcnt	Analog detection
SRRC	PS clutch	Controls the PS clutch.	OFF	ON	CN8	18	DSPFcnt	
STMPS	Stamp solenoid	Controls the finish stamp.	–	Stamping	CN8	17	DSPFcnt	
TCS	Toner density sensor [Magnetic sensor]	Detects the toner density.	–	–	CN15	A10	PCU	Analog detection
TDSC	Toner supply clutch [Electromagnetic clutch]	Controls toner supply.	ON	OFF	CN15	B6	PCU	

Signal name	Name [Type]	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	NOTE
			"L"	"H"				
TFD2	Paper exit full detection [Transmission type]	Detects the face-down paper exit tray full.	Full	–	CN11	A5	PCU	
TFD3	Right tray paper exit full detection	Detects the paper exit full in the right tray.	Full	–	CN6	3	PCU	
TH_DV	Developing section temperature detection	Detects the temperature in the developing section.	–	–	CN15	A4	PCU	Analog detection
TH_LM	Low thermistor	Detects the temperature	-	-	CN16	A7	PCU	Analog detection
TH_MY	Main thermistor	Detects the temperature.	–	–	CN16	B6	PCU	Analog detection
TH_US	Sub thermistor	Detects the temperature.	–	–	CN16	B4	PCU	Analog detection
TNBOX	Waste toner box remaining quantity detection	Detects the remaining quantity in the waste toner box.	–	–	CN7	6	PCU	
TNFD	Waste toner box remaining quantity detection	Detects the remaining quantity in the waste toner box.	–	–	CN7	9	PCU	
TSGOUT	Toner density sensor control voltage [Magnetic sensor]	Controls the toner density.	–	–	CN15	A12	PCU	Analog detection
WEB-END	Web end detection	Detects the web end.	End	–	CN16	A2	PCU	
WEBM	Web motor (Synchronous motor)	Drives the fusing web cleaning paper.	–	–	CN10	A1,A2,A5,A6	PCU	Drives with the 4-phase signal.
WH_CNT	Dehumidifying heater control	Turns ON/OFF the dehumidifying heater.	ON	OFF	CN21	3	PCU	

[13] TOOL LIST

1. Exclusive-use tools list

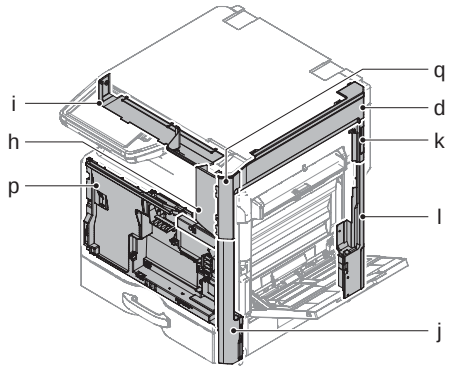
For repair or adjustments of this machine, the following tools are required.

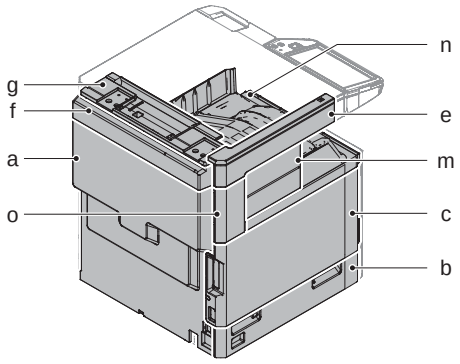
Name	Parts code	Purpose
DSPF shading adjustment sheet	UKOG-0333FCZZ	DSPF CCD unit shading adjustment
Gray scale chart	UKOG-0162FCZZ	Copy density and gradation check
Color test chart (AB series)	UKOG-0326FCZZ	Copy density and gradation check / Void area and image loss check / Resolution check
Color test chart (Inch series)	UKOG-0326FC11	
SIT chart	UKOG-0280FCZZ or UKOG-0280FCZ1	CCD, DSPF CCD color balance and gamma adjustment
Stearic acid	UKOG-0309FCZZ	Apply to the side seal on the OPC drum cleaner section.
Stearic acid powder	UKOG-0312FCZZ	Apply to the OPC drum surface
Yellow toner	CKOG-0345DS51	Apply to the OPC drum surface
DV handle	UKOG-0341FCZZ	Rotate MG roller of DV unit

[A] EXTERIOR

1. Disassembly and assembly

A. Cabinet

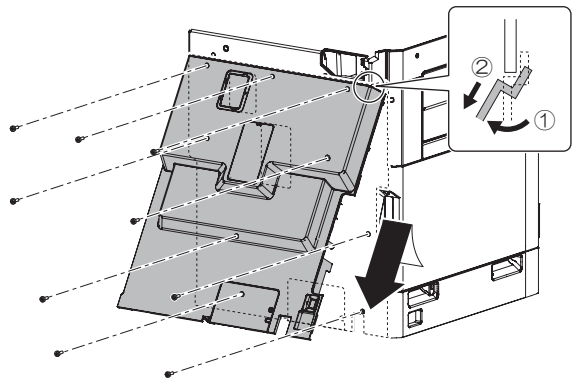




Parts	
a	Rear cabinet
b	Left cabinet lower
c	Left cabinet
d	Upper cabinet right
e	Upper cabinet left
f	Rear cabinet upper
g	Upper cabinet rear
h	Front cabinet upper
i	Operation panel base plate
j	Right cabinet front low
k	Right connection cabinet
l	Right cabinet rear cover
m	Paper exit cover
n	Paper exit tray cabinet
o	Front cover
p	Right cabinet front upper

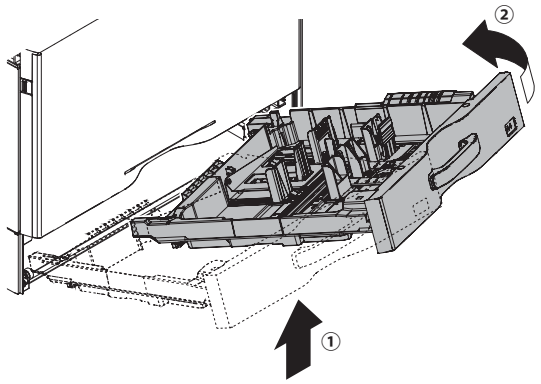
(1) Rear cabinet

1) Remove the screw, and remove the rear cabinet.

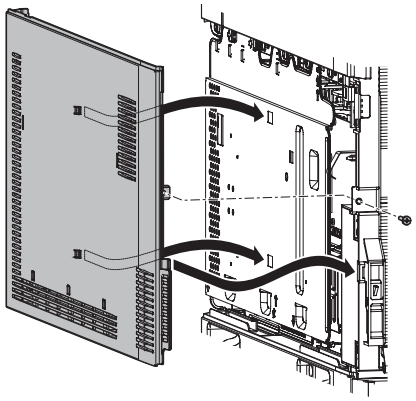


(2) Left cabinet lower/Left cabinet

1) Remove the tray 1 and 2.

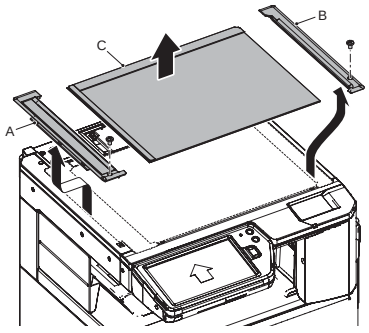


2) Remove the desk connection lid Remove the screw, and remove the left cabinet rear lower and the left cabinet.

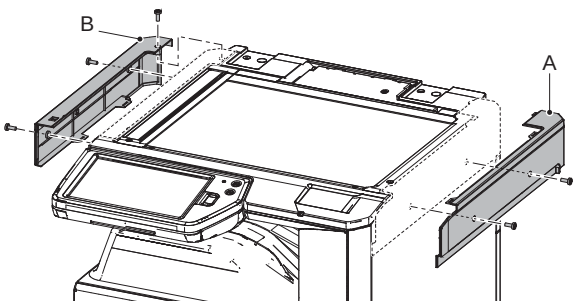


(3) Upper cabinet right/Upper cabinet left

1) Remove the SPF glass (A). Remove the glass holder (B) and the table glass (C).

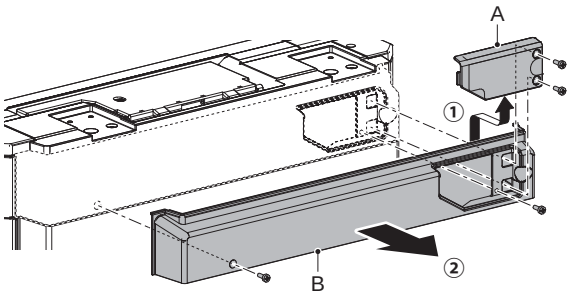


2) Remove the screw, and remove the upper cabinet right (A) and the upper cabinet left (B).

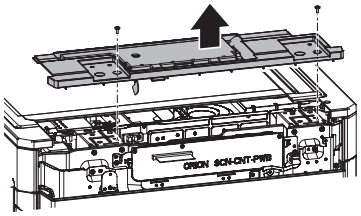


(4) Rear cabinet upper/Upper cabinet rear

1) Remove the rear cabinet upper lid (A). Remove the screw, and remove the rear cabinet rear cover (B).

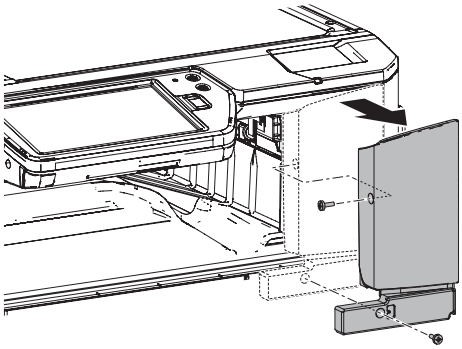


2) Disconnect the connector. Remove the screw, and remove the earth wire. Remove the screw, and remove the upper cabinet rear.

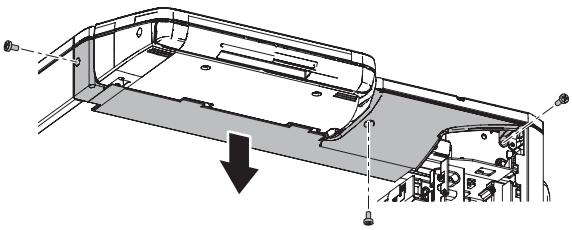


(5) Front cabinet upper/Operation panel base plate

1) Open the front cabinet. Remove the screws, and remove the front cabinet upper.

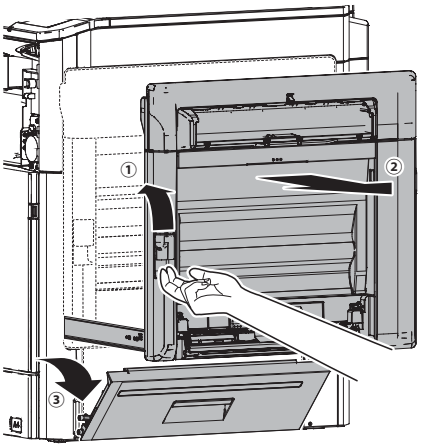


2) Remove the screw, and remove the operation panel base plate.

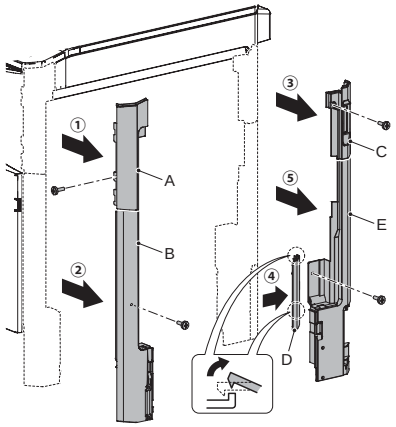


(6) Right cabinet front low/Right connection cabinet/ Right cabinet rear/Right cabinet front upper

1) Remove the front cabinet upper.
2) Open the right door and the right cabinet lower.



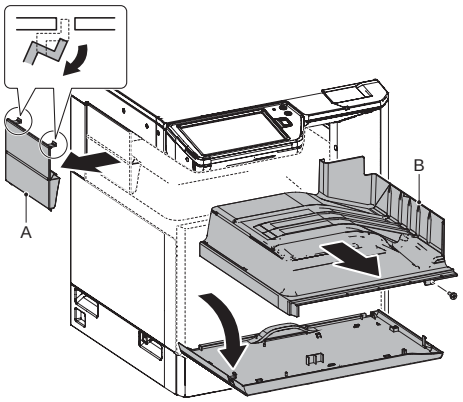
3) Remove the screw, and remove the right cabinet front (A). Remove the screw, and remove the right connection cabinet (B). Remove the ozone filter cover (C). Remove the screw, and remove the right cabinet rear cover (D).



(7) Paper exit cover/Paper exit tray cabinet/Left cabinet rear

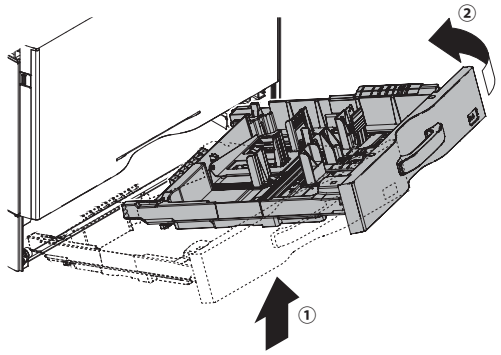
1) Remove the paper exit cover (A). Open the front cabinet, and remove the screw.

   Remove the screw, and remove the paper exit tray cabinet (B).

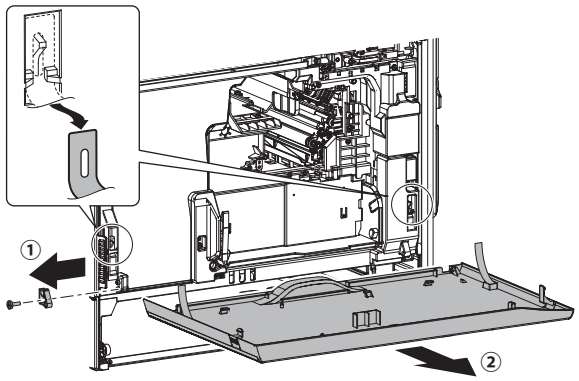


(8) Front cover

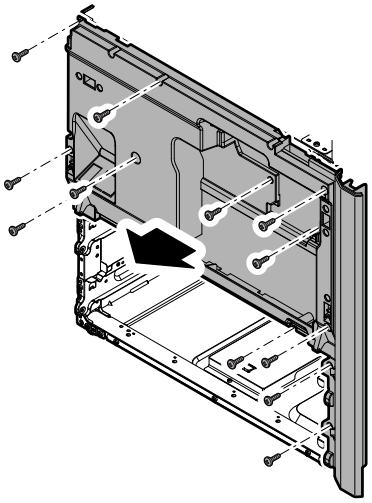
1) Remove the toner cartridge.
2) Remove the developing unit.
3) Remove the photo-conductor unit.
4) Remove the front cabinet upper and the paper exit tray cabinet.
5) Remove the tray 1 and 2.



6) Remove the band and the hinge, and remove the front cabinet.



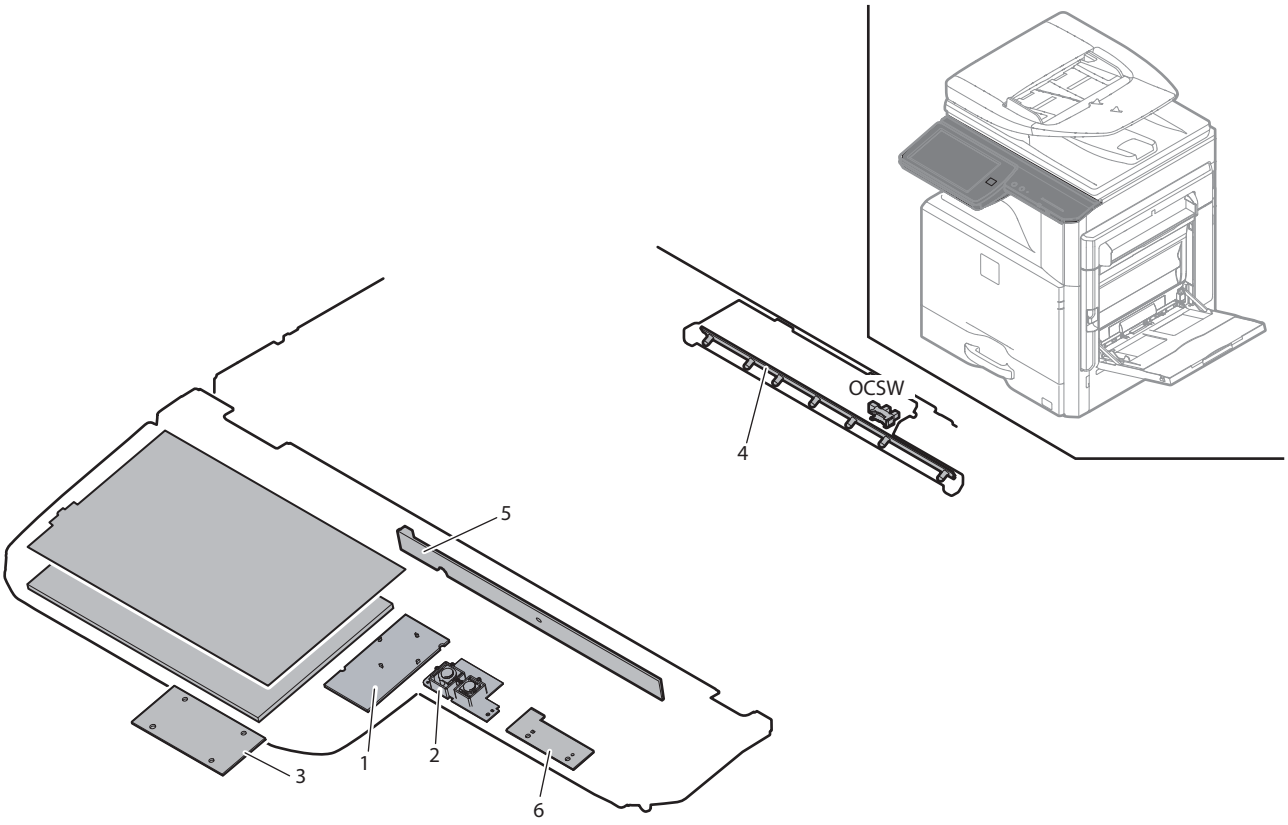
7) Remove the screw, and remove the front cover.



[B] OPERATION PANEL

1. Electrical and mechanical relation diagram

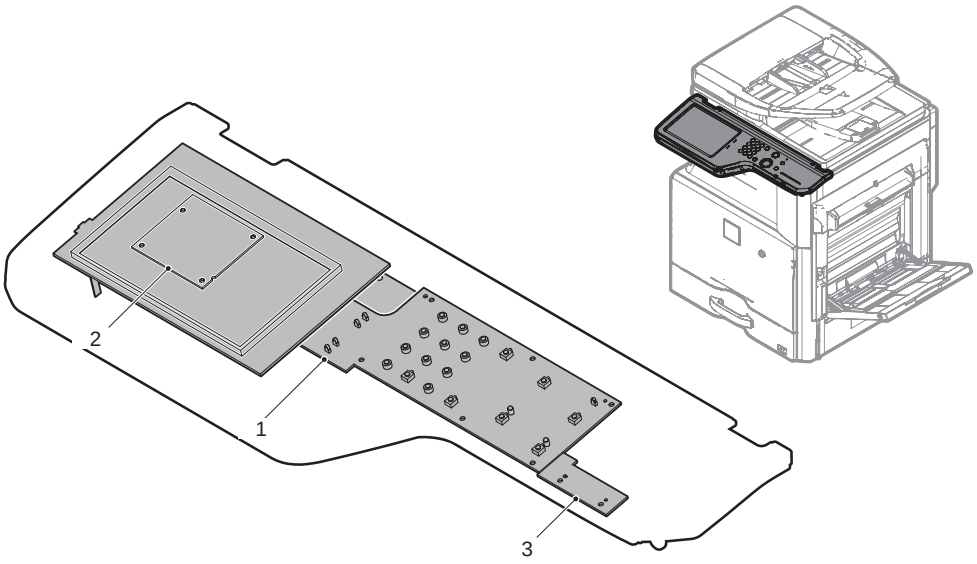
A. 10.1 inch operation panel



Signal	Name	Function/Operation
OCSW	Original cover SW	Document size detection timing switch

No.	Name	Function/Operation
1	HW-KEY PWB	Outputs the key operation signal.
2	PW-KEY PWB	Turns ON/OFF the power on the secondary side.
3	LVDS PWB	Converts the display data signal to the LCD display signal / Controls the touch panel.
4	Document size detection light emitting PWB	Drives the LED for the document size detection.
5	Document size detection light receiving PWB	Outputs the document size detection signal.
6	USB I/F PWB	USB interface.

B. 7 inch operation panel



Signal	Name	Function/Operation
1	KEY PWB	Outputs the key operation signal.
2	LVDS PWB	Converts the display data signal to the LCD display signal / Controls the touch panel.
3	USB I/F PWB	USB interface.

2. Operational descriptions

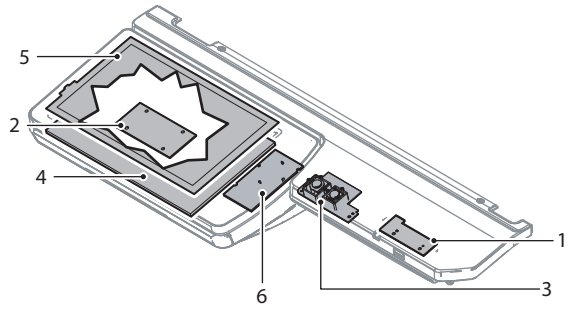
A. Outline

(1) General

The operation panel unit is composed of the LCD unit, the LVDS PWB, the USB/I/F PWB, and the KEY PWB. It displays the machine operation. It is provided with the USB I/F which is used for the firmware update, USB print, and scan to USB. In addition, the USB I/F line is provided inside the operation panel to connect with the keyboard and the IC card reader. A document size is detected by the document size detection PWB (light emitting) and the document size detection PWB (light receiving). The detection timing of document size is determined according to the document size detection trigger sensor signal.

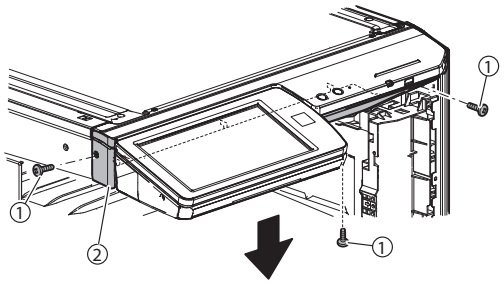
3. Disassembly and assembly

A. 10.1 inch operation panel unit

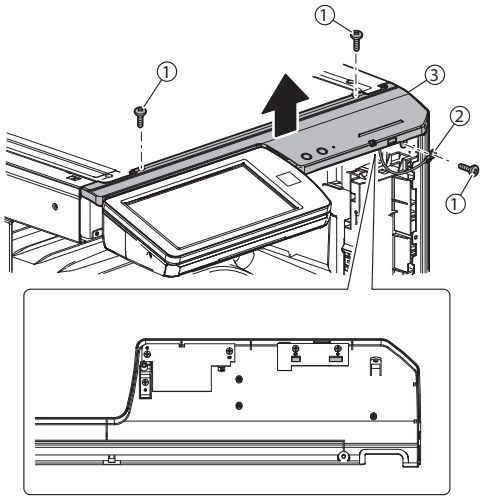


Parts	
1	USB I/F PWB
2	LVDS PWB
3	KEY PWB
4	LCD PWB
5	TOUCH PANEL
6	HOME KEY PWB

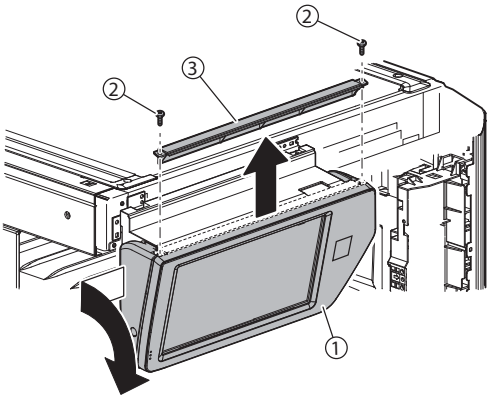
1) Remove the operation panel cover.



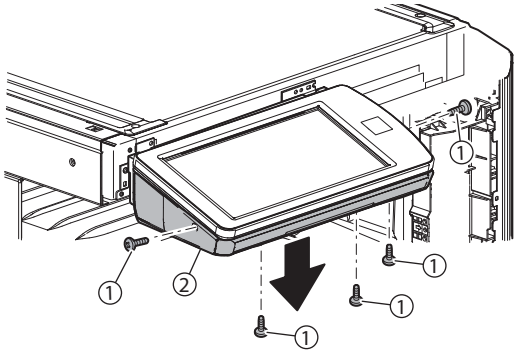
2) Remove the operation panel upper cover.



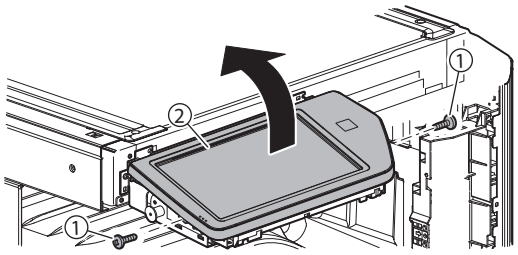
3) Slide the operation panel unit to the left and put it down. Remove the operation panel cover.



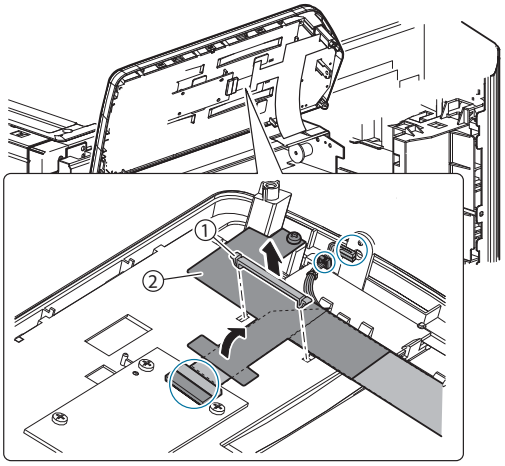
4) Remove the operation panel lower cover.



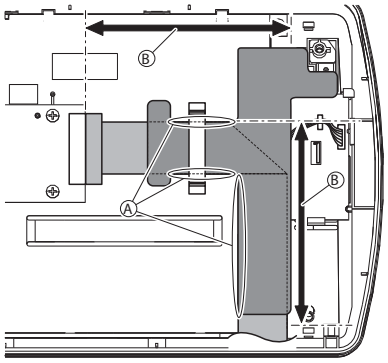
5) Turn over the operation panel unit.



6) Remove the clamp. Peel off the mylar and disconnect the connector.

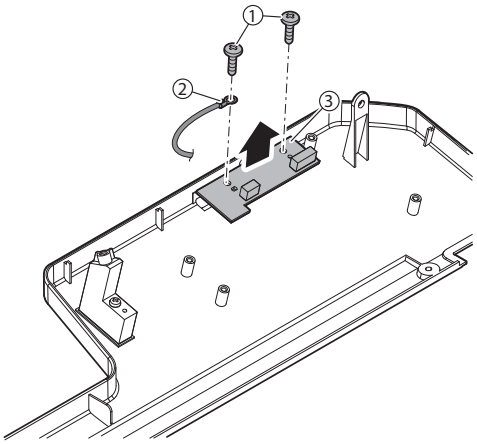


Fit the flat cable edges with sections A of the Mylar, and remove slack in sections B of the flat cables.



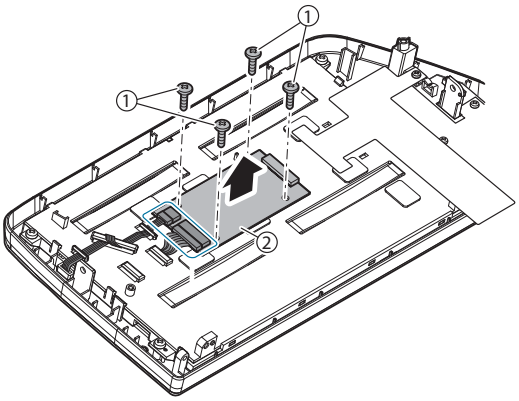
(1) USB I/F PWB

1) Remove the USB I/F PWB.



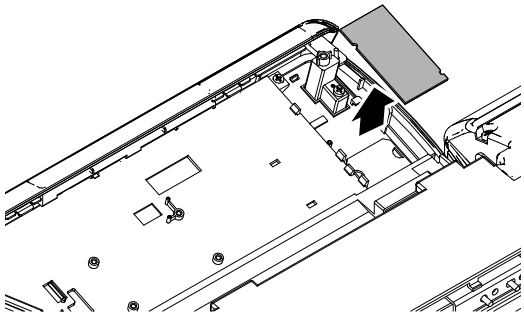
(2) LVDS PWB

1) Disconnect the connector, and remove the LVDS PWB.

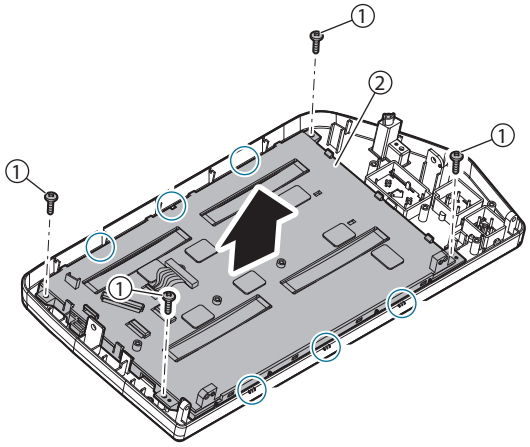


(3) HOME KEY PWB, LCD, Touch panel

1) Disconnect the connector and remove the HOME KEY PWB.

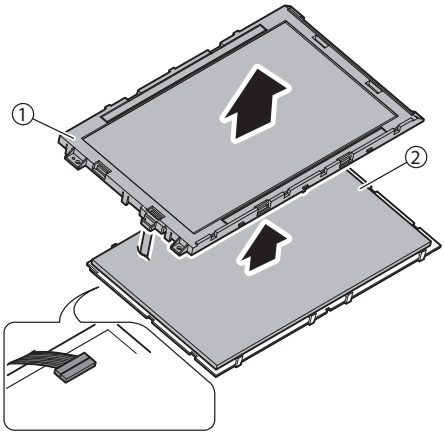


2) Remove the LCD holder.



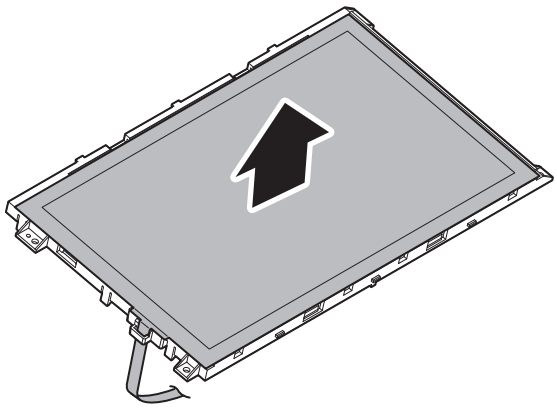
3) Remove the holder, and remove the LCD.

NOTE: Use enough care not to put finger prints on the LCD surface.



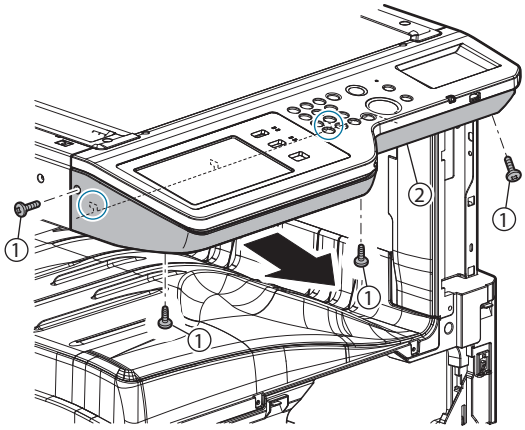
4) Remove the touch panel.

NOTE: Use enough care not to put finger prints on the touch panel surface.

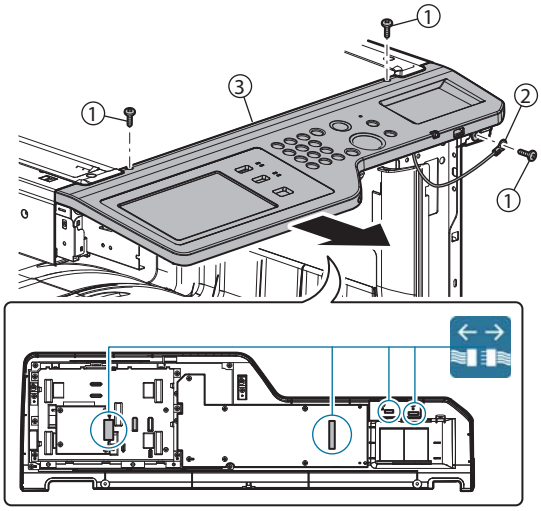


B. 7 inch operation panel unit

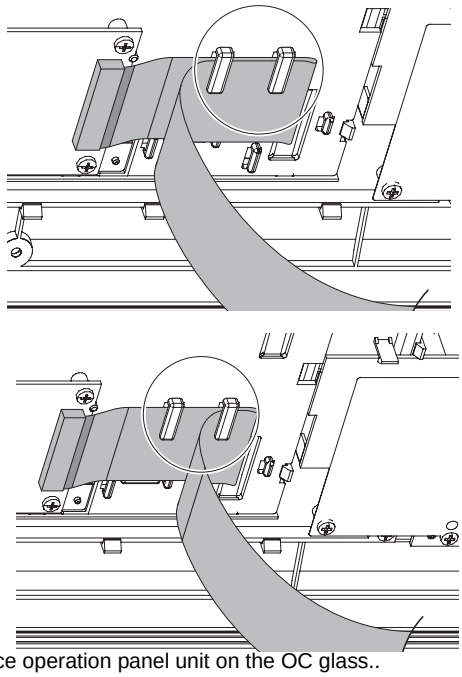
1) Remove the front cabinet upper.
2) Remove the operation panel base plate.



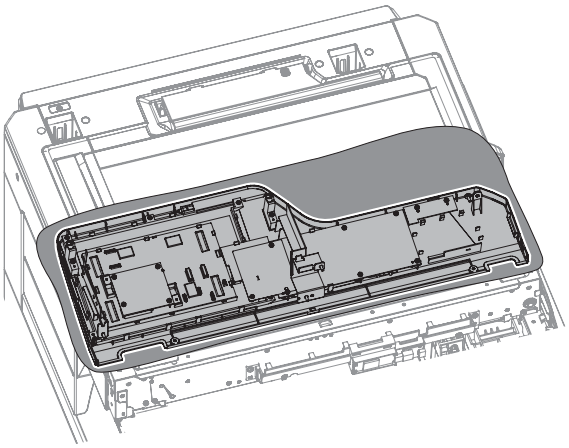
3) Place electrostatic prevention protection seat to OC glass and remove the operation panel unit.



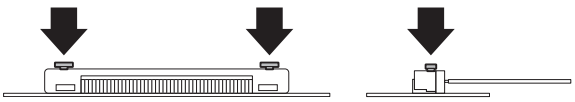
4) Remove the cable from the fixing pawl.



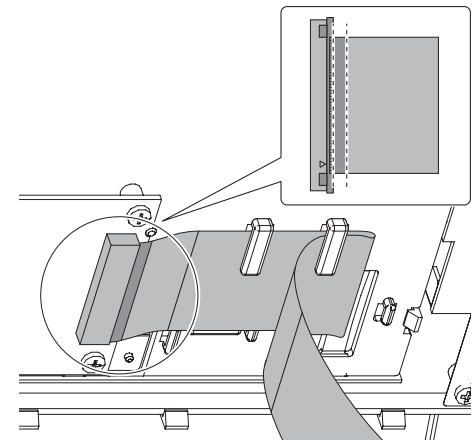
5) Place operation panel unit on the OC glass..

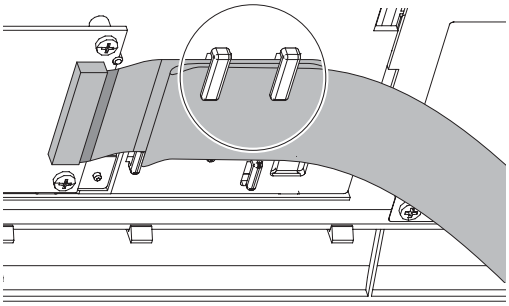


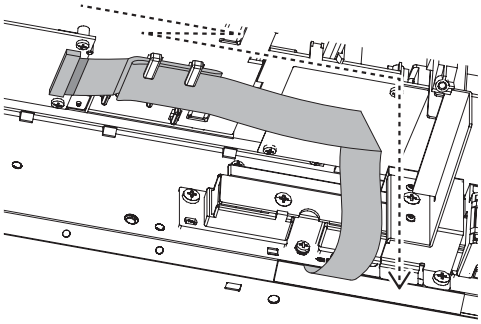
6) Push down the both button at the same time and pull the cable horizontally.



7) When assemble operation unit back, carefully insert the cable- and the cable with blue color should be upper side.

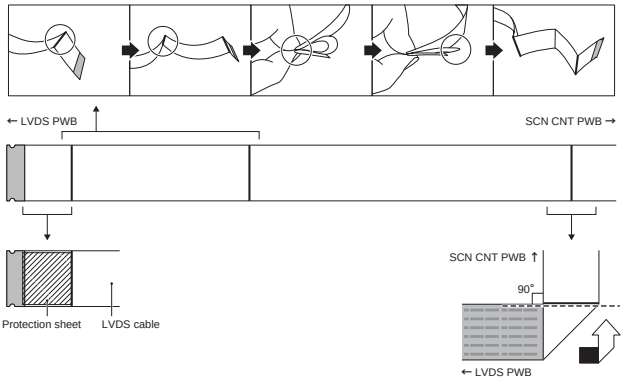






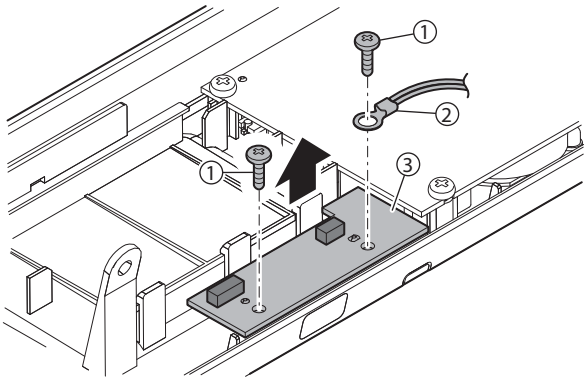
(1) LVDS cable replacement

1) Fold the cable.



(2) USB I/F PWB

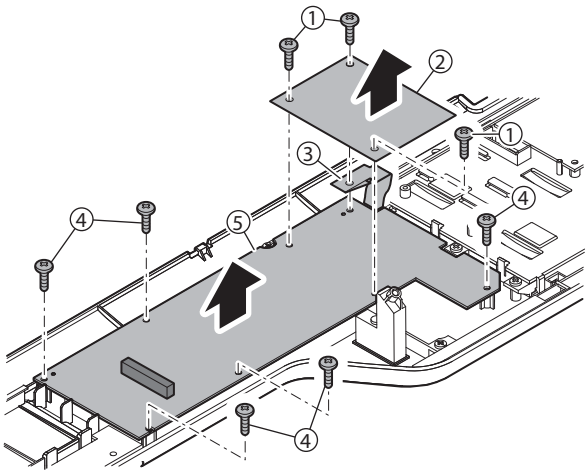
1) Remove the USB I/F PWB.



(3) KEY PWB

1) Remove the Mylar, the earth sheet, and remove the KEY PWB.

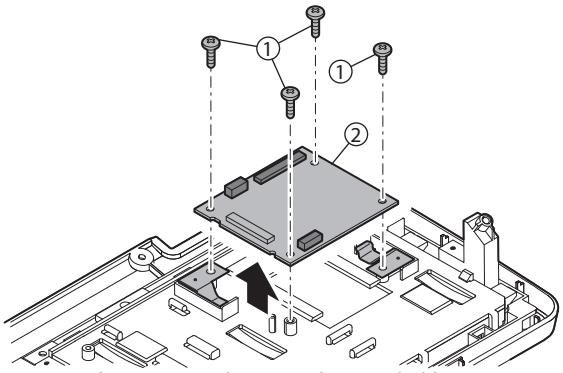
CAUTION: When installing, be careful of the overlapping sequence of the Mylar and the earth sheet.



(4) LVDS PWB, LCD, Touch panel

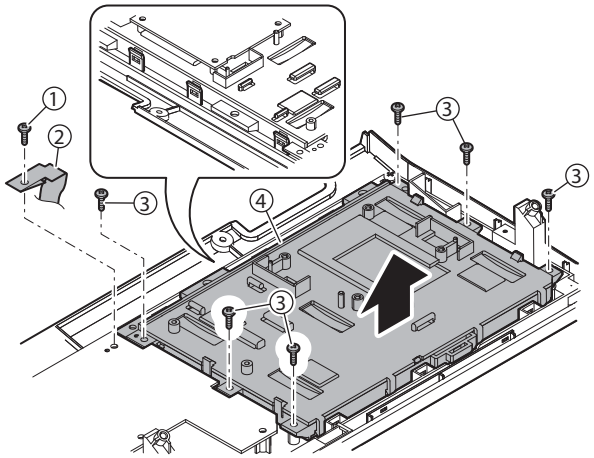
1) Remove the screw, disconnect the connector, and remove the LVDS PWB.

CAUTION: When installing, be careful of the overlapping sequence of the earth sheet.



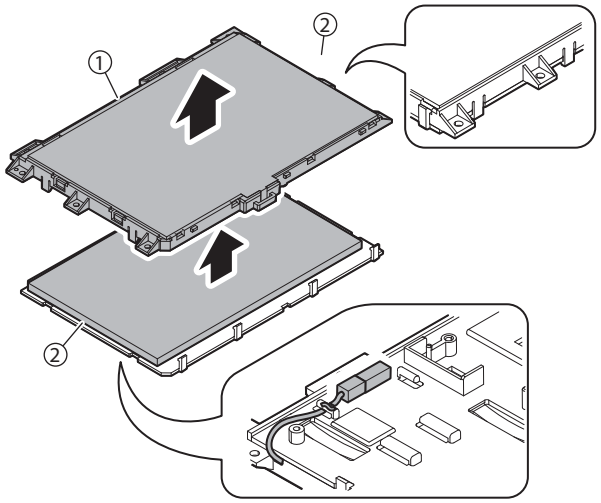
2) Remove the screw, and remove the LCD holder.

CAUTION: When installing, be careful of the overlapping sequence of the earth sheet.



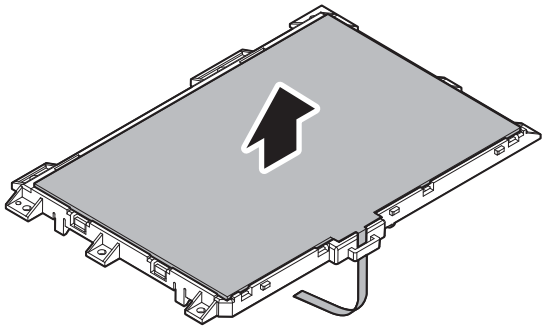
3) Remove the holder, and remove the LCD.

CAUTION: Use enough care not to put finger prints on the LCD surface.



4) Remove the touch panel.

CAUTION: Use enough care not to put finger prints on the touch panel surface.

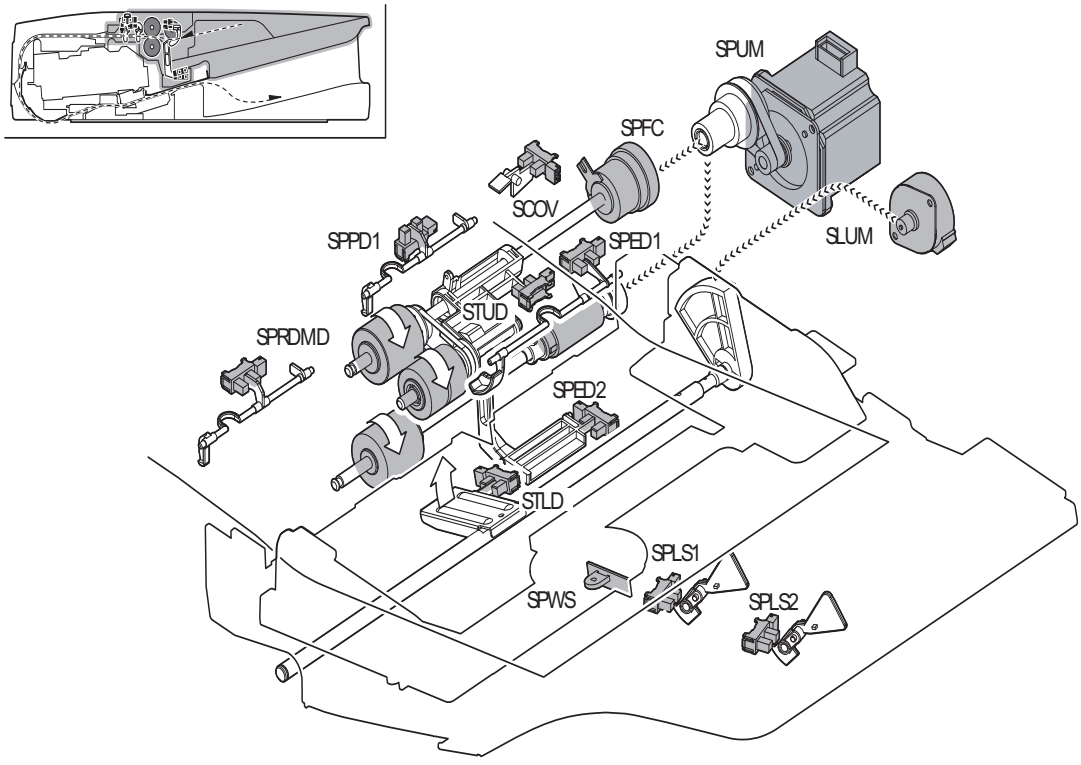


[C] DSPF/RSPF SECTION

1. Electrical and mechanical relation diagram

A. DSPF

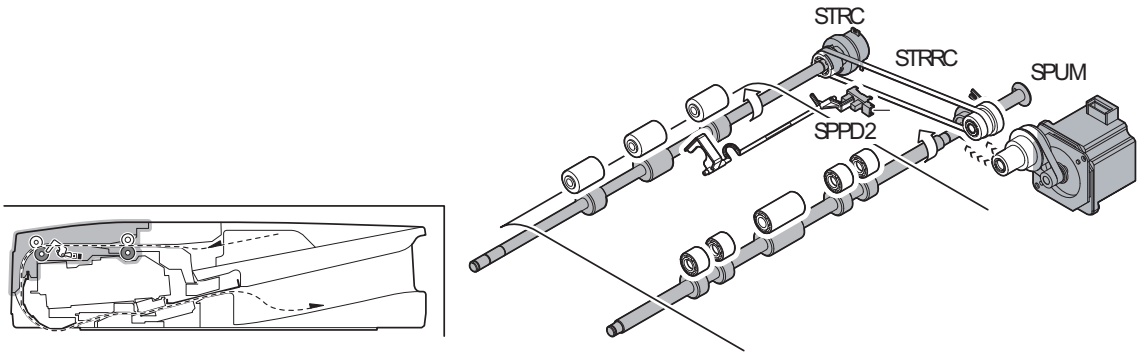
(1) Paper feed section



No.	Name	Function/Operation
1	Pick-up 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.

Signal name	Name	Function/Operation
SCOV	DSPF upper door open/close sensor	Detects open/close of the upper door.
SLUM	DSPF lift up motor	Lifts up or moves down the document feed tray
SPED1	DSPF document upper limit sensor	Detects the upper limit of the DSPF document.
SPED2	DSPF document empty sensor	Detects document empty in the document feed tray
SPFC	DSPF document feed clutch	Controls ON/OFF of the rollers in the document feed section
SPLS1	DSPF document length detection short sensor	Detects the document length of the document feed tray upper
SPLS2	DSPF document length detection long sensor	Detects the document length of the document feed tray upper
SPPD1	DSPF document pass sensor 1	Detects pass of the document
SPRDMD	DSPF document random sensor	Detects the document size in random document feed
SPUM	DSPF document feed motor	Drives the rollers and transport rollers in the document feed section
SPWS	DSPF document width sensor	Detects the document width of the document feed tray upper
STLD	DSPF document feed tray lower limit sensor	Detects the lower limit of the document feed tray
STUD	DSPF document feed tray upper limit sensor	Detects the upper limit of the document feed tray

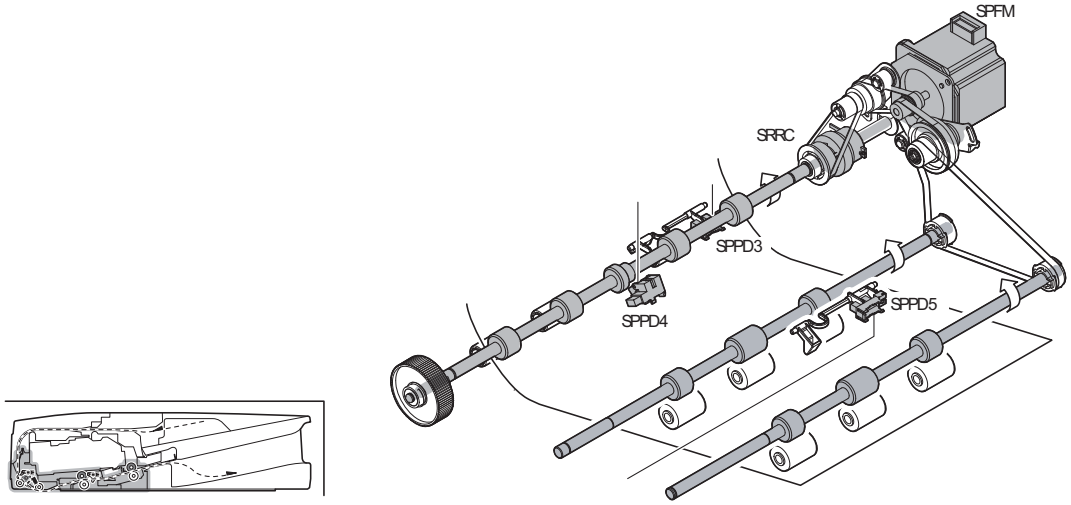
(2) Upper transport section



No.	Name	Function/Operation
1	No.1 registration roller (Drive)	Performs resist of document transport.
2	Transport roller 1 (Drive)	Transports paper from resist roller to No. 2 resist roller.

Signal name	Name	Function/Operation
SPPD2	DFPS document pass sensor 2	Detects pass of the document
SPUM	DSPF document feed motor	Droves the rollers, transport rollers and transport rollers in the document feed section
STRC	DSPF transport roller clutch	Controls ON/OFF of the transport roller 1
STRRC	DSPF No.1 registration roller clutch	Controls ON/OFF of No. 1registration roller

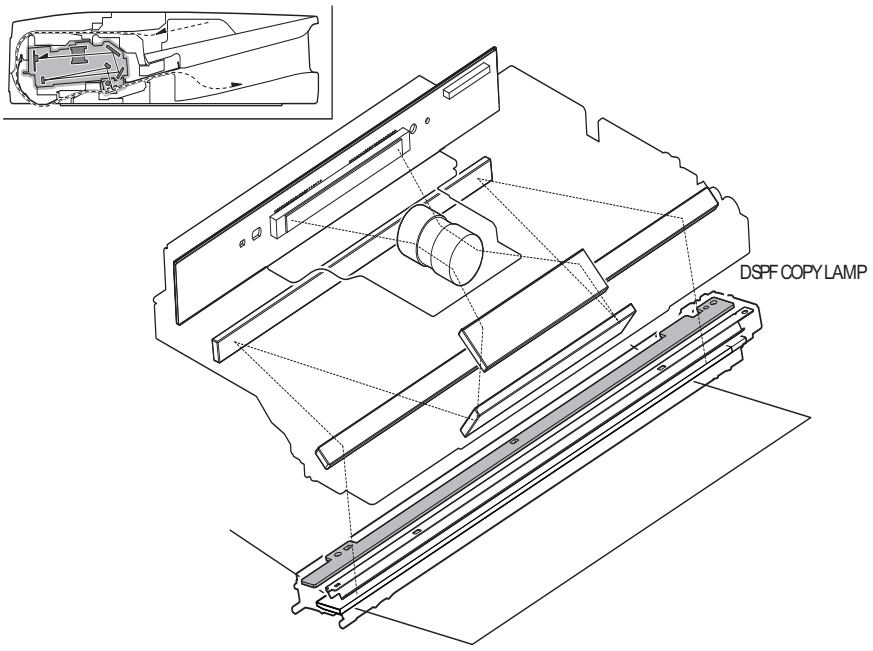
(3) Lower transport section



No.	Name	Function/Operation
1	No. 2 registration roller (Drive)	Make synchronization between the lead edge of a document and the scan start position
2	Transport roller 2 (Drive)	Transports document from the platen roller to the transport roller 3
3	Transport roller 3 (Drive)	Transports document from the transport roller 2 to the document exit roller

Signal name	Name	Function/Operation
SPFM	DSPF transport motor	Drives the transport roller.
SPPD3	DSPF document pass sensor 3	Detects pass of the paper.
SPPD4	DSPF document pass sensor 4	Detects pass of the paper.
SPPD5	DSPF document pass sensor 5	Detects pass of the paper.
SRRC	DSPF No. 2 registration roller clutch	Controls ON/OFF of No. 2 registration roller.

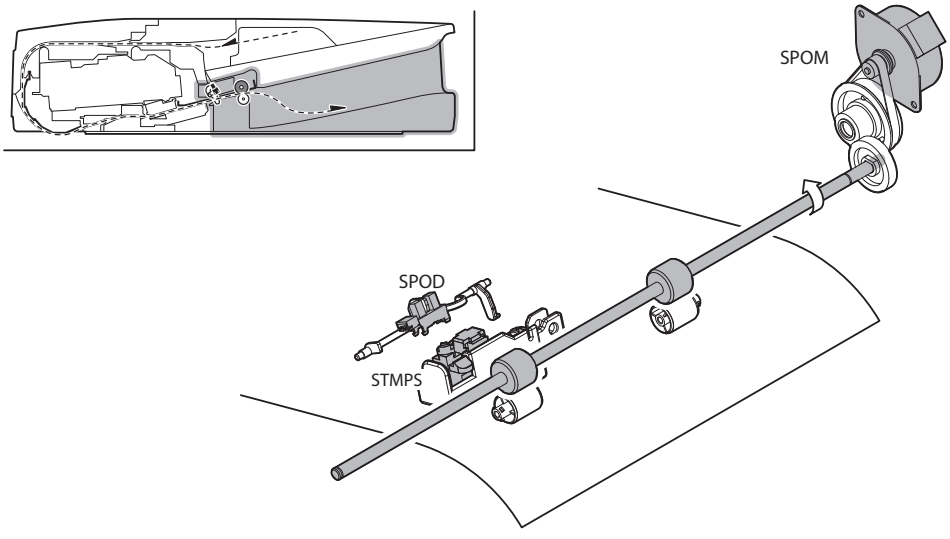
(4) Optical section



Signal name	Name	Function/Operation
DSPF COPY LAMP	DSPF copy lamp	Radiates light onto a document to allow the CCD to scan document images.

No.	Name	Function/Operation
1	Reflector	Converges lights from the copy lamp.
2	Mirror	Sends the document image to the lens.
3	Lens	Reduces the document image (light) and reflects it onto the CCD.
4	DSPF CCD PWB	Scans the document image (optical signals) and converts it into electrical signals.

(5) Paper exit section

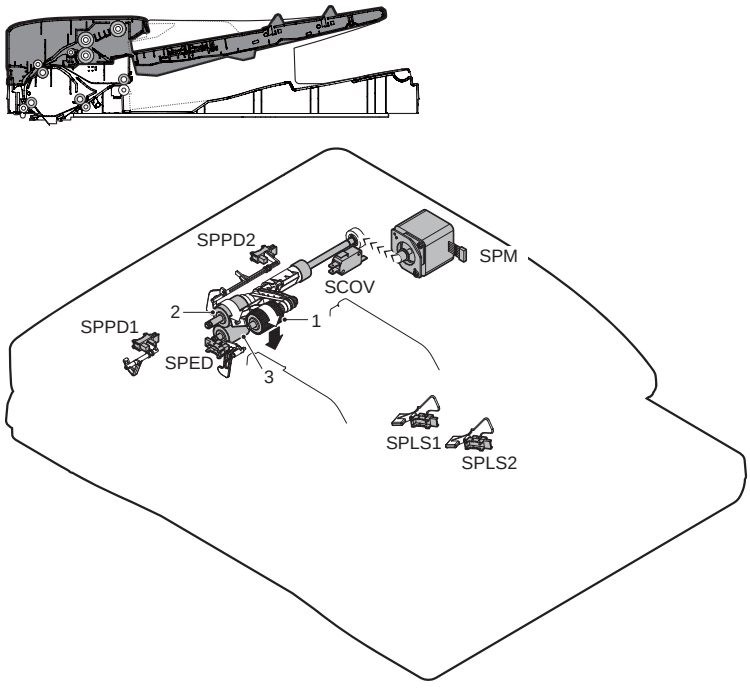


Signal name	Name	Function/Operation
SPOD	DSPF document exit sensor	Detects document exit of the document.
SPOM	DSPF document exit motor	Drives the document exit roller.
STMPS	Stamp solenoid	Drives the stamp solenoid.

No.	Name	Function/ Operation
1	Document exit roller (Drive)	Discharges document.

B. RSPF

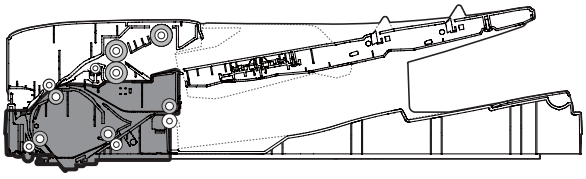
(1) Paper feed section

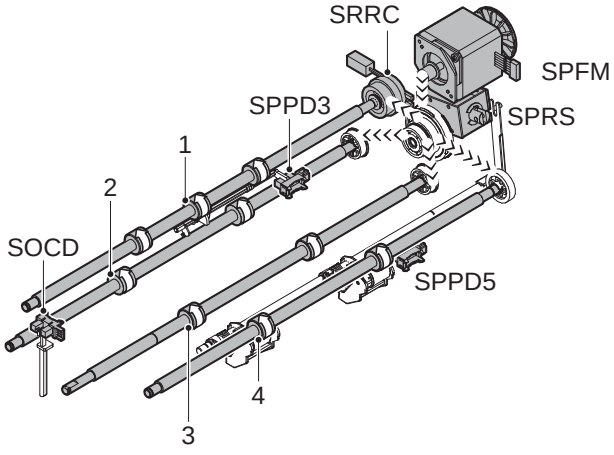


No.	Name	Function/Operation
1	Pick-up roller	Picks up a document and feeds it to the paper feed roller.
2	Paper feed roller	Performs the paper feed operation of documents.
3	Separation roller	Separate a document to prevent against double-feed.

Signal name	Name	Function/Operation
SCOV	Upper cover open/close sensor	Detects open/close of the RSPF upper cover
SPED	Document sensor	Detects document empty in the RSPF paper feed tray.
SPLS1	Paper size detector 1	Detects the document length in the RSPF paper feed tray
SPLS2	Paper size detector 2	Detects the document length in the RSPF paper feed tray
SPM	RSPF paper feed motor	Feeds a document
SPPD1	RSPF paper pass sensor 1	Detects paper feed and the document size in random paper feed
SPPD2	RSPF paper pass sensor 2	Detects paper pass

(2) Transport section





No.	Name	Function/Operation
1	Registration roller (Drive)	Transports a document to the transport roller 2. Controls the transport timing of the document and adjusts the document scanning timing
2	Transport roller 3 (Drive)	Transports a document transported from the document scanning section to the paper exit roller
3	Transport roller 2 (Drive)	Transports a document transported from the registration roller to the document scanning section
4	Paper exit roller (Drive)	Discharges a document. Switchbacks the document and transports it to the registration roller when scanning the back surface

Signal name	Name	Function/Operation
SOCD	RSPF open/close sensor	Detects open/close of the RSPF unit
SPFM	RSPF transport motor	Transports a document
SPPD3	Document transport sensor 3	Detects paper pass
SPPD4	Document transport sensor 5	Detects paper exit and switchback
SPRS	Paper exit roller pressure control solenoid	Controls ON/OFF of the transport power of the paper exit roller
SRRC	Registration roller clutch	Controls the registration roller (Controls the timing of document transport)

2. Operational descriptions

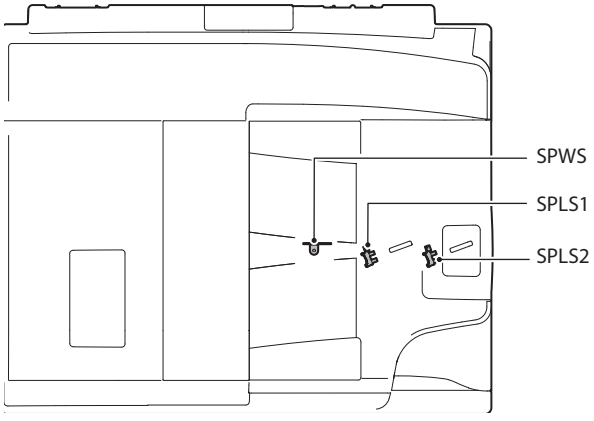
A. Document size detection

Size detection on the document tray

The document width is detected by the document width sensor (SPWS), and the document length is detected by the 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, mixed sizes of documents are loaded on the tray, the maximum size is detected.

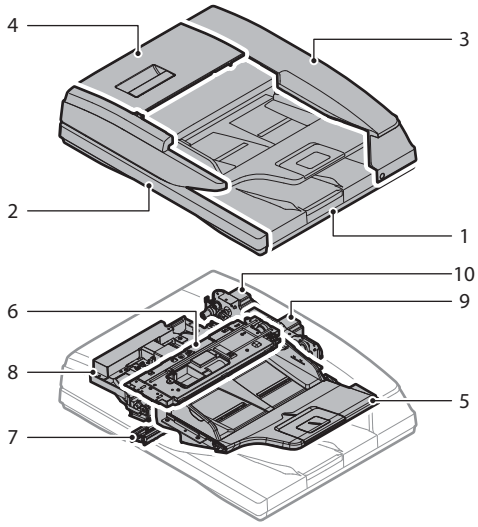
	Document size	Document length sensor	
		SPLS1	SPLS2
AB series	A5	OFF	OFF
	B5	OFF	OFF
	11" x 8.5"	OFF	OFF
	A4	OFF	OFF
	B5R	ON	OFF
	A4R	ON	OFF
	8.5" x 13"	ON	ON
	B4	ON	ON
	A3	ON	ON
	11" x 17"	ON	ON
Inch series	8.5" x 5.5"	OFF	OFF
	11" x 8.5"	OFF	OFF
	A4	OFF	OFF
	11" x 8.5"R	ON	OFF
	8.5" x 13"	ON	ON
	8.5" x 14"	ON	ON
	A3	ON	ON
	11" x 17"	ON	ON



3. Disassembly and assembly

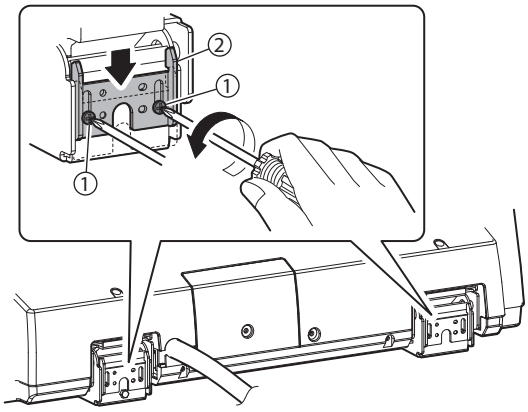
A. DSPF section

No.	Name
1	DSPF unit
2	Front cabinet
3	Rear cabinet
4	Upper door unit
5	Document feed tray
6	Document feed unit
7	Lamp unit
8	Optical unit
9	Drive unit
10	Transport drive unit
11	DSPF driver PWB
12	DSPF control PWB

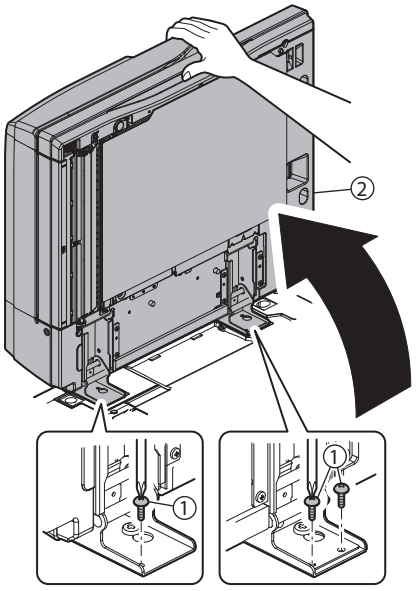


(1) DSPF unit

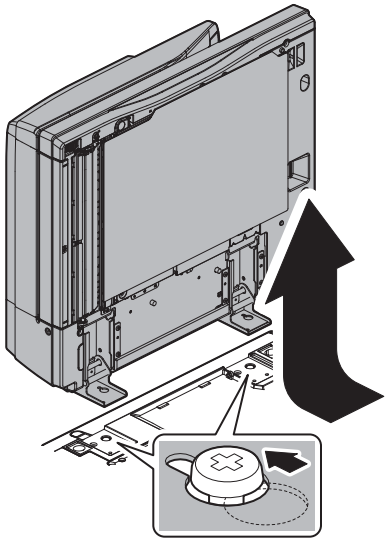
1) Remove the upper cabinet rear cover.
2) Remove the screw, and remove the earth wire. Disconnect the connector from the SCN Mother PWB.
3) Loosen the screw, and lower the angle adjustment plate.



4) Open the DSPF unit to put it straight up, and remove the screw.

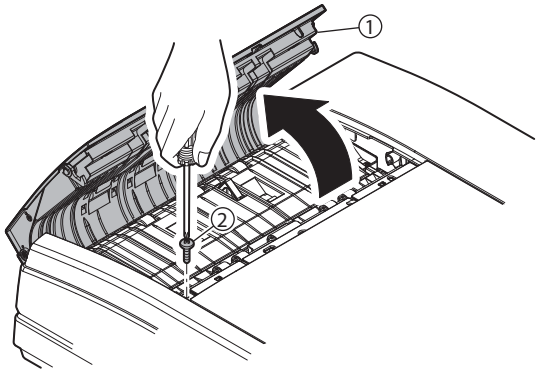


5) Slide the DSPF unit to the rear side, and fit the step screw with the key hole of the hinge, and lift it up to remove.

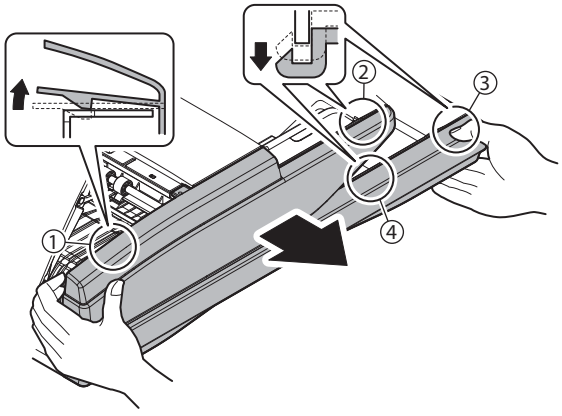


(2) Front cabinet

1) Open the upper door, and remove the screw.

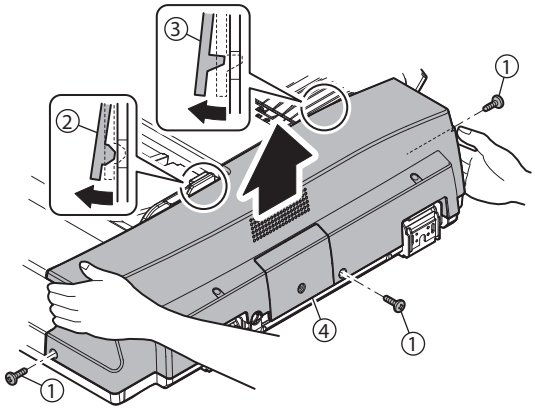


2) Remove the front cabinet.



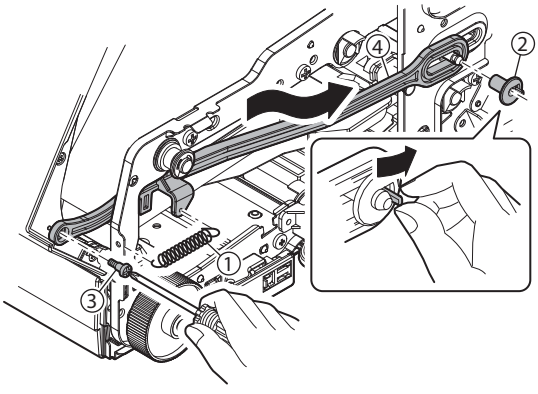
(3) Rear cabinet

1) Open the upper door. Remove the screw, and remove the rear cabinet.

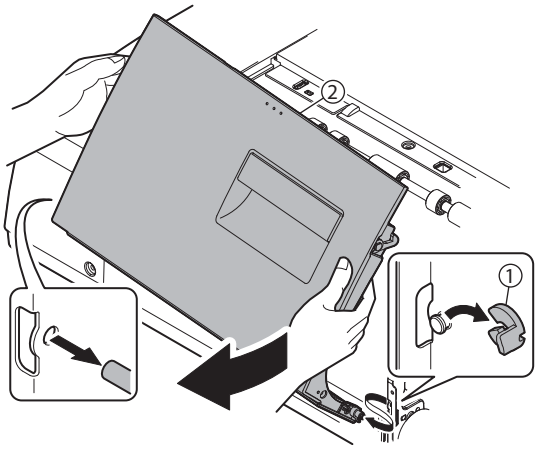


(4) Upper door unit

1) Remove the front cabinet.
2) Remove the sprig. Remove the pressure release axis holder and the screw, and remove the pressure release link lever.

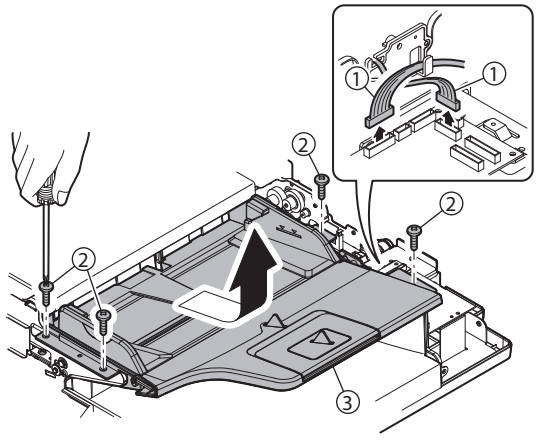


3) Remove the resin E-ring, and remove the upper door unit.



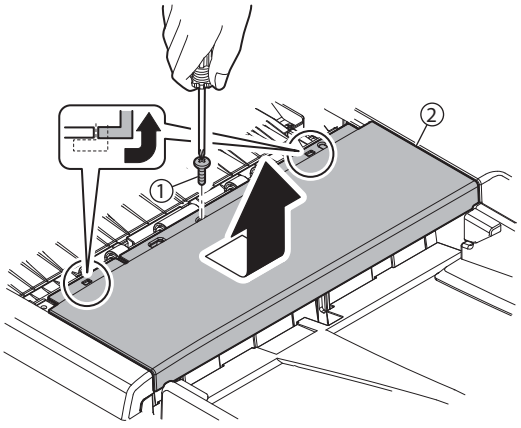
(5) Document feed tray

1) Remove the front cabinet.
2) Remove the rear cabinet.
3) Disconnect the connector. Remove the screw, and remove the document feed tray.

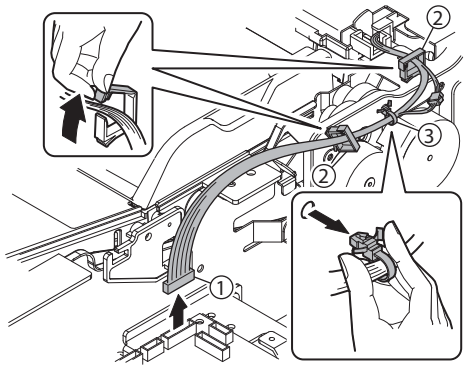


(6) Document feed unit

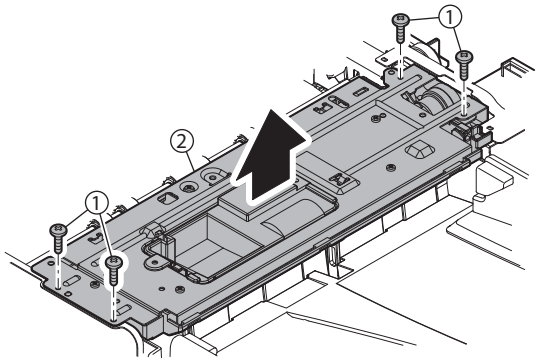
1) Remove the front cabinet.
2) Remove the rear cabinet.
3) Remove the screw. Remove the paper feed cover.



4) Disconnect the connector. Open the wire saddle. Remove the snap band.

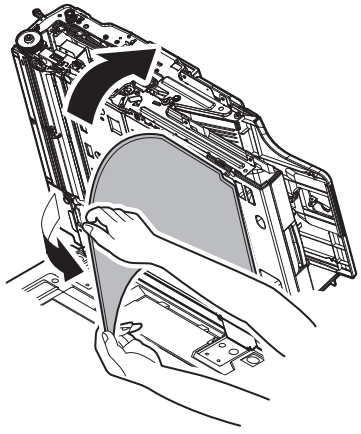


5) Remove the screw, and remove the document feed unit.

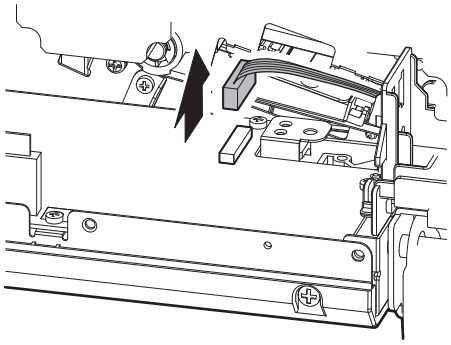


(7) Lamp unit

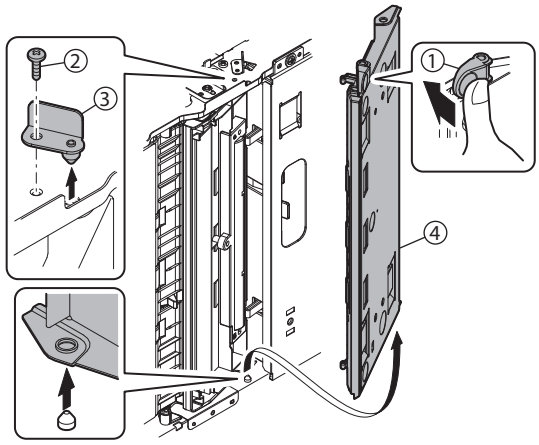
1) Remove the front cabinet.
2) Remove the rear cabinet.
3) Open the OC mat.



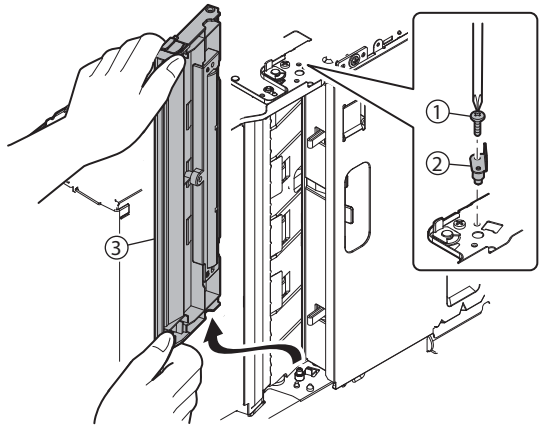
4) Disconnect the connector for lamp unit from the CONTROL PWB



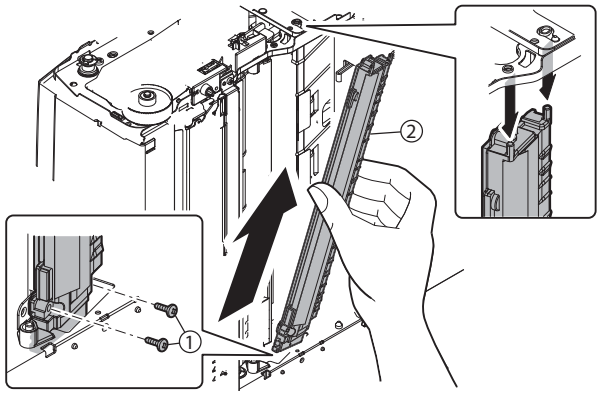
5) Open the lower door. Remove the screw, and remove the fulcrum plate. Remove the lower door.



6) Remove the screw, and remove the fulcrum plate. Remove the white reference plate.

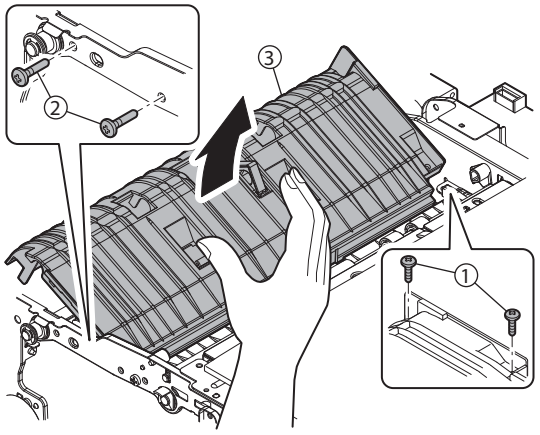


7) Remove the screw, and remove the lamp unit.

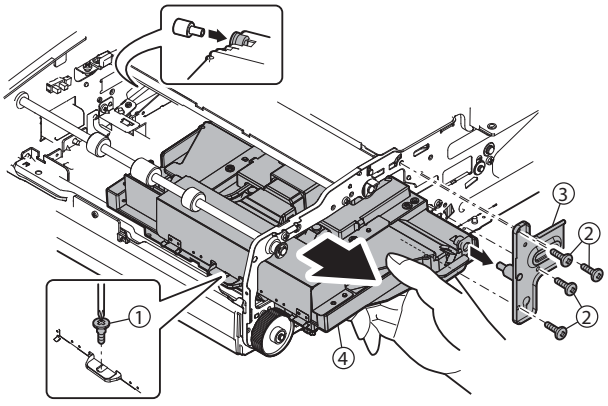


(8) Optical unit

1) Remove the upper door.
2) Remove the lamp unit.
3) Remove the screw, and remove the paper guide.



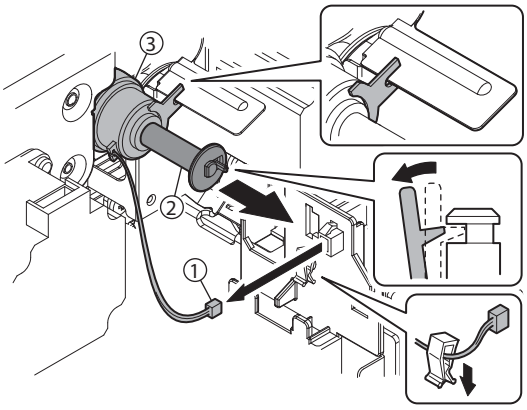
4) Remove the screw, and remove the optical fixing plate. Remove the optical unit.



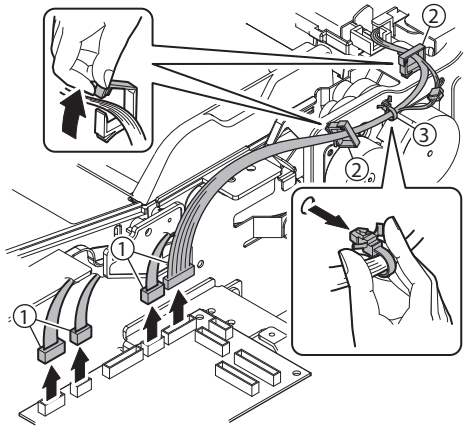
(9) Drive unit

1) Remove the rear cabinet.
2) Disconnect the connector. Remove the clutch stopper, and remove the No.1 registration roller clutch.

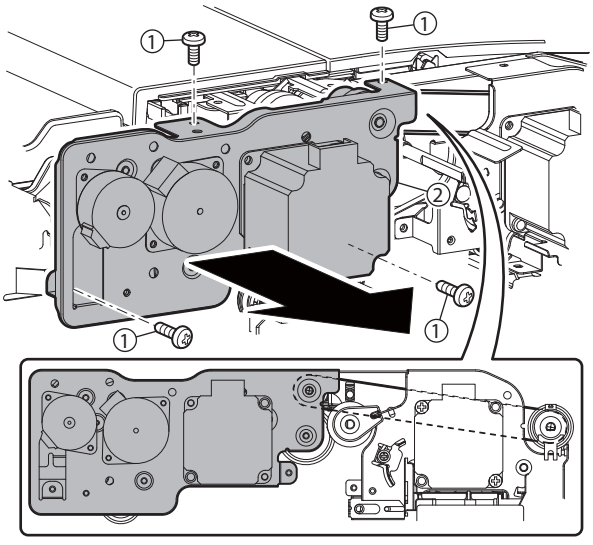
CAUTION: When assembling, check to confirm that the clutch stopper section is engaged with the plate.



3) Disconnect the connector, and open the edge saddle. Remove the snap band.



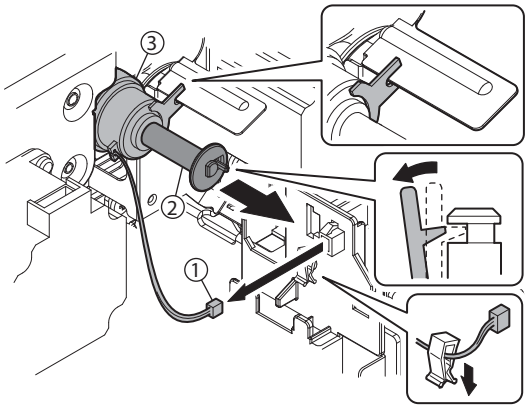
4) Remove the screw, and remove the drive unit.



(10) Transport drive unit

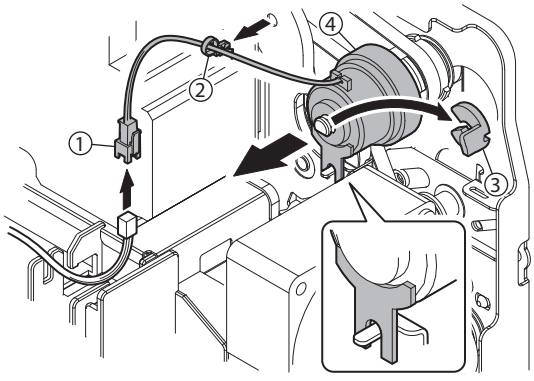
1) Remove the rear cabinet.
2) Disconnect the connector. Remove the clutch stopper, and remove the No.1 registration roller clutch.

CAUTION: When assembling, check to confirm that the clutch stopper section is engaged with the plate.

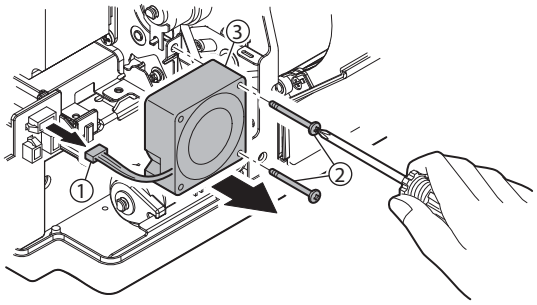


3) Disconnect the connector, and remove the snap band. Remove the resin E-ring, and remove the transport roller clutch.

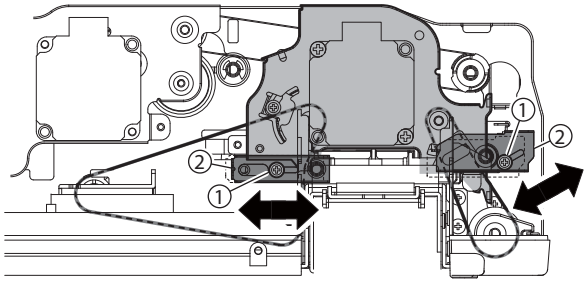
CAUTION: When assembling, check to confirm that the clutch stopper section is engaged with the plate.



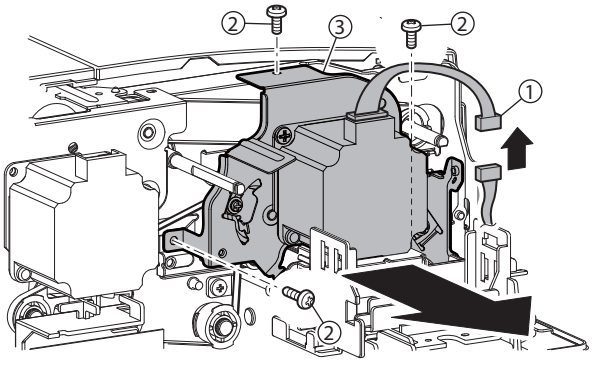
4) Disconnect the connector. Remove the screw, and remove the DSPF cooling fan.



5) Loosen the screw, and loosen the belt tension. Tighten the screw.

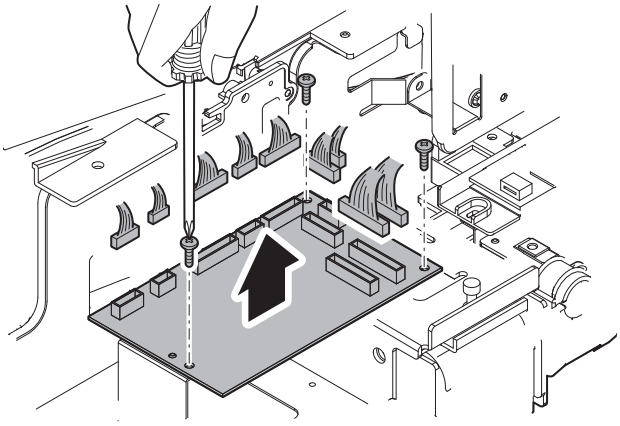


6) Disconnect the connector. Remove the screw, and remove the drive transport unit.



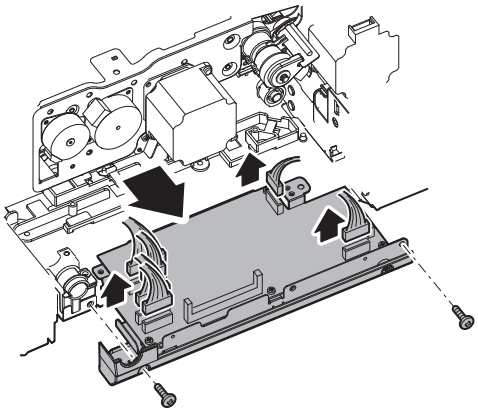
(11) DSPF driver PWB

1) Remove the rear cabinet.
2) Disconnect the connector. Remove the screws, and remove the DSPF driver PWB.

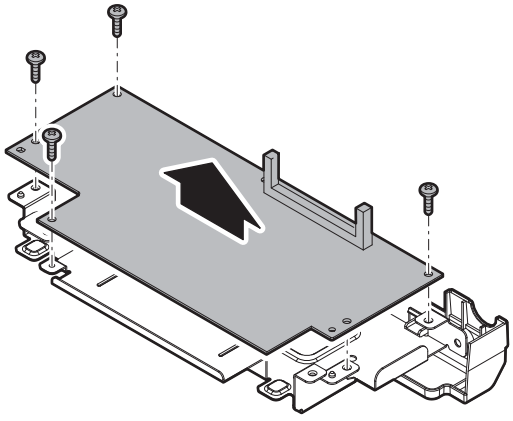


(12) DSPF control PWB

1) Remove the rear cabinet.
2) Disconnect the connector, and remove the screws. Remove the control PWB unit.



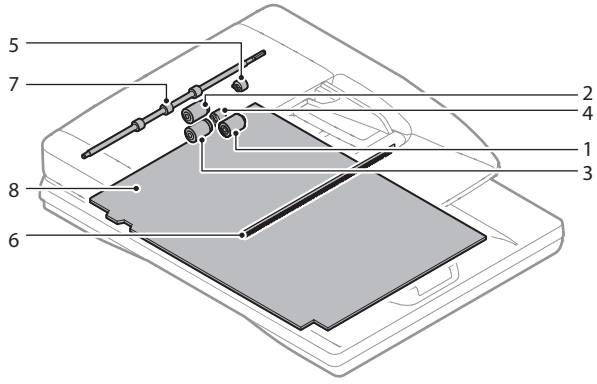
3) Disconnect the connector, and remove the screws. Remove the DSPF control PWB.



B. RSPF section

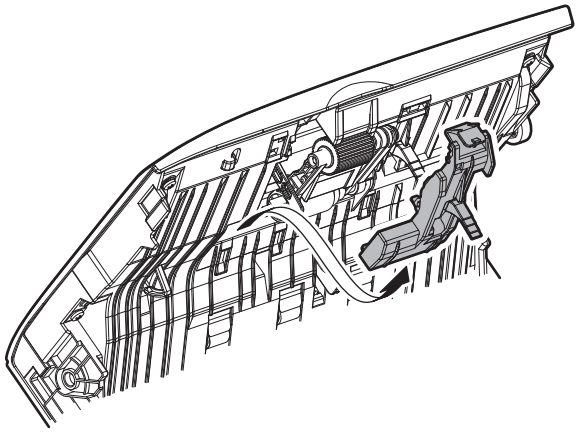
(1) RSPF unit

No.	Name
1	Document pickup roller
2	Paper feed roller
3	Separation roller
4	Torque limiter SPF
5	Take-up torque limiter
6	Discharge brush
7	Registration roller
8	OC mat

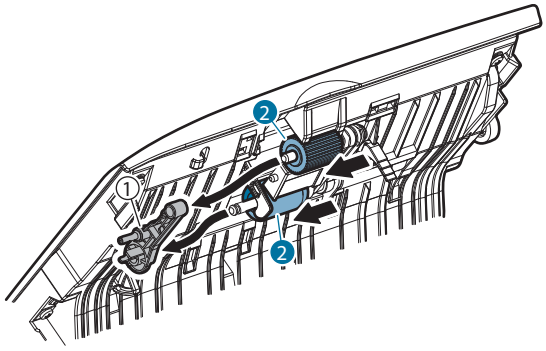


a. Document pickup roller, Paper feed roller

1) Open the paper feed unit, and remove the cover.

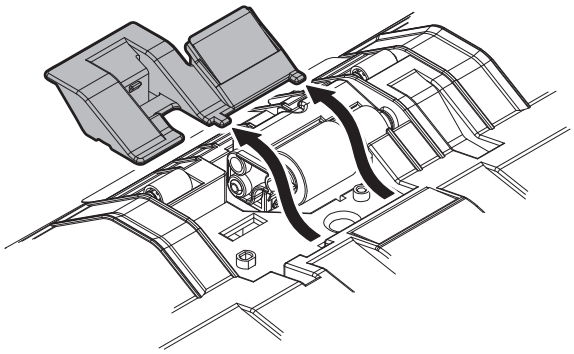


2) Remove the holder, and remove the document pickup roller, and the paper feed roller.

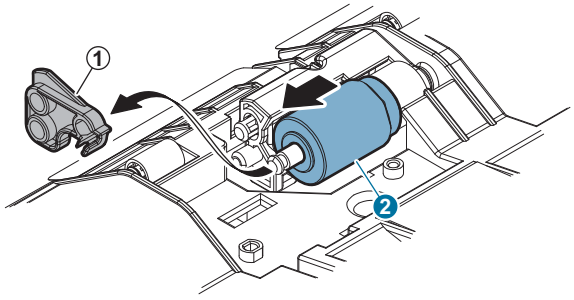


b. Separation roller, Torque limiter SPF

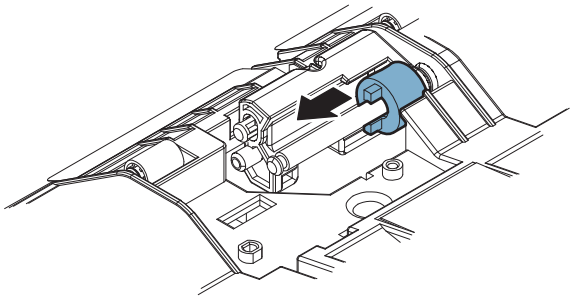
1) Open the paper feed unit, and remove the cover.



2) Remove the holder, and remove the separation roller.

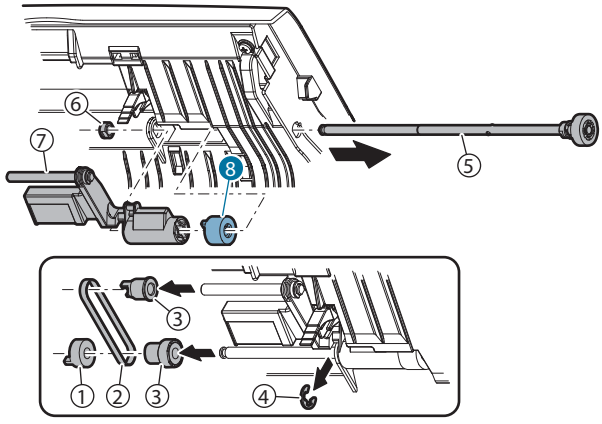


3) Remove the torque limiter SPF.



c. Take-up torque limiter

1) Remove the one-way coupling, the belt, and the pulley. Remove the E-ring. Pull out the shaft, and remove the bearing, the holder, and the take-up torque limiter.

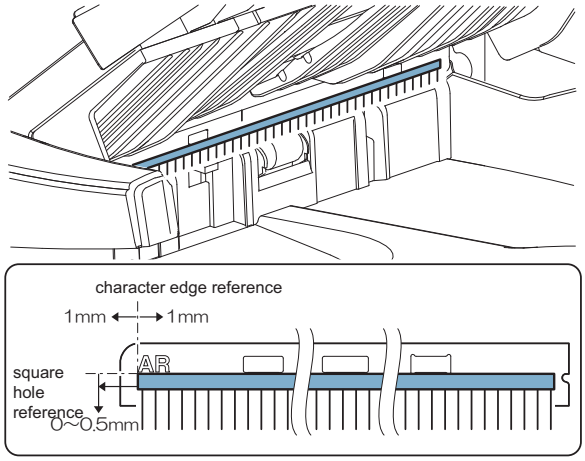


d. Discharge brush

1) Open the document tray, and remove the discharge brush.

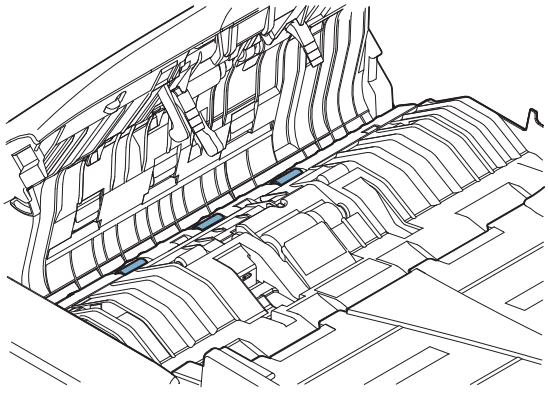
Important

When replacing the discharge brush, attach a new brush to the reference.



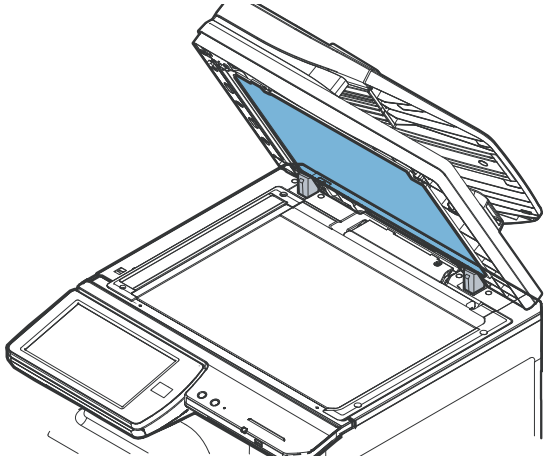
e. Registration roller

1) Open the paper feed unit, and clean the registration roller.



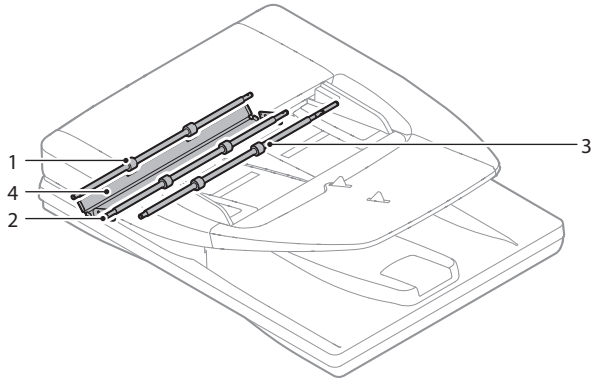
f. OC mat

1) Open the RSPF unit, and clean the OC mat.



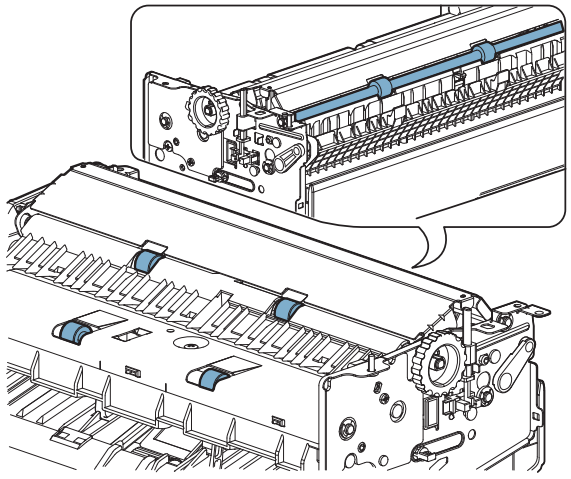
(2) RSPF transport unit

No.	Name
1	Transport roller 2
2	Transport roller 3
3	Paper exit roller
4	Scan plate



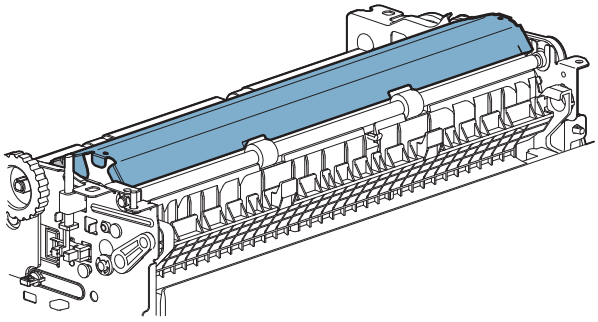
a. Transport roller 2, Transport roller 3, Paper exit roller

1) Clean the transport roller 2, the transport roller 3, and the paper exit roller



b. Scan plate

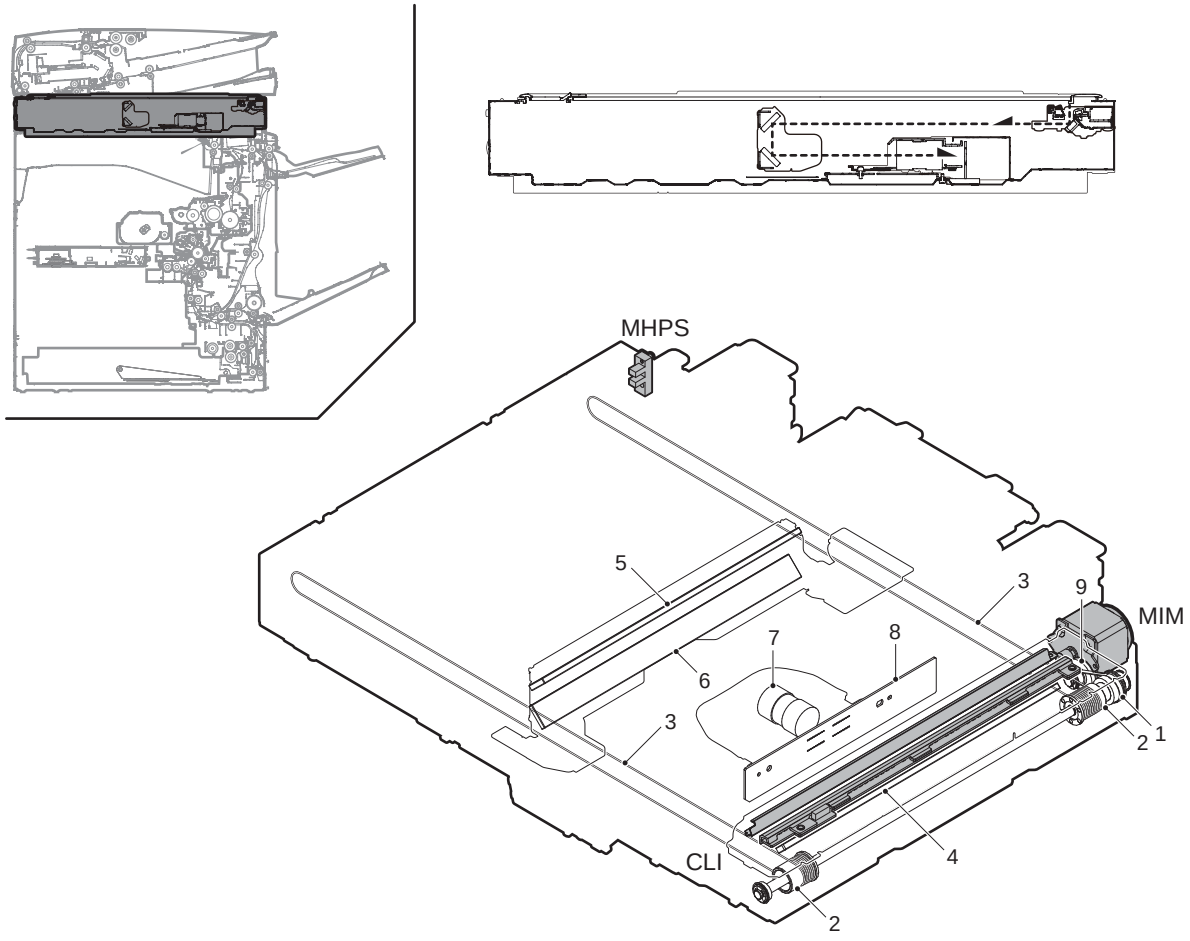
1) Clean the scan plate.



[D] SCANNER SECTION

1. Electrical and mechanical relation diagram

A. Electrical and mechanism relation diagram



Signal name	Name	Function/Operation
CLI	LED lamp unit	Illuminates the document
MHPS	Scanner home position sensor	Detects the scanner home position.
MIM	Scan motor	Drives the scanner unit. (scan, return operations)

No.	Name	Function/Operation
1	Pulley belt	Transmits the scanner motor power to the pulley
2	Pulley	Drives the scanner drive wire
3	Scanner drive wire	Transmits the scanner motor drive to the copy lamp unit and the mirror base unit
4	No.1 mirror	Reflects the document image into the No.2 mirror
5	No.2 mirror	Reflects the document image into the No.3 mirror
6	No.3 mirror	Reflects the document image into the lens
7	Lens	Shrinking the image (light) of the document and project it on CCD
8	CCD PWB	Reads the document image (optical signal) and converts it into the electric signal
9	Idle gear	Transmits the scanner motor drive power to the belt

B. Operational descriptions

(1) Outline

This section performs the following functions.

1) Light is radiated to the document by the LED 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).

(2) Detail description

a. 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.

b. LED lamp drive

The LED lamp (CLI) is driven by the LED lamp drive voltage generated in the LED drive PWB according to the control signal sent from the scanner control PWB.

c. Image scan/color separation

Light is radiated to the document by the LED 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).

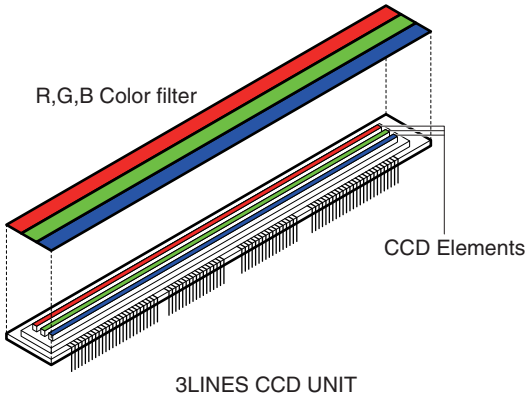
The color components of document images are extracted to R, G, and B separately by the three kinds of CCD elements (R,G,B).

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.

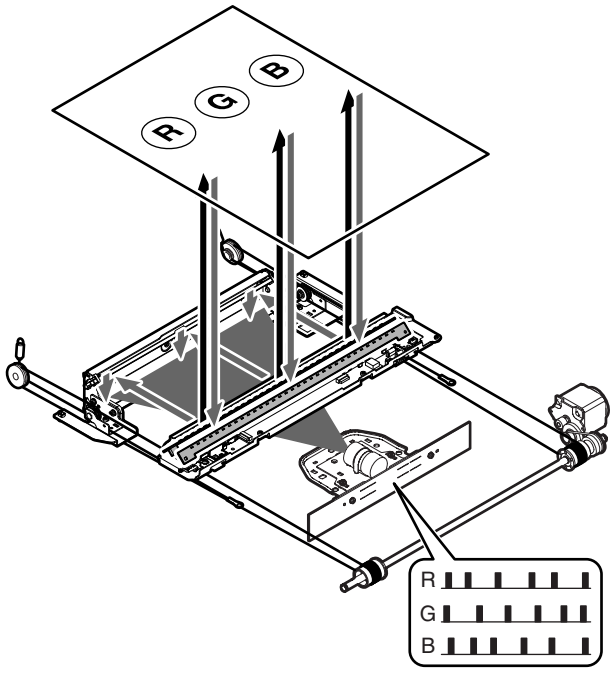
The CCD unit looks like one unit, but it includes three kinds of CCD elements, R, G, and B.

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.

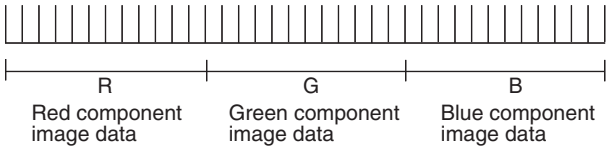
The scan resolution is 600 dpi.



3LINES CCD UNIT

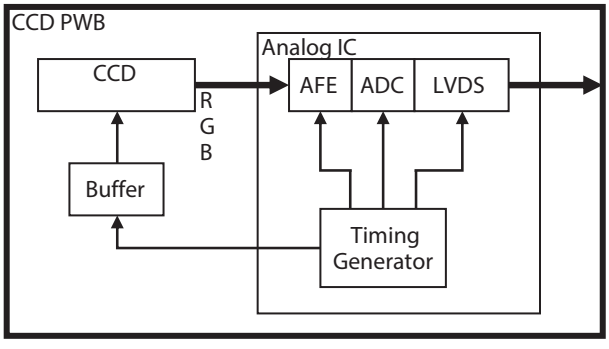


(Image data for 1 line)



d. 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.



e. Zooming operation

Zooming in the sub scanning direction is performed by changing the scanning speed in the sub scanning direction.

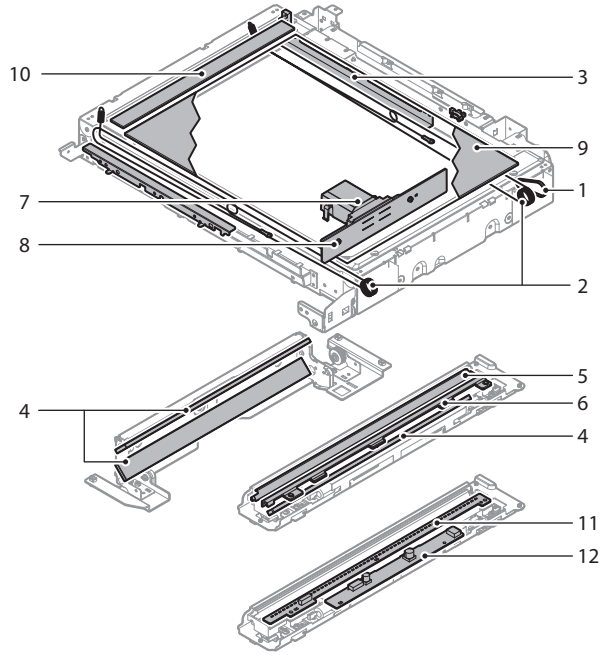
Zooming in the main scanning direction is not performed optically, but performed with the image process technology (by the software).

2. Disassembly and assembly

A. Scanner unit

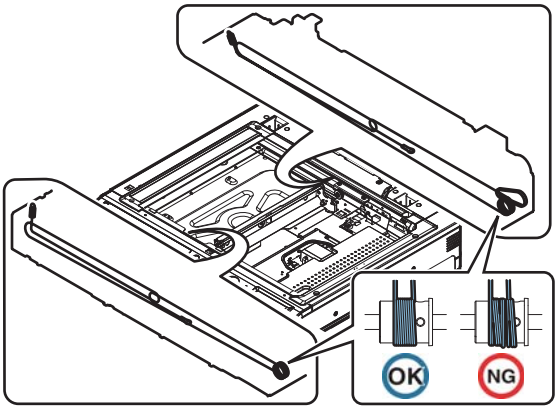
(1) Scanner unit

No.	Name
1	Drive belt
2	Drive wire
3	Rails
4	Mirror
5	Reflector
6	Scanner lamp
7	Lens
8	CCD
9	Table glass
10	SPF glass
11	LED PWB
12	LED driver PWB



a. Drive belt, Drive wire

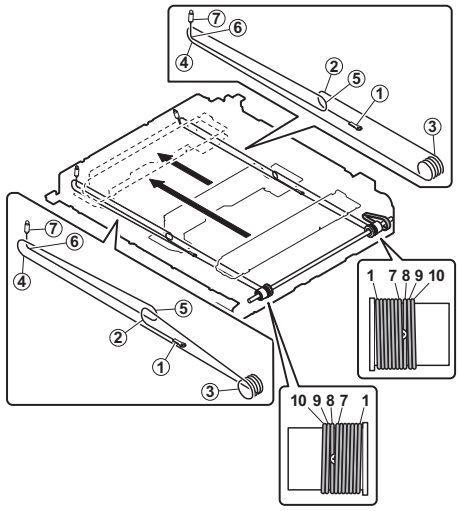
1) Remove the table glass.
2) Check the tension of the drive belt and the drive wire. Check to confirm that the drive wire in the winding pulley is wound without clearance.



Important

Wind the drive wire in the sequence of 1 to 7 as shown in the figure below and secure it.

When winding the drive wire around the pulley, shift the mirror unit to the vicinity of the home position, and wind 7 turns as shown in the figure, and fix the 8th turn with a screw. Then wind two turns furthermore around the pulley.



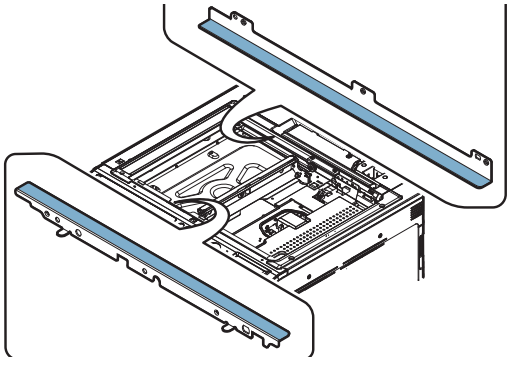
b. Rails

1) Remove the table glass.
2) Grease each rail.

Important

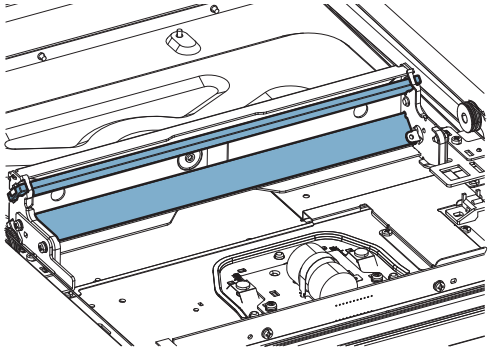
Be careful not to allow grease to come in contact with drive wires.

If grease contacts drive wires, clean wires thoroughly.

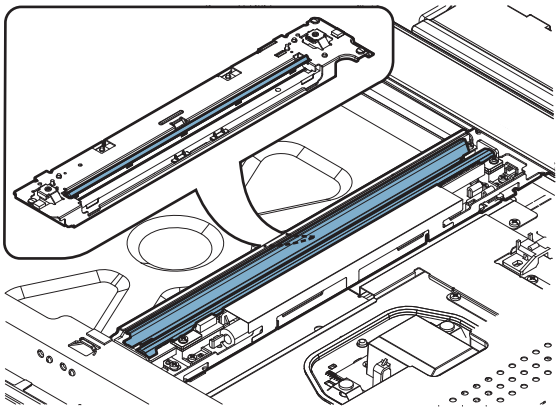


c. Mirror, Reflector, Scanner lamp

1) Remove the table glass.
2) Clean the No. 2 mirror, and the No. 3 mirror.

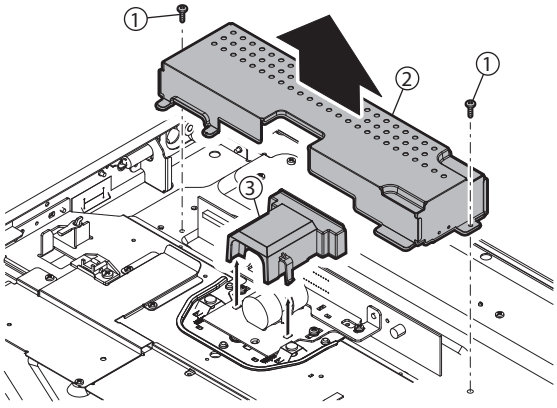


3) Clean the reflector, the scanner lamp, and the No. 2 mirror.

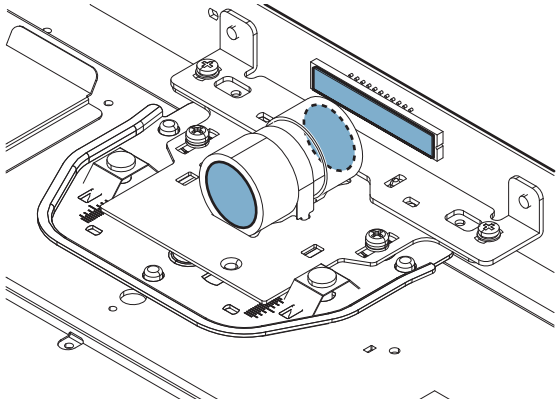


d. Lens, CCD

1) Remove the table glass.
2) Remove the dark box, and the cover.

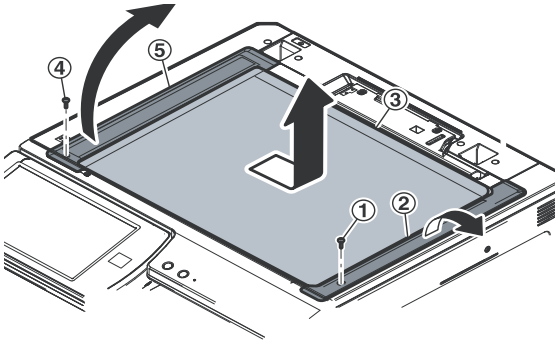


3) Clean the lens, and the CCD.

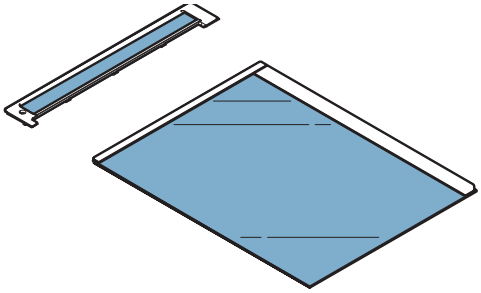


e. Table glass, SPF glass

1) Remove the glass holder. and the table glass. Remove the table glass, and the SPF glass.

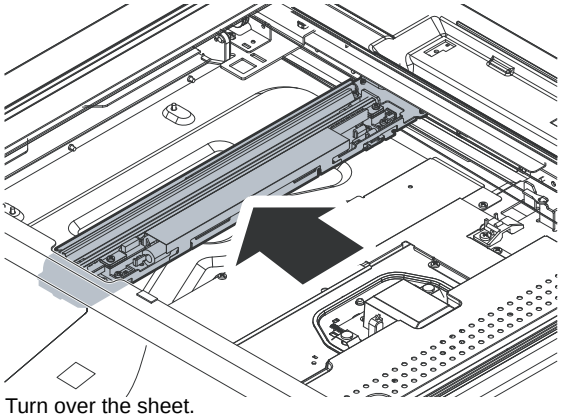


2) Clean the both surfaces of the table glass, and the SPF glass.



f. LED PWB, LED driver PWB

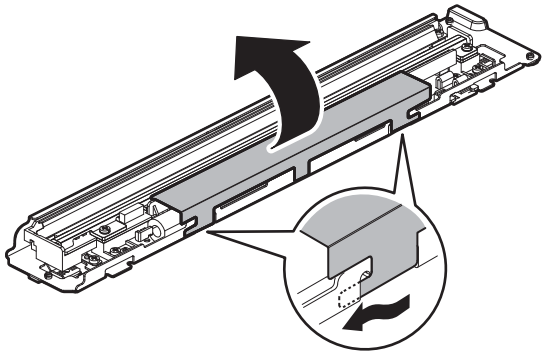
1) Remove the table glass.
2) Shift the lamp unit to the notch section of the scanner base plate.



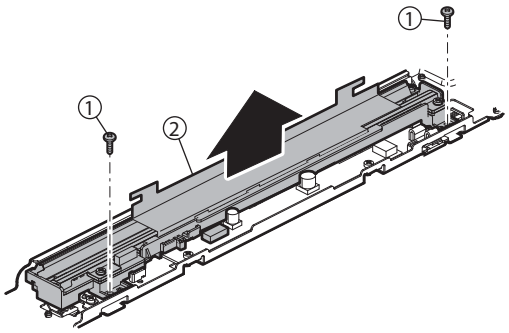
3) Turn over the sheet.

Important

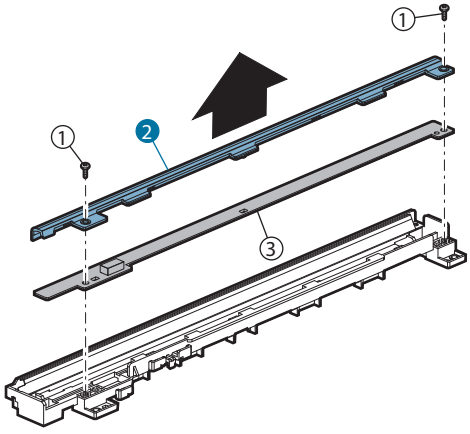
When attaching the sheet to the original position, insert the L-shape sections into the inside of the metal plate and attach the center portion to the metal plate with double-stick tape.



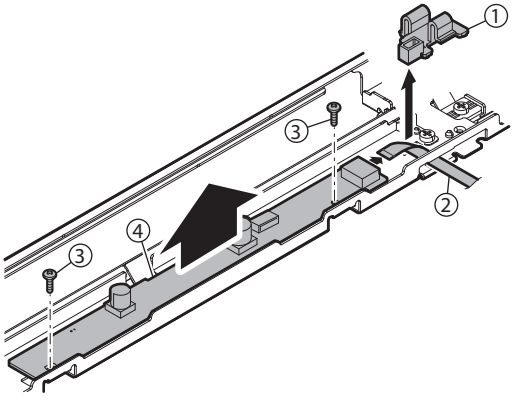
4) Remove the lamp guide. Disconnect the connector from the LED driver PWB.



5) Remove the scanner lamp, and the LED PWB. Disconnect the connector from the LED PWB.



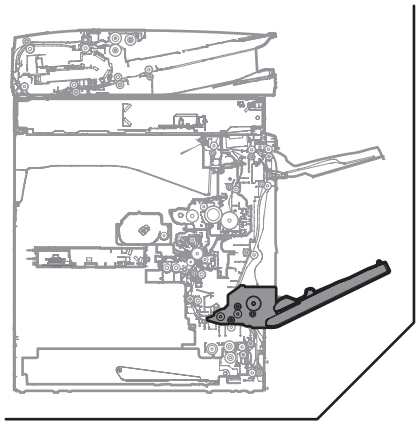
6) Remove the harness holder, and remove the flat cable from the LED driver PWB. Remove the LED driver PWB.

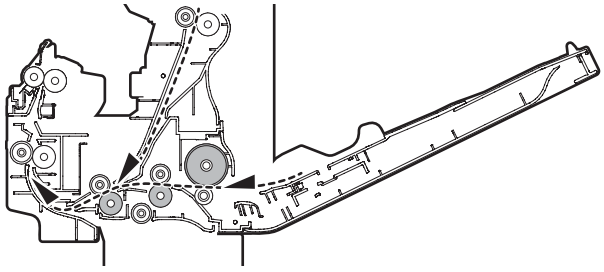


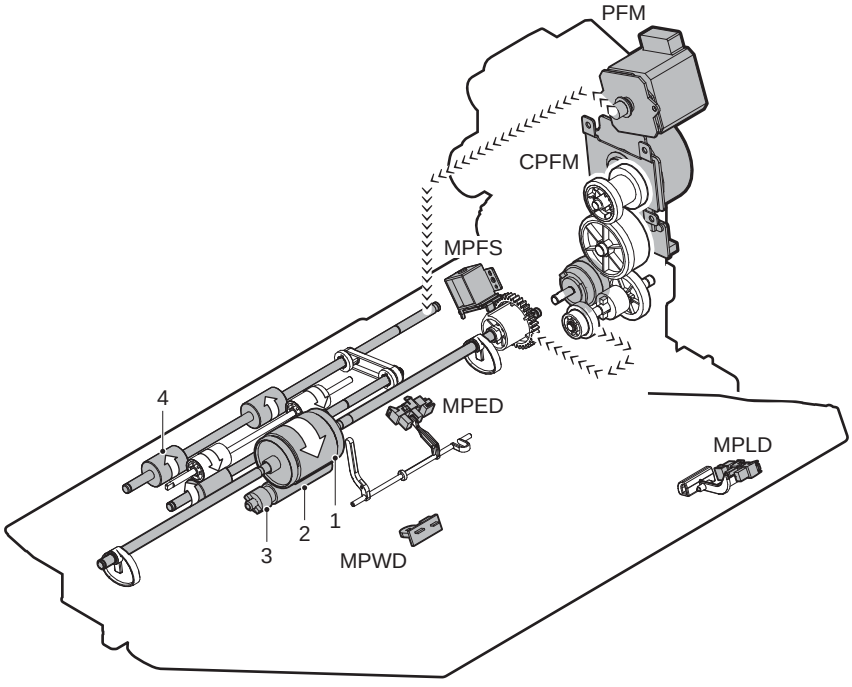
[E] PAPER FEED SECTION

1. Electrical and mechanical relation diagram

A. Manual paper feed section



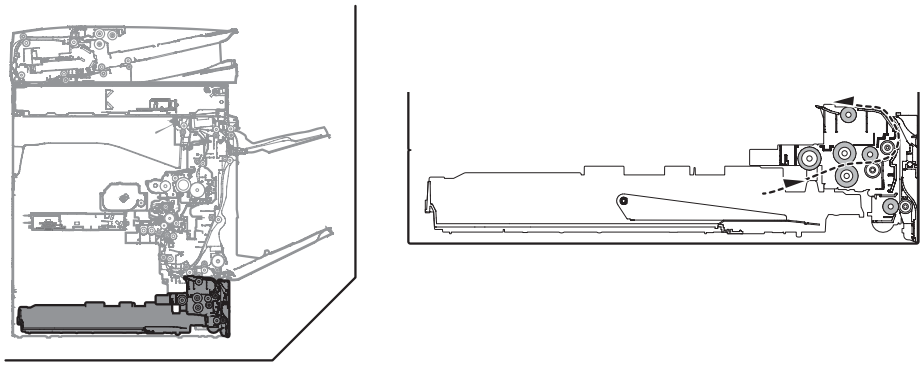


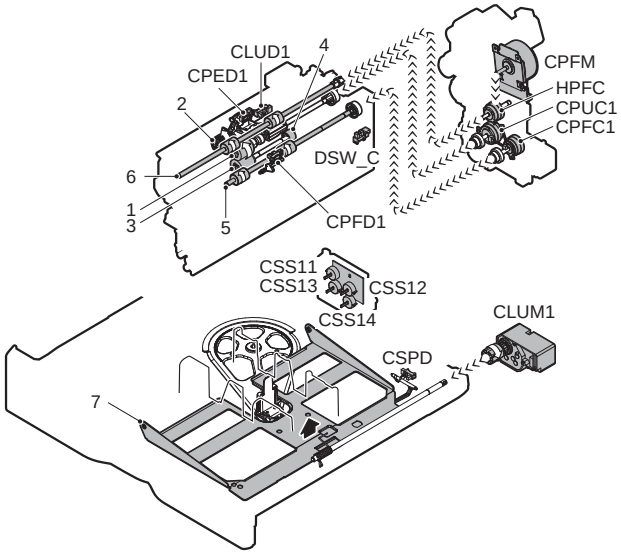


Signal name	Name	Function/Operation
CPFM	Paper feed motor	Drives the paper feed section.
MPED	Manual feed paper empty detection	Detects the manual feed paper empty.
MPFS	Manual paper feed gate solenoid	Controls the manual paper feed gate Open/Close.
MPLD	Manual feed paper length detector	Detects the manual paper feed tray paper length.
MPWD	Manual paper feed tray paper width detector	Detects the manual paper feed tray paper width.
PFM	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 (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	Torque limiter	A certain level of resistance force is supplied to the rotation of the separation roller to prevent double feed.
4	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.

B. Tray paper feed section





Signal name	Name	Function/Operation
CLUD1	Tray 1 upper limit detection (Lift HP detection)	Detects the tray 1 upper limit.
CLUM	Paper tray lift-up motor (Paper feed tray 1)	Drives the lift plate of the paper feed tray.
CPED	Tray 1 paper empty detection	Detects the tray 1 paper empty.
CPFC1	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.
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 1 section.
CSPD	Tray 1 paper remaining quantity detection	Detects the tray 1 paper remaining quantity.
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	
DSW_C	Tray 1 and 2 transport cover open/close detection	Detects the tray 1 and 2 transport cover open/close.
HPFC	Transport roller clutch	Controls the transport roller

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 feed roller.
3	Separation roller (No. 1 paper feed tray)	Separates paper to prevent Double Feed.
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 5 (Drive)	Transports paper from the paper feed tray 1 to the transport roller 7.
6	Transport roller 7 (Drive)	Transports paper from the paper feed tray 1, 2, 3, and 4 to the transport roller 8.
7	Rotating plate	Lifts up the paper, and always keeps constant the paper feed position.

2. Operational descriptions

A. Bypass

The paper tray moves up and paper feed roller 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.

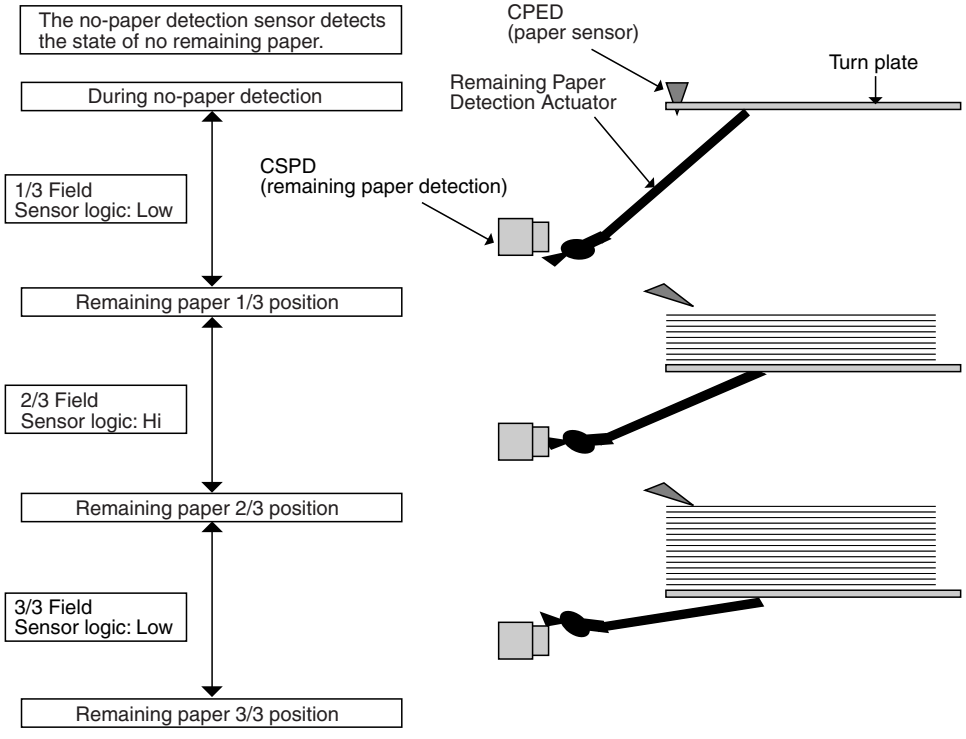
(3) Paper remaining detection

* Paper remaining quantity levels are in four steps total. Three steps regard paper quantity remaining and one step regards paper empty.

(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.

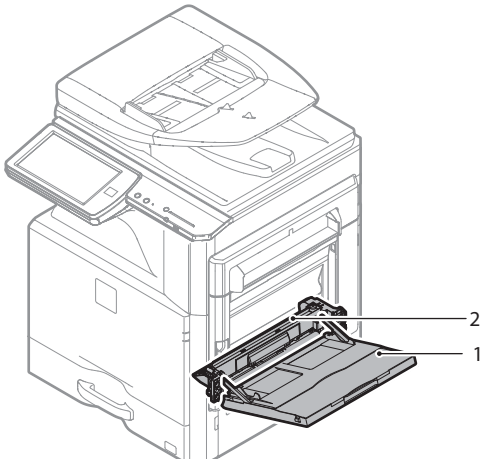
(Figure showing state transition of the remaining paper detection sensor during tray elevation and changes in status according to the number of remaining sheets)



3. Disassembly and assembly

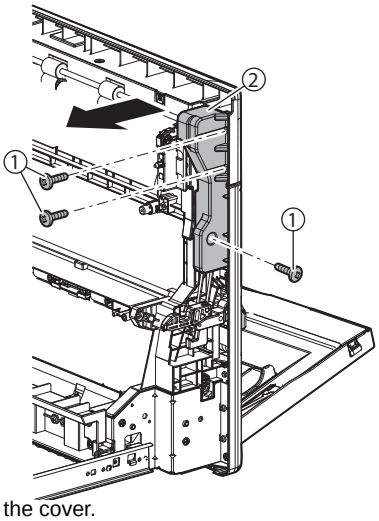
A. Manual paper feed unit

No.	Name
1	Manual paper feed tray
2	Manual paper feed unit

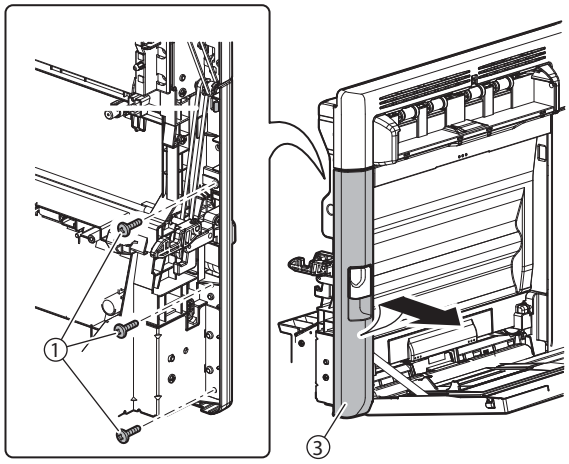


(1) Manual paper feed tray

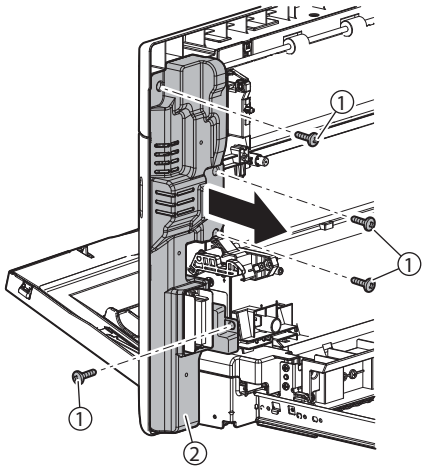
1) Open the right door, and remove the cover.



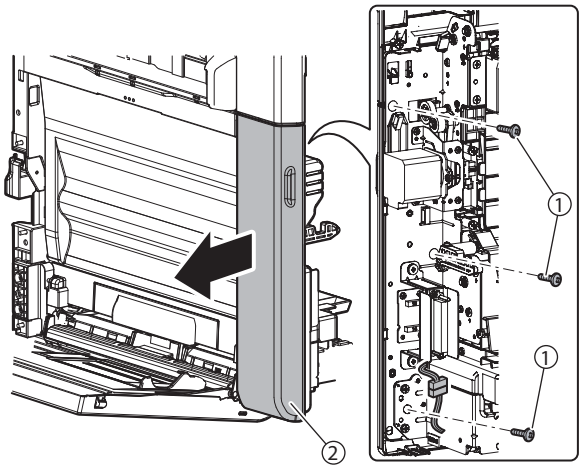
2) Remove the cover.



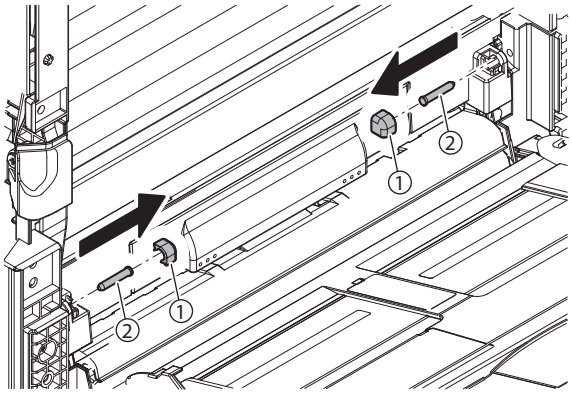
3) Remove the cover.



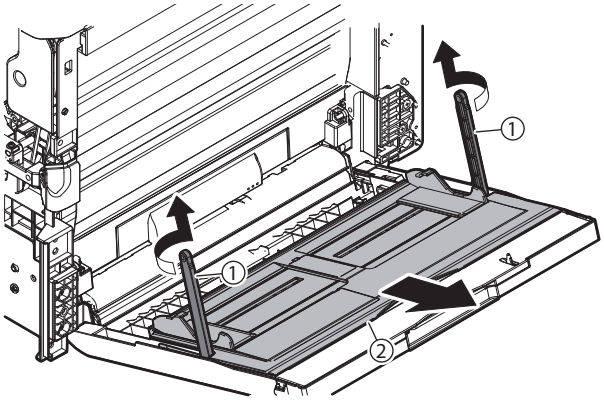
4) Remove the cover.



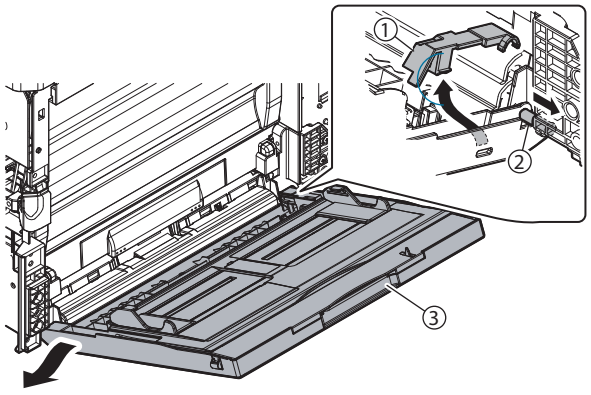
5) Remove the shaft.



6) Slide the tray and remove the arms.

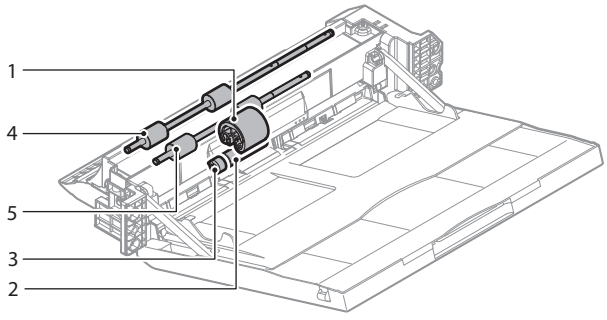


7) Remove the cover, and remove the manual paper feed tray.



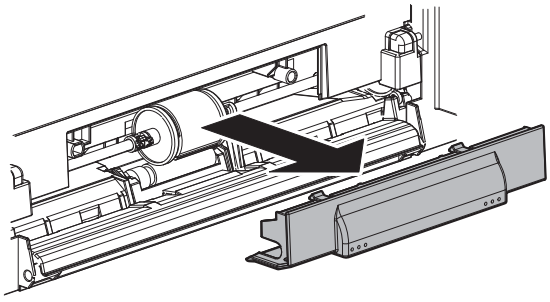
(2) Manual paper feed unit

No.	Name
1	Paper feed roller
2	Separation roller
3	Torque limiter
4	Transport roller 9
5	Transport roller 10 (36cpm machine)

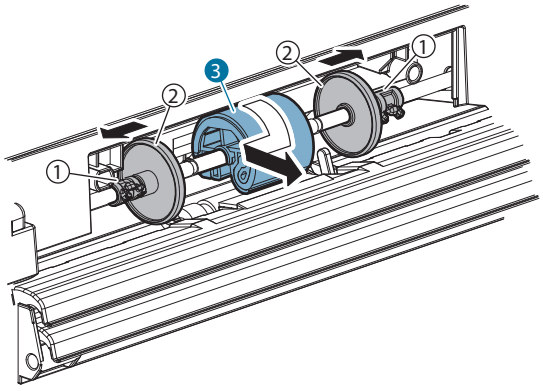


a. Paper feed roller, Separation roller, Torque limiter

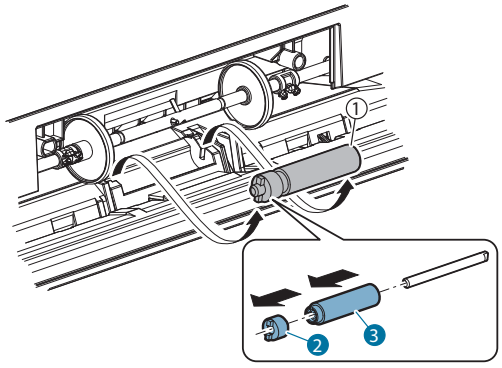
1) Remove the cover.



2) Slide the stopper and the collar, and remove the paper feed roller.

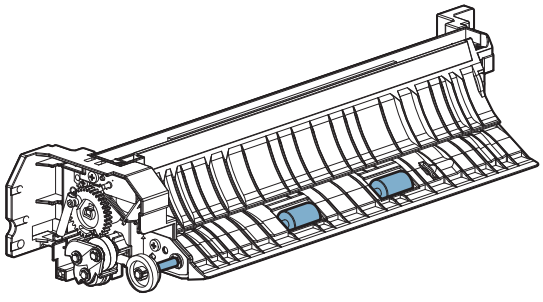


3) Remove the separation roller, and the torque limiter.



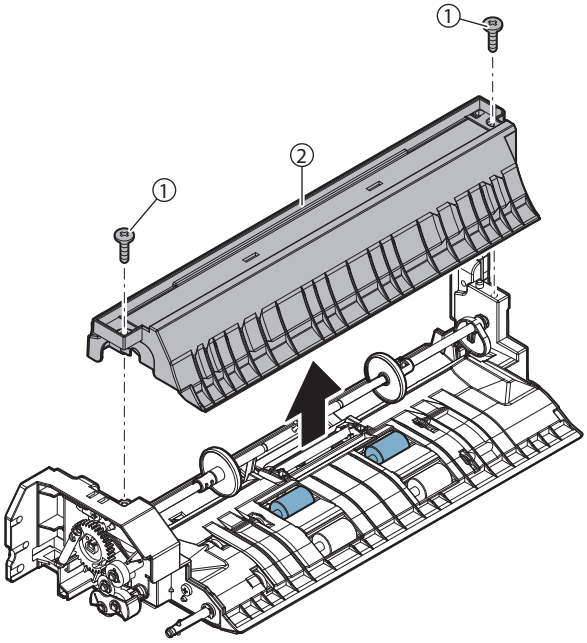
b. Transport roller 9

1) Clean the transport roller 9.



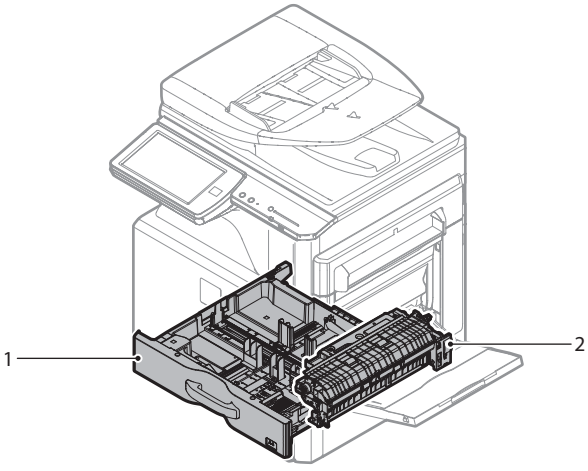
c. Transport roller 10

1) Remove the paper guide, and clean the transport roller 10.



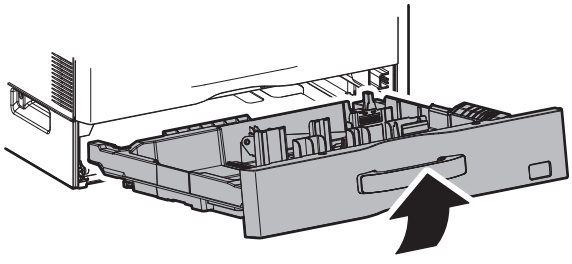
B. Tray paper feed section

No.	Name
1	Paper feed tray
2	Tray paper feed unit



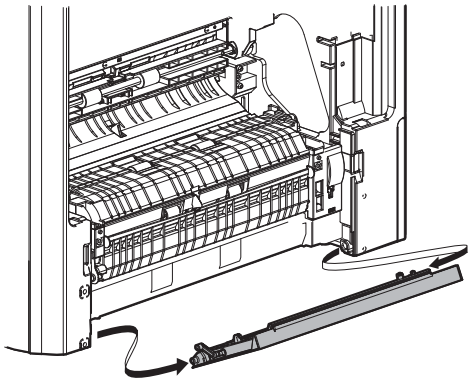
(1) Paper feed tray

1) Pull out the paper feed tray, and lift and remove it.

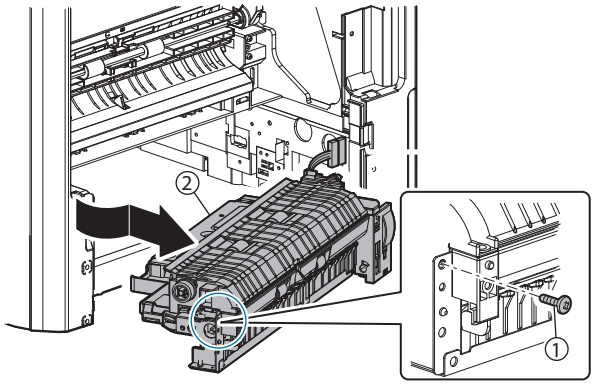


(2) Tray paper feed unit

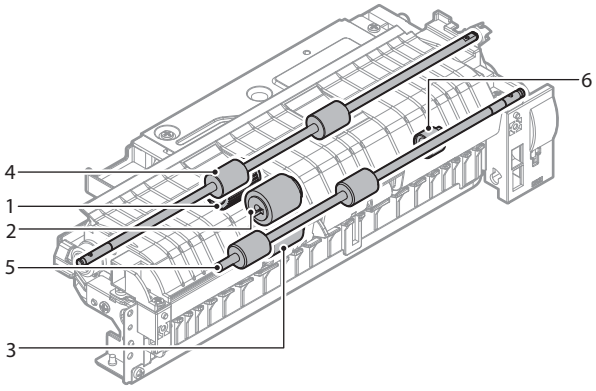
1) Remove the paper feed tray.
2) Remove the right door lower.



3) Remove the tray paper feed unit.

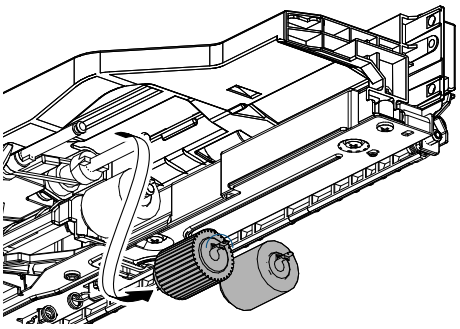


No.	Name
1	Paper pickup roller
2	Paper feed roller
3	Separation roller
4	Transport roller 4
5	Transport roller 2
6	Torque limiter

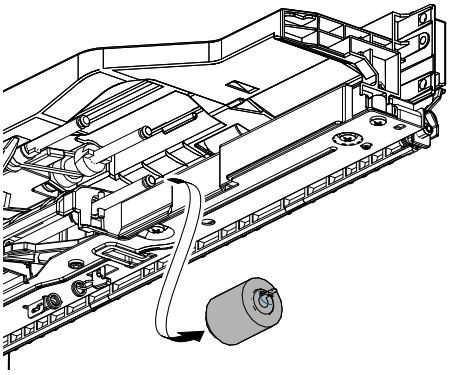


a. Paper pickup roller, Paper feed roller, Separation roller

1) Remove the paper pickup roller, and the paper feed roller.

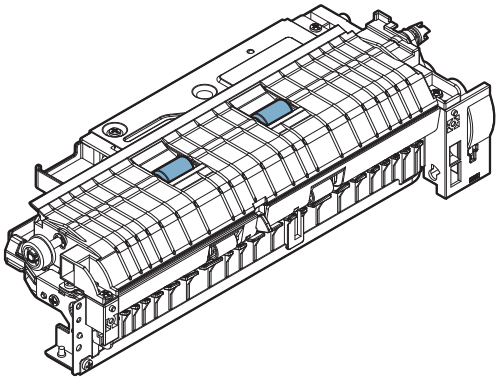


2) Remove the separation roller.



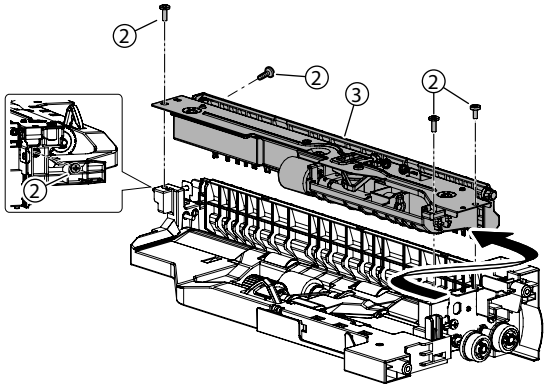
b. Transport roller 4

1) Clean the transport roller 4.

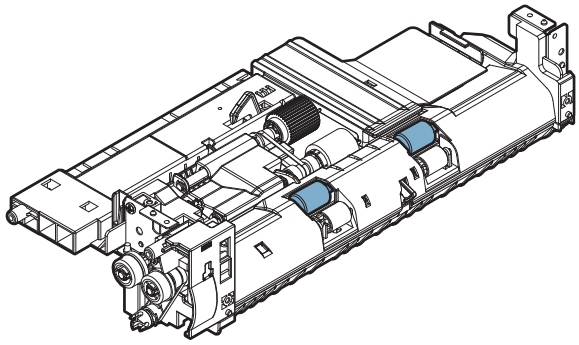


c. Transport roller 2

1) Remove the E-ring and the bearing, and remove the paper feed lower PG unit.

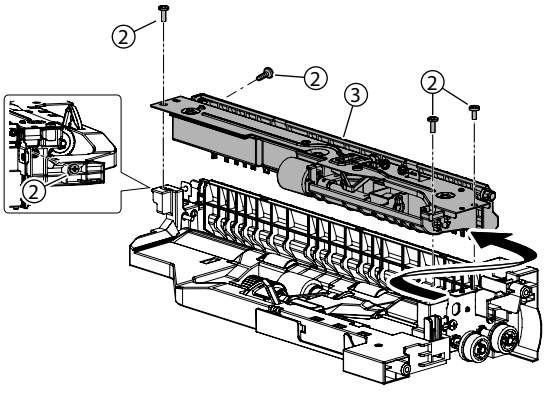


2) Clean the transport roller 2.

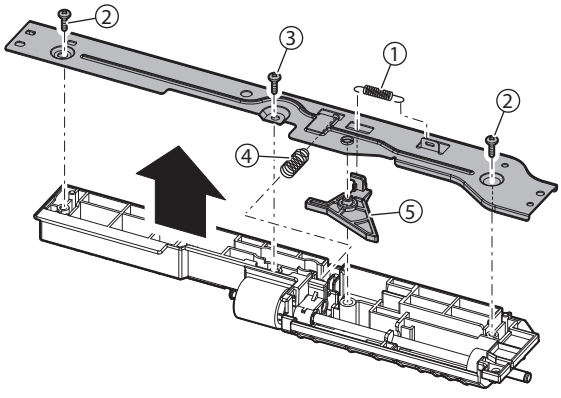


d. Torque limiter

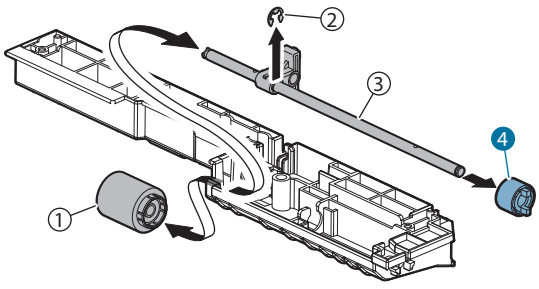
1) Remove the E-ring and the bearing, and remove the paper feed lower PG unit.



2) Remove the spring, and remove the reinforcement plate. Remove the spring, and the separation pressure release plate.

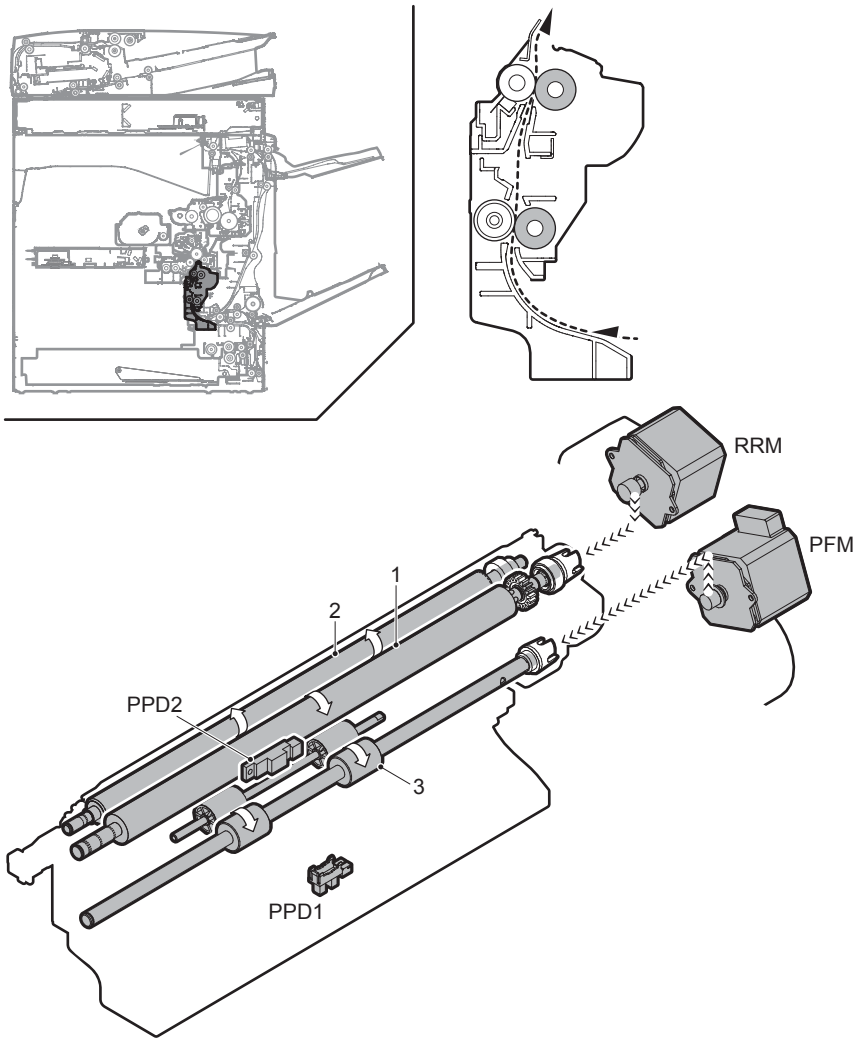


3) Remove the separation roller. Remove the E-ring, and the shaft, and remove the torque limiter.



[F] 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 transport roller 5.
PPD2	Resist detection	Detects the paper in front 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 paper transport timing to adjust relative relations between images and paper.
2	Resist roller (Idle)	Applies a pressure to paper and the resist roller to give the transport power of the transport roller to the paper.
3	Transport roller 5 (Drive)	Transports the paper to resist roller.

2. Operational descriptions

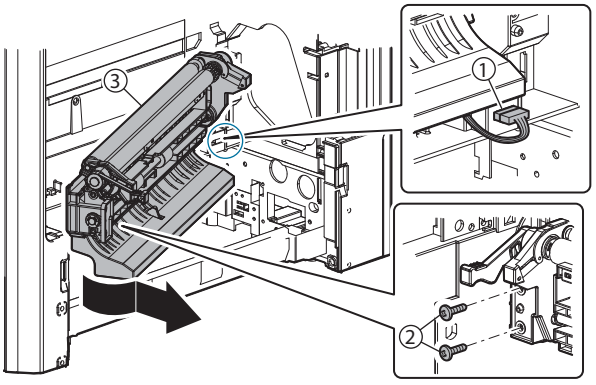
Transport paper from each paper feed section to the resist roller with two or more transport rollers. The paper transport clutch controls ON/OFF of each transport roller. The resist roller controls the relative positions of the transported paper and transfer images.

The resist roller controls the relative positions of the transported paper and transfer images. The resist roller is driven by the resist 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

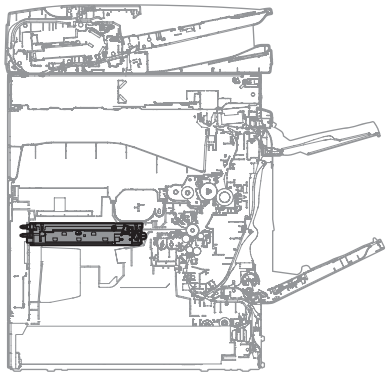
A. Resist roller unit

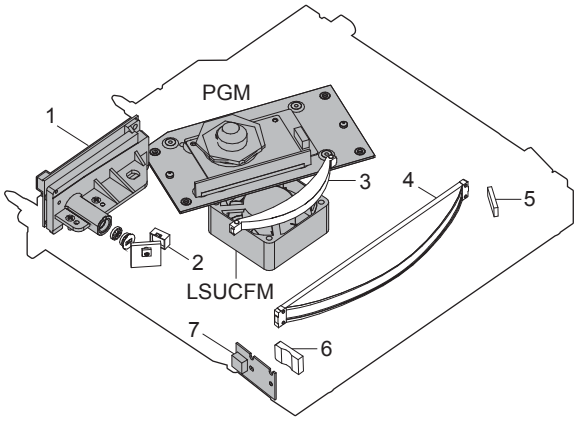
1) Remove the waste toner box.
2) Remove the paper dust cleaner unit.
3) Remove the paper feed tray.
4) Remove the tray paper feed unit.
5) Remove the PS unit.



[G] LSU SECTION

1. Electrical and mechanical relation diagram





Signal name	Name	Function/Operation
LSUCFM	LSU cooling fan motor	Cools the section LSU.
PGM	Polygon motor	Reflects the laser beams at constant-speed rotating.

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	fθ 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	fθ lens 2	
5	Reflection mirror for BD	Laser beams for BD are reflected to the BD PWB.
6	Collective lens for BD	Converges laser beams to the BD PWB.
7	BD PWB	Detects the timing for starting laser scanning.

2. Operational descriptions

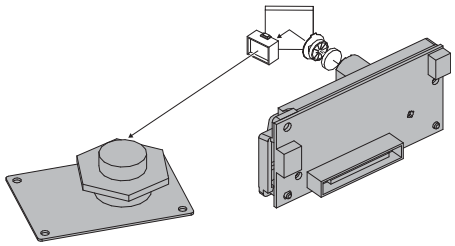
A. Outline

Image data sent from the image process circuit are converted into laser beams which are radiated to the surface of the OPC drum.

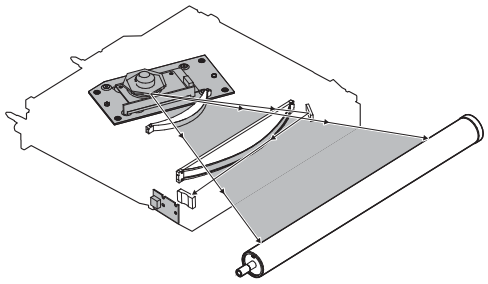
In this model, the 4/2-laser system is employed which radiates two laser beams. The LSU unit is composed of the primary system from the laser to the polygon mirror and the scanning system of the optical elements including the polygon mirror.

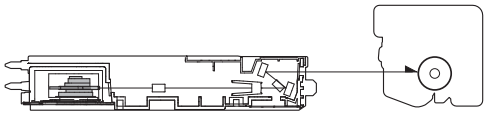
B. Composition

(Primary system)



(Scanning system)





(On the polygon motor)

Model	Number of mirror surface	Rotating speed	Bearing
56 cpm model	6 surfaces	30118rpm	OIL
46 cpm model	6 surfaces	26575rpm	OIL
36 xpm model	6 surfaces	MX-M365N 41339rpm MX-M364N 20669rpm	OIL

C. Outline of LSU specifications

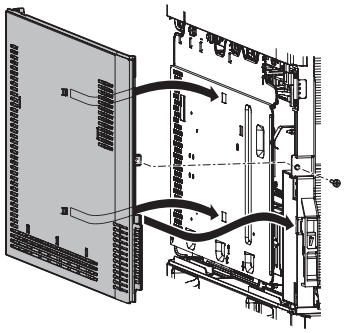
Process speed	56 cpm model: 255m m/sec 46 cpm model: 225mm/sec 36 cpm model: 175mm/sec
Resolution	1200dpi (MX-Mx65N) 600dpii (MX-Mx64N)
Laser beam	4 beam (MX-M465/M565N) 2 beam (MX-M365/M364/M464/M564N)
Laser power	0.25mW ～ 0.5mW
Beam diameter	Main scan = 50 to 80µm, Sub scan = 60 to 90µm
Effective scan width	310mm
LD wavelength	780 to 800nm

3. Disassembly and assembly

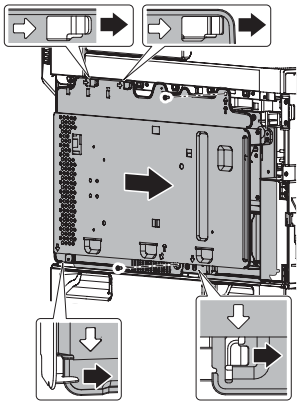
NOTE: Do not disassemble the LSU unit.

A. LSU removal

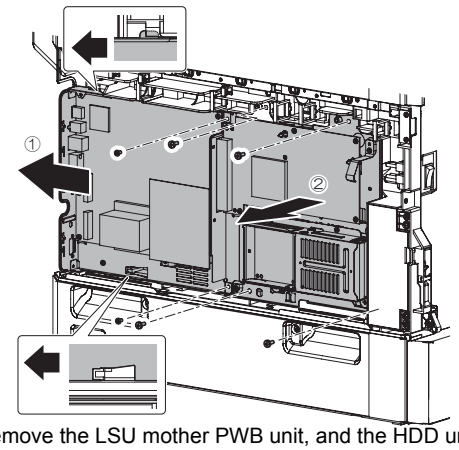
1) Turn OFF the machine power, and disconnect the power plug from the power outlet.
2) Remove the left cabinet.



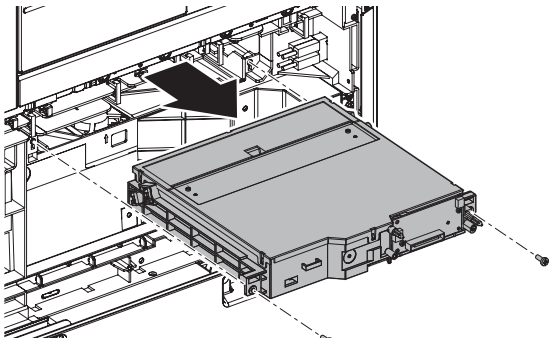
3) Remove the shield plate.



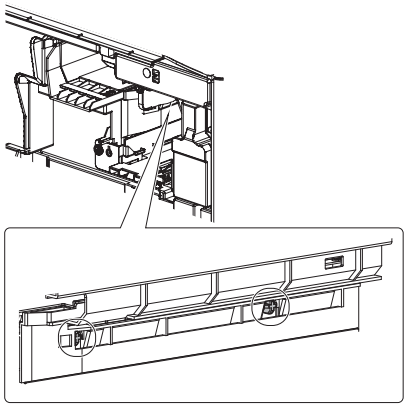
4) Remove the MFP control PWB unit and LSU mother PWB.
Since the MFP control PWB and the LSU mother PWB are connected together, use care when removing and attaching them.



5) Remove the LSU mother PWB unit, and the HDD unit.
6) Disconnect the LSU connectors, and remove the securing screws to remove the LSU.

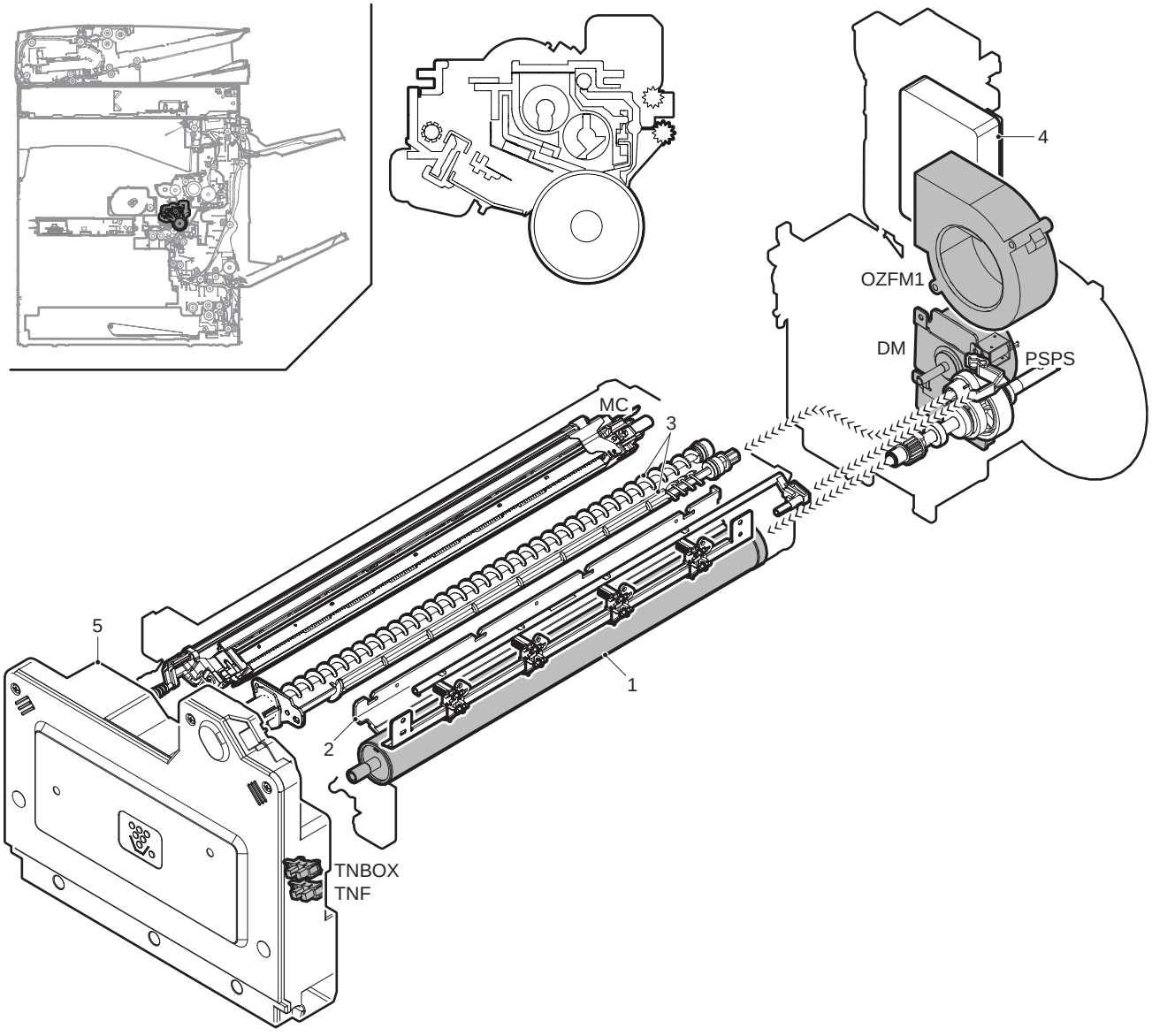


NOTE: Tip the LSU slightly to insert the alignment boss into the LSU alignment hole. To check for proper alignment, remove the toner cartridge to check.



[H] PHOTO-CONDUCTOR SECTION

1. Electrical and mechanical relation diagram



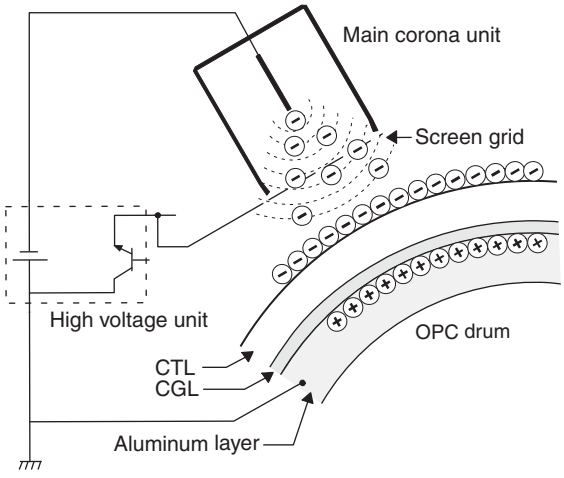
Signal name	Name	Function/Operation
DM	Drum motor	Drives the OPC drum and the developing unit.
MC	Main charger	Charges the OPC drum surface.
OZFM1	Ozone fan	Discharges ozone generated in the machine.
PSPS	Separation solenoid	Separation solenoid operates separation pawls which separates paper from the OPC drum.
TNBOX	Waste toner box remaining quantity detection	Detects installation of the waste toner box. Detects the waste toner near end and the waste toner full.
TNF	Waste toner box remaining quantity detection	Detects installation of the waste toner box. Detects the waste toner near end and the waste toner full.

No.	Name	Function/Operation
1	OPC drum	Latent electrostatic images are formed.
2	Cleaning blade	Cleans and remove residual toner from the OPC drum surface.
3	Waste toner transport screw	Transports waste toner to the toner collection box.
4	Ozone filter	Removes ozone.
5	Waste toner collection box	Collects waste toner.

2. Operational descriptions

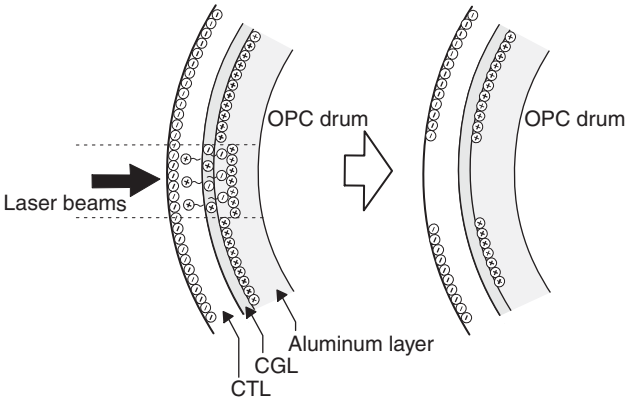
The OPC drum surface is negatively charged by the main charger. The laser beam images are radiated to the OPC drum surface by the laser (writing) unit to form latent electrostatic images.

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.

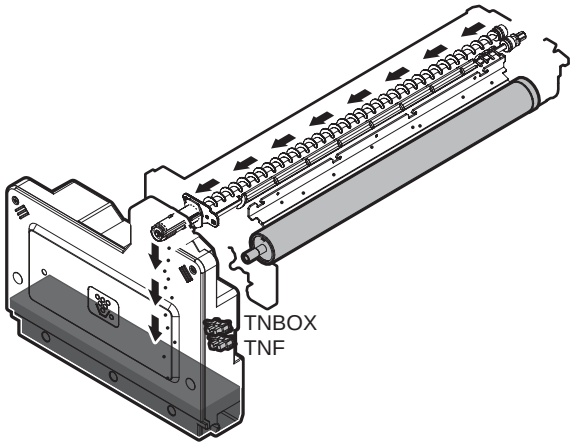
Positive charges generated on the CGL are attracted by the negative charges on the OPC drum surface. On the other hand, negative charges are attracted by the positive charges in the aluminum layer of the OPC drum.

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.



Waste toner detection is performed by two sensors (TNBOX, TNF).

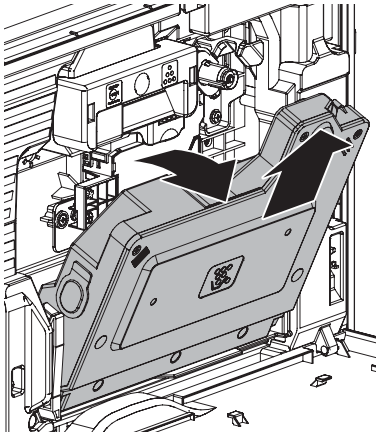
The following four statuses of the waste toner box are detected by the two sensors as shown below.

Pattern	Output level		Sensor status		Status
	TNBOX	TNF	TNBOX	TNF	
1	L	H	Transmitted	Interrupted	Waste toner box not provided
2	L	L	Transmitted	Transmitted	Waste toner box provided + Not full
3	H	L	Interrupted	Transmitted	Waste toner box provided + Near end
4	H	H	Interrupted	Interrupted	Waste toner box provided + Full

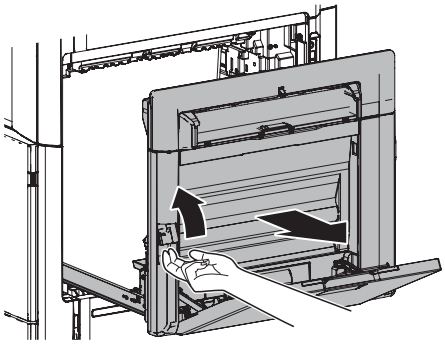
3. Disassembly and assembly

A. Photo-conductor unit

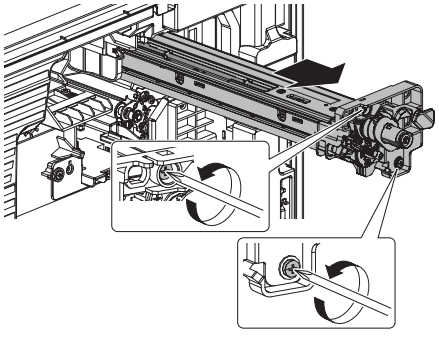
1) Open the front cover.
2) Tilt the waste toner box forward to remove it.



3) Remove the toner cartridge.
4) Remove the developing unit.
5) Pull the lock lever, and open the right door.

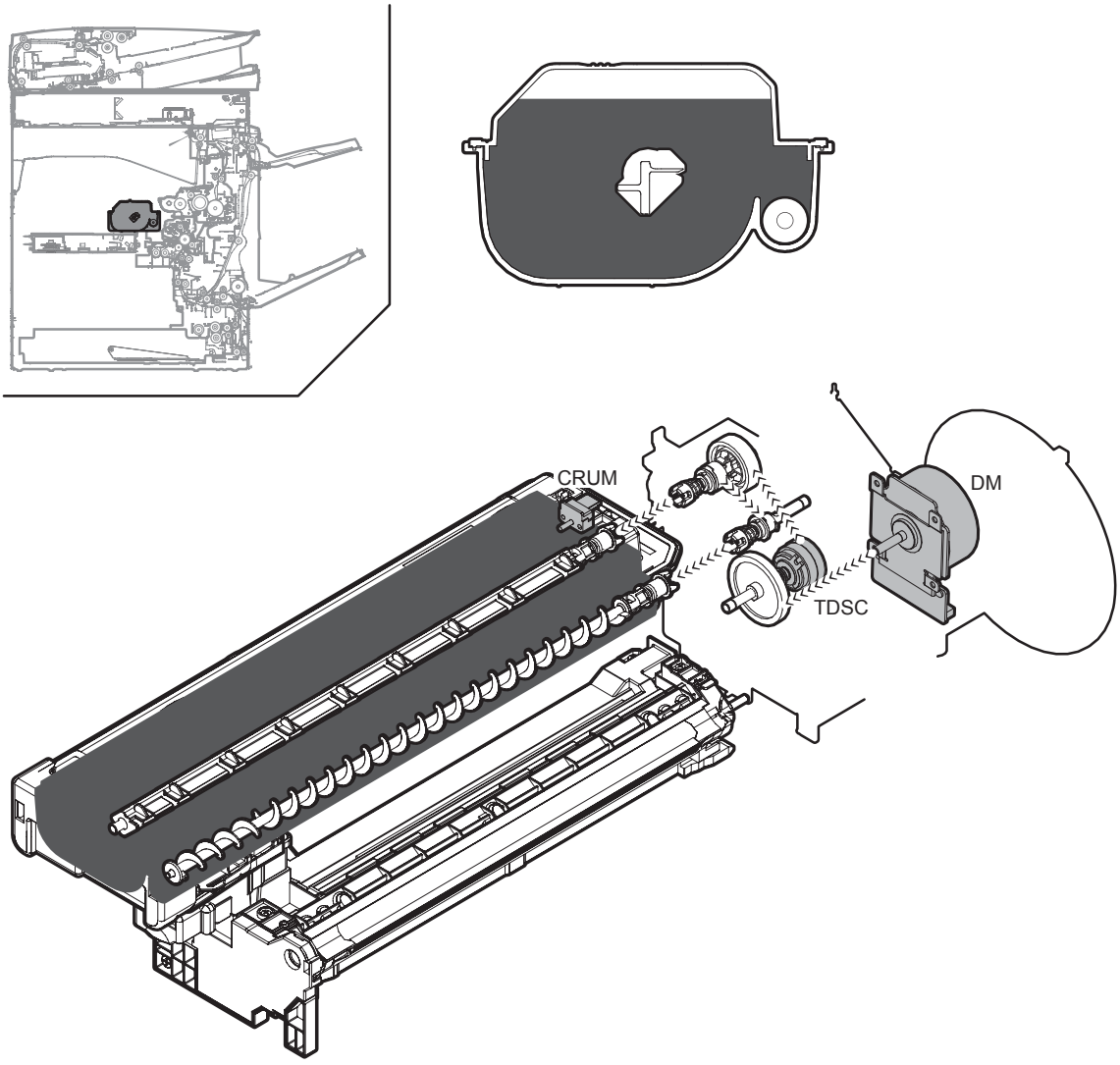


6) Remove the process cover, disconnect the connector, remove the blue screws. Pull the photo-conductor unit, and hold the handle to remove the unit.



[i] TONER SUPPLY SECTION

1. Electrical and mechanical relation diagram



Signal name	Name	Function/Operation
CRUM	Crum PWB	Stores various information of the toner cartridge.
DM	Drum motor	Drives the OPC drum and the developing unit.
TDSC	Toner supply clutch	Controls ON/OFF of toner supply.

2. Operational descriptions

The toner transport screw in the toner cartridge is driven by the drum motor to supply toner to the developing unit.

The toner transport screw in the toner cartridge is turned ON/OFF by the toner supply clutch TDSC.

The toner density in the developing unit is detected by the toner density sensor. When the density falls below the specified level, the drum motor and the toner supply clutch TDSC are turned ON to supply toner in the toner cartridge to the developing unit.

When the toner density reaches the specified level, TDSC turns OFF to stop supply of toner to the developing unit.

With the above process, the toner density in the developing unit is maintained at a fixed level.

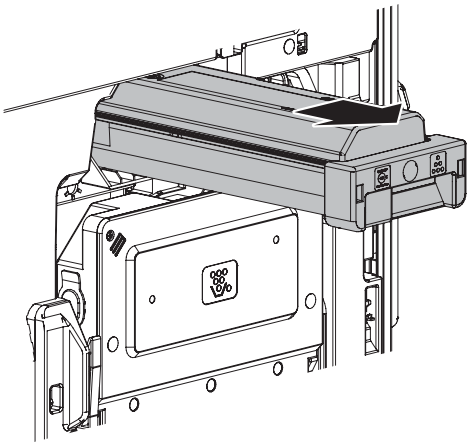
3. Disassembly and assembly

A. Toner cartridge

1) Open the front cover.

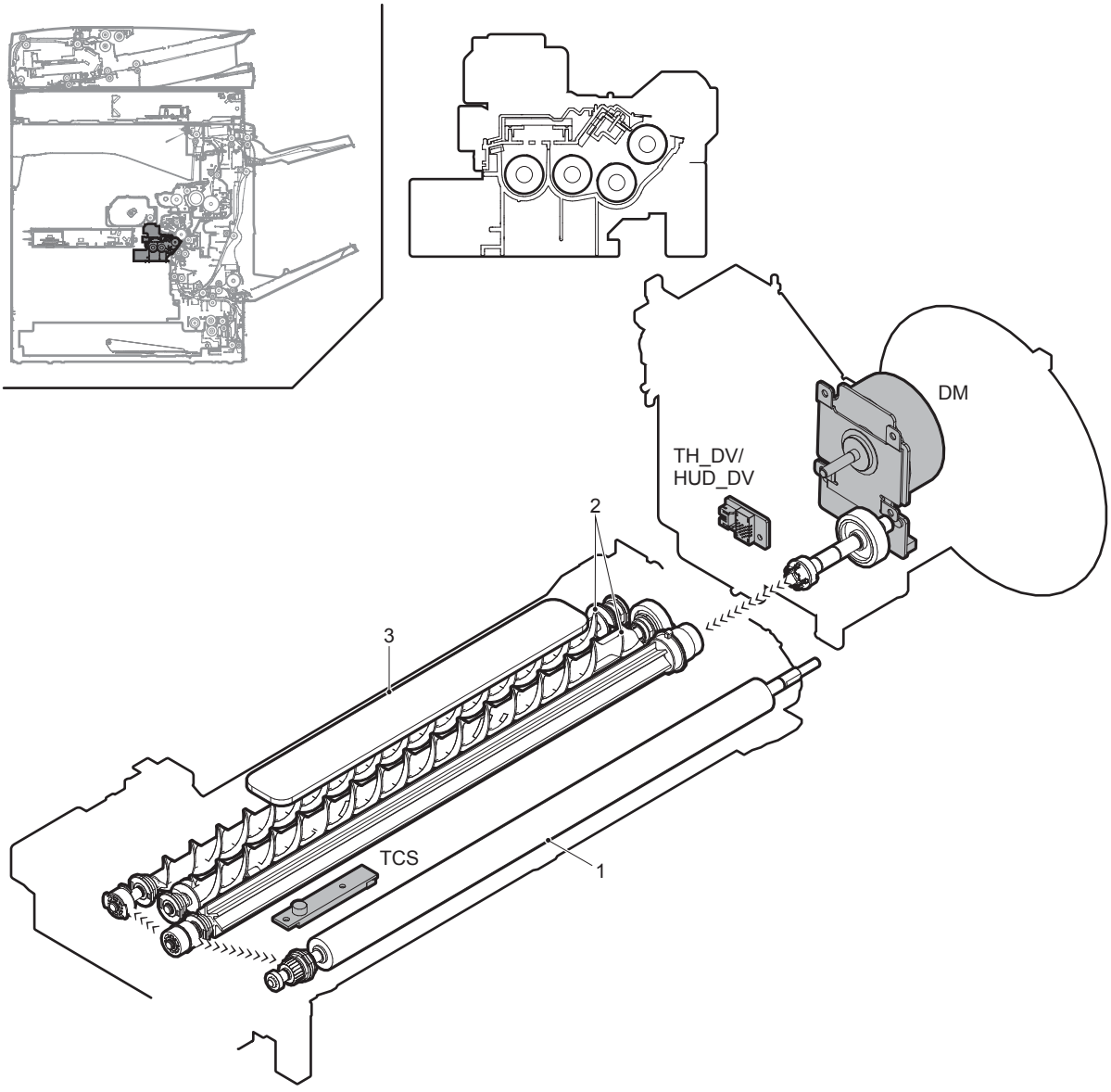
2) Pull and remove the toner cartridge slowly and horizontally.

NOTE: When installing, hold the toner cartridge horizontally and inset it slowly.



[J] DEVELOPING SECTION

1. Electrical and mechanical relation diagram

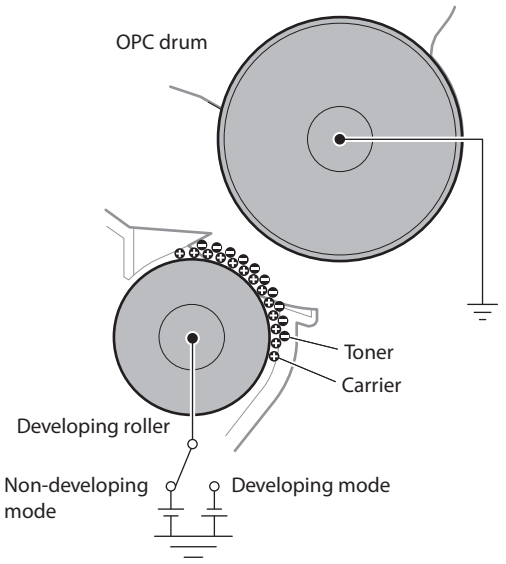


Signal name	Name	Function/Operation
DM	Drum motor	Drives the OPC drum and the developing unit.
TCS	Toner density sensor	Detects the toner density in the developing unit.
TH_DV/HUD_DV	Temperature/humidity sensor	Detects the temperature and humidity of the process section for process control.

No.	Name	Function/Operation
1	Developing roller	Forms electrostatic latent images on the OPC drum into visible images.
2	Stirring roller	Stirs toner and developer to charge toner negatively by friction.
3	Toner filter	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.

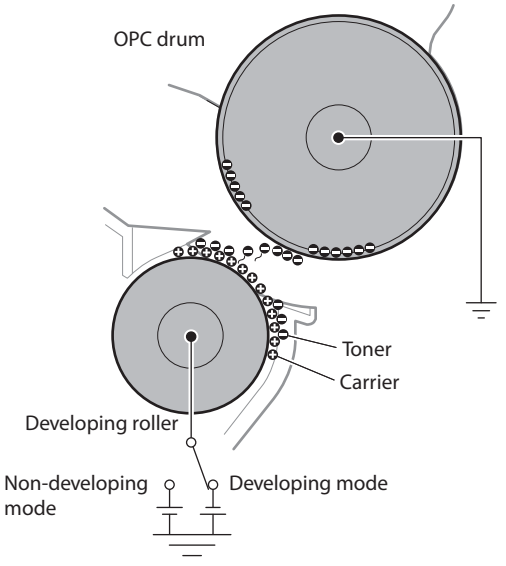
By mixing and transporting, toner and carrier are negatively charged due to mechanical friction.

The developing bias voltage (negative) 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 (negative).

If the OPC drum is not exposed, the negative potential is higher than the developing bias voltage, and toner is not attracted.

When rotation of the OPC drum is started and stopped, some area on the OPC drum is not charged negatively. To prevent toner from attaching to that area, a positive voltage is applied to the drum.



3. Disassembly and assembly

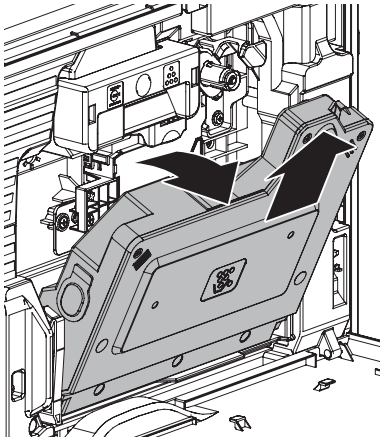
A. Developing unit

NOTE: Be careful not to attach fingerprints or oily dirt on the DV roller surface.

NOTE: Be careful not to hold the case adjacent to the developing roller strongly.

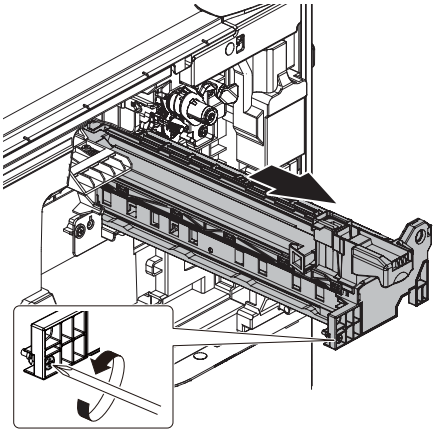
1) Open the front cover.

2) Tilt the waste toner box forward to remove it.



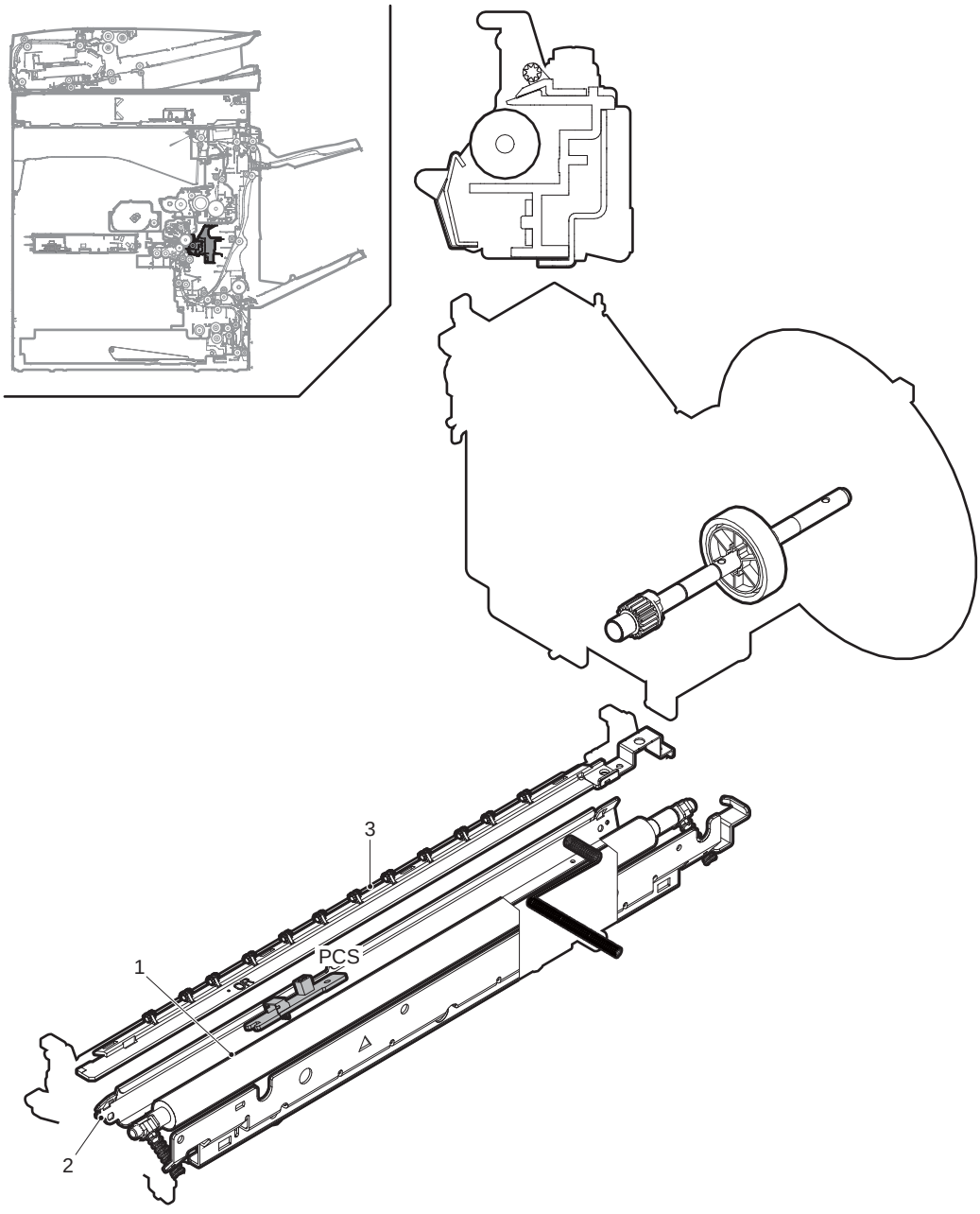
3) Remove the toner cartridge.

4) Remove the blue screw, and pull the developing unit to remove.



[K] TRANSFER SECTION

1. Electrical and mechanical relation diagram



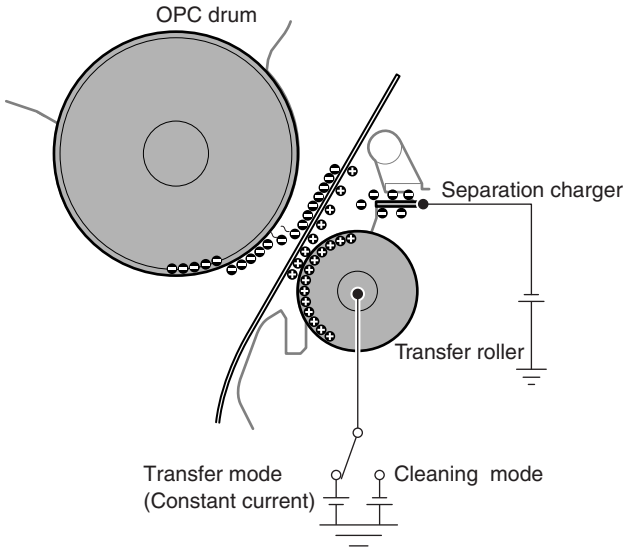
Signal name	Name	Function/Operation
PCS	Image density sensor	Detects the toner patch density on the OPC drum in process control.

No.	Name	Function/Operation
1	Transfer roller	Transfers toner images from the OPC drum to paper.
2	Paper guide electrode	Connected to the ground through a high resistor to maintain the paper guide at a proper potential, stabilizing the transfer operation.
3	Separation charger	Applies a high negative voltage to the paper which was charged positively in the transfer process in order to discharge it.

2. Operational descriptions

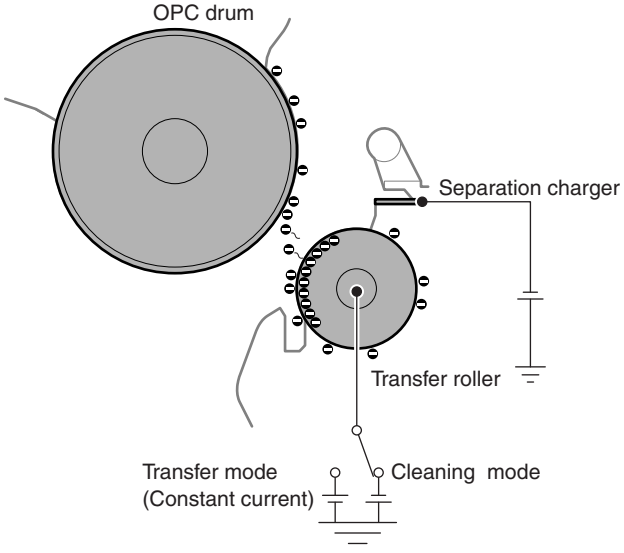
A. Transfer operation

A positive high voltage is applied to the transfer roller to transfer the toner images from the OPC drum to paper.



B. Cleaning operation

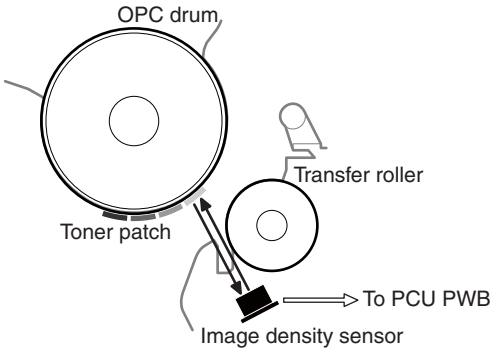
In the cleaning process, the polarity of the voltage applied to the transfer roller is made negative, and unnecessary toner on the transfer roller is sent to the OPC drum, cleaned with the cleaning blade, and transported to the waste toner section.



C. Toner patch density detection in the process control

In the process control, the toner patch density on the OPC drum is detected with the image density sensor.

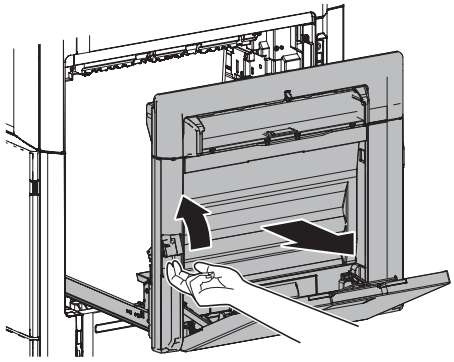
In addition, the sensitivity of the image density sensor is automatically performed by using reflection on the OPC drum surface.



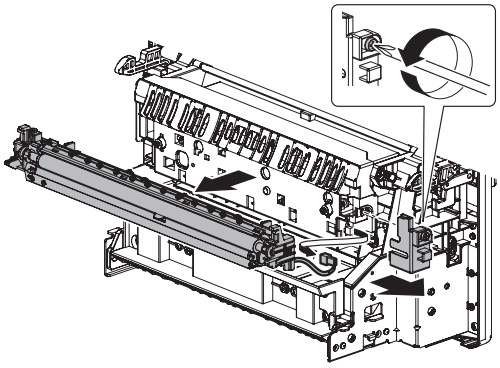
3. Disassembly and assembly

A. Transfer unit

1) Pull the lock lever, and open the right door.



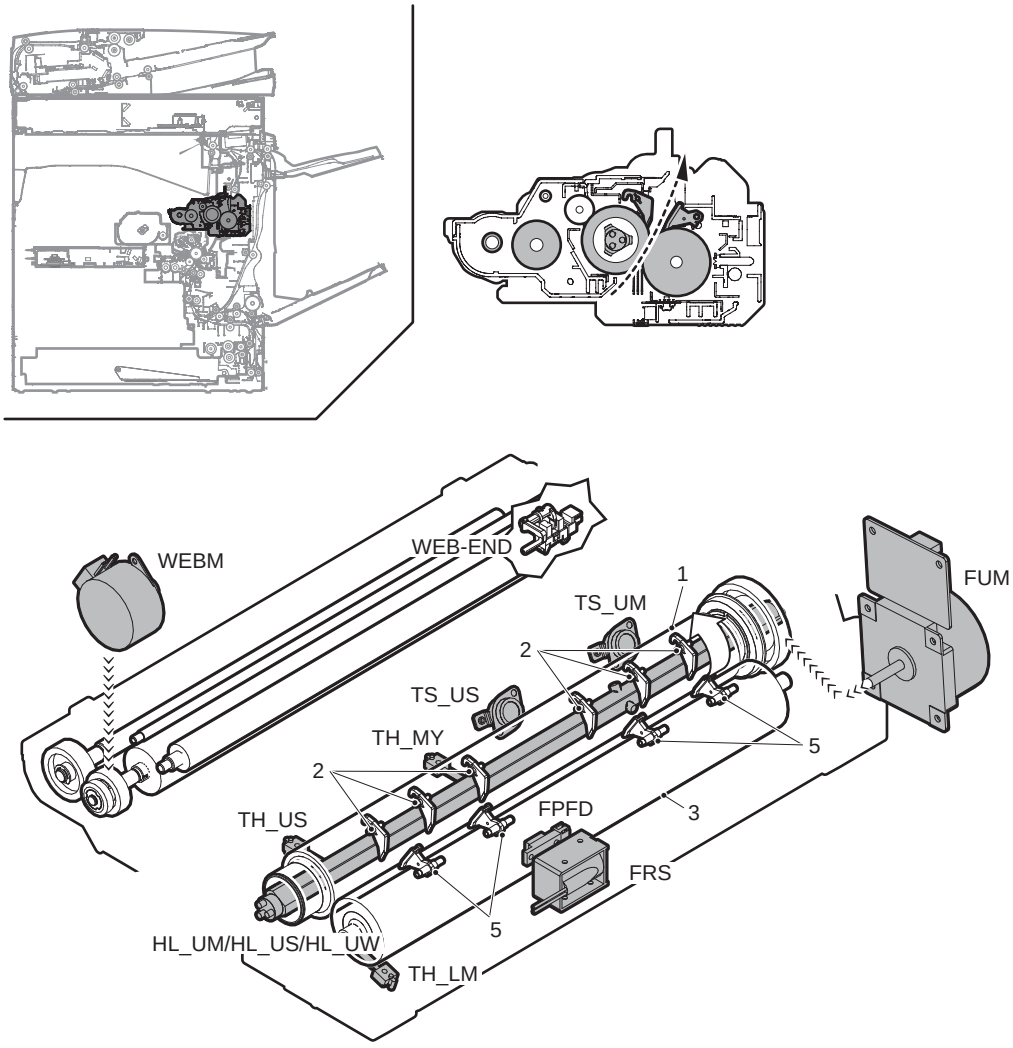
2) Remove the blue screw, and remove the cover. Disconnect the connector, and remove the transfer unit.



[L] FUSING SECTION

1. Electrical and mechanical relation diagram

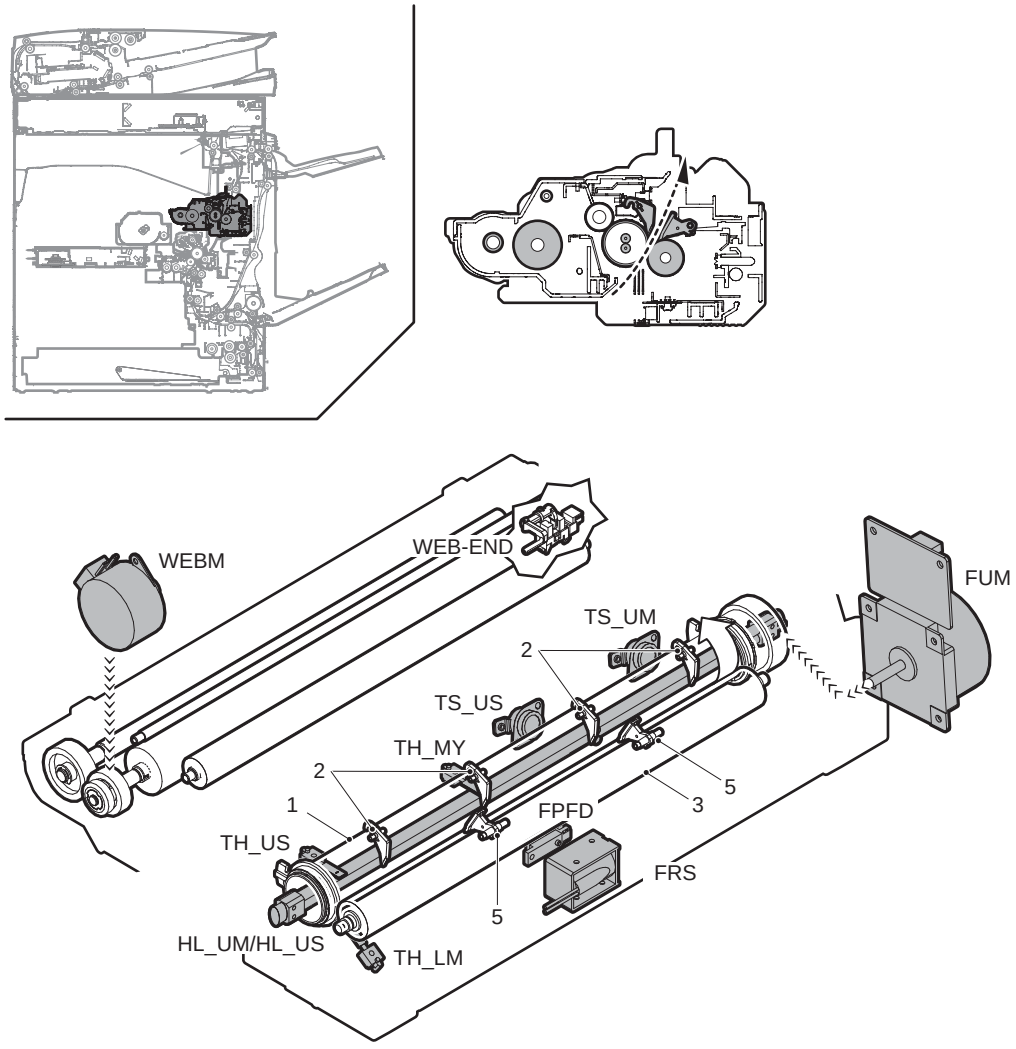
A. 46/56 cpm machine



Signal name	Name [Type]	Function/Operation
FPFD	Fusing front paper pass detector	Detects paper pass in front of the fusing section
FRS	Lower pawl separation solenoid	Controls the lower pawl separation solenoid
FUM	Fusing motor	Drives the fusing section.
HL_UM	Heater lamp main	Turns ON/OFF the heater lamp main.
HL_US	Heater lamp sub	Turns ON/OFF the heater lamp sub.
HL_UW	Heater lamp warm-up	Turns ON/OFF the warm-up operation of the heater lamp.
TH_MY	Main thermistor	Detects the temperature.
TH_US	Sub thermistor	Detects the temperature.
TS_UM	Thermostat UM	shuts down the heater lamp (HL_UM) circuit when the fusing section is overheated (center section)
TS_US	Thermostat US	shuts down the heater lamp (HL_US) circuit when the fusing section is overheated (edge section)
WEB-END	Web end detection	Detects the web end.
WEBM	Web 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)	Presses toner on paper to fuse.
4	Web roller	Cleans the fusing roller (heating).
5	Lower separation pawl	Mechanically separates paper which was not naturally separated from the fusing roller (pressing).

B. 36cpm machine



Signal name	Name [Type]	Function/Operation
FPFD	Fusing front paper pass detector	Detects paper pass in front of the fusing section
FRS	Lower pawl separation solenoid	Controls the lower pawl separation solenoid
FUM	Fusing motor	Drives the fusing section.
HL_UM	Heater lamp main	Turns ON/OFF the heater lamp main.
HL_US	Heater lamp sub	Turns ON/OFF the heater lamp sub.
TH_MY	Main thermistor	Detects the temperature.
TH_US	Sub thermistor	Detects the temperature.
TS_UM	Thermostat UM	shuts down the heater lamp (HL_UM) circuit when the fusing section is overheated (center section)
TS_US	Thermostat US	shuts down the heater lamp (HL_US) circuit when the fusing section is overheated (edge section)
WEB-END	Web end detection	Detects the web end.
WEBM	Web 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)	Presses toner on paper to fuse.
4	Web roller	Cleans the fusing roller (heating).
5	Lower separation pawl	Mechanically separates paper which was not naturally separated from 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 Brush-less 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 thermistor 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.

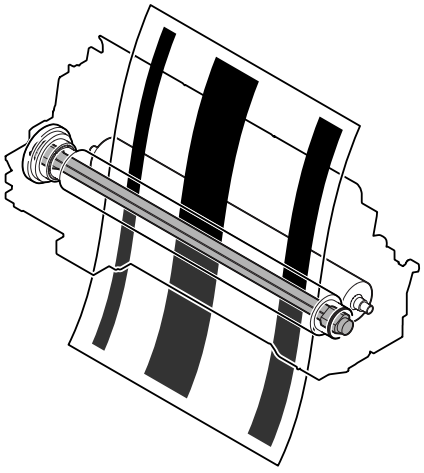
The power triac in the heater lamp drive circuit is turned on, and the AC power is supplied to the heater lamp, lighting the lamp and heating the heat roller.

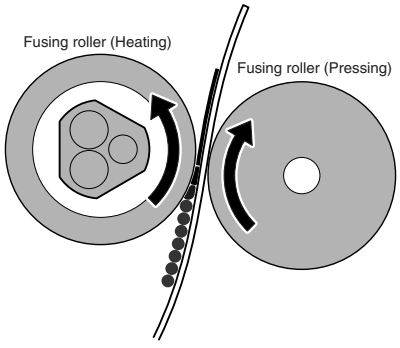
To prepare for an abnormally high temperature of the heat roller, the thermostat is provided for safety.

When the thermostat is opened, the power supply (AC line) to the heater lamp is cut off.

C. Fusing operation

Toner on paper is heated and pressed to be fused by the heat roller.





The fusing heat roller (heating) is provided with three/two heater lamps, which heat the fusing roller to fuse toner onto paper.

The fusing rollers (pressing) are made of silicon rubber because of the following reasons and purpose.

1) Paper is separated upward. (Since the fusing roller (heating) is of higher hardness, the fusing roller (pressing) is deformed to separate paper upward.)
2) The nip quantity is increased to increase heat capacity for paper.
3) By pressing paper with the flexible roller, toner is fused without deformation.

D. Fusing temperature control

The temperature sensor is provided at the center of the fusing roller (heating).

The roller temperature is detected by the thermistor sensor, and the heater lamp is controlled so that the temperature is maintained at the specified level.

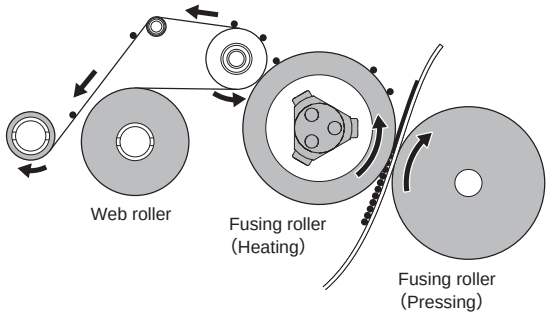
E. Roller cleaning

The upper fusing roller is cleaned by the web.

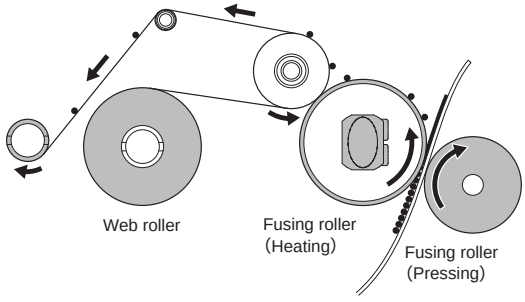
1) Remaining toner on the upper fusing roller is cleaned by the web with silicon included.

   The web unit is provided in the upper section of the upper fusing roller, and is composed of the feeding section of the web sheet, the winding section, and the backup roller which pressed the web sheet onto the upper fusing roller.

46/56 cpm machine.



36 cpm machine.



F. Web end detection

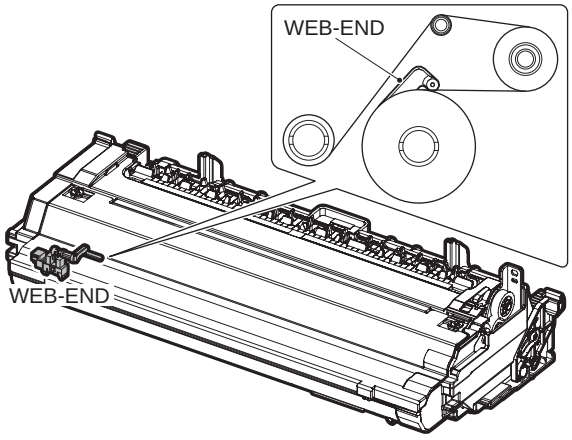
The judgment of web end is made by the fusing web send counter for near end, and the web life end detection, whichever is earlier.

When the web life end is detected, the warning display is made, and the machine is stopped the operation.

Warning display content: Maintenance required. Code: FK3

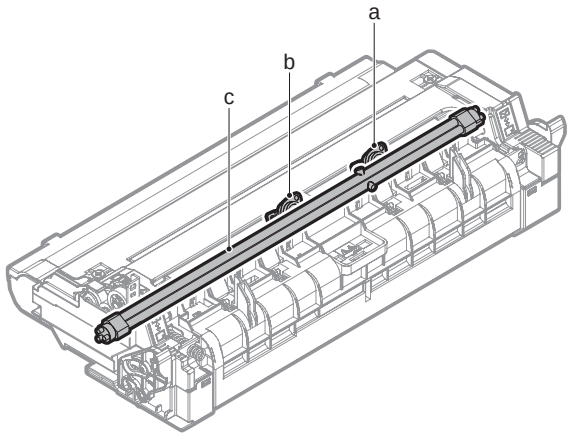
When the web is replaced with a new one and the web counter is cleared, the warring display disappears.

The new web is not automatically detected.



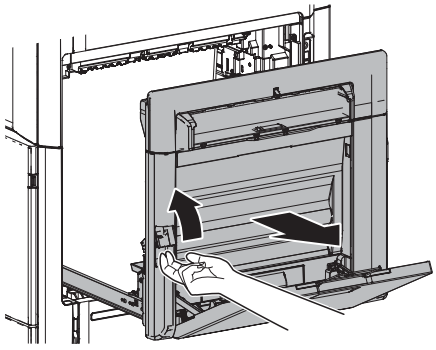
3. Disassembly and assembly

A. Fusing unit

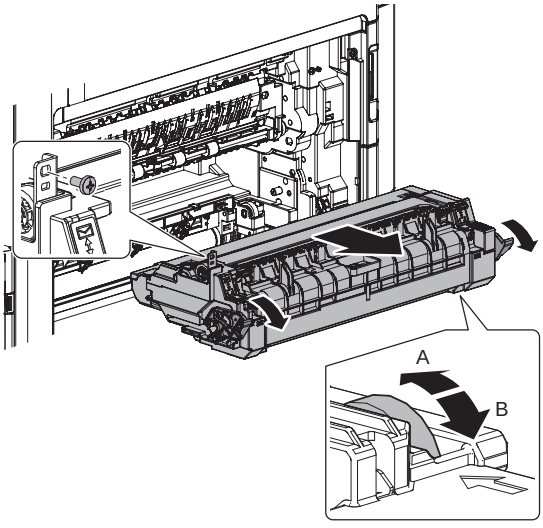


Parts	
a	Thermostat (main)
b	Thermostat (sub)
c	Heater lamp

1) Pull the lock lever, and open the right door.



2) Remove the blue screw. Pull the lock lever and remove the fusing unit.Turn it to the arrow A direction that Web is flabby in the state that excluded a fixation unit and may coil itself around a roller. Never turn it to the B direction



(1) Thermostat (main/sub)

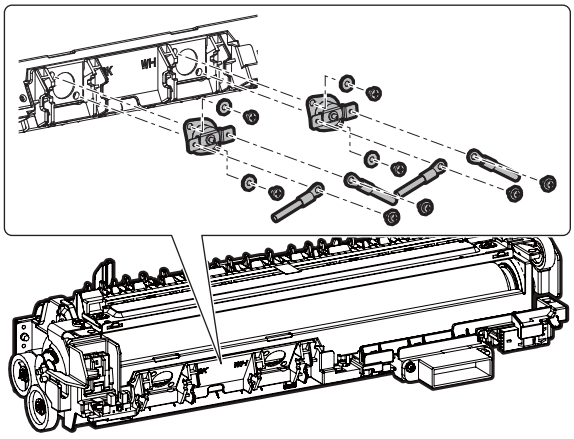
1) Remove the fusing unit.
2) Remove the screw, and remove the cover. Remove the screw, and remove the terminal. Remove the screw and the washer, and remove the thermostat.

NOTE: When fixing the thermostat and the harness, tighten the screws at the following torque:

1.0 - 1.2 N□m

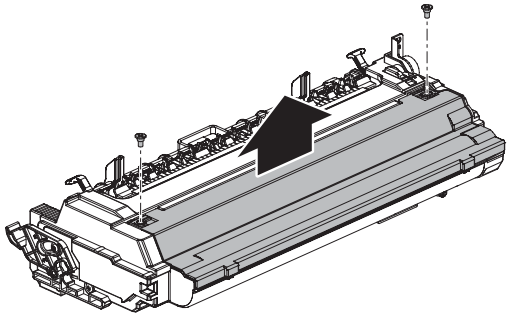
10 - 12 kgf□cm

0.7 - 0.9 lbft

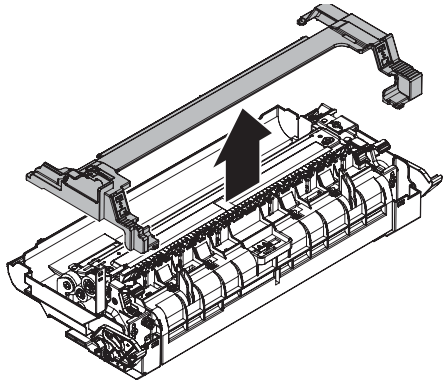


(2) Heater lamp

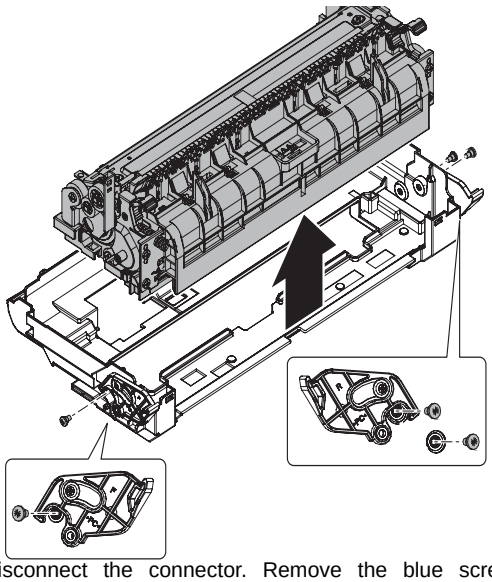
1) Remove the fusing unit.
2) Remove the screw, and remove the web unit.



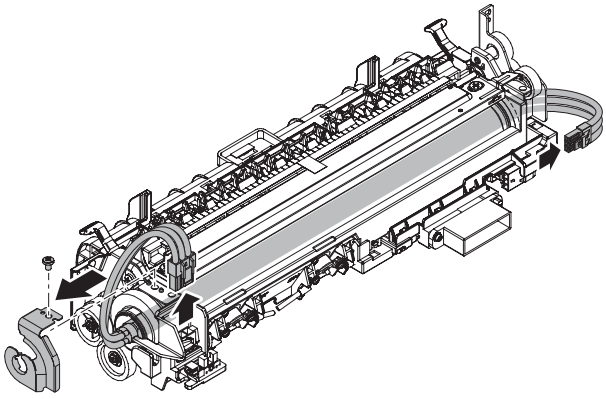
3) Remove the cover.



4) Remove the screw, and remove the cover.



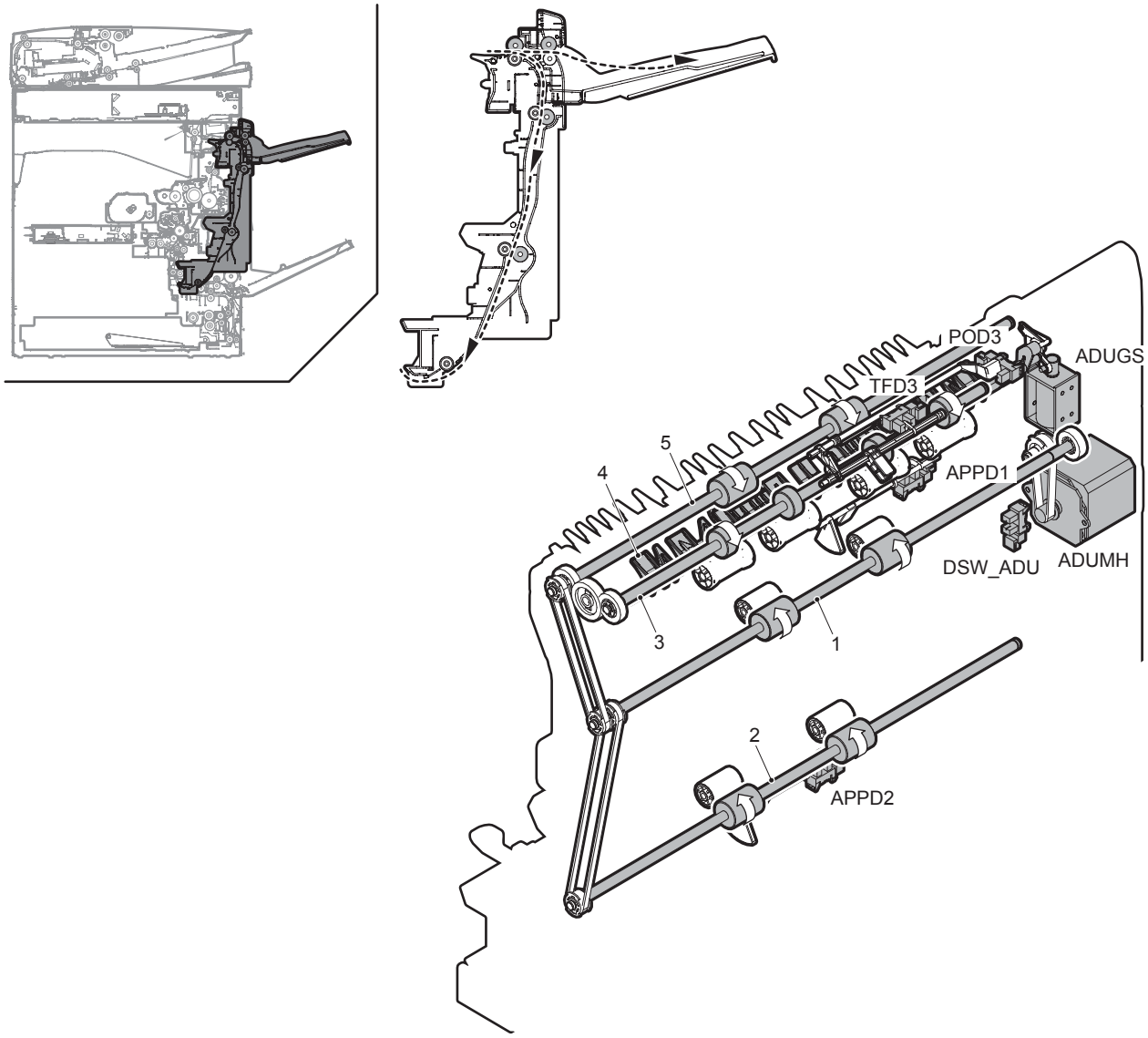
5) Disconnect the connector. Remove the blue screw, and remove the lamp holder. Remove the heater lamp.



[M] DUPLEX/PAPER EXIT SECTION

1. Electrical and mechanical relation diagram

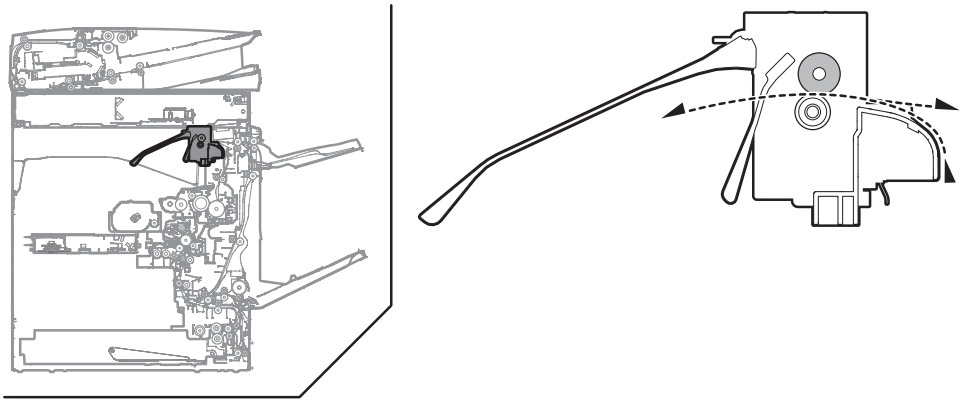
A. Duplex section

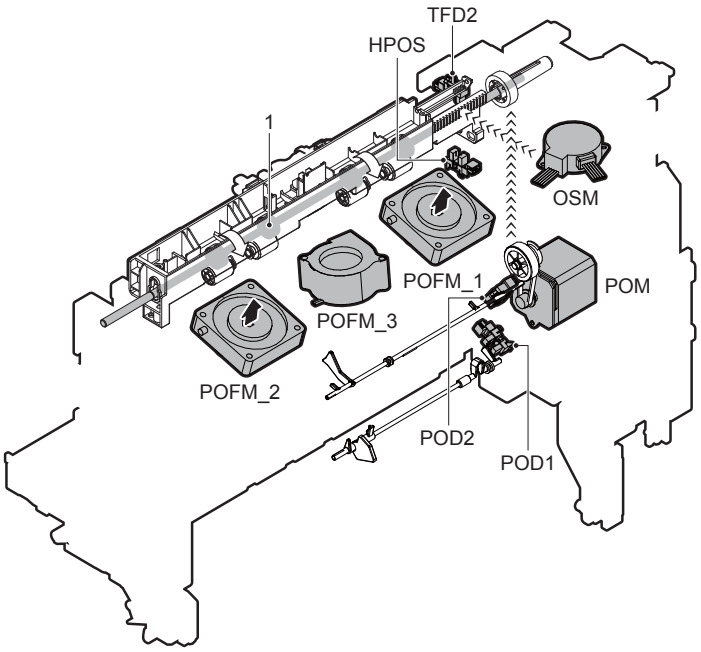


Signal name	Name	Function/Operation
ADUGS	ADU gate solenoid	Controls the ADU gate.
ADUMH	ADU motor upper	Drive the transport roller 13.
APPD1	ADU transport path detection 1	Detects paper pass in the upstream of the duplex (ADU).
APPD2	ADU transport path detection 2	Detects paper pass in the midstream 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 7 (Drive)	Transports the paper transported from the transport roller 13 to the transport roller 11.
2	Transport roller 8 (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	Paper exit roller 3 (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_1	Paper exit cooling fan motor	Cools the paper exit unit.
POFM_2	Paper exit cooling fan motor	Cools the paper exit unit.
POFM_3	Paper exit cooling fan motor	Cools the paper.
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

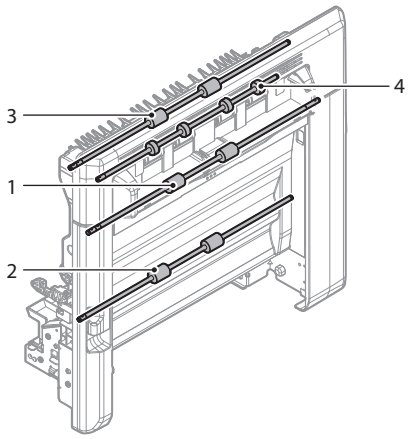
* Paper transported from the fusing section is sent from the transport roller 13 (which is driven by the paper exit drive motor) to the paper exit roller 1, and discharged to the inner tray.
* When paper is discharged to the right tray, paper is sent to the paper exit roller 1. The paper exit drive motor rotates reversely. Paper is passed through the right paper exit gate, and discharged to the right tray.

3. Disassembly and assembly

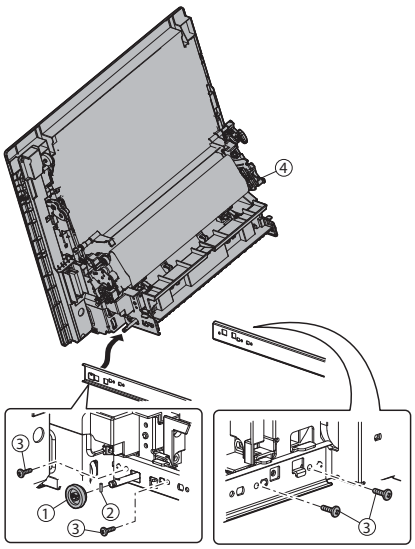
A. Right door unit

(1) Right door unit

No.	Name
1	Transport roller 7
2	Transport roller 8
3	Paper exit roller 3
4	Paper exit roller 2

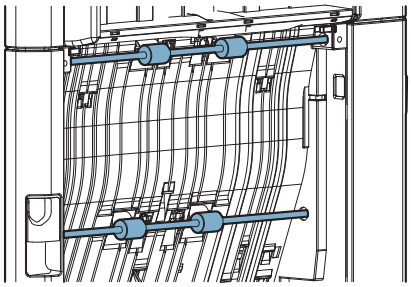


Open the right door. Remove the gear, and remove the right door.



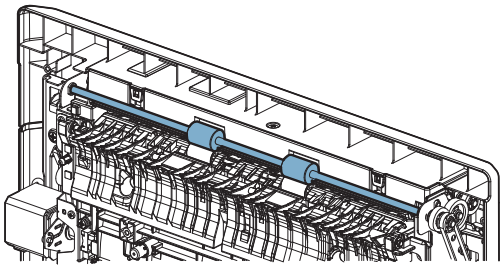
a. Transport roller 7, Transport roller 8

1) Open the ADU open/close door, and clean the transport roller 7, and the transport roller 8.



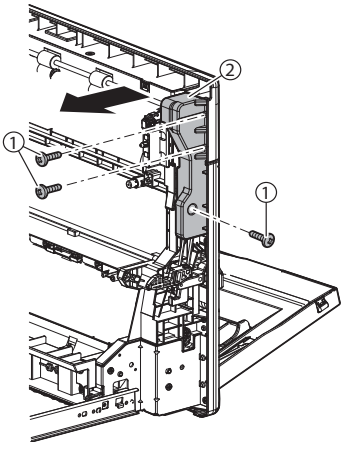
b. Paper exit roller 3

1) Open the right door unit, and clean the paper exit roller 3.

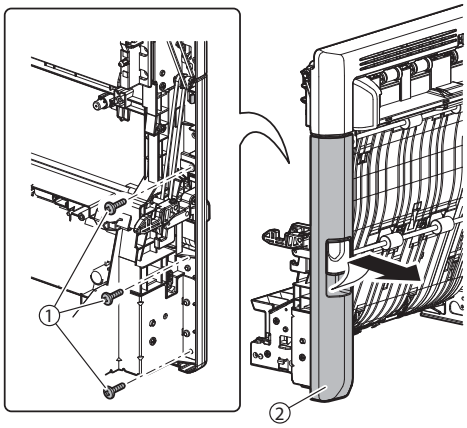


c. Paper exit roller 2

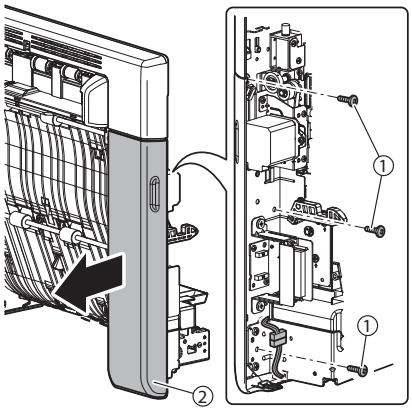
1) Open the right door unit and remove the cover.



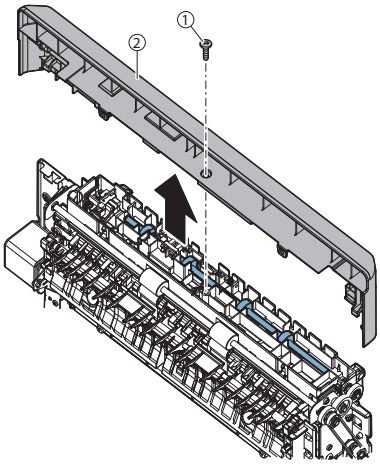
2) Open the right door unit, and remove the cover.



3) Remove the cover.



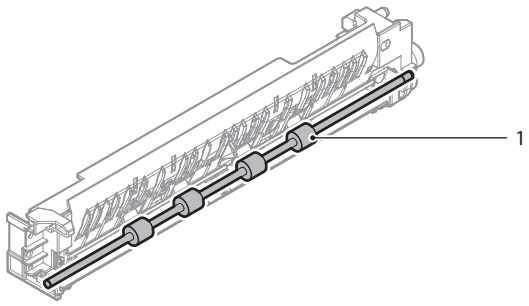
4) Remove the cover, and clean the paper exit roller 2.



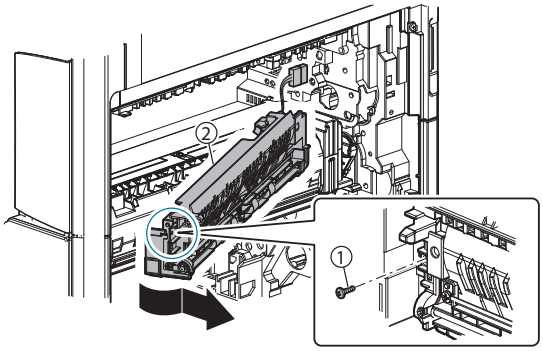
B. Fusing rear unit

(1) Fusing rear unit

No.	Name
1	Transport roller 6

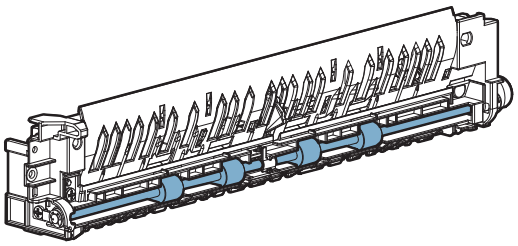


1) Remove the fusing unit.
2) Remove the fusing rear unit.



a. Transport roller 6

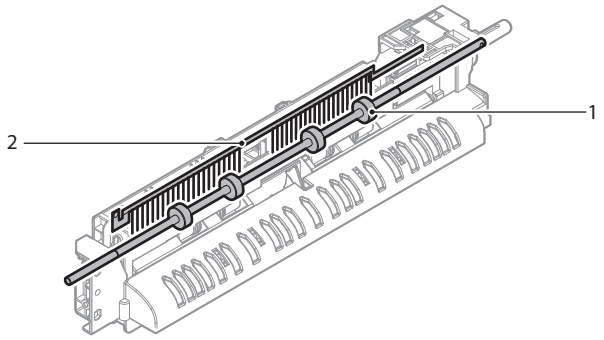
1) Clean the transport roller 6.



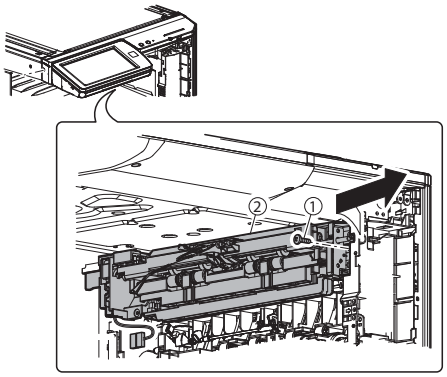
C. Paper exit unit

(1) Paper exit unit

No.	Name
1	Paper exit roller 1
2	Discharge brush



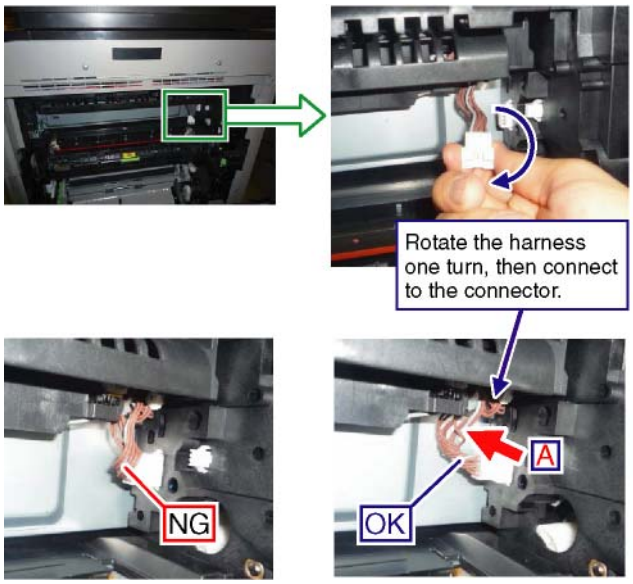
1) Remove the front cabinet upper.
2) Remove the paper exit tray.
3) Remove the paper exit unit.



Important

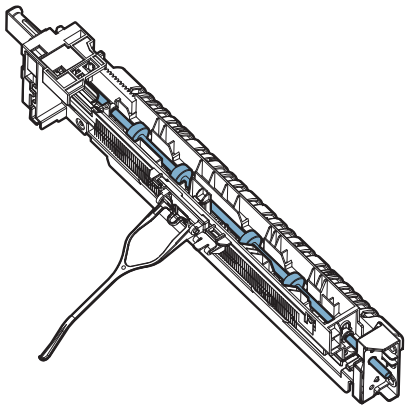
When connecting the paper exit unit connector, rotate the harness one turn clockwise as shown in the figure below so that the harness faces toward the arrow A, and connect the connector.

This procedure is necessary for preventing the paper exit sensor from disconnecting by contact with the harness.



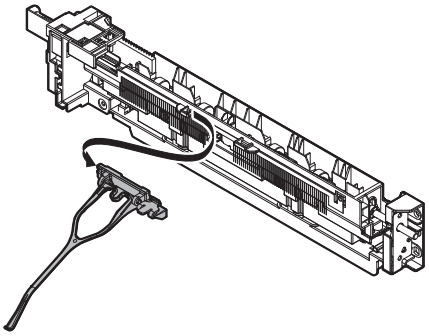
a. Paper exit roller 1

1) Clean the paper exit roller 1.



b. Discharge brush

1) Remove the holder.



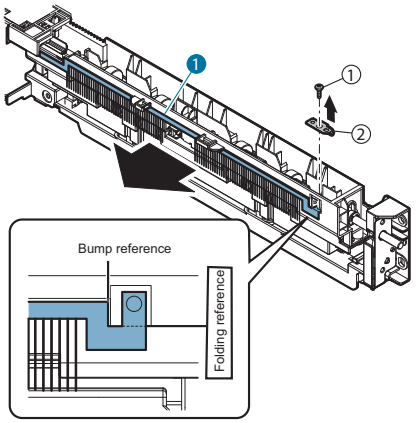
2) Remove the earth plate. Remove the discharge brush.

Important

When replacing the discharge brush, attach a new brush to the reference.

Important

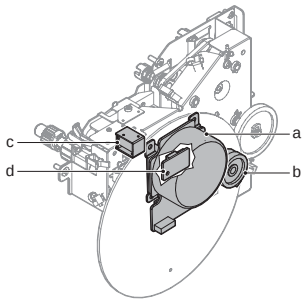
Thoroughly clean the frame surface of any old glue residue before attaching the new seals.



[N] DRIVE SECTION

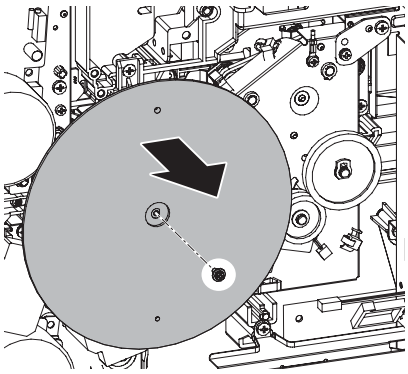
1. Disassembly and assembly

A. Main drive unit

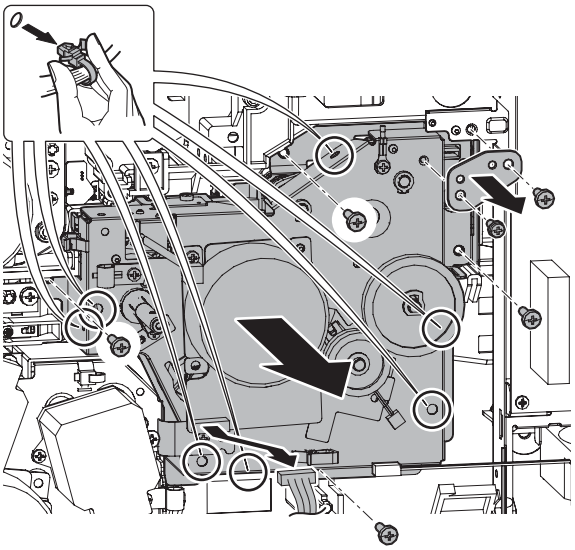


Parts	
a	Drum motor
b	Toner supply clutch
c	Separation solenoid
d	Temperature/humidity sensor

1) Remove the rear cabinet
2) Remove the flywheel.
   * After installing, check to confirm that the flywheel is not in contact with the harness.

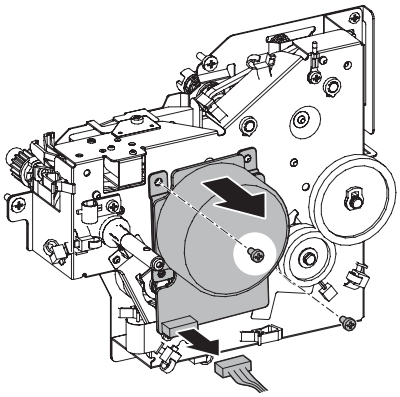


3) Disconnect the connector, remove the screw, and remove the main drive unit.



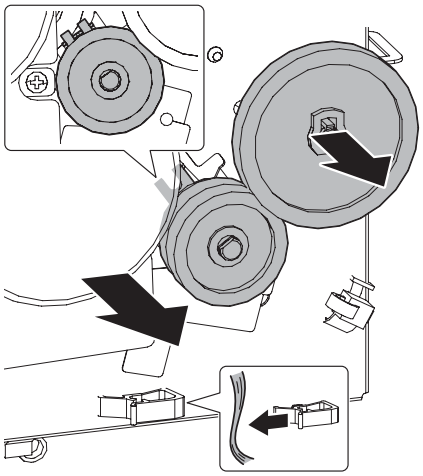
(1) Drum motor

1) Remove the rear cabinet
2) Remove the flywheel.
3) Disconnect the connector, remove the screw, and remove the drum motor.



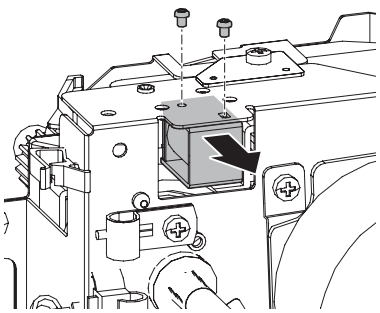
(2) Toner supply clutch

1) Remove the rear cabinet
2) Remove the flywheel.
3) Disengage the pawl, and remove the gear. Disconnect the connector, remove the toner supply clutch.



(3) Separation solenoid

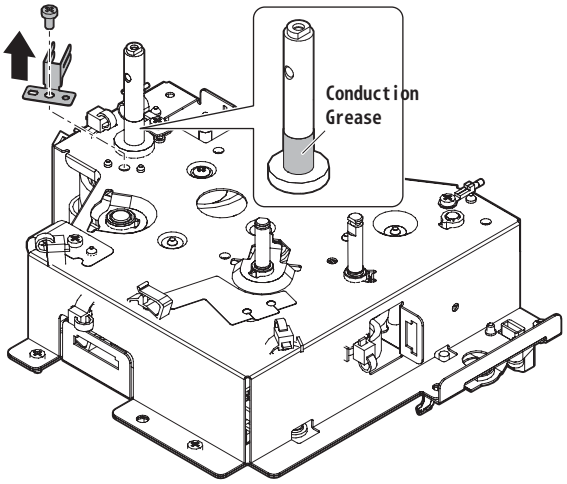
1) Remove the rear cabinet
2) Remove the main drive unit.
3) Remove the E-ring and the screw, and remove the separation solenoid.



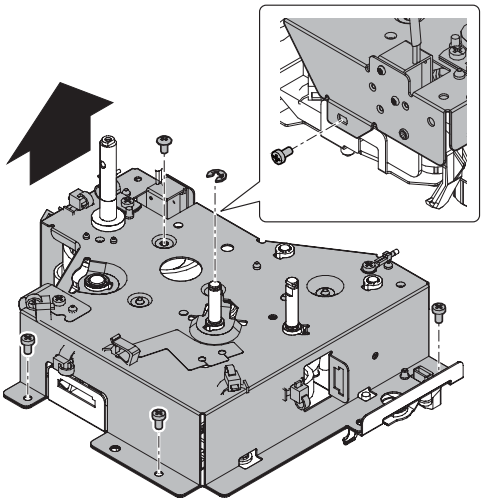
(4) Temperature/humidity sensor

1) Remove the main drive unit.
2) Remove the drum motor and the toner supply clutch
3) Disconnect the connector from the frame. Remove the screw, and remove the grounding plate. Remove grease from the shaft.

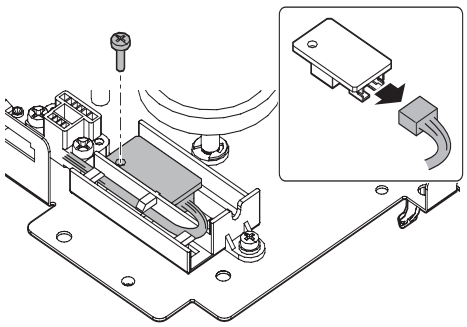
NOTE: When reassembling, apply conduction grease (UKOG-0012QSZZ).



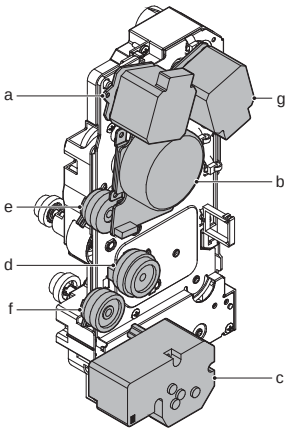
4) Remove the E-ring, the screw, and remove the frame.



5) Remove the snap band. Remove the screw, and remove the temperature/humidity sensor. Disconnect the connector from the temperature/humidity sensor.

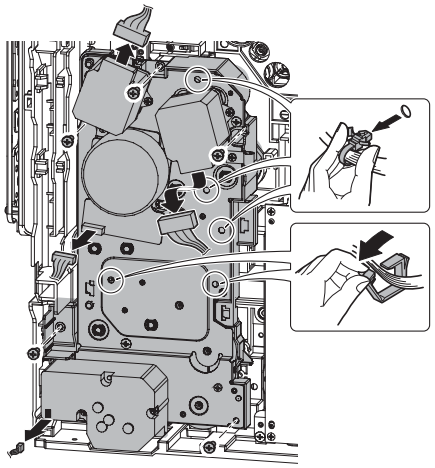


B. Paper feed drive unit



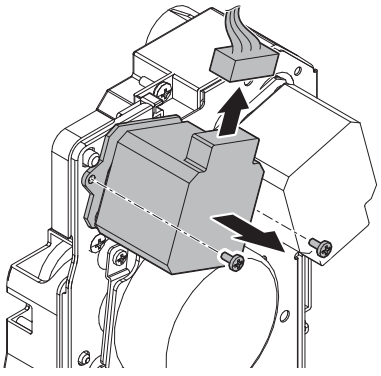
Parts	
a	Transport motor
b	Paper feed motor
c	Paper tray lift-up motor
d	Paper feed clutch
e	Transport roller clutch
f	Paper transport clutch
g	Resist motor

1) Remove the rear cabinet
2) Disconnect the connector, and remove the paper feed drive unit.



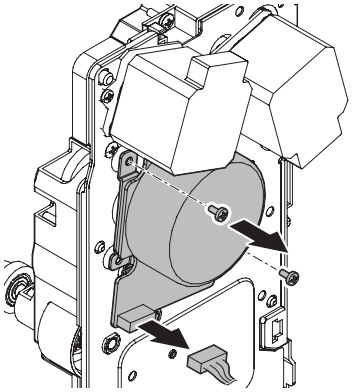
(1) Transport motor

1) Remove the rear cabinet
2) Disconnect the connector and remove the screw, and remove the transport motor.



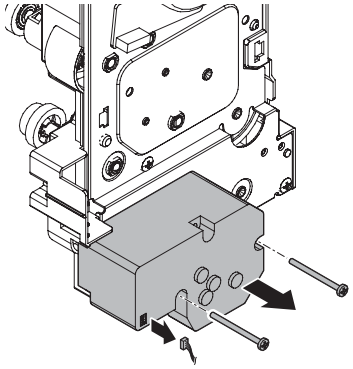
(2) Paper feed motor

1) Remove the rear cabinet
2) Disconnect the connector and remove the screw, and remove the paper feed motor.

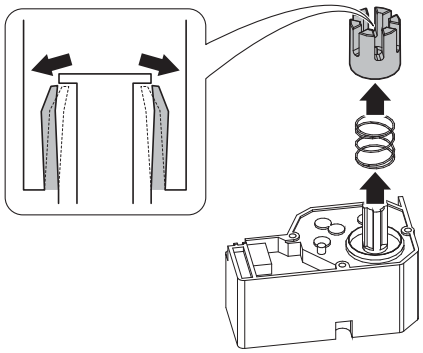


(3) Paper tray lift-up motor

1) Remove the rear cabinet
2) Disconnect the connector and remove the screw, and remove the paper tray lift-up motor unit.

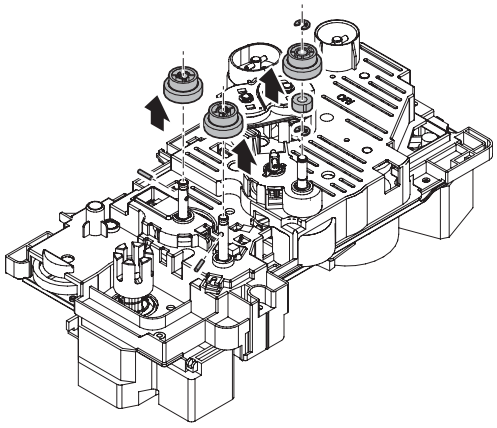


3) Disengage the pawl, and remove the lift-up coupling.

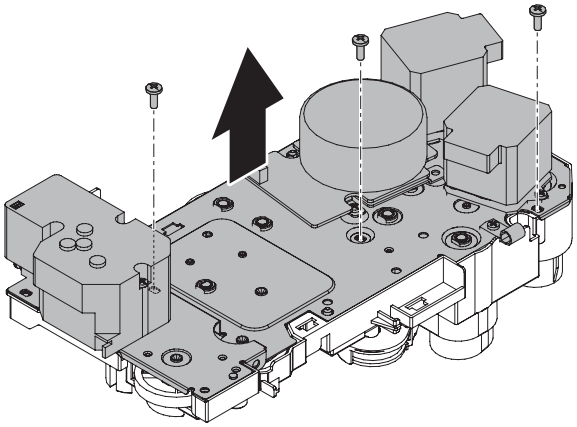


(4) Paper feed clutch / Transport roller clutch / Paper transport clutch

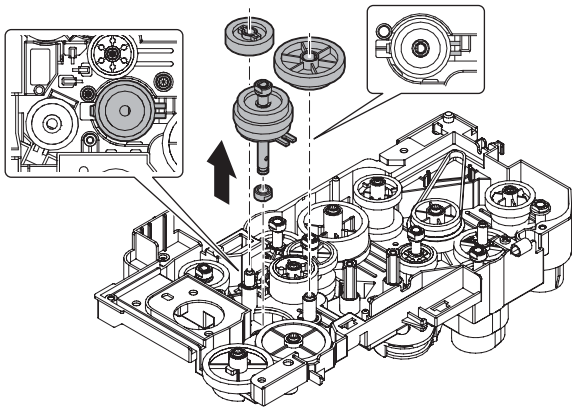
1) Remove the rear cabinet
2) Remove the paper feed drive unit.
3) Remove the gear and disconnect the connector.



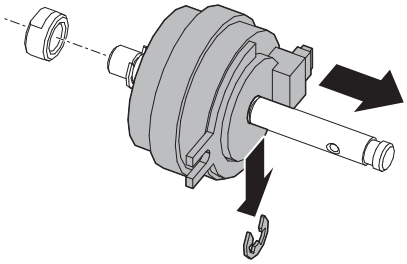
4) Remove the screw, and remove the drive frame upper unit.



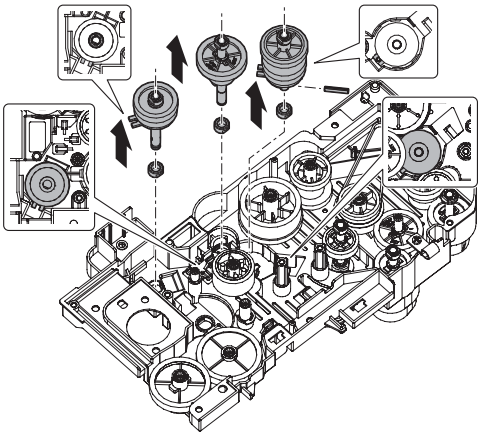
5) Remove the paper feed clutch unit.
   * When installing, be careful of wiring process.



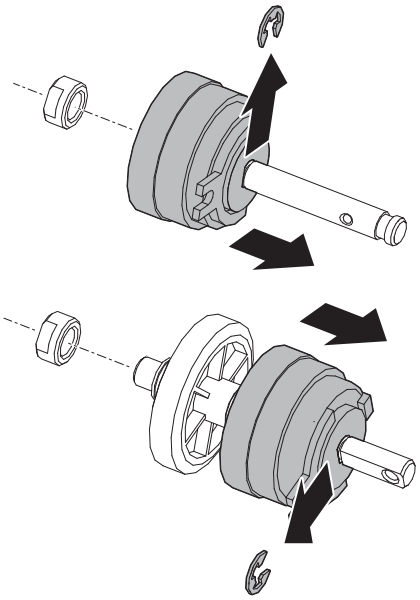
6) Remove the E-ring, and remove the paper feed clutch.



7) Remove the gear, and remove the paper transport clutch unit.
   * When installing, be careful of wiring process.

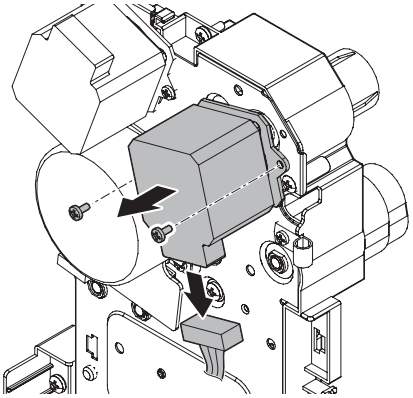


8) Remove the E-ring, and remove the paper transport clutch 1.



(5) Resist motor

1) Remove the rear cabinet
2) Remove the flywheel.
3) Disconnect the connector, remove the screw, and remove the resist motor.



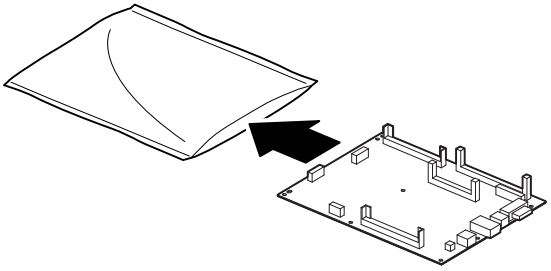
[O] PWB SECTION

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.

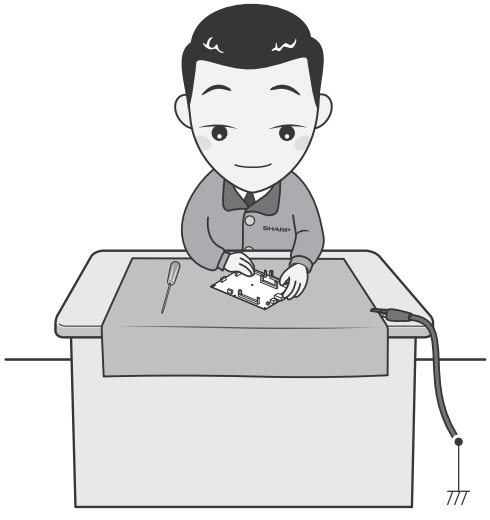


2) When and after removing the parts from an anti-static bag (case), use an earth band as shown below:

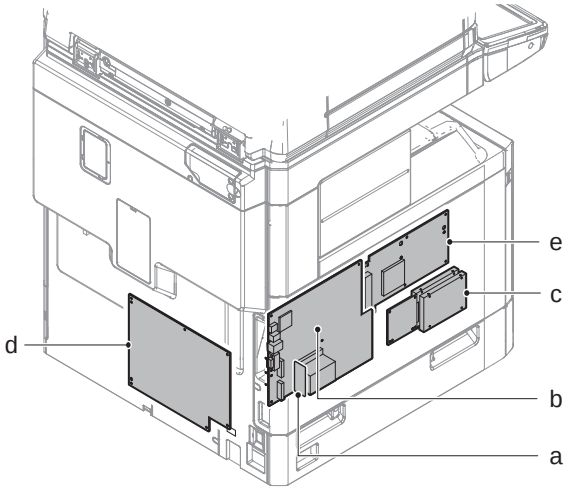
? Put an earth band to your arm, and connect it to the machine.



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



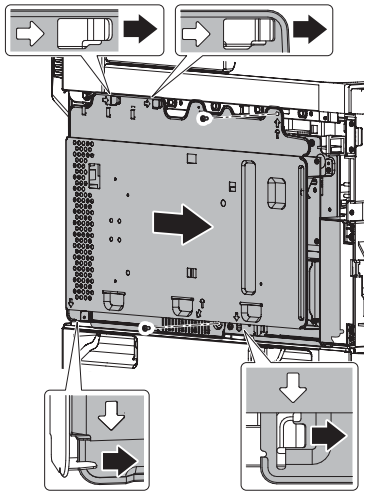
A. Control box



Parts	
a	DIMM memory PWB (1GB)
b	MFP control PWB
c	HDD
d	PCU PWB
e	LSU mother PWB

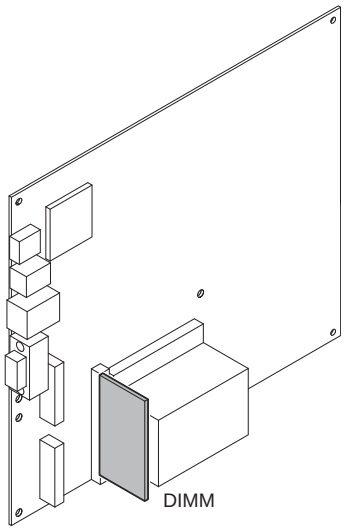
(1) DIMM memory PWB/MFP cnt PWB

1) Remove the left cabinet cover.
2) Remove the MFP shield plate the MFP cnt PWB.

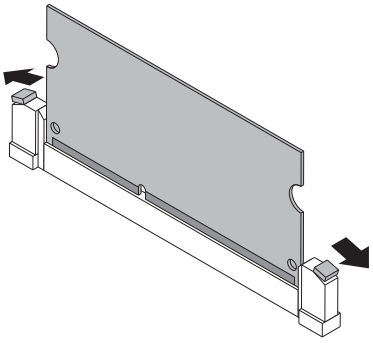


* When placing the HDD on the upper side, do not apply an excessive force to the DIMM memory. So remove it or put a spacer.

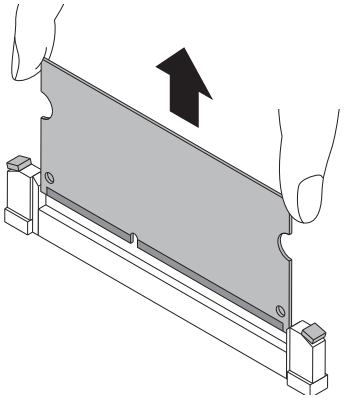
* Inserting position an inserting procedure when the DIMM memory is removed

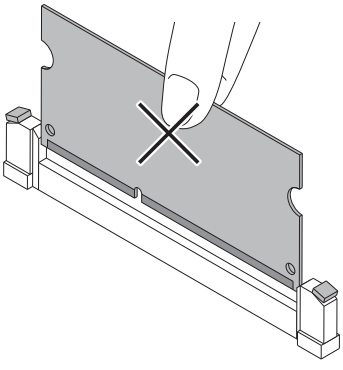


3) Open Stopper with your finger to release the lock holding the memory PWB.

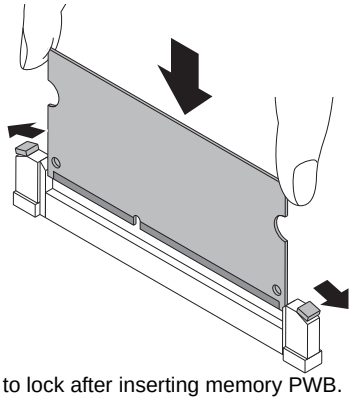


4) When the lock is released, the memory PWB tilts. Pull it out.
   * Be sure to release the lock before pulling it out.
   * Do not touch the IC on the memory PWB.

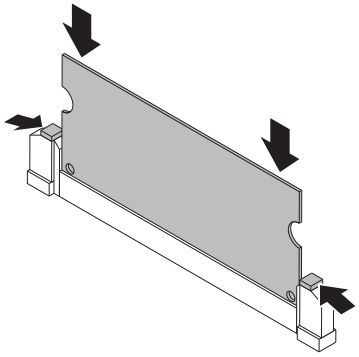




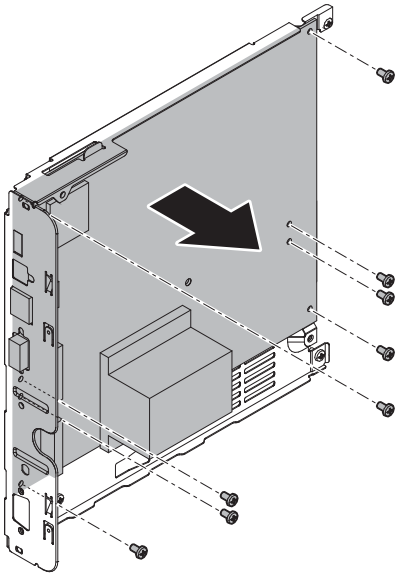
5) Release the lock, and insert the memory PWB.



6) Be sure to lock after inserting memory PWB.

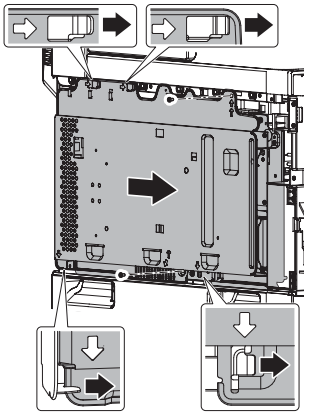


7) Disconnect the connector and remove the MFP cnt PWB.

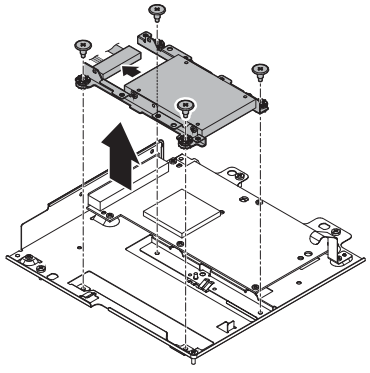


(2) HDD

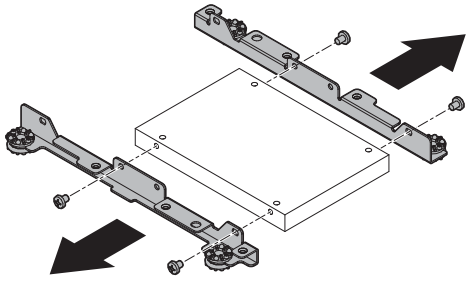
1) Remove the left cabinet cover.
2) Remove the MFP shield plate.



3) Disconnect the connector and remove the screw, and remove the HDD unit.

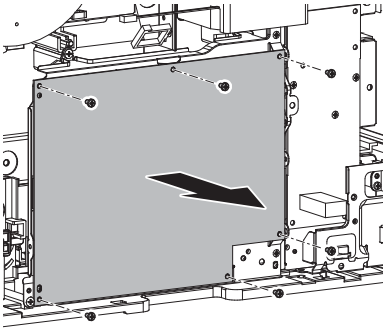


4) Remove the screw, and remove the angle from the HDD.
   * The HDD is very fragile. Handle the HDD carefully so as not to damage the unit due to any external shock.



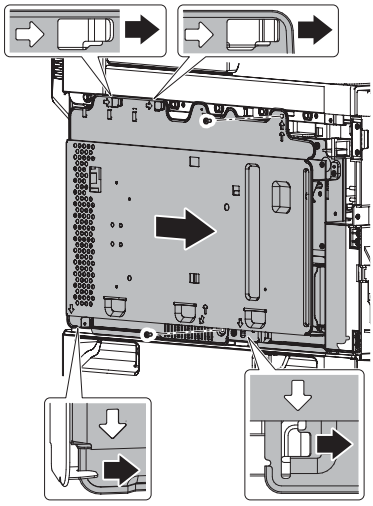
(3) PCU PWB

1) Remove the rear cabinet.
2) Disconnect the connector and remove the screw, and remove the PCU PWB.

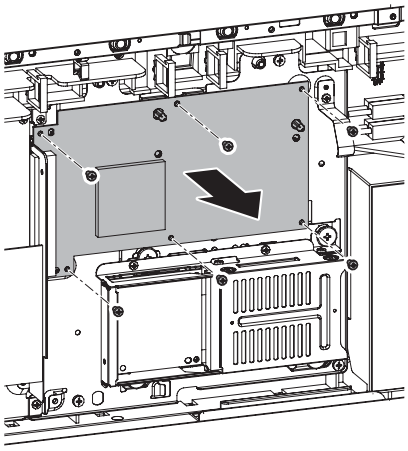


(4) LSU mother PWB

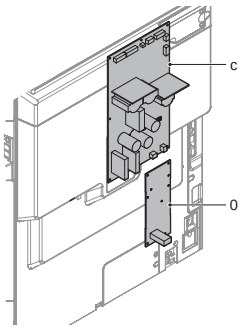
1) Remove the left cabinet.
2) Remove the MFP shield plate.



3) Disconnect the connector and remove the LSU mother PWB.



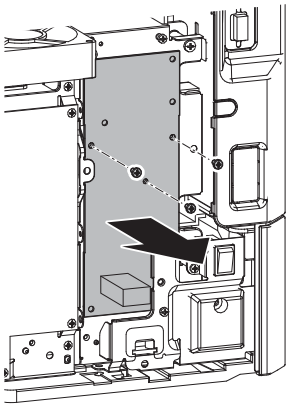
B. Power unit



Parts	
a	ACWH PWB
b	DC power PWB

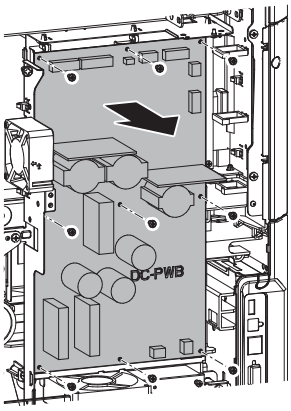
(1) ACWH PWB

1) Remove the rear cabinet.
2) Remove the screw, the reactor and disconnect the connector, and remove the ACWH PWB.

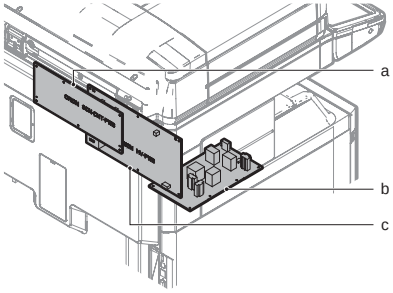


(2) DC power PWB

1) Remove the rear cabinet.
2) Remove the screw and disconnect the connector, and remove the DC power PWB.



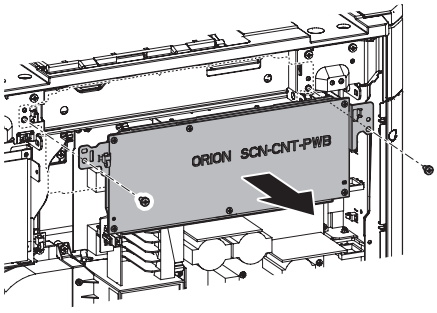
C. Others



Parts	
a	Scanner control PWB
b	HL PWB
c	HV PWB (High voltage PWB)

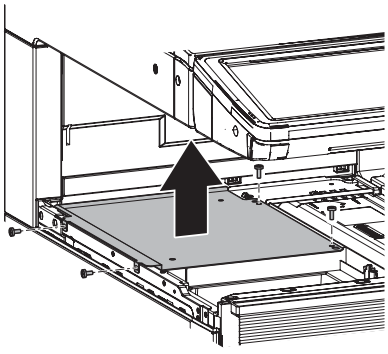
(1) Scanner control PWB

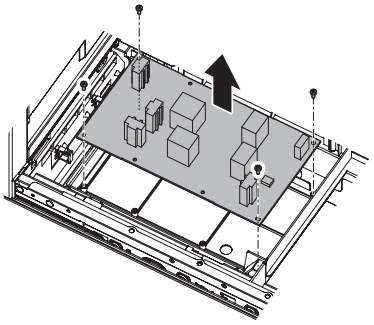
1) Remove the rear cabinet upper.
2) Remove the screw and the scanner control PWB.



(2) HL PWB

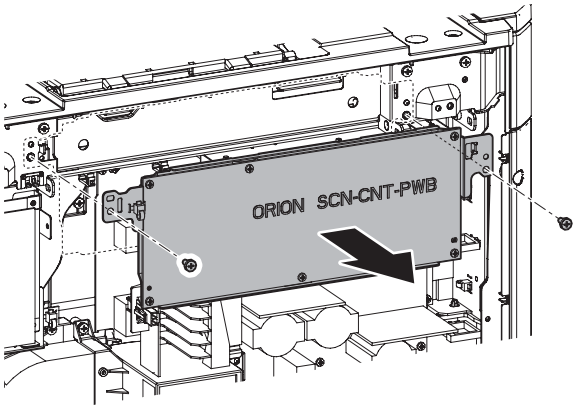
1) Remove the paper exit cabinet.
2) Remove the screw and disconnect the connector, and remove the HL PWB.



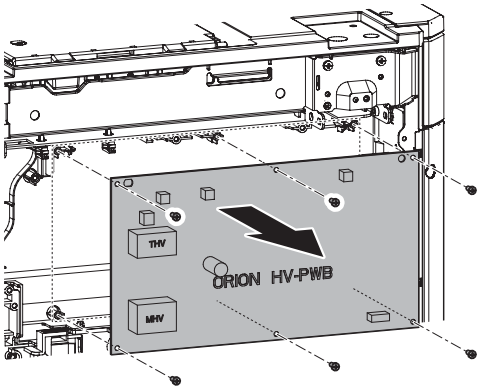


(3) HV PWB (High voltage PWB)

1) Remove the rear cabinet.
2) Remove the scanner control PWB.



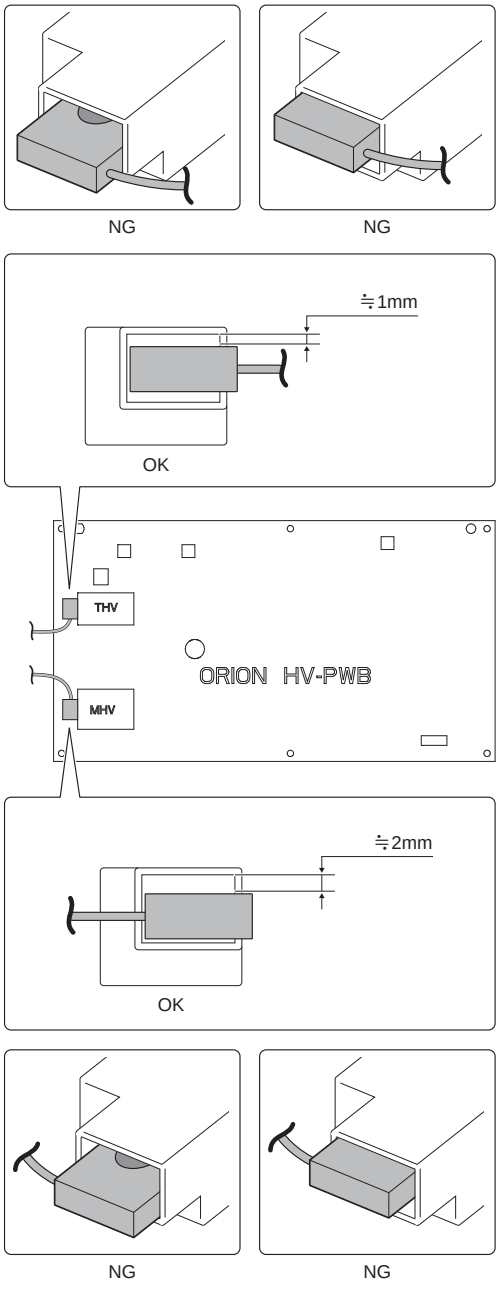
3) Disconnect the connector, remove the screw and the high voltage PWB.



4) Note for assembly of the HV PWB (High voltage PWB)

When inserting the connector into the high voltage output terminal of the HV PWB (High voltage PWB), check to confirm that the connector is securely inserted into the high voltage output terminal as shown in the photo below.

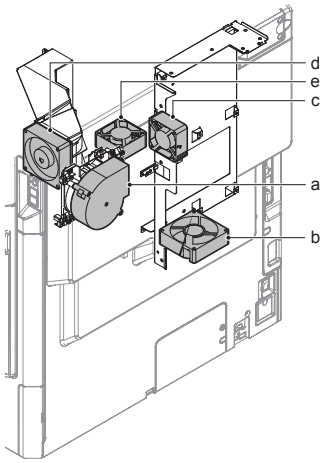
If the high voltage output terminal is on the outside of the connector, it is NG.



[P] FAN SECTION

1. Disassembly and assembly

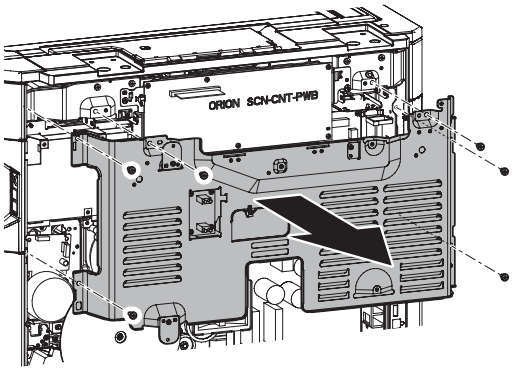
A. Fan motor



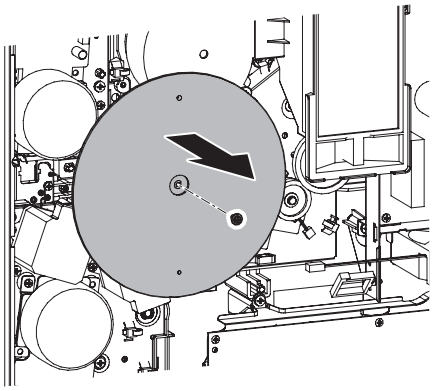
Parts	
a	Ozone fan
b	Power cooling fan 1
c	Power cooling fan 2
d	Process fan
e	LSU fan

(1) Ozone fan

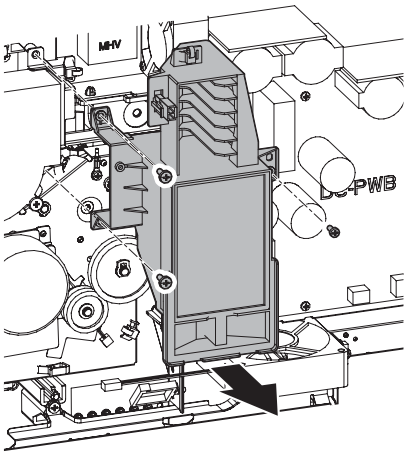
1) Remove the rear cabinet and the rear cabinet upper.
2) Remove the screw, and the plate.



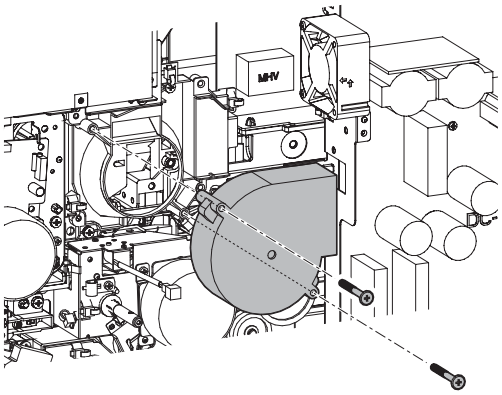
3) Remove the flywheel.



4) Remove the process duct.

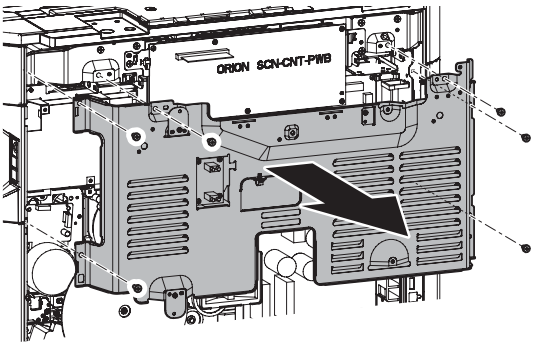


5) Disconnect the connector, remove the screw, and the ozone fan.

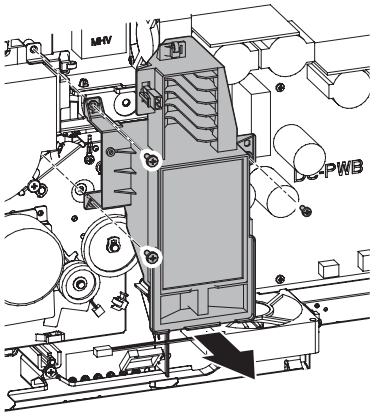


(2) Power cooling fan 1/2

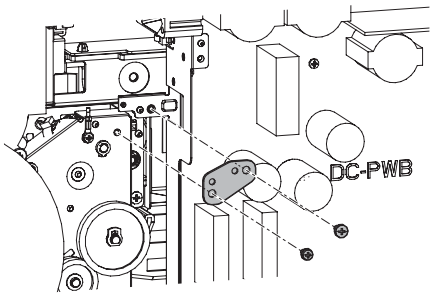
1) Remove the rear cabinet and the rear cabinet upper.
2) Remove the screw, the plate.



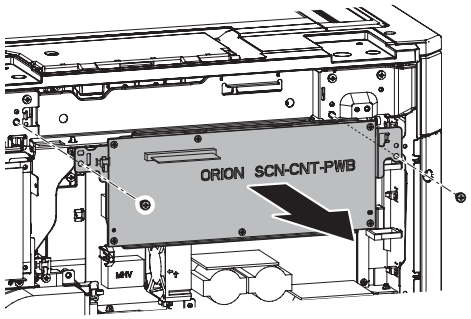
3) Remove the process duct.



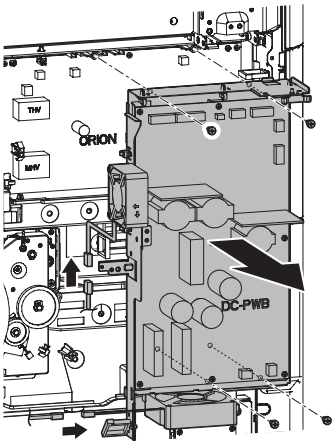
4) Remove the plate.



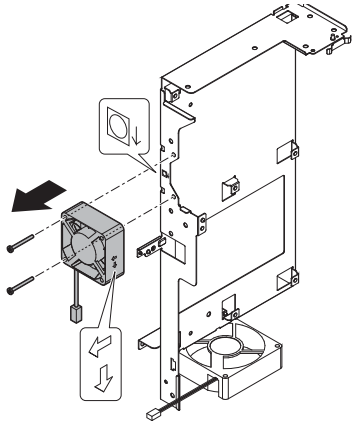
5) Remove the scanner control PWB.



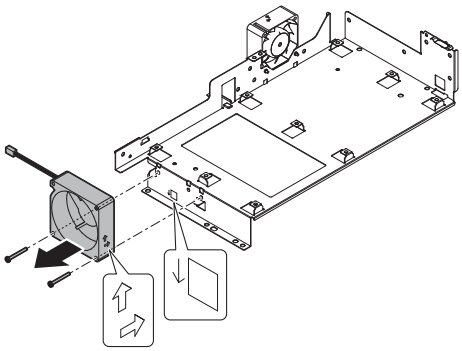
6) Disconnect the connector. Remove the screw, and the DC power unit.



7) Remove the power cooling fan 2.

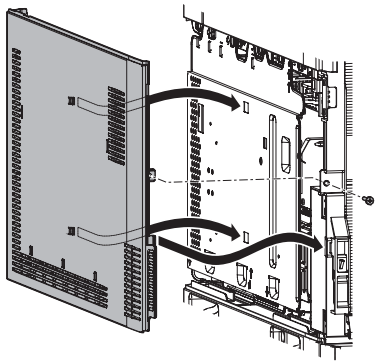


8) Remove the power cooling fan 1.

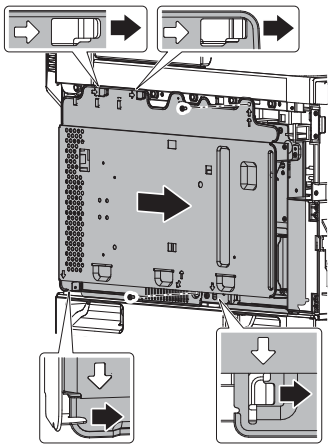


(3) LSU fan

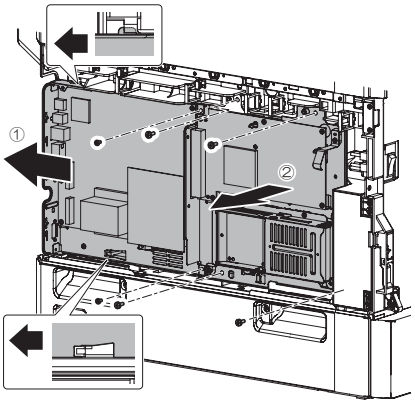
1) Remove the left cabinet.



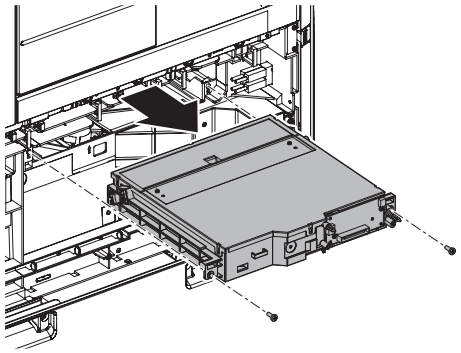
2) Remove the MFP shield plate.



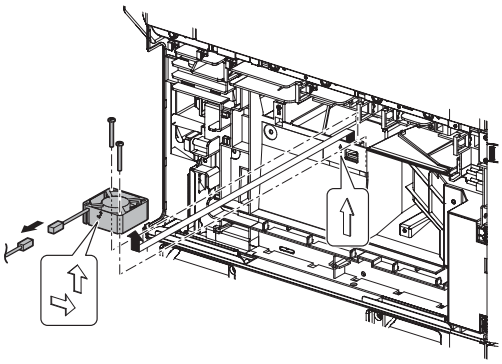
3) Remove the MFP control PWB, LSU mother PWB.



4) Remove the LSU unit.

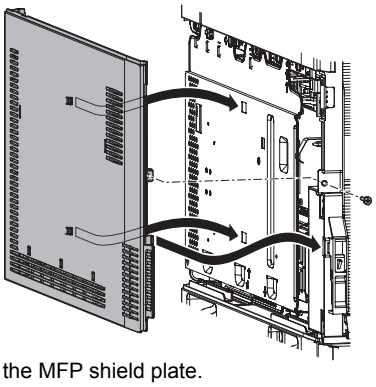


5) Remove the screw and LSU fan.

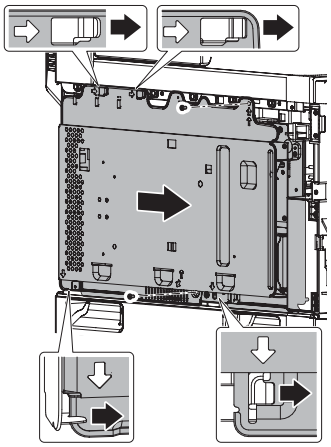


(4) Process fan

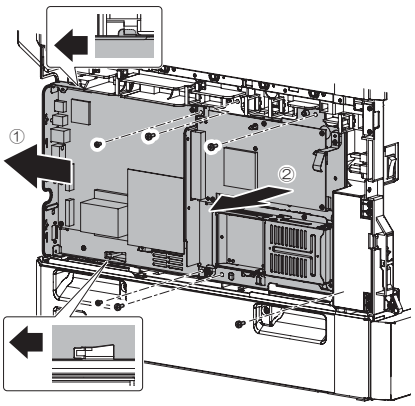
1) Remove the left cabinet.



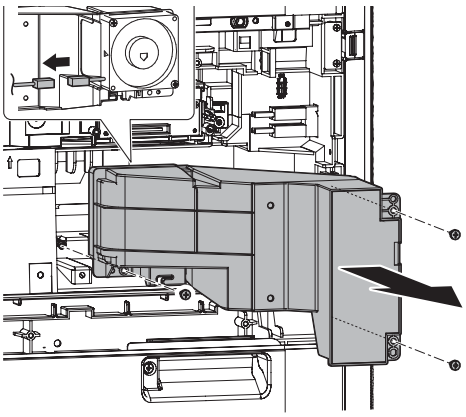
2) Remove the MFP shield plate.



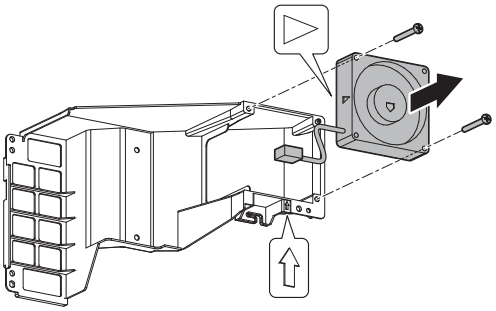
3) Remove the MFP control PWB, LSU mother PWB.



4) Disconnect the connector, remove the screw and duct.



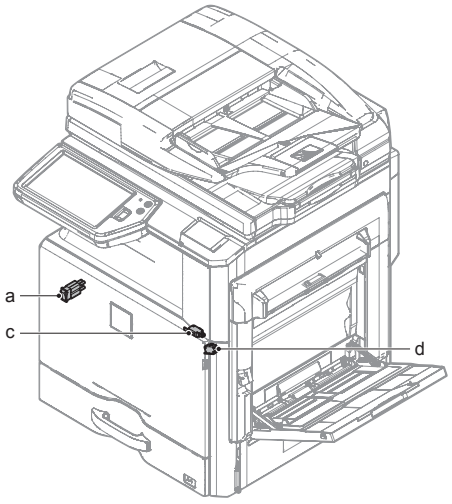
5) Disconnect the connector, and remove the screw and fan.



[Q] SENSOR/SWITCH SECTION

1. Disassembly and assembly

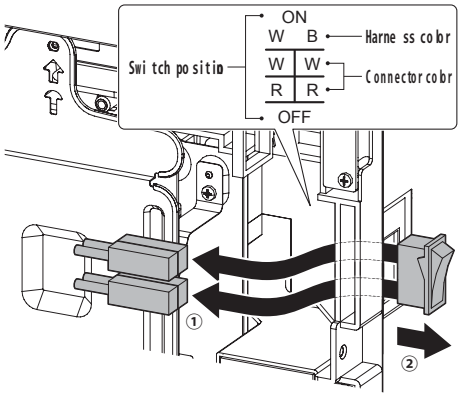
A. Sensor/Switch



Parts	
a	Main switch
c	Front door open/close switch
d	Right door open/close switch

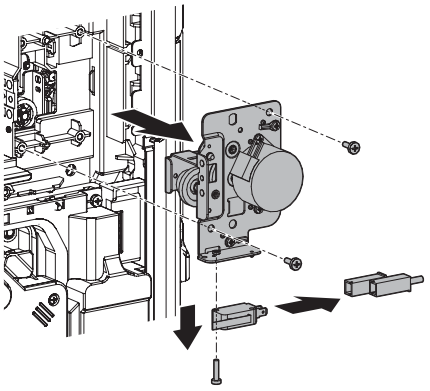
(1) Main switch

1) Remove the front cover.
2) Remove the screw, and remove the cover. Disconnect the connector, disengage the pawl, and remove the main switch.
   * Attach the main switch and the harness so that they are fit with the marks on the back surface of the mounting plate.



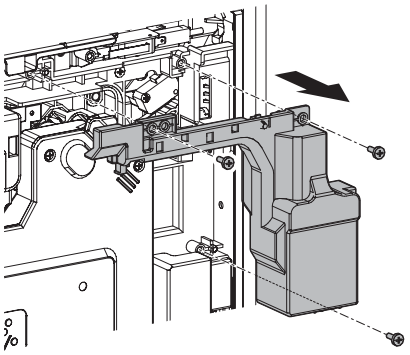
(2) Front door open/close switch

1) Remove the front 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.

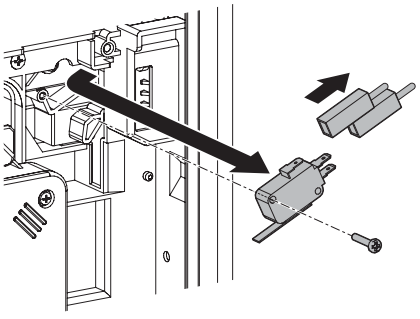


(3) Right door open/close switch

1) Remove the front cover and the cover.



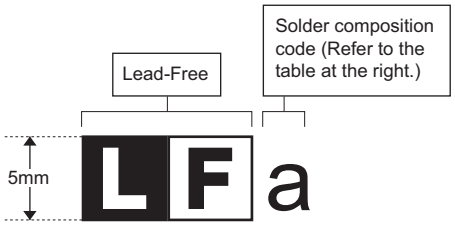
2) Disconnect the connector and remove the screw, and remove the right door open/close switch cover unit.



LEAD-FREE SOLDER

The PWB's of this model employs lead-free solder. The "LF" marks indicated on the PWB's and the Service Manual mean "Lead-Free" solder.
The alphabet following the LF mark shows the kind of lead-free solder.

Example:



<Solder composition code of lead-free solder>

Solder composition	Solder composition code
Sn-Ag-Cu	a
Sn-Ag-Bi Sn-Ag-Bi-Cu	b
Sn-Zn-Bi	z
Sn-In-Ag-Bi	i
Sn-Cu-Ni	n
Sn-Ag-Sb	s
Bi-Sn-Ag-P Bi-Sn-Ag	p

(1) NOTE FOR THE USE OF LEAD-FREE SOLDER THREAD

When repairing a lead-free solder PWB, use lead-free solder thread.

Never use conventional lead solder thread, which may cause a breakdown or an accident.

Since the melting-point of lead-free solder thread is about 40°C higher than that of conventional lead solder thread, the use of the exclusive-use soldering iron is recommended.

(2) NOTE FOR SOLDERING WORK

Since the melting-point of lead-free solder is about 220°C, which is about 40°C higher than that of conventional lead solder, and its soldering capacity is inferior to conventional one, it is apt to keep the soldering iron in contact with the PWB for longer time. This may cause land separation or may exceed the heat-resistive temperature of components. Use enough care to separate the soldering iron from the PWB when completion of soldering is confirmed.

Since lead-free solder includes a greater quantity of tin, the iron tip may corrode easily. Turn ON/OFF the soldering iron power frequently.

If different-kind solder remains on the soldering iron tip, it is melted together with lead-free solder. To avoid this, clean the soldering iron tip after completion of soldering work.

If the soldering iron tip is discolored black during soldering work, clean and file the tip with steel wool or a fine filer.

CAUTION FOR BATTERY REPLACEMENT

(Danish) ADVARSEL !
Lithiumbatteri – Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri
af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandoren.

(English) Caution !
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type
recommended by the manufacturer.
Dispose of used batteries according to manufacturer's instructions.

(Finnish) VAROITUS
Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan
tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden
mukaisesti.

(French) ATTENTION
Il y a danger d'explosion s' il y a remplacement incorrect
de la batterie. Remplacer uniquement avec une batterie du
même type ou d'un type équivalent recommandé par
le constructeur.
Mettre au rebut les batteries usagées conformément aux
instructions du fabricant.

(Swedish) VARNING
Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent
typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens
instruktion.

(German) Achtung
Explosionsgefahr bei Verwendung inkorrekter Batterien.
Als Ersatzbatterien dürfen nur Batterien vom gleichen Typ oder
vom Hersteller empfohlene Batterien verwendet werden.
Entsorgung der gebrauchten Batterien nur nach den vom
Hersteller angegebenen Anweisungen.

CAUTION FOR BATTERY DISPOSAL

(For USA, CANADA)
"BATTERY DISPOSAL"
THIS PRODUCT CONTAINS A LITHIUM PRIMARY (MANGANESS DIOXIDE) MEMORY BACK-UP BATTERY THAT MUST BE DISPOSED OF PROPERLY. REMOVE THE BATTERY FROM THE PRODUCT AND CONTACT YOUR LOCAL ENVIRONMENTAL AGENCIES FOR INFORMATION ON RECYCLING AND DISPOSAL OPTIONS.

"TRAITEMENT DES PILES USAGÉES"
CE PRODUIT CONTIENT UNE PILE DE SAUVEGARDE DE MÉMOIRE LITHIUM PRIMAIRE (DIOXYDE DE MANGANÈSE) QUI DOIT ÊTRE TRAITÉE CORRECTEMENT. ENLEVEZ LA PILE DU PRODUIT ET PRENEZ CONTACT AVEC VOTRE AGENCE ENVIRONNEMENTALE LOCALE POUR DES INFORMATIONS SUR LES MÉTHODES DE RECYCLAGE ET DE TRAITEMENT.

SHARP

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