SHARP SERVICE MANUAL

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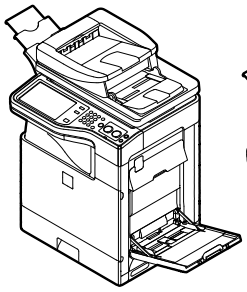
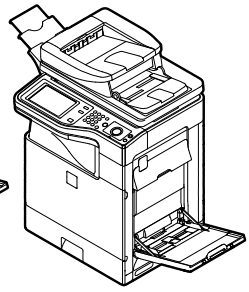


MX-C402SC/C382SC



MX-B402SC/B382SC

DIGITAL FULL COLOR MULTIFUNCTIONAL SYSTEM
DIGITAL MULTIFUNCTIONAL SYSTEM

MODEL MX-C402SC/C382SC MX-B402SC/B382SC

CONTENTS

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

CONTENTS

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 belt, the gear, and other driving sections.

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

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

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

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

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

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

10) When replacing the lithium battery of the PWB, use a specified one only.

    If a battery of different specification is used, it may be broken, causing breakdown or malfunction of the machine.

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

    It may cause a breakdown or malfunctions.

CAUTION
DOUBLE POLE/NEUTRAL FUSING

(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 a smoke or an abnormal smell, interrupt the job and disconnect the power plug.

   It may cause a fire or an electric shock.

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

   To protect the machine and the power unit from 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 work the power cord.

   Do not put heavy objects on the power cable. Do not bend it forcibly or do not pull it extremely.

   It may cause a fire or an electric shock.

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

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

   It may cause a fire or an electric shock.

7) Do not put a receptacle with water in it or a metal piece which may drop inside the machine.

   It may cause a fire or an electric shock.

8) With wet or oily hands, do not touch the power plug, do not insert the telephone line jack, do not operate the machine, or do not perform servicing.

   It may cause an electric shock.

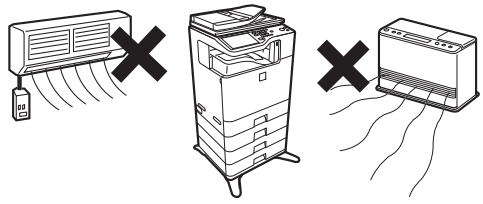
3. Note for installing site

Do not install the machine at the following sites.

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

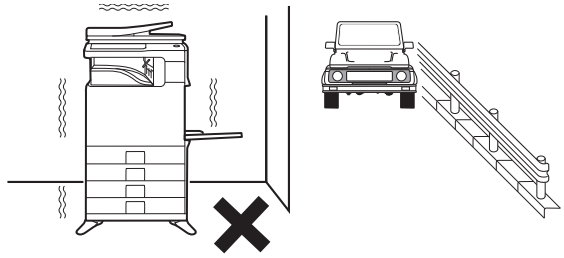
   Paper may get damp and form dews inside the machine, causing paper jam or copy dirt.

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



2) **Place of much vibrations**

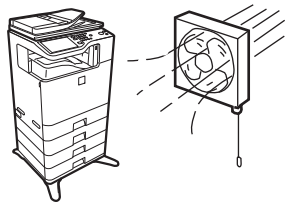
   It may cause a breakdown.



3) **Poorly ventilated place**

   An electrostatic type copier will produce ozone inside it.

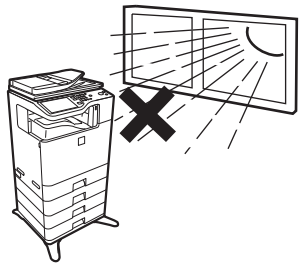
   The quantity of ozone produced is designed to a low level so as not to affect human bodies. However, continuous use of such a machine may produce a smell of ozone. Install the machine in a well ventilated place, and ventilate occasionally.



4) **Place of direct sunlight.**

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

It may cause a breakdown or copy dirt.



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 dirt copy.

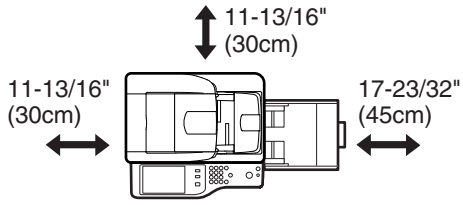
6) **Place of much dust**

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

7) **Place near a wall**

The machine will require intake and exhaust of air.

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



8) **Unstable or irregular surface**

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

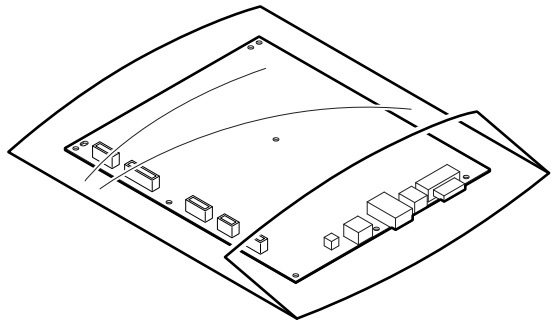
If there are optional paper desk and the copier desk specified, it is recommendable to use them.

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

4. Note for handling PWB and electronic parts

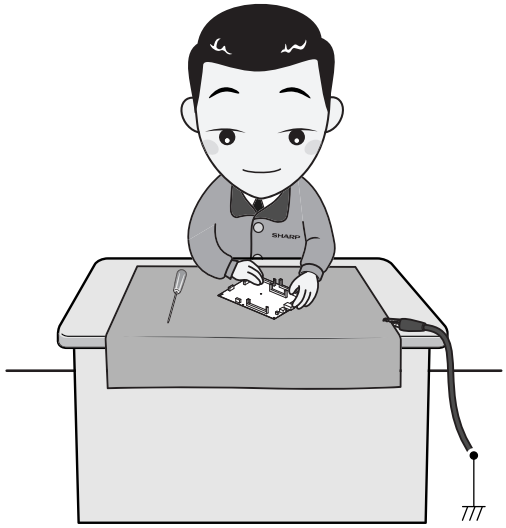
When handling the PWB and the electronic parts, be sure to observe the following precautions in order to prevent against damage by static electricity.

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 cartridge, the transfer unit, the developer cartridge, and the fusing unit

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

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

(Drum cartridge)

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 belt and the transfer roller.

(Developer cartridge)

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

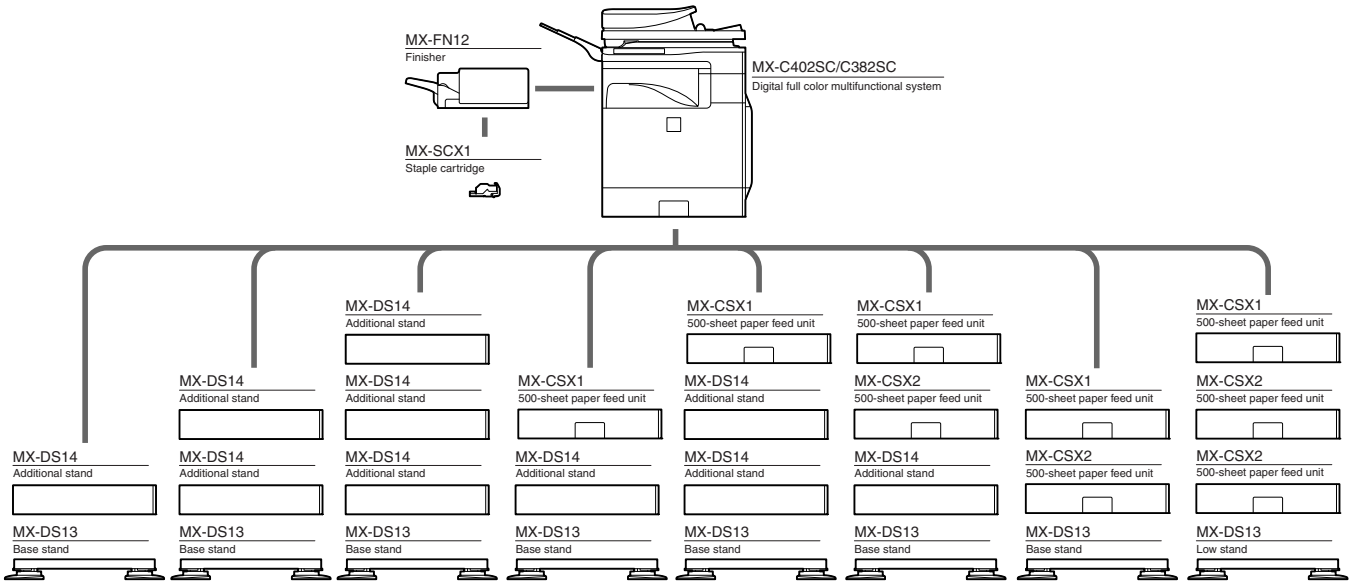
(Fusing unit)

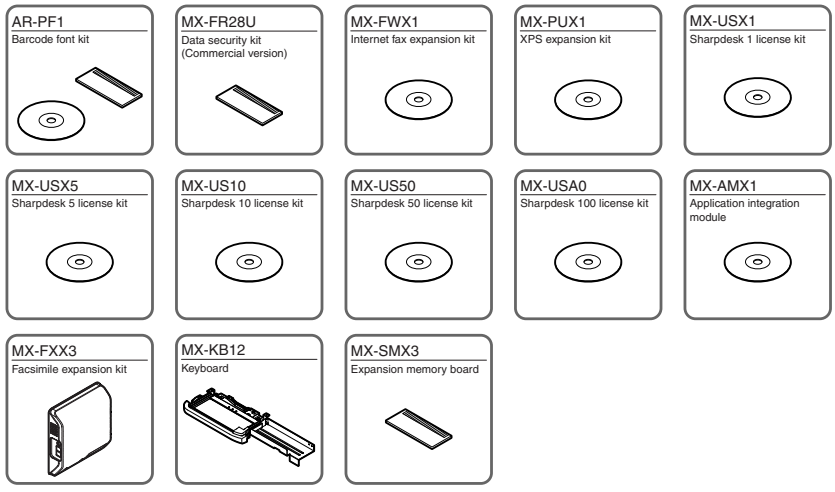
1) Be careful not to put fingerprints, oil, grease, or other foreign material on the fusing roller and the external heating belt.
2) Do not leave the fusing roller in contact state for a long time.

[1] PRODUCT OUTLINE

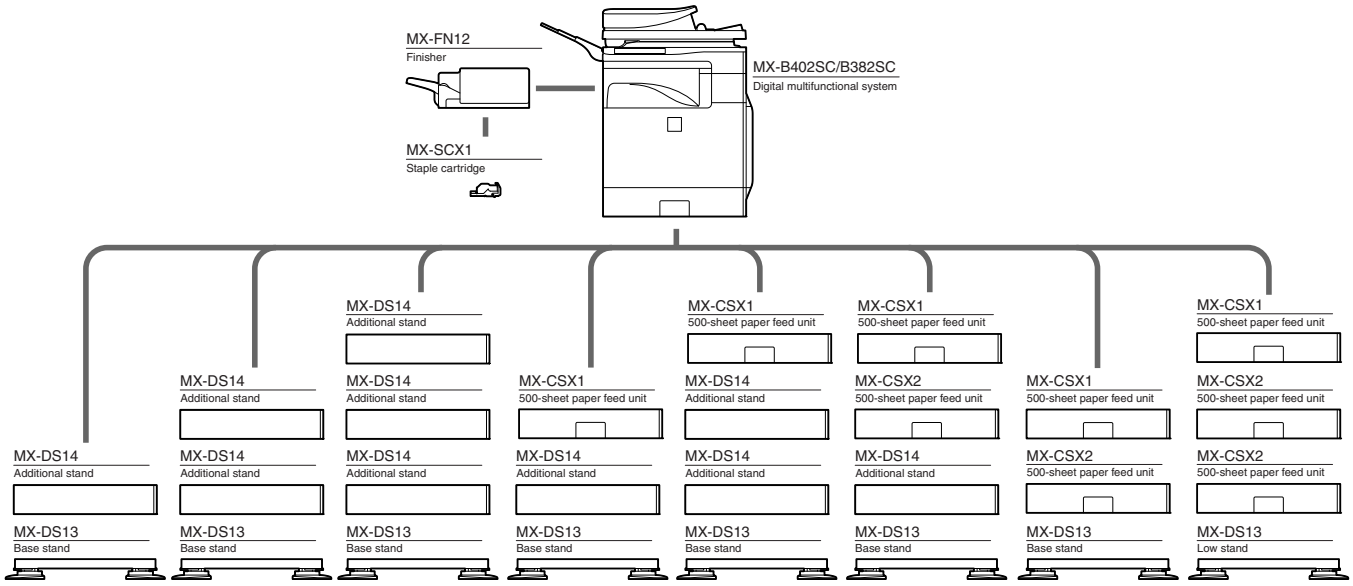
1. System configuration

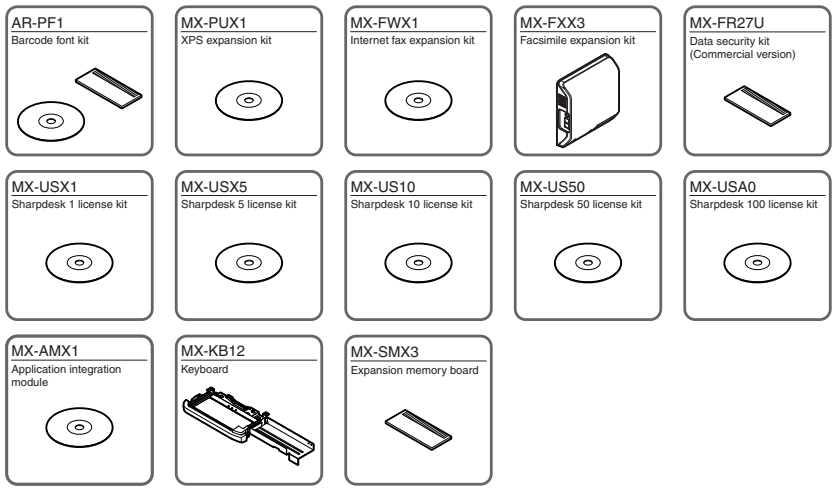
A. MX-C402SC/C382SC





B. MX-B402SC/B382SC





2. Machine configuration

	MX-C402SC	MX-C382SC	MX-B402SC	MX-B382SC
Main body LCD	8.5 Inch color LCD		7.0 Inch color LCD	
DSPF	STD			
Automatic duplex	STD			
HDD	STD			
System memory	1GB		512MB	
Local memory	512MB			
Codec memory	256MB		–	
Copier	STD			
PCL printer	STD			
PS printer	STD			
FAX	OPT			
Internet Fax	OPT*1			
Network scanner	STD			
Filing	STD			
Security	OPT*1			
OSA	STD			

STD: Standard provision, OPT: Option, –: No setting

*1: Product key target

3. Option list

Model	Name	Model name	MX-C402SC	MX-C382SC	MX-B402SC	MX-B382SC	Product key target
Paper feed system	500-sheet paper feed unit	MX-CSX1	OPT				–
	500-sheet paper feed unit	MX-CSX2	OPT				–
	Base stand	MX-DS13	OPT				–
	Additional stand	MX-DS14	OPT				–
Paper exit system	Finisher	MX-FN12	OPT				–
Electrical system (ROM)	Barcode font kit	AR-PF1	OPT				–
	Data security kit	MX-FR28U	OPT		–		Yes
	Data security kit	MX-FR27U	–		OPT		Yes
Electrical system (Software)	Internet fax expansion kit	MX-FWX1	OPT				Yes
	XPS expansion kit	MX-PUX1	OPT*1				Yes
	Sharpdesk 1 license kit	MX-USX1	OPT				–
	Sharpdesk 5 license kit	MX-USX5	OPT				–
	Sharpdesk 10 license kit	MX-US10	OPT				–
	Sharpdesk 50 license kit	MX-US50	OPT				–
	Sharpdesk 100 license kit	MX-USA0	OPT				–
	Application integration module	MX-AMX1	OPT				Yes
	Facsimile expansion kit	MX-FXX3	OPT*2				–
	Keyboard	MX-KB12	STD	OPT	STD	OPT	–
Memory	Expansion memory board	MX-SMX3	OPT*3				–

STD: Standard provision, OPT: Option, –: No setting

*1: To install the MX-PUX1, the MX-SMX3 is required.

*2: No support for some destinations.

*3: This is required in case of short in the memory capacity due to print data. When the XPS expansion kit is installed, it is required.

[2] CONSUMABLE PARTS

1. Supply system table

A. MX-C402SC/C382SC

(1) USA/Canada/South and Central America (MX-C402SC)

No.	Item	Content		Life	Model Name	Quantity in collective package	Remarks
1	Toner Cartridge (Black)	Toner Cartridge (Black) with IC Chip (Black toner : Net 215g)	x 1	10K *1	MX-C40NTB	10	
2	Toner Cartridge (Cyan)	Toner Cartridge (Cyan) with IC Chip (Cyan toner : Net 215g)	x 1	10K *1	MX-C40NTC	10	
3	Toner Cartridge (Magenta)	Toner Cartridge (Magenta) with IC Chip (Magenta toner : Net 215g)	x 1	10K *1	MX-C40NTM	10	
4	Toner Cartridge (Yellow)	Toner Cartridge (Yellow) with IC Chip (Yellow toner : Net 215g)	x 1	10K *1	MX-C40NTY	10	
5	Developer Cartridge (Black)	Developer Cartridge (Black) (Black developer : Net 185g)	x 1	60K *2	MX-C40NVB	10	
6	Developer Cartridge (Cyan)	Developer Cartridge (Cyan) (Cyan developer : Net 185g)	x 1	30K *2	MX-C40NVC	10	
7	Developer Cartridge (Magenta)	Developer Cartridge (Magenta) (Magenta developer : Net 185g)	x 1	30K *2	MX-C40NVM	10	
8	Developer Cartridge (Yellow)	Developer Cartridge (Yellow) (Yellow developer : Net 185g)	x 1	30K *2	MX-C40NVY	10	
9	Drum Cartridge (Black)	Drum Cartridge (Black) Charger Cleaner	x 1 x 1	60K *2	MX-C40NRB	10	
10	Drum Cartridge (Cyan/Magenta/Yellow)	Drum Cartridge (Common to C, M, Y) * 3 cartridges are required for one machine.	x 1	30K *2	MX-C40NRS	10	

*1: Life: A4/Letter size at Area Coverage 5% (Reference: 8K for A4/Letter 6%)
The toner life may vary depending on the document density and temperature and humidity.
The life of toner cartridges packed together with the main unit is 2.5K.

*2: Life: A4/Letter size in 4-sheet continuous print within 550K of the cartridge rotations.

(2) Europe/East Europe/Russia/Australia/New Zealand (MX-C382SC)

No.	Item	Content		Life	Model Name	Quantity in collective package	Remarks
1	Toner Cartridge (Black)	Toner Cartridge (Black) with IC Chip (Black toner : Net 215g)	x 1	10K *1	MX-C38GTB	10	
2	Toner Cartridge (Cyan)	Toner Cartridge (Cyan) with IC Chip (Cyan toner : Net 215g)	x 1	10K *1	MX-C38GTC	10	
3	Toner Cartridge (Magenta)	Toner Cartridge (Magenta) with IC Chip (Magenta toner : Net 215g)	x 1	10K *1	MX-C38GTM	10	
4	Toner Cartridge (Yellow)	Toner Cartridge (Yellow) with IC Chip (Yellow toner : Net 215g)	x 1	10K *1	MX-C38GTY	10	
5	Developer Cartridge (Black)	Developer Cartridge (Black) (Black developer : Net 185g)	x 1	60K *2	MX-C38GVB	10	
6	Developer Cartridge (Cyan)	Developer Cartridge (Cyan) (Cyan developer : Net 185g)	x 1	30K *2	MX-C38GVC	10	
7	Developer Cartridge (Magenta)	Developer Cartridge (Magenta) (Magenta developer : Net 185g)	x 1	30K *2	MX-C38GVM	10	
8	Developer Cartridge (Yellow)	Developer Cartridge (Yellow) (Yellow developer : Net 185g)	x 1	30K *2	MX-C38GVY	10	
9	Drum Cartridge (Black)	Drum Cartridge (Black) Charger Cleaner	x 1 x 1	60K *2	MX-C38GRB	10	
10	Drum Cartridge (Cyan/Magenta/Yellow)	Drum Cartridge (Common to C, M, Y) * 3 cartridges are required for one machine.	x 1	30K *2	MX-C38GRS	10	

*1: Life: A4/Letter size at Area Coverage 5% (Reference: 8K for A4/Letter 6%)
The toner life may vary depending on the document density and temperature and humidity.
The life of toner cartridges packed together with the main unit is 2.5K.

*2: Life: A4/Letter size in 4-sheet continuous print within 550K of the cartridge rotations.

B. MX-B402SC/B382SC

(1) USA/Canada/South and Central America

No.	Item	Content	Life	Model Name	Quantity in collective package	Remarks
1	Toner Cartridge	Toner Cartridge with IC Chip (Toner : Net 430g) x 1	20K *1	MX-B42NT1	10	
2	Developer	Developer : Net 185g x 1	72K *2	MX-B42NV1	10	
3	Drum Cartridge	Drum Cartridge x 1 Charger Cleaner x 1	72K *2	MX-C40NRB	10	

*1: Life: A4/Letter size at Area Coverage 5% (Reference: 16K for A4/Letter 6%)
The toner life may vary depending on the document density and temperature and humidity.

*2: 72K sheets or 550K rotations (For details, refer to item 4, "Life end conditions.")
The life of the above Developer Cartridge and the Drum Cartridge is 72K only when they are installed to the MX-B402.

(2) Europe/Australia/New Zealand

No.	Item	Content	Life	Model Name	Quantity in collective package	Remarks
1	Toner Cartridge	Toner Cartridge with IC Chip (Toner : Net 430g) x 1	20K *1	MX-B42GT1	10	
2	Developer	Developer : Net 185g x 1	72K *2	MX-B42GV1	10	
3	Drum Cartridge	Drum Cartridge x 1 Charger Cleaner x 1	72K *2	MX-C38GRB	10	

*1: Life: A4/Letter size at Area Coverage 5% (Reference: 16K for A4/Letter 6%)
The toner life may vary depending on the document density and temperature and humidity.

*2: 72K sheets or 550K rotations (For details, refer to item 4, "Life end conditions.")
The life of the above Developer Cartridge and the Drum Cartridge is 72K only when they are installed to the MX-B382.

2. Maintenance parts list

A. MX-C402SC/C382SC

(1) USA/Canada/South and Central America (MX-C402SC)

No.	Item	Model name	Content	Quantity	Life	Package	Remarks
1	Heat roller kit	MX-C31HK	Upper heat roller assy	1	120K	5	
			Lower heat roller assy	1			
			External heating unit	1			
			Separation pawl lower	2			
			Separation pawl lower spring	2			
			Upper thermistor retainer	1			
			Upper thermistor	1			
			Lower thermistor	1			
2	Primary transfer kit	MX-C31Y1	Intermediate transfer belt F	1	120K	5	
			Primary transfer roller F	4			
			Cleaning blade	1			
			PTC wire	1			
			PTC cleaner assy	1			
			PTC cleaner B AS	1			
			Primary transfer drive coupling	1			
3	Primary transfer belt unit	MX-C31U1	Primary transfer belt unit	1	120K	1	
4	Secondary transfer roller unit	MX-C31U2	Secondary transfer roller unit	1	60K	1	
5-1	Fusing unit	MX-C31FU1	Fusing unit (Heater lamp 120V)	1	120K	1	
			Ozone filter	1			
5-2	Fusing unit	MX-C31FU	Fusing unit (Heater lamp 230V)	1	120K	1	
			Ozone filter	1			
6	Filter kit	MX-C31FL	Ozone filter	1	120K	10	
7	Toner collection container	MX-C31HB	Toner collection container	2	15K *1	5	
			LSU cleaner	2			
8	Paper feed roller kit	MX-C31RT	Paper feed roller FT	1	Replace as needed.	10	Reference: About 100K (Commonly used for the MX-CSX1/MX-CSX2.)
			Take-up roller FT	1			
			Separation roller FT	1			
9	Manual paper feed roller kit	MX-C31MR	MF paper feed roller	1	Replace as needed.	10	Reference: About 100K
			Manual paper feed separation pad unit	1			
10	DF roller kit	MX-C31DF	Pickup_assy	1	Replace as needed.	10	Reference: About 100K
			Pad_separation_assy	1			
11	Staple cartridge	MX-SCX1	Staple cartridge	3	5000 times x 3	20	Consumable part of the MX-FN12 (option)

*1: The life is estimated with 5% coverage of each color and 25% color ratio. It differs depending on the use conditions of the machine.

(2) Europe/East Europe/Russia/Australia/New Zealand (MX-C382SC)

No.	Item	Model name	Content	Quantity	Life	Package	Remarks
1	Heat roller kit	MX-C31HK	Upper heat roller assy	1	120K	5	
			Lower heat roller assy	1			
			External heating unit	1			
			Separation pawl lower	2			
			Separation pawl lower spring	2			
			Upper thermistor retainer	1			
			Upper thermistor	1			
			Lower thermistor	1			
2	Primary transfer kit	MX-C31Y1	Intermediate transfer belt F	1	120K	5	
			Primary transfer roller F	4			
			Cleaning blade	1			
			PTC wire	1			
			PTC cleaner assy	1			
			PTC cleaner B AS	1			
			Primary transfer drive coupling	1			
3	Primary transfer belt unit	MX-C31U1	Primary transfer belt unit	1	120K	1	
4	Secondary transfer roller unit	MX-C31U2	Secondary transfer roller unit	1	60K	1	
5	Fusing unit	MX-C31FU	Fusing unit (Heater lamp 230V)	1	120K	1	
			Ozone filter	1			
6	Filter kit	MX-C31FL	Ozone filter	1	120K	10	
7	Toner collection container	MX-C31HB	Toner collection container	2	15K *1	5	
			LSU cleaner	2			
8	Paper feed roller kit	MX-C31RT	Paper feed roller FT	1	Replace as needed.	10	Reference: About 100K (Commonly used for the MX-CSX1/MX-CSX2.)
			Take-up roller FT	1			
			Separation roller FT	1			
9	Manual paper feed roller kit	MX-C31MR	MF paper feed roller	1	Replace as needed.	10	Reference: About 100K
			Manual paper feed separation pad unit	1			
10	DF roller kit	MX-C31DF	Pickup_assy	1	Replace as needed.	10	Reference: About 100K
			Pad_separation_assy	1			
11	Staple cartridge	MX-SCX1	Staple cartridge	3	5000 times x 3	20	Consumable part of the MX-FN12 (option)

B. MX-B402SC/B382SC

(1) USA/Canada/South and Central America

No.	Item	Model name	Content	Quantity	Life	Package	Remarks
1	Heat roller kit	MX-B42HK	Upper heat roller assembly	1	120K	5	
			Lower pressure roller	1			
			Lower roller bearing	2			
			Separation pawl lower spring	2			
			Upper thermistor	1			
			Thermistor retainer	1			
2	Cleaning kit	MX-B42CL	Separation plate assembly	1	120K	5	
			Separation spring	2			
			Oil roller	1			
			Oil roller bearing	4			
			Oil roller spring	4			
			Cleaning roller	1			
			Lower pressure roller, Cleaning roller	1			
3	Primary transfer kit	MX-B40Y1	Intermediate transfer belt F	1	120K	5	
			Primary transfer roller F	1			
			Cleaning blade	1			
			PTC wire	1			
			PTC cleaner assembly	1			
			PTC cleaner B AS	1			
			Primary transfer drive coupling	1			
4	Primary transfer belt unit	MX-B40U1	Primary transfer belt unit	1	120K	1	
5	Secondary transfer roller unit	MX-C31U2	Secondary transfer roller unit	1	60K	1	
6-1	Fusing unit	MX-B42FU1	Fusing unit (Heater lamp 120V)	1	120K	1	
			Ozone filter	1			
6-2	Fusing unit	MX-B42FU	Fusing unit (Heater lamp 230V)	1	120K	1	
			Ozone filter	1			
7	Filter kit	MX-B42FL	Ozone filter	1	120K	10	
8	Toner collection container	MX-B40HB	Toner collection container	2	45K for one *1	5	
			LSU cleaner	2			
9	Paper feed roller kit	MX-C31RT	Paper feed roller FT	1	Replace as needed.	10	Reference: About 100K (Commonly used for the MX-CSX1/MX-CSX2.)
			Take-up roller FT	1			
			Separation roller FT	1			

No.	Item	Model name	Content	Quantity	Life	Package	Remarks
10	Manual paper feed roller kit	MX-C31MR	MF paper feed roller	1	Replace as needed.	10	Reference: About 100K
			Manual paper feed separation pad unit	1			
11	DF roller kit	MX-C31DF	Pickup_assembly	1	Replace as needed.	10	Reference: About 100K
			Pad_separation_assembly	1			
12	Staple cartridge	MX-SCX1	Staple cartridge	3	5000 times x 3	20	Consumable part of the MX-FN12 (option)

*1: The life is estimated with 5% coverage. It differs depending on the use conditions of the machine.
The DV blade, the DV side seal F/R, and the toner filter are treated as service parts.

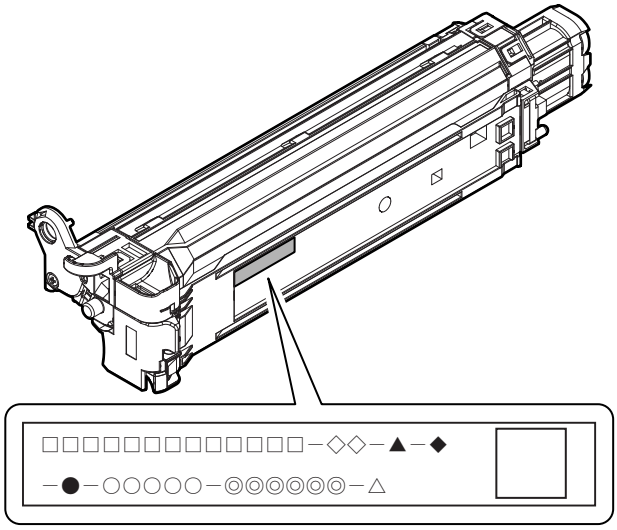
(2) Europe/Australia/New Zealand

No.	Item	Model name	Content	Quantity	Life	Package	Remarks
1	Heat roller kit	MX-B42HK	Upper heat roller assembly	1	120K	5	
			Lower pressure roller	1			
			Lower roller bearing	2			
			Separation pawl lower spring	2			
			Upper thermistor	1			
			Thermistor retainer	1			
2	Cleaning kit	MX-B42CL	Separation plate assembly	1	120K	5	
			Separation spring	2			
			Oil roller	1			
			Oil roller bearing	4			
			Oil roller spring	4			
			Cleaning roller	1			
			Lower pressure roller, Cleaning roller	1			
3	Primary transfer kit	MX-B38Y1	Intermediate transfer belt F	1	120K	5	
			Primary transfer roller F	1			
			Cleaning blade	1			
			PTC wire	1			
			PTC cleaner assembly	1			
			PTC cleaner B AS	1			
			Primary transfer drive coupling	1			
4	Primary transfer belt unit	MX-B38U1	Primary transfer belt unit	1	120K	1	
5	Secondary transfer roller unit	MX-C31U2	Secondary transfer roller unit	1	60K	1	
6	Fusing unit	MX-B42FU	Fusing unit (Heater lamp 230V)	1	120K	1	
			Ozone filter	1			
7	Filter kit	MX-B42FL	Ozone filter	1	120K	10	
8	Toner collection container	MX-B38HB	Toner collection container	2	45K for one *1	5	
			LSU cleaner	2			
9	Paper feed roller kit	MX-C31RT	Paper feed roller FT	1	Replace as needed.	10	Reference: About 100K (Commonly used for the MX-CSX1/MX-CSX2.)
			Take-up roller FT	1			
			Separation roller FT	1			
10	Manual paper feed roller kit	MX-C31MR	MF paper feed roller	1	Replace as needed.	10	Reference: About 100K
			Manual paper feed separation pad unit	1			
11	DF roller kit	MX-C31DF	Pickup_assembly	1	Replace as needed.	10	Reference: About 100K
			Pad_separation_assembly	1			
12	Staple cartridge	MX-SCX1	Staple cartridge	3	5000 times x 3	20	Consumable part of the MX-FN12 (option)

*1: The life is estimated with 5% coverage. It differs depending on the use conditions of the machine.
The DV blade, the DV side seal F/R, and the toner filter are treated as service parts.

3. Production number identification

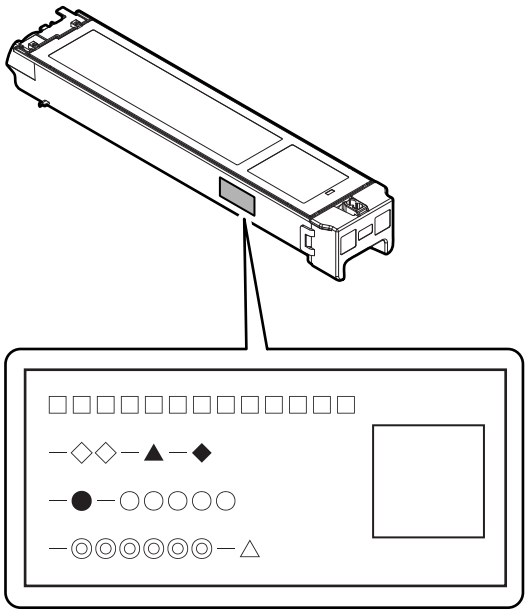
A. Developer cartridge (MX-C402SC/C382SC)



□: Unit code/Model name
◇: Color code (Black: BK /Cyan: CY /Magenta: MA /Yellow: YE)
▲: Destination
◆: Skating
●: Production place
○: Production date (YYYYMMDD)
◎: Serial number
△: Version number

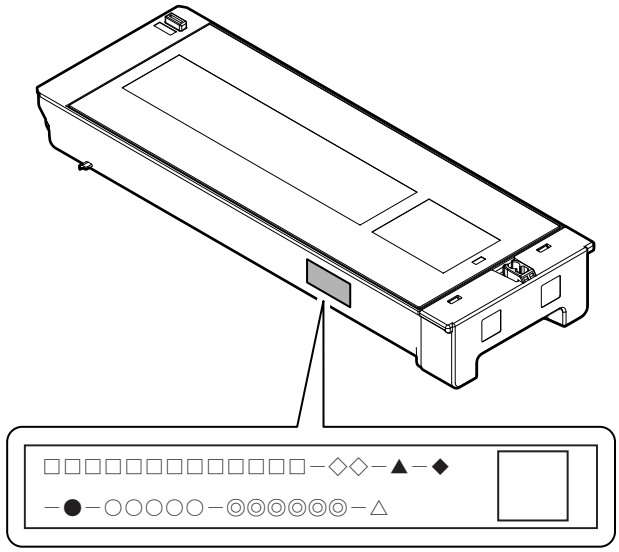
B. Toner cartridge

(1) MX-C402SC/C382SC



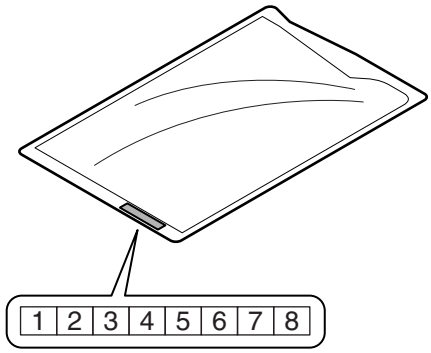
□: Unit code/Model name
◇: Color code (Black: BK /Cyan: CY /Magenta: MA /Yellow: YE)
▲: Destination
◆: Skating
●: Production place
○: Production date (YYYYMMDD)
◎: Serial number
△: Version number

(2) MX-B402SC/B382SC



□: Unit code/Model name
◇: Color code (Black: BK /Cyan: CY /Magenta: MA /Yellow: YE)
▲: Destination
◆: Skating
●: Production place
○: Production date (YYYYMMDD)
◎: Serial number
△: Version number

C. Developer (MX-B402SC/B382SC)



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.

4. Life end conditions

A. MX-C402SC/C382SC

(1) Toner cartridge

After detecting near end, when the toner density is lowered to the specified level or lower and the toner sensor detects toner LOW continuously for a certain time, it is judged as toner end.

(2) Developer cartridge/Drum cartridge

- When the developer (developer cartridge)/drum counter exceeds the specified number of sheets.
- When the rpm of the developer cartridge/drum cartridge exceeds the specified number.

If one of the above two exceeds the specified level, it is judged as life end.

In an actual use, the ratio of the color output may be extremely greater than the monochrome output, and vice versa.

For a document or data with monochrome and color components, it may be outputted in the color mode in order to prevent against fall in the job efficiency.

In addition to during the output operation, the developer cartridge and the drum are rotated during the correction operation and the warm-up operation.

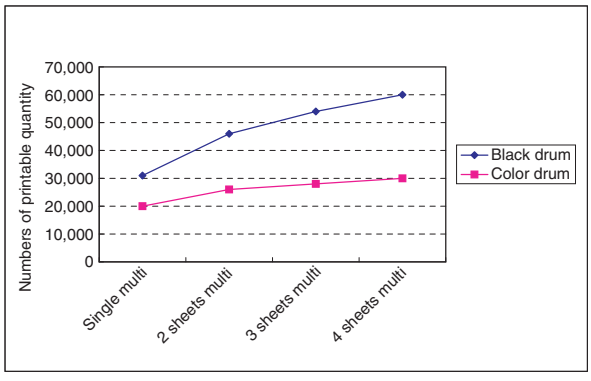
Because of these factors, the consumption degree of the developer cartridge and the drum cartridge cannot be determined only with the print quantity. When, therefore, the number of rotations of the cartridge exceeds the specified level, it is judged as life end.

	Developer (Developer cartridge)/Drum counter		Number of rotations of Developer (Developer cartridge)/Drum	
	Black-White	Full color	Black-White	Full color
Developer (Developer cartridge)/Drum	60K	30K	550K rotations	550K rotations

The accumulated number of rotations of each developer (developer cartridge)/drum can be displayed with SIM 22-1 as the reference for the drum/developer (developer cartridge) life. The value displayed with SIM 22-1 indicates the reached level (%) when the developer (developer cartridge)/drum life is 100%.

Example) Life 550K, used number of rotations 385K

385/550 x 100 = 70 (%)



	Black drum	Color drum
Single multi	31,000	20,000
2 sheets multi	46,000	26,000
3 sheets multi	54,000	28,000
4 sheets multi	60,000	30,000

B. MX-B402SC/B382SC

(1) Toner cartridge

After detecting near end, when the toner density is lowered to the specified level or lower and the toner sensor detects toner LOW continuously for a certain time, it is judged as toner end.

(2) Developer/Drum cartridge

- When the developer/drum counter exceeds the specified number of sheets.
- When the rpm of the developer/drum cartridge exceeds the specified number.

In an actual use, in the correction operation and the warm-up operation as well as the output operation, the developer and the drum rotate idly.

If the correction operation and the warm-up operation are made frequently, idle rotations of the developer and the drum are increased accordingly.

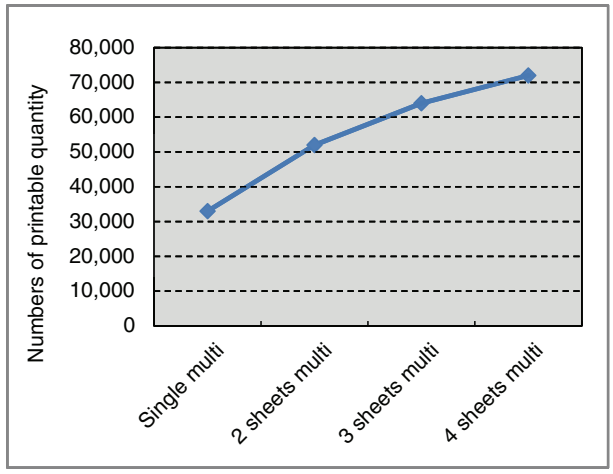
Because of these factors, the consumption degree of the developer and the drum cartridge cannot be determined only with the print quantity. When, therefore, the number of rotations of the cartridge exceeds the specified level, it is judged as life end.

	Developer/ Drum counter	Number of rotations of Developer/Drum
	Black-White	Black-White
Developer/Drum	72K	550K rotations

As the reference for the drum/developer life. the accumulated number of rotations can be displayed with SIM 22-1. The value displayed with SIM 22-1 indicates the reached level in percent (%) when the developer/drum life is 100%.

Example) Life 550K, used number of rotations 385K

385/550 x 100 = 70 (%)



Single multi	33,000
2 sheets multi	52,000
3 sheets multi	64,000
4 sheets multi	72,000

5. Life end display

A. MX-C402SC/C382SC

(1) Drum cartridge

For [K] [C] [Y] [M], only the life end cartridge code is displayed.

Display content	Display condition			Print job Enable/ Disable
	Sim26-38-E set value	Counter name	Counter value	
Change the supplies. > Drum Cartridge [K]	0 (Print continue)	Drum cartridge print counter (K)	When 60K is reached	Enable
		Drum cartridge accumulated rotation number (K)	When 550K rotations is reached	Enable
Change the supplies. > Drum Cartridge [C]	0 (Print continue)	Drum cartridge print counter (C)	When 30K is reached	Enable
		Drum cartridge accumulated rotation number (C)	When 550K rotations is reached	Enable
Change the supplies. > Drum Cartridge [M]	0 (Print continue)	Drum cartridge print counter (M)	When 30K is reached	Enable
		Drum cartridge accumulated rotation number (M)	When 550K rotations is reached	Enable
Change the supplies. > Drum Cartridge [Y]	0 (Print continue)	Drum cartridge print counter (Y)	When 30K is reached	Enable
		Drum cartridge accumulated rotation number (Y)	When 550K rotations is reached	Enable
The supplies will be needed soon. > Drum Cartridge [K] [C] [M] [Y] *1	1 (Print stop)	Drum cartridge print counter (K) Drum cartridge print counter (C) Drum cartridge print counter (M) Drum cartridge print counter (Y)	When 90% of 60K is reached by the K counter. When 90% of 30K is reached by the C, M, or Y counter.	Enable
		Drum cartridge accumulated rotation number (K) Drum cartridge accumulated rotation number (C) Drum cartridge accumulated rotation number (M) Drum cartridge accumulated rotation number (Y)	When 90% of 550K rotations is reached by either counter	Enable
Change the supplies. > Drum Cartridge [K]	1 (Print stop)	Drum cartridge print counter (K)	When 60K is reached	Disable
		Drum cartridge accumulated rotation number (K)	When 550K rotations is reached	Disable
Change the supplies. > Drum Cartridge [C] [M] [Y]	1 (Print stop)	Drum cartridge print counter (C) Drum cartridge print counter (M) Drum cartridge print counter (Y)	When 30K is reached by either counter	Enable for Black/White Disable for Color *2
		Drum cartridge accumulated rotation number (C) Drum cartridge accumulated rotation number (M) Drum cartridge accumulated rotation number (Y)	When 550K rotations is reached by either counter	Enable for Black/White Disable for Color *2

*1: Selection of Display/Not Display can be made with Sim26-69. (Default: Not Display)

*2: When the black drum cartridge does not reach the life end and only the color drum cartridge reaches the life end, black/white print can be performed but color print cannot be performed.

- When the drum cartridge is replaced with a new one, the print counter, the accumulated traveling distance counter, the accumulated rotation number counter, and the usage day counter are automatically cleared. If SIM26-55 setting is set to ENABLE in that case, the guidance for execution of the auto color calibration is displayed.
- If SIM26-55 setting is set to DISABLE, SIM46-74 must be used to execute the automatic adjustment of the engine.
- If the above guidance does not disappear when the drum cartridge is replaced, SIM24-7 must be executed to clear the print counter, the accumulated traveling distance counter, the accumulated rotation number counter, and the usage day counter, and the auto color calibration must be executed.
- The above display disappears when the counters are cleared.

(2) Developer cartridge

For [K] [C] [Y] [M], only the life end cartridge code is displayed.

Display content	Display condition			Print job Enable/Disable
	Sim26-38-E set value	Counter name	Counter value	
Change the supplies. > Developer Cartridge [K]	0 (Print continue)	Developer cartridge print counter (K)	When 60K is reached	Enable
		Developer cartridge accumulated rotation number (K)	When 550K rotations is reached	Enable
Change the supplies. > Developer Cartridge [C]	0 (Print continue)	Developer cartridge print counter (C)	When 30K is reached	Enable
		Developer cartridge accumulated rotation number (C)	When 550K rotations is reached	Enable
Change the supplies. > Developer Cartridge [M]	0 (Print continue)	Developer cartridge print counter (M)	When 30K is reached	Enable
		Developer cartridge accumulated rotation number (M)	When 550K rotations is reached	Enable
Change the supplies. > Developer Cartridge [Y]	0 (Print continue)	Developer cartridge print counter (Y)	When 30K is reached	Enable
		Developer cartridge accumulated rotation number (Y)	When 550K rotations is reached	Enable
The supplies will be needed soon. > Developer Cartridge [K] *1	1 (Print stop)	Developer cartridge print counter (K) Developer cartridge print counter (C) Developer cartridge print counter (M) Developer cartridge print counter (Y)	When 90% of 60K is reached by the K counter. When 90% of 30K is reached by the C, M, or Y counter.	Enable
		Developer cartridge accumulated rotation number (K) Developer cartridge accumulated rotation number (C) Developer cartridge accumulated rotation number (M) Developer cartridge accumulated rotation number (Y)	When 90% of 550K rotations is reached by either counter	Enable
Change the supplies. > Developer Cartridge [K]	1 (Print stop)	Developer cartridge print counter (K)	When 60K is reached	Disable
		Developer cartridge accumulated rotation number (K)	When 550K rotations is reached	Disable
Change the supplies. > Developer Cartridge [C] [M] [Y]	1 (Print stop)	Developer cartridge print counter (C) Developer cartridge print counter (M) Developer cartridge print counter (Y)	When 30K is reached	Enable for Black/White Disable for Color *2
		Developer cartridge accumulated rotation number (C) Developer cartridge accumulated rotation number (M) Developer cartridge accumulated rotation number (Y)	When 550K rotations is reached	Enable for Black/White Disable for Color *2

*1: Selection of Display/Not Display can be made with Sim26-69. (Default: Not Display)

*2: When the black drum cartridge does not reach the life end and only the color drum cartridge reaches the life end, black/white print can be performed but color print cannot be performed.

- When the developer cartridge is replaced with a new one, the print counter, the accumulated traveling distance counter, the accumulated rotation number counter, and the usage day counter are automatically cleared, and the initial setting of the toner density is automatically executed.
- When SIM26-55 setting is set to ENABLE, the initial setting of the toner density is executed and the guidance for execution of the auto color calibration is displayed.
- When SIM26-55 setting is set to DISABLE, SIM46-74 must be used to execute the auto color calibration after completion of the initial setting of the toner density.
- If the above guidance does not disappear when the developer cartridge is replaced, the initial setting of the toner density must be executed with the simulation, and the auto color calibration must be executed.
- When the initial setting of the toner density is executed, the counters are cleared and the above display disappears.

(3) Toner cartridge

For K C Y M, only the life end cartridge code is displayed.

Display content	Display condition			Print job Enable/Disable
	Sim26-38-A set value	Remaining quantity display *1	Status	
The supplies will be needed soon. > Toner Cartridge K C M Y *2	0 (Print continue)	25-0%	Toner remaining quantity is 25% or less.	Enable
	1 (Print stop)			
The supplies will be needed soon. > Toner Cartridge K C M Y *2	0 (Print continue)	25-0%	Toner remaining quantity corresponds to output of XX sheets. *3	Enable
	1 (Print stop)			
Change the supplies. > Toner Cartridge K	0 (Print continue)	0%	When the black toner cartridge reaches toner end.	Disable
	1 (Print stop)			
Change the supplies. > Toner Cartridge C M Y	0 (Display)	0%	When the color toner cartridge reaches toner end.	Enable for Black/White Disable for Color *4
	1 (No display)			
No display	—	50-25%	Toner remaining quantity is 49 - 25%.	Enable
No display	—	75-50%	Toner remaining quantity is 74 - 50%.	Enable
No display	—	100-75%	Toner remaining quantity is 100-75%.	Enable
Install the toner cartridge.	—	No display	When no toner cartridges are installed. When a toner cartridge of a different color is installed.	Disable
Improper cartridge.	—	No display	When an incompatible toner cartridge is installed.	Disable
Cartridge error.	—	No display	CRUM trouble Toner cartridge connector contact trouble	Disable

*1: Detected by the toner motor rotation number and the pixel count (The value of larger life percentage is employed.)
Since the life of the toner cartridge which is packed when shipping from the factory is 2.5K, the remaining quantity of the toner cartridge, though it is a new one, is displayed as 25-0%.

*2: Selection of Display/Not Display can be made with Sim26-69. (Default: Not Display)

*3: Setting can be made with Sim26-69. (Default: 0 sheet)

*4: When the black toner cartridge does not reach the life end and only the color toner cartridge reaches the life end, black/white print can be performed but color print cannot be performed.

B. MX-B402SC/B382SC

(1) Drum cartridge

Display content	Display condition			Print job Enable/ Disable
	Sim26-38-E set value	Counter name	Counter value	
Change the supplies. > Drum Cartridge	0 (Print continue)	Drum cartridge print counter	When 72K is reached	Enable
		Drum cartridge accumulated rotation number	When 550K rotations is reached	Enable
The supplies will be needed soon. > Drum Cartridge *1	1 (Print stop)	Drum cartridge print counter	When 90% of 72K is reached by the counter	Enable
		Drum cartridge accumulated rotation number	When 90% of 550K rotation is reached by the counter	Enable
Change the supplies. > Drum Cartridge	1 (Print stop)	Drum cartridge print counter	When 72K is reached	Enable
			When 72K + 1K is reached	Disable
		Drum cartridge accumulated rotation number	When 550K rotations is reached	Enable
			When 550K rotation + 430Kmm is reached	Disable

*1: Selection of Display/Not Display can be made with Sim26-69. (Default: Not Display)

- When the drum cartridge is replaced with a new one, the print counter, the accumulated traveling distance counter, the accumulated rotation number counter, and the usage day counter are automatically cleared. If SIM26-55 setting is set to ENABLE in that case, the guidance for execution of the automatic adjustment of the engine is displayed.
- If SIM26-55 setting is set to DISABLE, SIM46-74 must be used to execute the automatic adjustment of the engine.
- If the above guidance does not disappear when the drum cartridge is replaced, SIM24-7 must be executed to clear the print counter, the accumulated traveling distance counter, the accumulated rotation number counter, and the usage day counter, and the engine automatic adjustment must be executed.
- The above display disappears when the counters are cleared.

(2) Developer section

Counter name	End conditions	Message when end over	
		Sim.26-38A "0" Print Enable	Sim.26-38A "1" Print Stop
Developer print counter (K)	72,000 [sheets]	Message (9)	Message (9)
Developer accumulated rotation number (K)	550K rotations	Message (9)	Message (9)

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
(9)	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.

(3) Toner cartridge

Display content	Display condition		Print job Enable/ Disable
	Remaining quantity display *1	Status	
The supplies will be needed soon. > Toner Cartridge *2	25-0%	Toner remaining quantity is 25% or less.	Enable
	25-0%	Toner remaining quantity corresponds to output of XX sheets. *3	Enable
Change the supplies. > Toner Cartridge	0%	When the toner cartridge reaches toner end.	Disable
No display	50-25%	Toner remaining quantity is 49 - 25%.	Enable
No display	75-50%	Toner remaining quantity is 74 - 50%.	Enable
No display	100-75%	Toner remaining quantity is 100 -75%.	Enable
Install the toner cartridge.	No display	When no toner cartridges are installed.	Disable
Improper cartridge.	No display	When an incompatible toner cartridge is installed.	Disable
Cartridge error.	No display	CRUM trouble Toner cartridge connector contact trouble	Disable

*1: Detected by the toner motor rotation number and the pixel count (The value of larger life percentage is employed.)

*2: Selection of Display/Not Display can be made with Sim26-69. (Default: Not Display)

*3: Setting can be made with Sim26-69. (Default: 0 sheet)

6. Recommended color paper

The following kinds of color print paper can be recommended.

When these recommended color paper is used, a satisfactory image quality can be obtained.

If a kind of paper other than the recommended ones is used, normal image quality (color reproduction) may not be obtained.

Model	Supplier	Specification
Hammermill LASER PRINT	Hammermill	[11" x 8.5", 90g/m^2]
Mondi Color Copy (90g/m^2)	Mondi	[A4, 90g/m^2]

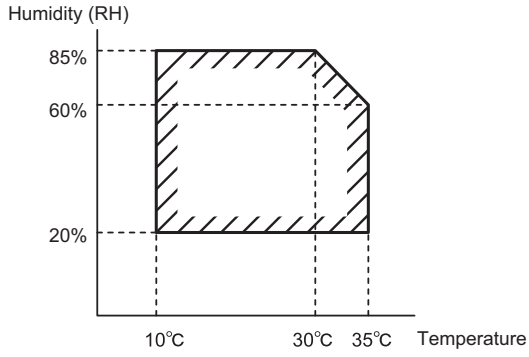
7. Environment conditions

A. Operating environment conditions

Temperature: 10 - 35°C

Humidity: 20 - 85% RH

Atmospheric pressure: 590 - 1013hPa (Altitude: 0 - 2000m)



B. Transit environment conditions (term: 2 weeks)

-20 - 45°C (Free from dew)

C. Storage environment conditions (unopened)

-10 - 40°C (Free from dew)

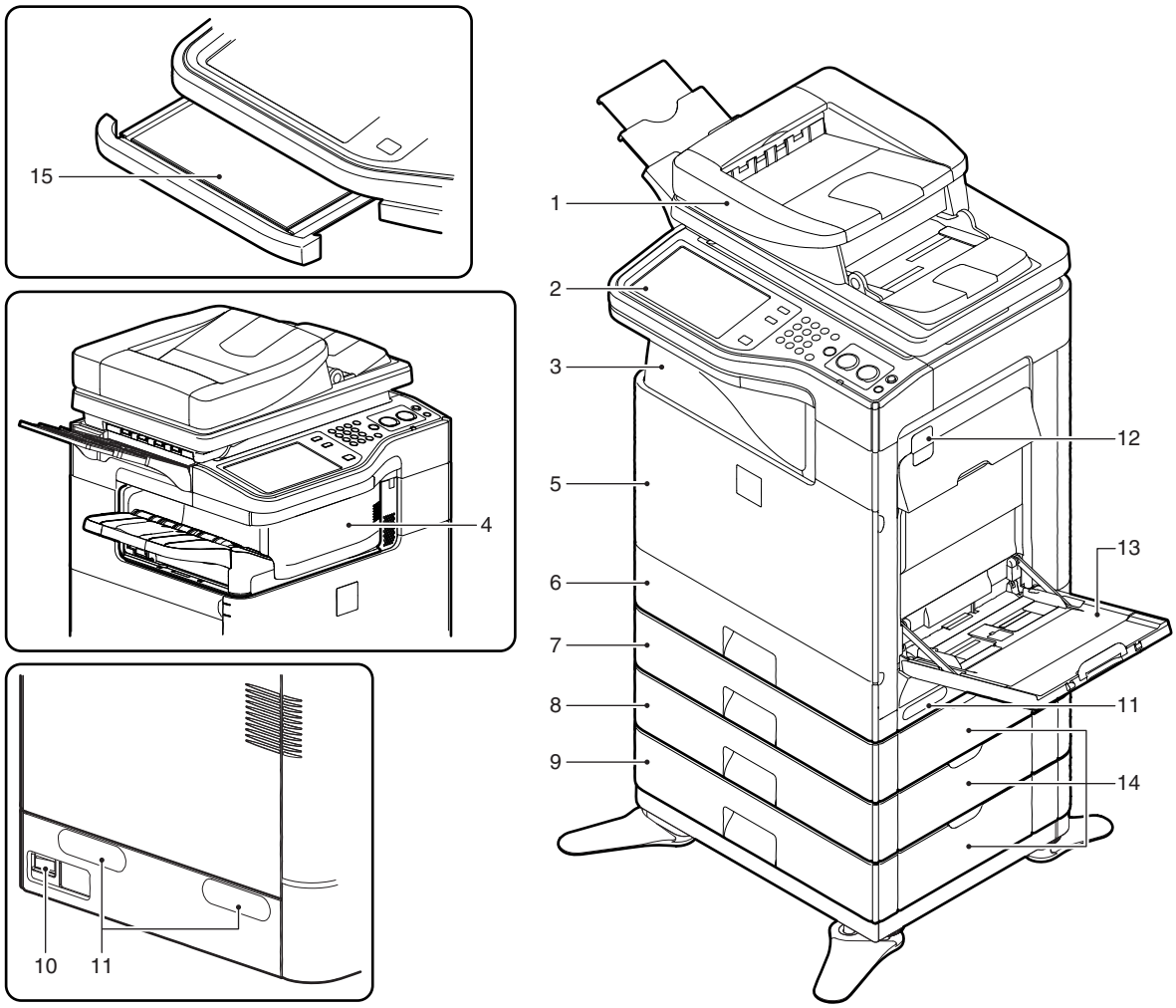
D. Disposal standard

Toner cartridge/developer cartridge: 24 months (unopened) from the production month.

Drum cartridge: 36 months from the production month

[3] EXTERNAL VIEW AND INTERNAL STRUCTURE

1. External view

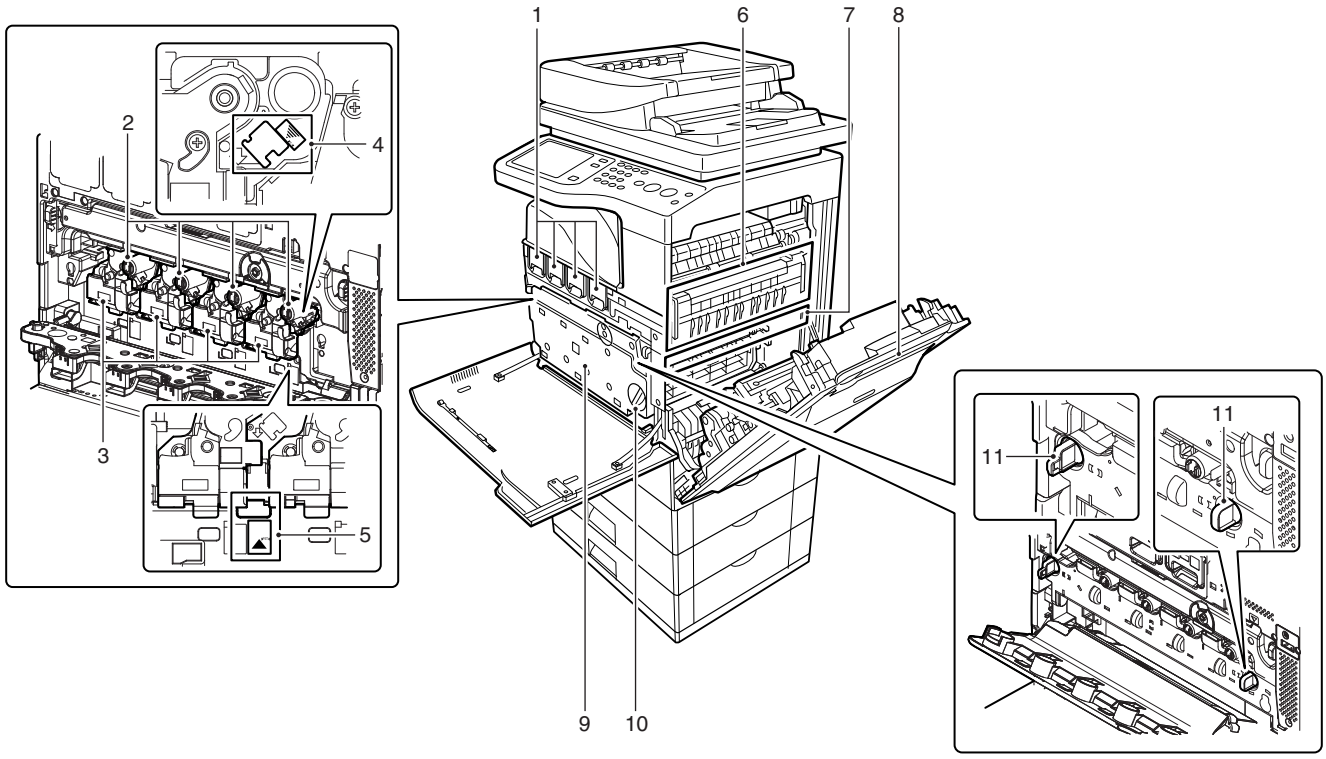


No.	Name	Function/Operation	NOTE
1	Auto document feeder	Feeds the set documents automatically, and scans them continuously. The duplex surfaces are scanned.	
2	Operation panel	Used to enter an input of various settings or the copy quantity. 8.5 inch touch panel LCD (MX-C402SC/C382SC) 7.0 inch touch panel LCD (MX-B402SC/B382SC)	
3	Paper exit tray (Center tray)	Copied or printed paper is discharged to this tray.	
4	Finisher *1	Delivers stapled paper, and allows offset discharge of paper.	
5	Front cover	This is opened when replacing toner cartridges or the waste toner box.	
6	Tray 1	Stores paper. Max. 500 sheets (80g/m^2, 21lbs)	
7	Tray 2 (with the MX-CSX1 installed) *1	Stores paper. Max. 500 sheets (80g/m^2, 21lbs)	
8	Tray 3 (with the MX-CSX2 installed) *1	Stores paper. Max. 500 sheets (80g/m^2, 21lbs)	
9	Tray 4 (with the MX-CSX2 installed) *1	Stores paper. Max. 500 sheets (80g/m^2, 21lbs)	
10	Main power switch	Turns on the power of the machine. When FAX or internet FAX is used, keep it ON.	
11	Handle	Use this handle to lift the main unit for transit.	
12	Right side cover release lever	To remove paper jam, lift this lever and open the right side cover.	
13	Manual paper feed tray	For manual paper feed, paper is inserted from this tray. When A4R or 8-1/2" x 11"R paper is set, extend the auxiliary tray.	
14	One-stage paper feed unit side cover (with the MX-CSX1/2 installed)	To remove paper jam in tray 2, 3, or 4, open this cover.	
15	Keyboard *1	This is a keyboard that is incorporated into the machine. When not used, it can be stored under the operation panel.	A standard part or an option depending on the model and the destination.

*1: Option

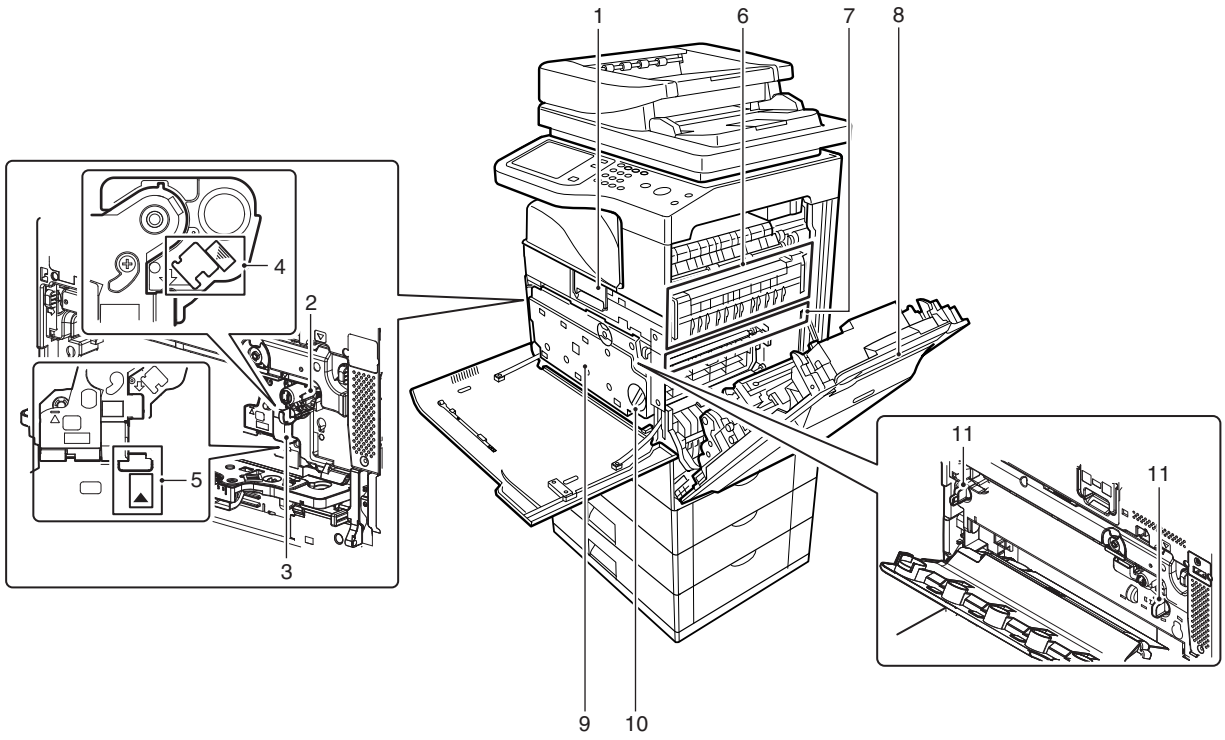
2. Internal structure

A. MX-C402SC/C382SC



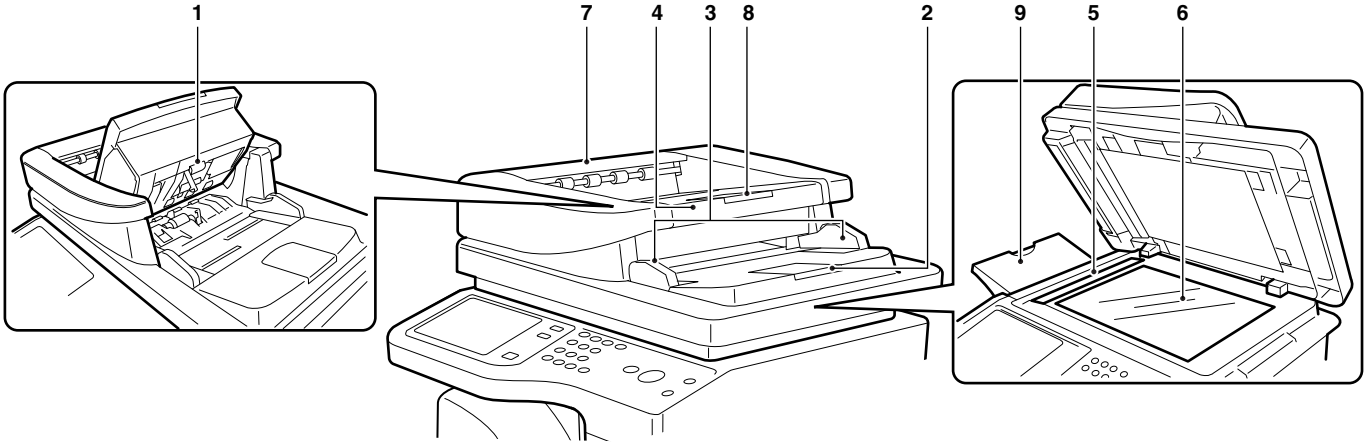
No.	Name	Function/Operation	Note
1	Toner cartridge	When toner is exhausted in a cartridge, remove the cartridge and replace it with a new one.	
2	Drum cartridge	This cartridge stores a drum. When the specified life is reached, replace it with a new cartridge.	
3	Developer cartridge	This cartridge stores developer. When the specified life is reached, replace it with a new cartridge.	
4	MC cleaning rod insertion port	When the copy quality is degraded by dirt on the MC unit, the rod to clean the MC unit is inserted into this port.	One for each color
5	LSU cleaning rod insertion port	When the copy quality is degraded by dirt on the LSU, the rod to clean the LSU is inserted into this port.	One for each color
6	Fusing section	Fuses images transferred on paper by heat.	Note: The fusing section is heated to a high temperature. Be careful not to burn when paper jam.
7	Transfer belt	In full color copy, the transfer belt overlaps 4-color toner images on the transfer belt. In black copy, black toner images are shifted to the transfer belt.	Do not touch or scratch. It may cause degraded images.
8	Right side cover	Opened when a paper jam is generated.	
9	Waste toner box	Receives waste toner when copying or printing.	The waste toner box is collected by the servicemen.
10	Waste toner box release lever	When the waste toner box is removed, this lever is rotated to release lock.	
11	Drum positioning plate unit release lever	Releases lock of the drum positioning plate unit. When a drum cartridge or a developer cartridge is replaced, rotate this lever to open the drum positioning plate unit.	

B. MX-B402SC/B382SC



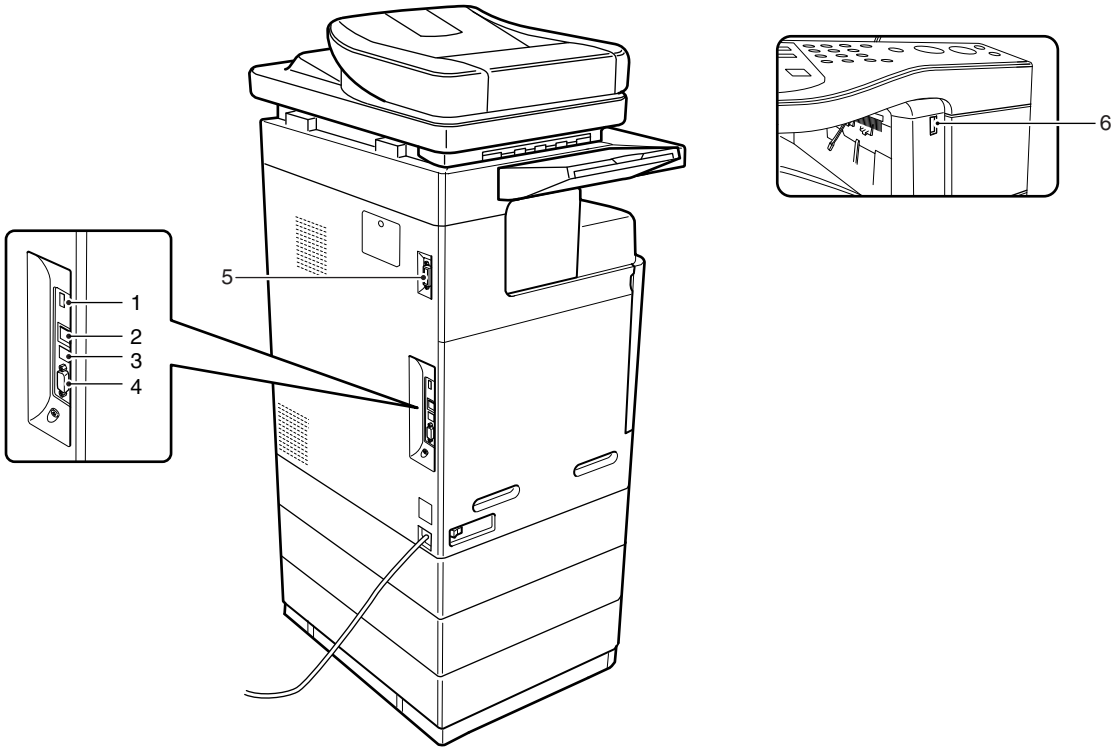
No.	Name	Function/Operation	Note
1	Toner cartridge	When toner is exhausted in a cartridge, remove the cartridge and replace it with a new one.	
2	Drum cartridge	This cartridge stores a drum. When the specified life is reached, replace it with a new cartridge.	
3	Developing unit	This unit stores developer. When the specified life is reached, replace it with a new developer.	
4	MC cleaning rod insertion port	When the copy quality is degraded by dirt on the MC unit, the rod to clean the MC unit is inserted into this port.	
5	LSU cleaning rod insertion port	When the copy quality is degraded by dirt on the LSU, the rod to clean the LSU is inserted into this port.	
6	Fusing section	Fuses images transferred on paper by heat.	Note: The fusing section is heated to a high temperature. Be careful not to burn when paper jam.
7	Transfer belt	The transfer belt transfers toner on the drum.	Do not touch or scratch. It may cause degraded images.
8	Right side cover	Opened when a paper jam is generated.	
9	Waste toner box	Receives waste toner when copying or printing.	The waste toner box is collected by the servicemen.
10	Waste toner box release lever	When the waste toner box is removed, this lever is rotated to release lock.	
11	Drum positioning plate unit release lever	Releases lock of the drum positioning plate unit. When a drum cartridge or a developer cartridge is replaced, rotate this lever to open the drum positioning plate unit.	

3. RSPF



No.	Name	Function/ Operation
1	Document feed roller	Transports a document automatically.
2	Document exit section	The scanned document is discharged to this section.
3	Document guide	Guides to scan a document properly. Set to the set document size.
4	Document set table	A document is set on this table. In the case of a single-surface document, set it face up.
5	Document scan section	The document set on the document set table is scanned in this section.
6	Document table (Glass surface)	Used for thick documents or book documents which cannot be entered to the auto document feeder.
7	Document feed section cover	This cover is opened when removing a paper jam or cleaning the document feed roller.
8	Document feeding area cover	Open this cover to remove an original misfeed or clean the paper feed roller.
9	Original exit tray 2	If originals are not be delivered to original exit tray 1 after scanning, they are delivered to this tray.

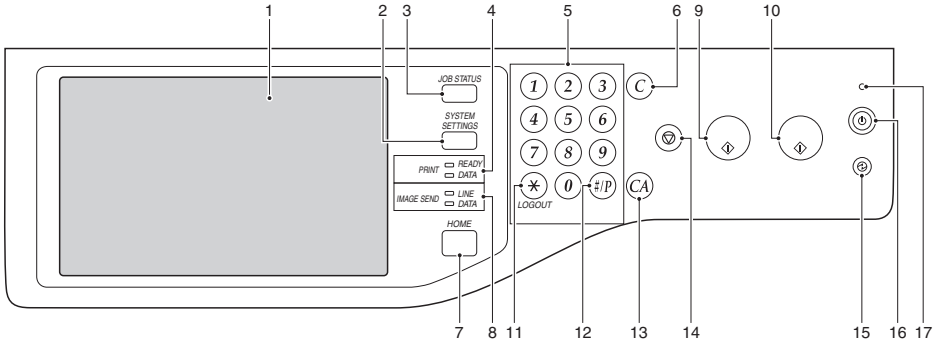
4. Connectors



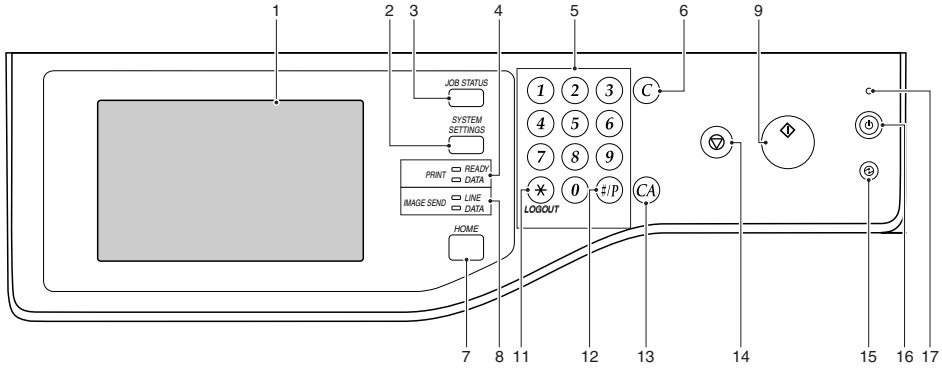
No.	Name	Function/ Operation
1	USB connector (Type A)	Used to connect a USB hub or USB memory.
2	LAN connector	Used to connect a LAN cable to use this machine in a network.
3	USB connector (Type B)	Used to connect a computer to use this machine as a printer.
4	Connector	This connector is used by the serviceman.
5	Inner finisher connection connector	This connector is used to connect the inner finisher and the main unit when the inner finisher (option) is installed.
6	USB connector (Type A)	Used to connect a USB hub or USB memory.

5. Operation panel

- **MX-C402SC/C382SC**



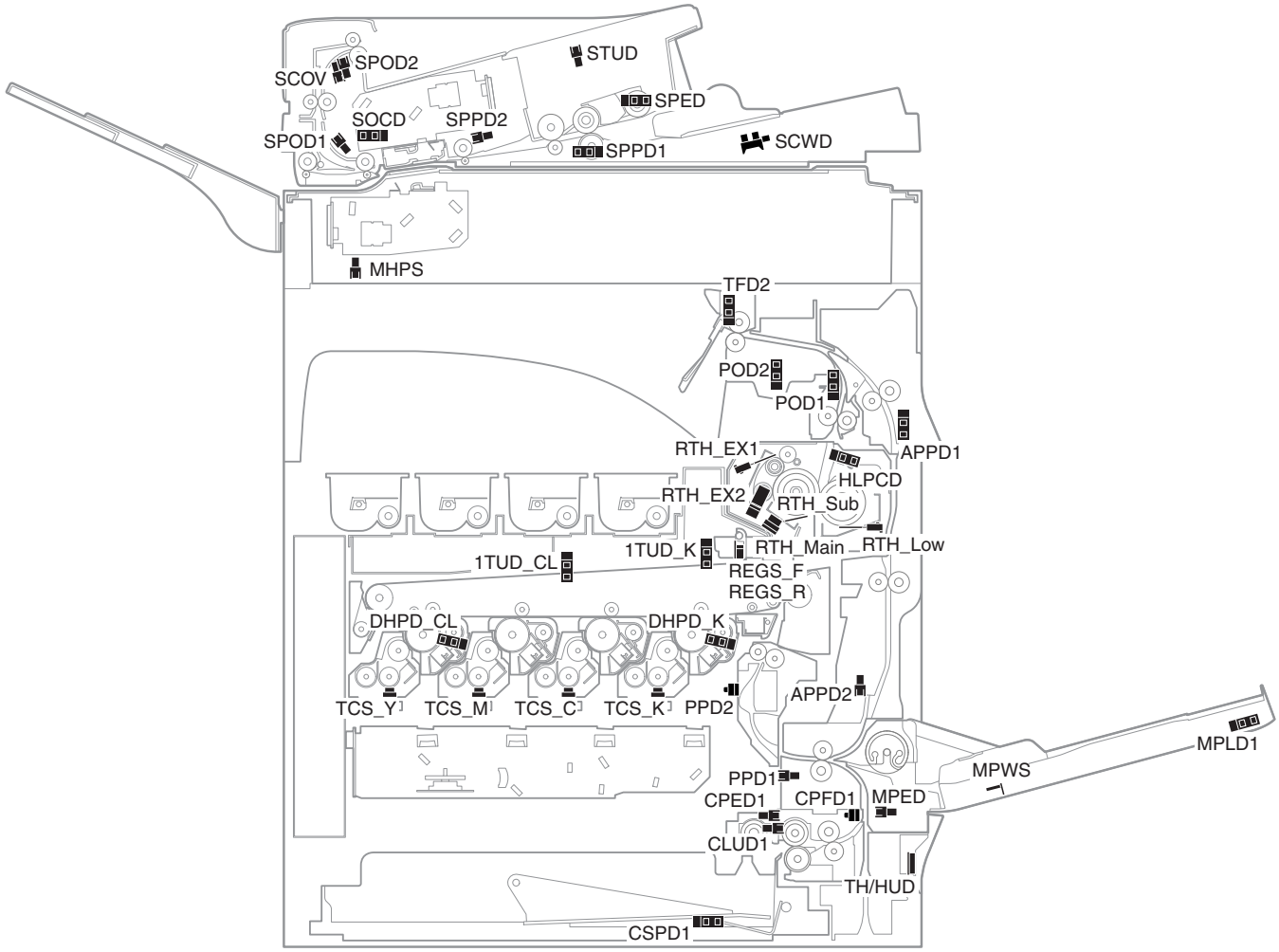
- **MX-B402SC/B382SC**



No.	Name	Function/Operation
1	Touch panel	Messages and keys appear in the touch panel display. Touch the displayed keys to perform a variety of operations. When a key is touched, a beep sounds and the selected item is highlighted. This provides confirmation as you perform an operation.
2	[SYSTEM SETTINGS] key	Press this key to display the system settings menu screen. The system settings are used to configure paper tray settings, store addresses for transmission operations, and adjust parameters to make the machine easier to use.
3	[JOB STATUS] key	Press this key to display the job status screen. The job status screen is used to check information on jobs and to cancel jobs.
4	PRINT mode indicators	• 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	[HOME] key	Touch this key to display the home screen. Frequently used settings can be registered in the home screen to enable quick and easy operation of the machine.
8	IMAGE SEND mode indicators	• 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	[BLACK & WHITE START] key (MX-C402SC/C382SC)	Press this key to copy or scan an original in black and white. This key is also used to send a fax in fax mode.
	[START] key (MX-C402SC/C382SC)	Press this key to copy or scan an original. This key is also used to send a fax in fax mode.
10	[COLOR START] key (MX-C402SC/C382SC)	Press this key to copy or scan an original in color. This key cannot be used for fax or Internet fax.
11	[LOGOUT] key (Ⓐ)	Press this key to log out after you have logged in and used the machine. When using the fax function, this key can also be pressed to send tone signals on a pulse dial line.
12	[#/P] key (Ⓟ)	When using the copy function, press this key to use a job program. When using the fax function, this key can be used when dialing.
13	[CLEAR ALL] key (Ⓒ)	Press this key to return to the initial operation state. Use this key when you wish to cancel all settings that have been selected and start operation from the initial state.
14	[STOP] key (Ⓢ)	Press this key to stop a copy job or scanning of an original.
15	[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.
16	[POWER] key (⏻)	Use this key to turn the machine power on and off.
17	Main power indicator	This lights up when the machine's main power switch is in the "on" position.

6. Sensors and detectors

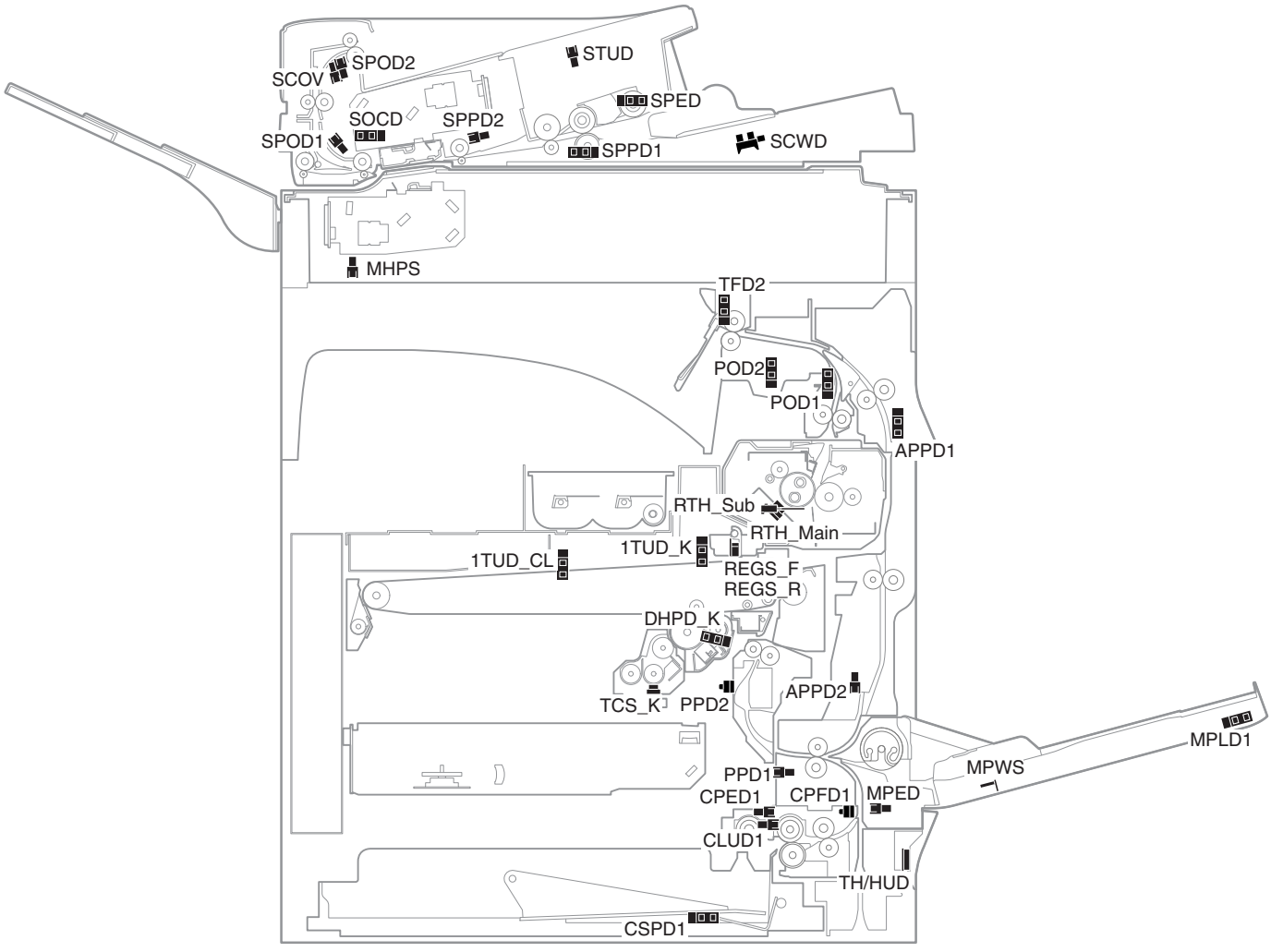
A. MX-C402SC/C382SC



Signal name	Name	Type	Function/Operation	Note
1TUD_CL	Transfer belt separation detector CL	Transmission type	Detects separation of the color section of the transfer belt.	High voltage PWB holder unit
1TUD_K	Transfer belt separation detector BK	Transmission type	Detects separation of the black section of the transfer belt.	Frame unit
APPD1	ADU transport path detector 1	Transmission type	Detects paper pass in the upper stream of the switchback section.	Right door unit
APPD2	ADU transport path detector 2	Transmission type	Detects paper pass in the middle stream of the switchback section.	Right door unit
CLUD1	Tray 1 upper limit detector	Transmission type	Detects that the top surface of the paper stored in the tray 1 is lifted to the top.	Paper feed unit
CPED1	Tray 1 paper empty detector	Transmission type	Detects that paper is stored in the tray 1.	Paper feed unit
CPFD1	Paper transport detector 1	Reflection type	Detects paper when passes the transport roller 1.	Paper feed unit
CSPD1	Tray 1 paper remaining quantity detector	Transmission type	Detects the paper remaining quantity in the tray 1.	Lift-up unit
DHPD_CL	Drum cartridge (CL) rotation detector	Transmission type	Detects the rotating state of the color drum cartridge.	Main drive unit
DHPD_K	Drum cartridge (BK) rotation detector	Transmission type	Detects the rotating state of the black drum cartridge.	Main drive unit
HLPCD	Fusing roller pressure release detector	Transmission type	Detects separation of the upper and the lower heat rollers.	Fusing unit
MHPS	Scanner home position detector	Transmission type	Detects the scanner home position.	Scanner unit
MPED	Manual feed paper empty detector	Transmission type	Detects paper empty in the manual paper feed tray.	Manual paper feed unit
MPLD1	Manual feed paper length detector 1	Transmission type	Detects the length of paper in the manual paper feed tray.	Manual paper feed unit
MPWS	Manual paper feed tray paper width sensor	Volume resistor	Detects the width of the paper guide in the manual paper feed tray.	Manual paper feed unit
POD1	Fusing rear detector	Transmission type	Detects paper exit from the fusing section.	Frame fusing unit
POD2	Paper exit detector	Transmission type	Detects paper which is discharged.	Paper exit lower PG unit
PPD1	Paper transport detector 2	Transmission type	Detects paper when passes the transport roller 2.	Paper feed unit
PPD2	Paper transport detector 3	Reflection type	Detects paper in front of the registration roller.	Frame unit
REGS_F	Registration sensor	Reflection type	Detects registration shift.	Registration unit
REGS_R				

Signal name	Name	Type	Function/Operation	Note
RTH_EX1	External heat roller contact thermistor 1	Thermistor	Detects the temperature of the external heat roller.	Fusing unit
RTH_EX2	External heat roller contact thermistor 2	Thermistor		
RTH_Low	Lower heat roller contact thermistor	Thermistor	Detects the temperature of the lower heat roller.	Fusing unit
RTH_Main	Upper heat roller non-contact thermistor	Non-contact thermistor	Detects the temperature of the upper heat roller.	Fusing unit
RTH_Sub	Upper heat roller contact thermistor	Thermistor		
SCOV	DSPF cover open/close detector	Transmission type	Detects open/close of the DSPF cover.	DSPF unit
SCWD	Card width detector	Transmission type	Detects the card width.	DSPF unit
SOCD	DSPF open/close detector	Transmission type	Detects open/close of the DSPF unit itself.	DSPF unit
SPED	DSPF document empty detector	Transmission type	Detects that a document is in the document tray.	DSPF unit
SPOD1	DSPF exit detector 1	Transmission type	Detects a document which passes the paper path. (Direct)	DSPF unit
SPOD2	DSPF exit detector 2	Transmission type	Detects a document which passes the paper path.	DSPF unit
SPPD1	DSPF transport detector 1	Transmission type	Detects a document which passes the paper path.	DSPF unit
SPPD2	DSPF transport detector 2	Transmission type	Detects a document which passes the paper path.	DSPF unit
STUD	DSPF tray upper limit detector	Transmission type	Detects to check that the number of documents on the document tray dose not exceed the upper limit.	DSPF unit
TCS_C	Toner density sensor	Magnetic sensor	Detects the toner density in the developing cartridge. (C)	Developing cartridge
TCS_K	Toner density sensor	Magnetic sensor	Detects the toner density in the developing cartridge. (K)	Developing cartridge
TCS_M	Toner density sensor	Magnetic sensor	Detects the toner density in the developing cartridge. (M)	Developing cartridge
TCS_Y	Toner density sensor	Magnetic sensor	Detects the toner density in the developing cartridge. (Y)	Developing cartridge
TFD2	Paper exit tray full detector	Transmission type	Detects the full state of the paper exit tray.	Paper exit upper PG unit
TH/HUD	Temperature humidity sensor	Temperature humidity sensor	Detects the temperature and the humidity around the machine.	Right door unit

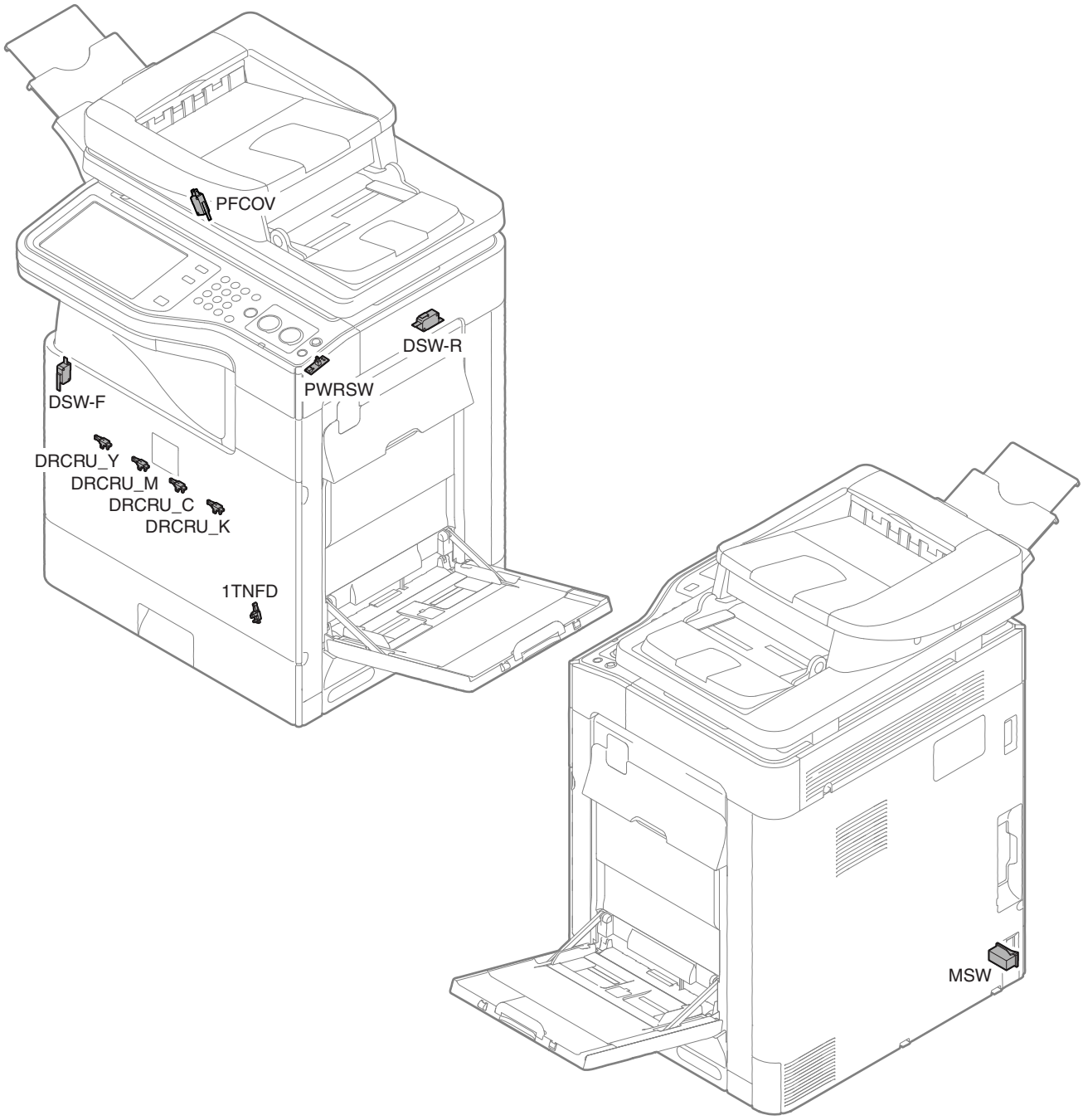
B. MX-B402SC/B382SC



Signal name	Name	Type	Function/Operation	Note
1TUD_CL	Transfer belt separation detector CL	Transmission type	Detects separation of the transfer belt.	High voltage PWB holder unit
1TUD_K	Transfer belt separation detector BK	Transmission type	Detects initialization of the primary transfer unit.	Frame unit
APPD1	ADU transport path detector 1	Transmission type	Detects paper pass in the upper stream of the switchback section.	Right door unit
APPD2	ADU transport path detector 2	Transmission type	Detects paper pass in the middle stream of the switchback section.	Right door unit
CLUD1	Tray 1 upper limit detector	Transmission type	Detects that the top surface of the paper stored in the tray 1 is lifted to the top.	Paper feed unit
CPED1	Tray 1 paper empty detector	Transmission type	Detects that paper is stored in the tray 1.	Paper feed unit
CPFD1	Paper transport detector 1	Reflection type	Detects paper when passes the transport roller 1.	Paper feed unit
CSPD1	Tray 1 paper remaining quantity detector	Transmission type	Detects the paper remaining quantity in the tray 1.	Lift-up unit
MHPS	Scanner home position detector	Transmission type	Detects the scanner home position.	Scanner unit
MPED	Manual feed paper empty detector	Transmission type	Detects paper empty in the manual paper feed tray.	Manual paper feed unit
MPLD1	Manual feed paper length detector 1	Transmission type	Detects the length of paper in the manual paper feed tray.	Manual paper feed unit
MPWS	Manual paper feed tray paper width sensor	Volume resistor	Detects the width of the paper guide in the manual paper feed tray.	Manual paper feed unit
POD1	Fusing rear detector	Transmission type	Detects paper exit from the fusing section.	Frame fusing unit
POD2	Paper exit detector	Transmission type	Detects paper which is discharged.	Paper exit lower PG unit
PPD1	Paper transport detector 2	Transmission type	Detects paper when passes the transport roller 2.	Paper feed unit
PPD2	Paper transport detector 3	Reflection type	Detects paper in front of the registration roller.	Frame unit
REGS_R	Registration sensor	Reflection type	Detects the toner patch density. Detects open/close of the reference reflection plate, the secondary transfer roller transfer position, and the non-transfer position.	Registration unit
RTH_Main	Upper heat roller non-contact thermistor	Non-contact thermistor	Detects the temperature of the upper heat roller.	Fusing unit
RTH_Sub	Upper heat roller contact thermistor	Thermistor		
SCOV	DSPF cover open/close detector	Transmission type	Detects open/close of the DSPF cover.	DSPF unit
SCWD	Card width detector	Transmission type	Detects the card width.	DSPF unit
SOCD	DSPF open/close detector	Transmission type	Detects open/close of the DSPF unit itself.	DSPF unit
SPED	DSPF document empty detector	Transmission type	Detects that a document is in the document tray.	DSPF unit
SPOD1	DSPF exit detector 1	Transmission type	Detects a document which passes the paper path. (Direct)	DSPF unit
SPOD2	DSPF exit detector 2	Transmission type	Detects a document which passes the paper path.	DSPF unit
SPPD1	DSPF transport detector 1	Transmission type	Detects a document which passes the paper path.	DSPF unit
SPPD2	DSPF transport detector 2	Transmission type	Detects a document which passes the paper path.	DSPF unit
STUD	DSPF tray upper limit detector	Transmission type	Detects to check that the number of documents on the document tray dose not exceed the upper limit.	DSPF unit
TCS_K	Toner density sensor	Magnetic sensor	Detects the toner density in the developing cartridge.	Developing cartridge
TFD2	Paper exit tray full detector	Transmission type	Detects the full state of the paper exit tray.	Paper exit upper PG unit
TH/HUD	Temperature humidity sensor	Temperature humidity sensor	Detects the temperature and the humidity around the machine.	Right door unit

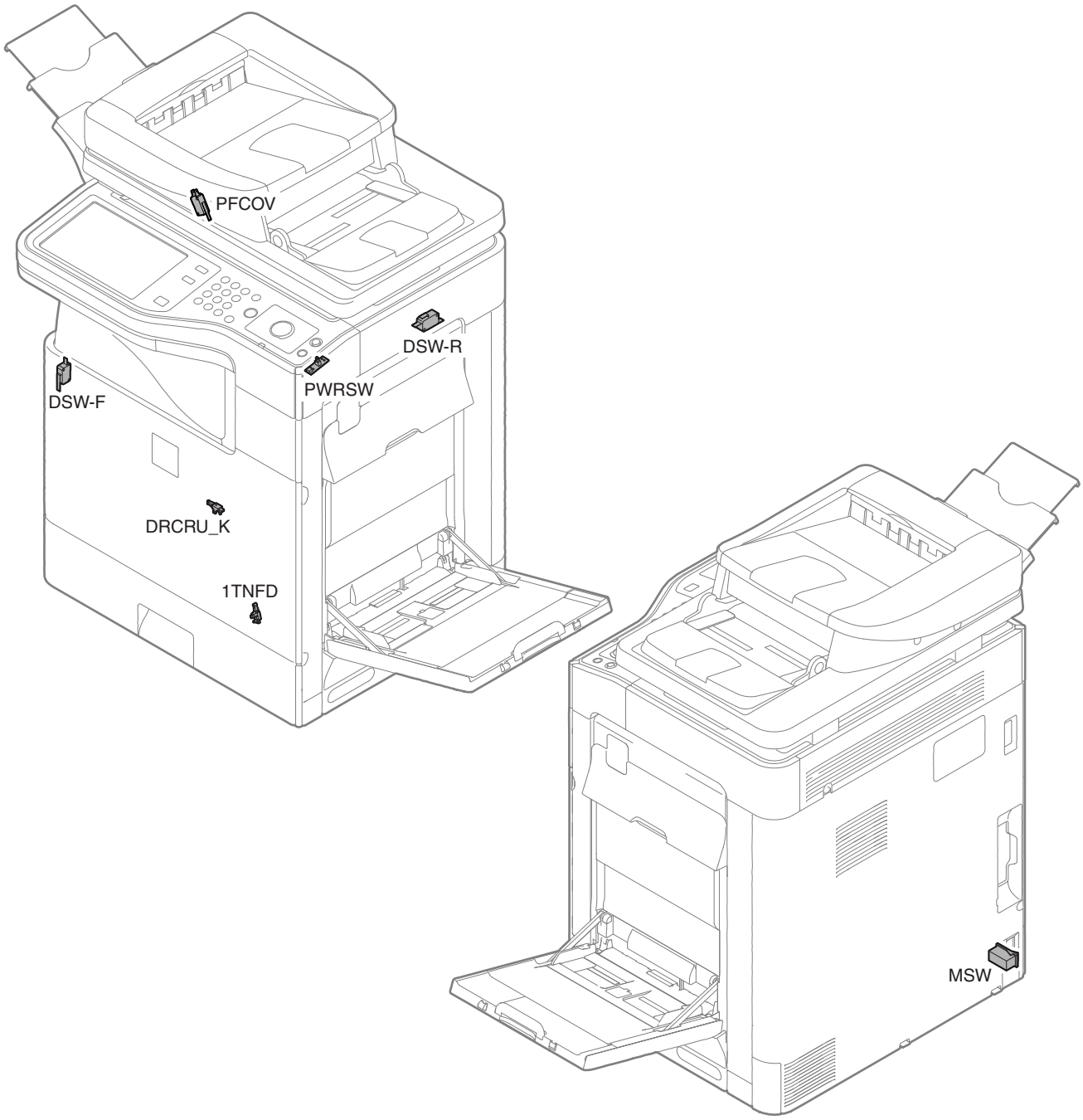
7. Switches

A. MX-C402SC/C382SC



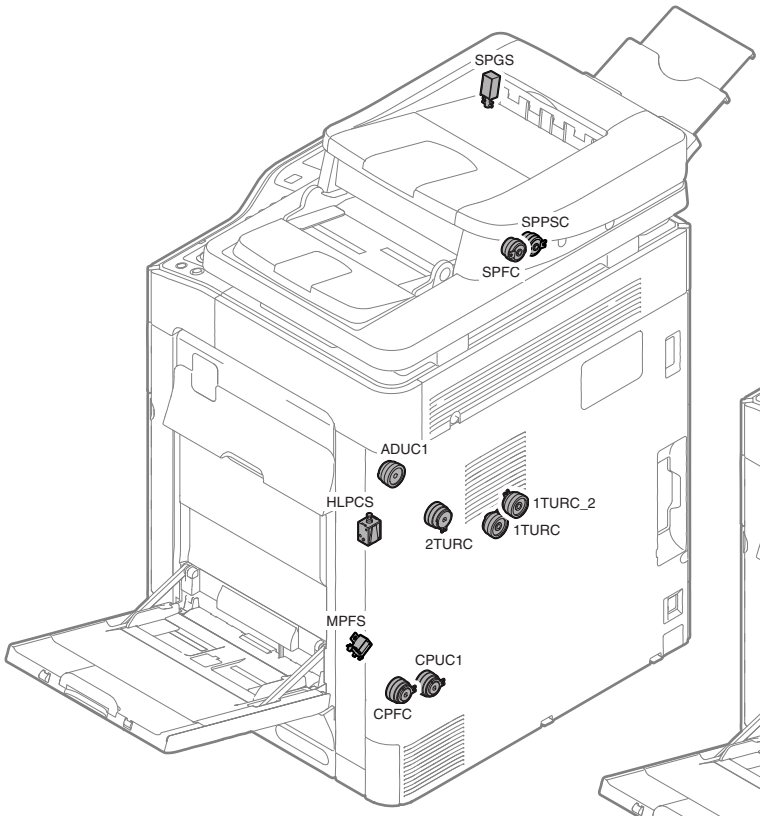
Signal name	Name	Type	Function/Operation
1TNFD	Waste toner full detection switch	Micro switch	Detects the waste toner full.
DRCRU_C	OPC drum initial (new OPC drum) detector (C)	Micro switch	Detects the OPC drum initial state (new OPC drum).
DRCRU_K	OPC drum initial (new OPC drum) detector (BK)	Micro switch	Detects the OPC drum initial state (new OPC drum).
DRCRU_M	OPC drum initial (new OPC drum) detector (M)	Micro switch	Detects the OPC drum initial state (new OPC drum).
DRCRU_Y	OPC drum initial (new OPC drum) detector (Y)	Micro switch	Detects the OPC drum initial state (new OPC drum).
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, the motor and the LSU laser.
DSW-R	Right door open/close switch	Micro switch	Detects open/close of the right door unit, and turns ON/OFF the power line of the fusing, the motor and the LSU laser.
MSW	Main switch	Seesaw switch	Turns ON/OFF the main DC power source.
PFCOV	Paper feed section cover open detection	Micro switch	Detects open/close of the original feed tray.
PWRSW	Operation panel power switch	Push switch	Outputs the ON/OFF control signal of the DC power source.

B. MX-B402SC/B382SC

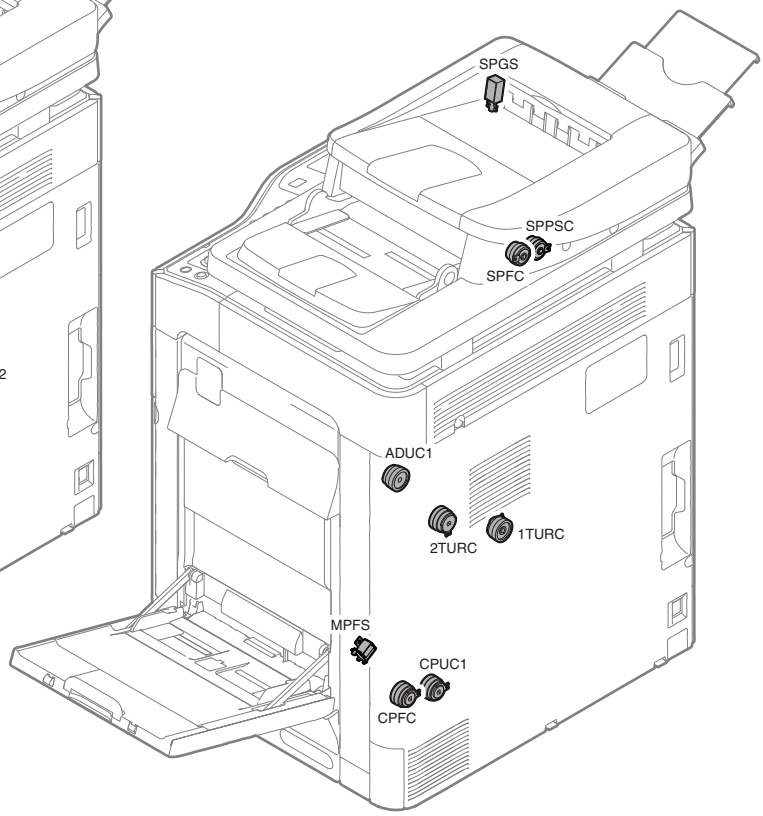


Signal name	Name	Type	Function/Operation
1TNFD	Waste toner full detection switch	Micro switch	Detects the waste toner full.
DRCRU_K	OPC drum initial (new OPC drum) detector (BK)	Micro switch	Detects the OPC drum initial state (new OPC drum).
DSW-F	Front door open/close switch	Micro switch	Detects open/close of the front door, and turns ON/OFF the power line of the fusing, the motor and the LSU laser.
DSW-R	Right door open/close switch	Micro switch	Detects open/close of the right door unit, and turns ON/OFF the power line of the fusing, the motor and the LSU laser.
MSW	Main switch	Seesaw switch	Turns ON/OFF the main DC power source.
PFCOV	Paper feed section cover open detection	Micro switch	Detects open/close of the original feed tray.
PWRSW	Operation panel power switch	Push switch	Outputs the ON/OFF control signal of the DC power source.

8. Clutches and solenoids



MX-C402SC/C382SC



MX-B402SC/B382SC

- **MX-C402SC/C382SC**

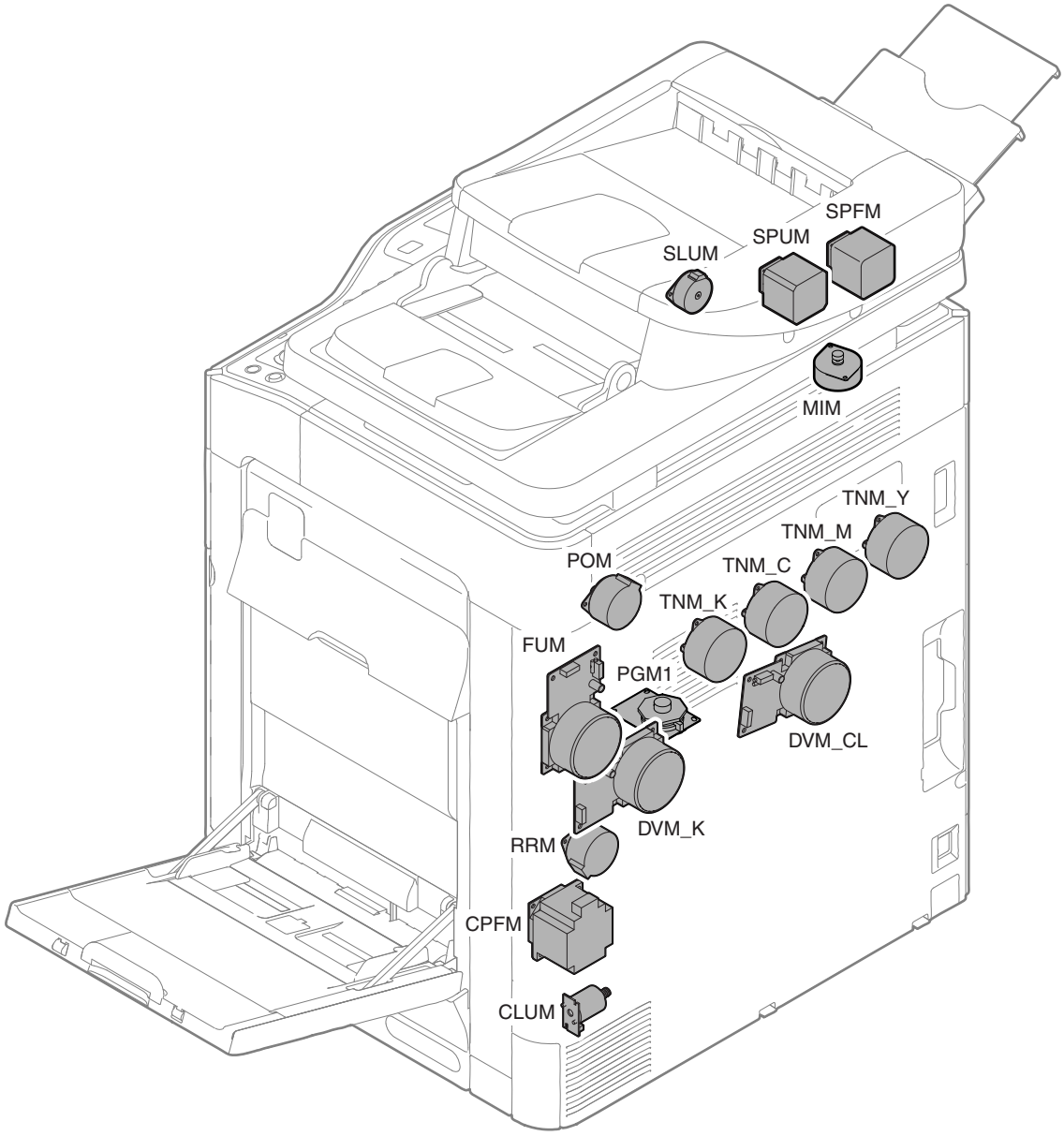
Signal name	Name	Type	Function/Operation
1TURC	Primary transfer separation clutch 1	Electromagnetic clutch	Controls the primary transfer separation mode.
1TURC_2	Primary transfer separation clutch 2	Electromagnetic clutch	Controls the primary transfer separation mode.
2TURC	Secondary transfer separation clutch	Electromagnetic clutch	Controls open/close of the registration sensor cover.
ADUC1	ADU transport clutch 1	Electromagnetic clutch	Controls ON/OFF of the roller in the switchback section.
CPFC	Tray vertical transport clutch	Electromagnetic clutch	Controls ON/OFF of the paper transport roller in the tray paper feed section.
CPUC1	Paper feed clutch (Tray paper feed)	Electromagnetic clutch	Controls ON/OFF of the roller in the tray paper feed section.
HLPCS	Fusing pressure release solenoid	Electromagnetic solenoid	Controls the pressure applied to the upper and the lower heat rollers in the fusing section.
MPFS	Paper pickup solenoid (Manual paper feed)	Electromagnetic solenoid	Controls ON/OFF of the pick-up operation of the paper feed roller in the manual paper feed section.
SPGS (D)	DSPF document exit gate solenoid	Electromagnetic solenoid	Switches the document exit destination to the left paper exit tray.
SPGS (U)	DSPF document exit gate solenoid	Electromagnetic solenoid	Switches the document exit destination to the DSPF upper paper exit tray.
SPPSC	DSPF PS roller clutch	Electromagnetic clutch	Controls ON/OFF of PS roller.
SPUC	DSPF paper feed clutch	Electromagnetic clutch	Controls ON/OFF of the rollers in the paper feed section.

- **MX-B402SC/B382SC**

Signal name	Name	Type	Function/Operation
1TURC	Primary transfer separation clutch 1	Electromagnetic clutch	Controls the primary transfer separation mode.
2TURC	Secondary transfer separation clutch	Electromagnetic clutch	Controls open/close of the registration sensor cover.
ADUC1	ADU transport clutch 1	Electromagnetic clutch	Controls ON/OFF of the roller in the switchback section.
CPFC	Tray vertical transport clutch	Electromagnetic clutch	Controls ON/OFF of the paper transport roller in the tray paper feed section.
CPUC1	Paper feed clutch (Tray paper feed)	Electromagnetic clutch	Controls ON/OFF of the roller in the tray paper feed section.
MPFS	Paper pickup solenoid (Manual paper feed)	Electromagnetic solenoid	Controls ON/OFF of the pick-up operation of the paper feed roller in the manual paper feed section.
SPGS (D)	DSPF document exit gate solenoid	Electromagnetic solenoid	Switches the document exit destination to the left paper exit tray.
SPGS (U)	DSPF document exit gate solenoid	Electromagnetic solenoid	Switches the document exit destination to the DSPF upper paper exit tray.
SPPSC	DSPF PS roller clutch	Electromagnetic clutch	Controls ON/OFF of PS roller.
SPUC	DSPF paper feed clutch	Electromagnetic clutch	Controls ON/OFF of the rollers in the paper feed section.

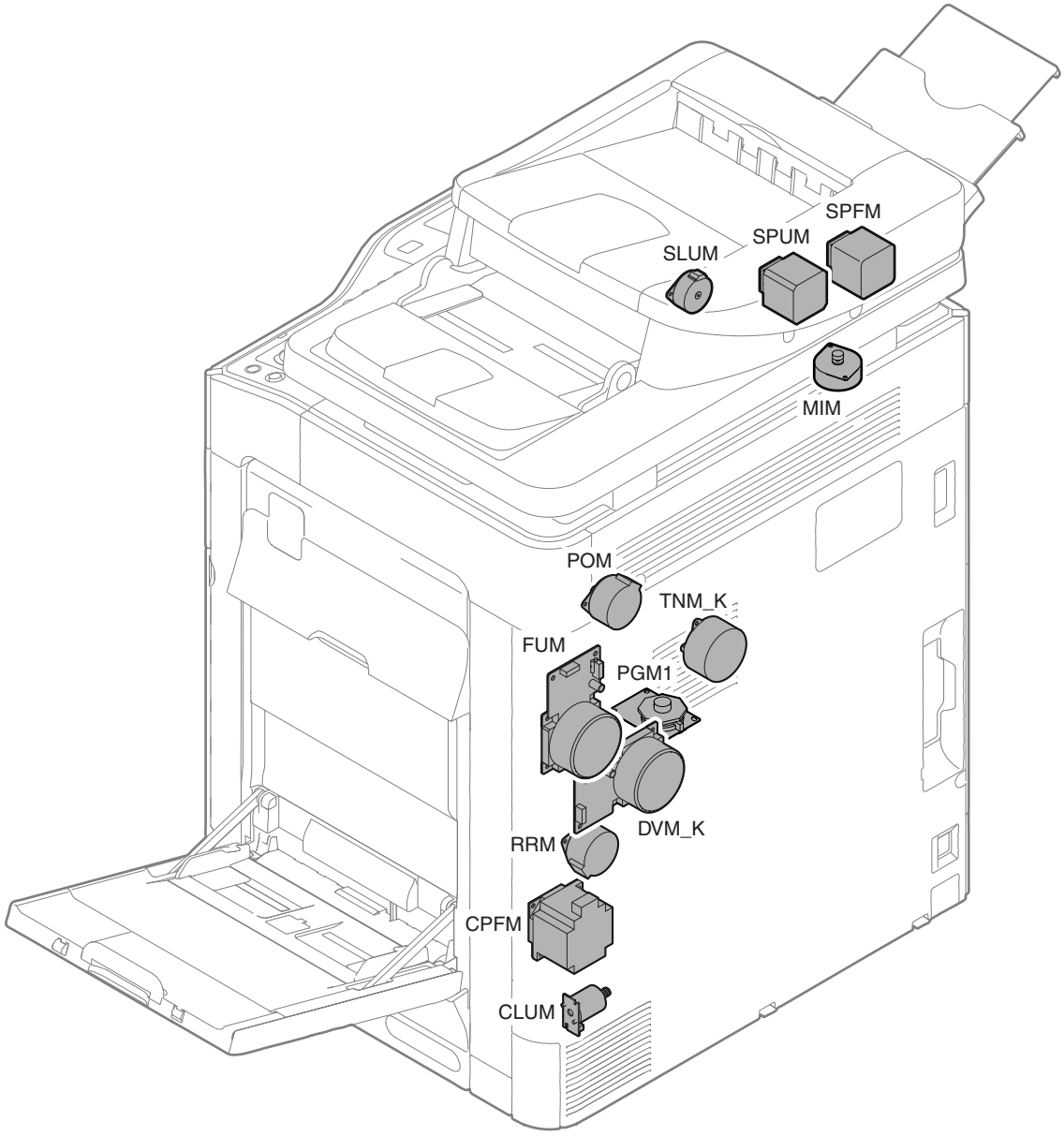
9. Drive motors

A. MX-C402SC/C382SC



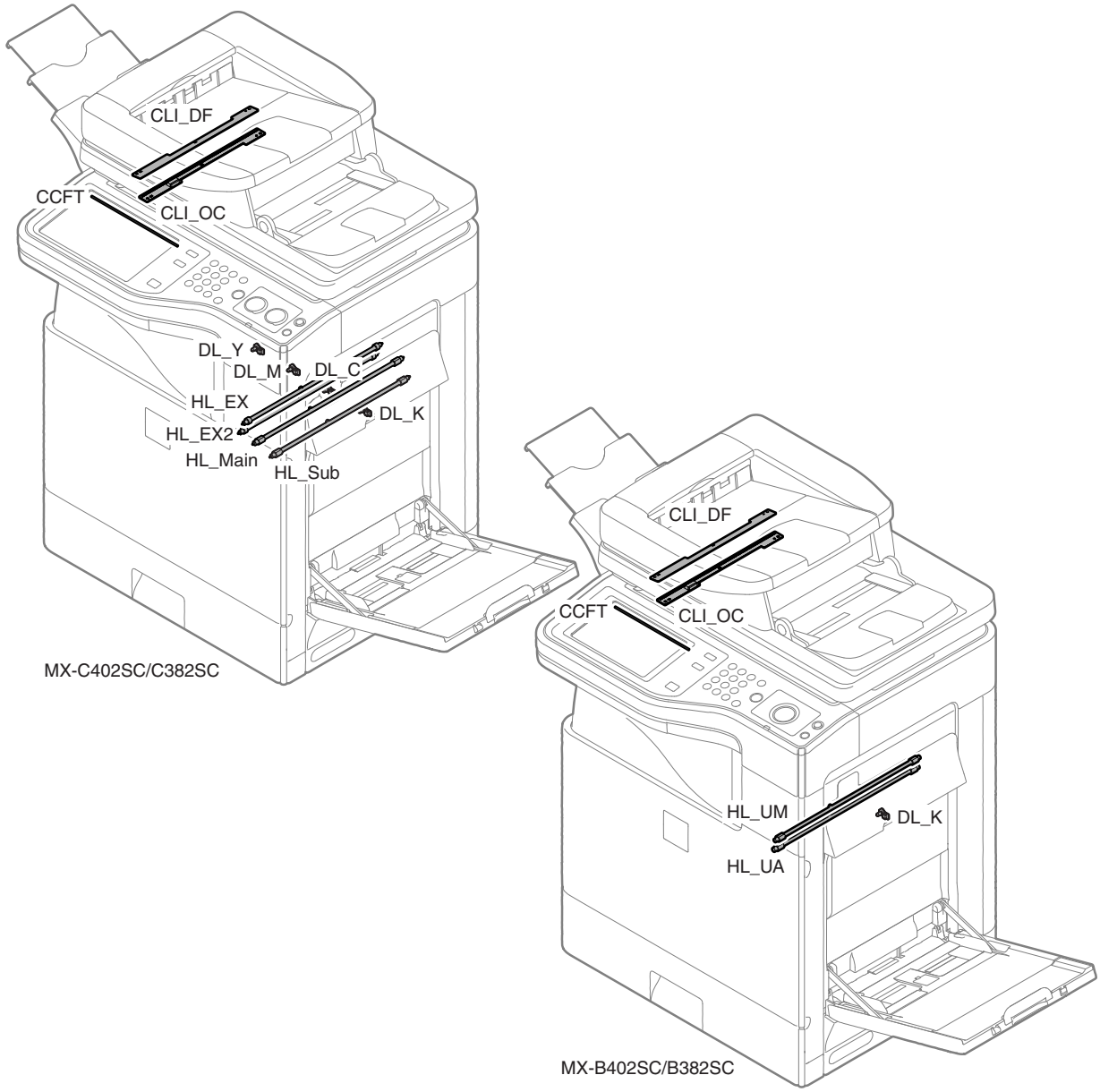
Signal name	Name	Type	Function/Operation
CLUM	Paper tray lift-up motor (Paper feed tray 1)	DC brush-less motor	Drives the lift plate of the paper feed tray.
CPFM	Paper feed motor	Stepping motor	Drives the paper feed section.
DVM_CL	Developing drive motor (CL)	Brush-less motor	Drives the development cartridge (color) and the drum cartridge (color).
DVM_K	Developing drive motor (K)	Brush-less motor	Drives the development cartridge (black), the drum cartridge (black), the primary transfer unit, and the secondary transfer unit. Also separates the primary transfer unit.
FUM	Fusing drive motor	DC brush motor	Drives the fusing unit.
MIM	Scanner motor	Stepping motor	Drives the carriage unit.
PGM1	Polygon motor 1	DC brush-less motor	Scans the laser beam.
POM	Paper exit drive motor	Stepping motor	Drives the paper exit roller.
RRM	Registration motor	Stepping motor	Drives the registration roller and controls ON/OFF.
SLUM	Original Pickup motor	Stepping motor	Drives the document pickup unit.
SPFM	DSPF transport motor	Stepping motor	Drives the DSPF unit.
SPUM	Original paper feeding motor	Stepping motor	Drives the paper feed unit.
TNM_C	Toner motor C	Synchronous motor	Transports toner from the toner cartridge to the developing unit.
TNM_K	Toner motor K	Synchronous motor	Transports toner from the toner cartridge to the developing unit.
TNM_M	Toner motor M	Synchronous motor	Transports toner from the toner cartridge to the developing unit.
TNM_Y	Toner motor Y	Synchronous motor	Transports toner from the toner cartridge to the developing unit.

B. MX-B402SC/B382SC



Signal name	Name	Type	Function/Operation
CLUM	Paper tray lift-up motor (Paper feed tray 1)	DC brush-less motor	Drives the lift plate of the paper feed tray.
CPFM	Paper feed motor	Stepping motor	Drives the paper feed section.
DVM_K	Developing drive motor	Brush-less motor	Drives the development cartridge, the drum cartridge, the primary transfer unit, and the secondary transfer unit. Also separates the primary transfer unit.
FUM	Fusing drive motor	DC brush motor	Drives the fusing unit.
MIM	Scanner motor	Stepping motor	Drives the carriage unit.
PGM1	Polygon motor 1	DC brush-less motor	Scans the laser beam.
POM	Paper exit drive motor	Stepping motor	Drives the paper exit roller.
RRM	Registration motor	Stepping motor	Drives the registration roller and controls ON/OFF.
SLUM	Original Pickup motor	Stepping motor	Drives the document pickup unit.
SPFM	DSPF transport motor	Stepping motor	Drives the DSPF unit.
SPUM	Original paper feeding motor	Stepping motor	Drives the paper feed unit.
TNM_K	Toner motor K	Synchronous motor	Transports toner from the toner cartridge to the developing unit.

10. Lamps



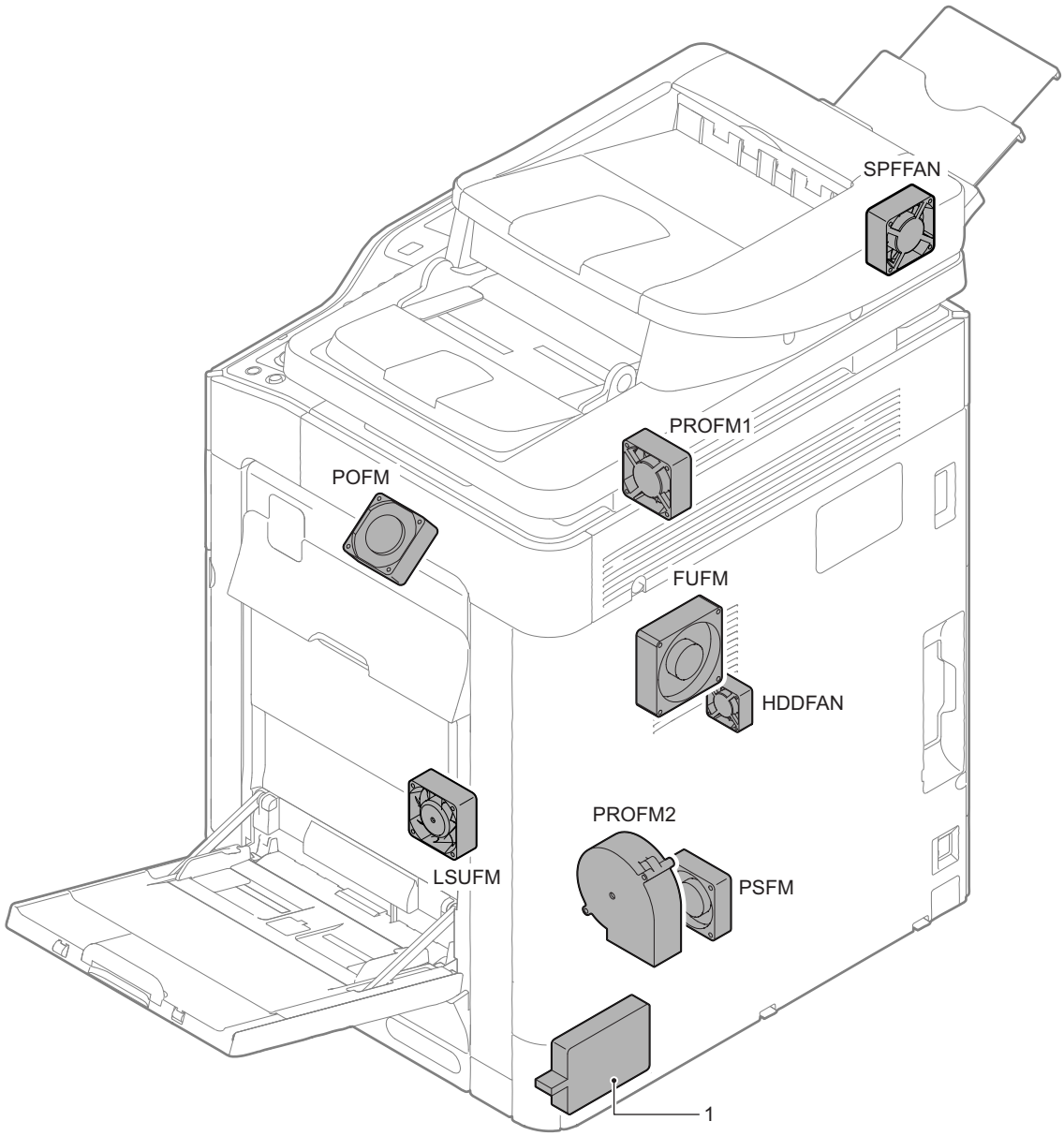
• **MX-C402SC/C382SC**

Signal name	Name	Type	Function/Operation
CCFT	LCD backlight	CCFT cool cathode ray tube	Backlight for the CCD
CLI_DF	Scanner lamp	LED	Radiates lights onto a document for the CCD to scan document images.
CLI_OC	Scanner lamp	LED	Radiates lights onto a document for the CCD to scan document images.
DL_C	Discharge lamp C	LED	Discharges electric charges on the OPC drum.
DL_K	Discharge lamp K	LED	Discharges electric charges on the OPC drum.
DL_M	Discharge lamp M	LED	Discharges electric charges on the OPC drum.
DL_Y	Discharge lamp Y	LED	Discharges electric charges on the OPC drum.
HL_EX	External heater lamp	Halogen lamp	Heats the upper heat roller through an external heat roller.
HL_EX2	External heater lamp 2	Halogen lamp	Heats the upper heat roller through an external heat roller.
HL_Main	Upper heater lamp	Halogen lamp	Heats the upper heat roller. (Main)
HL_Sub	Lower heater lamp	Halogen lamp	Heats the lower heat roller. (Main)

• **MX-B402SC/B382SC**

Signal name	Name	Type	Function/Operation
CCFT	LCD back-light	CCFT cool cathode ray tube	Back-light for the LCD
CLI_DF	Scanner lamp	LED	Radiates lights onto a document for the CCD to scan document images.
CLI_OC	Scanner lamp	LED	Radiates lights onto a document for the CCD to scan document images.
DL_K	Discharge lamp K	LED	Discharges electric charges on the OPC drum.
HL_UM	Upper heater lamp	Halogen lamp	Heats the upper heat roller. (main)
HL_UA	Upper heater lamp	Halogen lamp	Heats the upper heat roller. (all)

11. Fans and filter

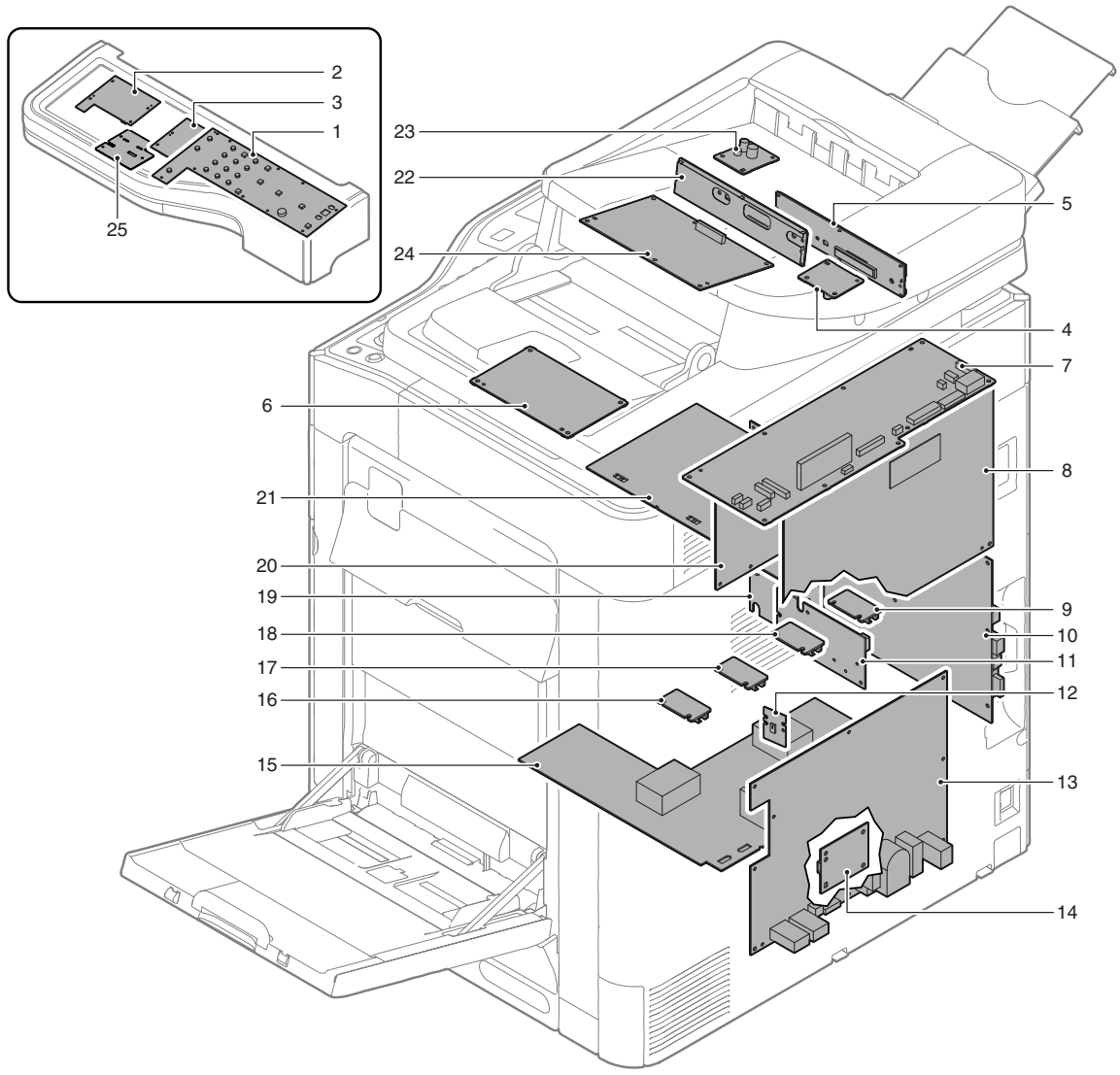


Signal name	Name	Function/Operation
FUFM	Fusing cooling fan motor	Cools the fusing unit.
HDDFM	HDD cooling fan motor	Cools the HDD.
LSUFM	LSU cooling fan motor	Cools the LSU.
POFM	Paper exit cooling fan motor	Cools the paper exit section.
PROFM1	Process fan motor 1	Cools the process section.
PROFM2	Process fan motor 2	Exhausts ozone.
PSFM	Power PWB cooling fan motor	Cools the power PWB.
SPFFAN	SPF fan motor	Cools the DSPF.

No.	Name	Function/Operation
1	Ozone filter	Absorbs ozone generated in the image process section.

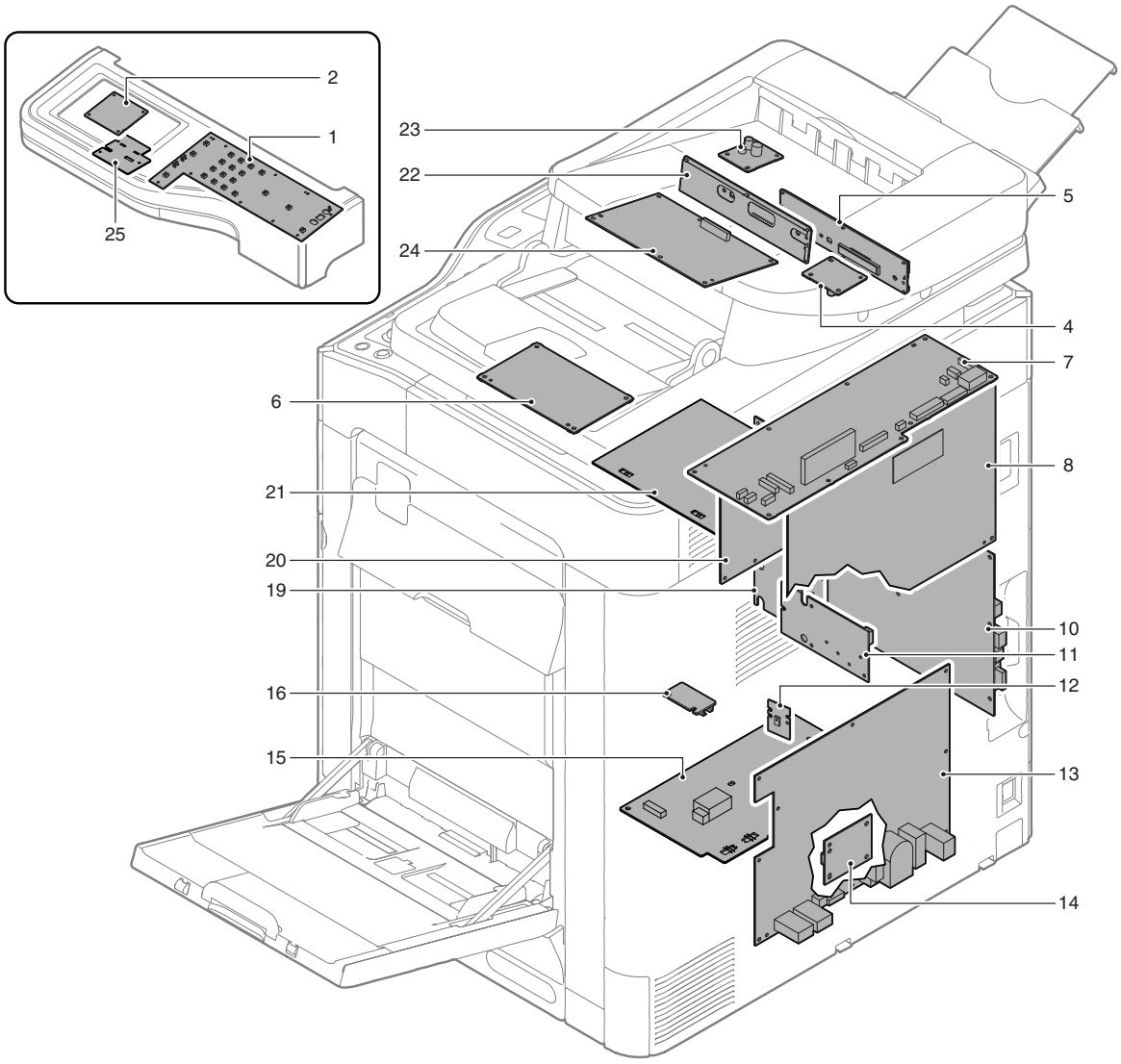
12. PWB

A. MX-C402SC/C382SC



No.	Name	Function/Operation
1	MFP OPE-P PWB	Outputs the key operation signal.
2	LVDS PWB	Converts the display signal and outputs to the LCD.
3	LCD INV PWB	Generates the high voltage for the LCD backlight.
4	LED DRV PWB	Drives the LED lamp.
5	CCD PWB	Scans the document images.
6	DSPF driver PWB	Drive for DSPF load.
7	Scanner control PWB	Controls the scanner section.
8	PCU PWB	Controls the engine section.
9	DV initial PWB	Detects the DV model.
10	MFPC PWB	Controls images and the whole machine.
11	LD PWB	Controls laser lighting.
12	BD PWB	Detects laser and outputs the synchronous signal.
13	ACDC power PWB	Controls the primary side power source and outputs the secondary side voltage.
14	Paper size detection PWB	Detects the paper size in the tray 1.
15	MC PWB	Generates the high voltage for the main charger and the developing bias voltage.
16	DV initial PWB	Detects the DV model.
17	DV initial PWB	Detects the DV model.
18	DV initial PWB	Detects the DV model.
19	LSU MOTHER PWB	Controls the LSU. Interfaces the MFPC PWB and PCU PWB.
20	HL PWB	Controls the heater lamp.
21	TC PWB	Generates each transfer voltage and separation voltage.
22	CCD PWB	Scans the document images.
23	LED DRV PWB	Drives the LED lamp.
24	DSPF CNT PWB	Controls the DSPF.
25	USB CONVERTION PWB	Convertion USB keyboard.

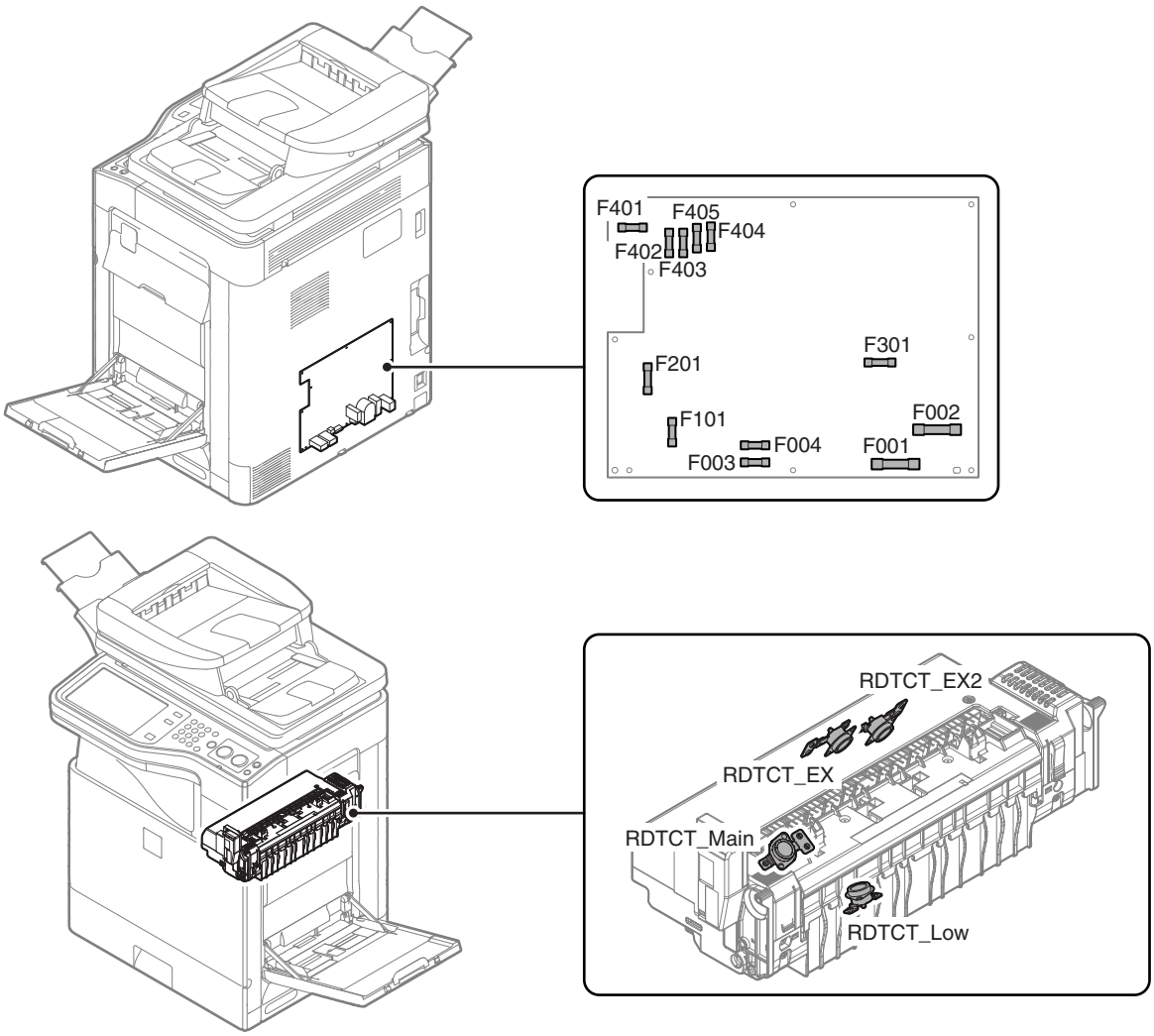
B. MX-B402SC/B382SC



No.	Name	Function/Operation
1	MFP OPE-P PWB	Outputs the key operation signal.
2	LVDS PWB	Converts the display signal and outputs to the LCD.
4	LED DRV PWB	Drives the LED lamp.
5	CCD PWB	Scans the document images.
6	DSPF driver PWB	Drive for DSPF load.
7	Scanner control PWB	Controls the scanner section.
8	PCU PWB	Controls the engine section.
10	MFPC PWB	Controls images and the whole machine.
11	LD PWB	Controls laser lighting.
12	BD PWB	Detects laser and outputs the synchronous signal.
13	ACDC power PWB	Controls the primary side power source and outputs the secondary side voltage.
14	Paper size detection PWB	Detects the paper size in the tray 1.
15	MC PWB	Generates the high voltage for the main charger and the developing bias voltage.
16	DV initial PWB	Detects the DV model.
19	LSU MOTHER PWB	Controls the LSU. Interfaces the MFPC PWB and PCU PWB.
20	HL PWB	Controls the heater lamp.
21	TC PWB	Generates each transfer voltage and separation voltage.
22	CCD PWB	Scans the document images.
23	LED DRV PWB	Drives the LED lamp.
24	DSPF CNT PWB	Controls the DSPF.
25	USB CONVERTION PWB	Convertion USB keyboard.

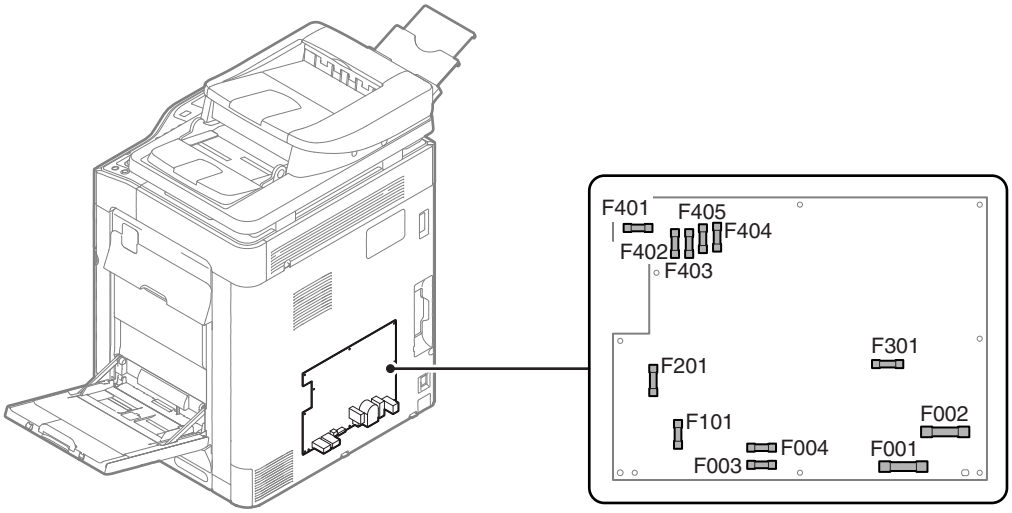
13. Fuses and Thermostats

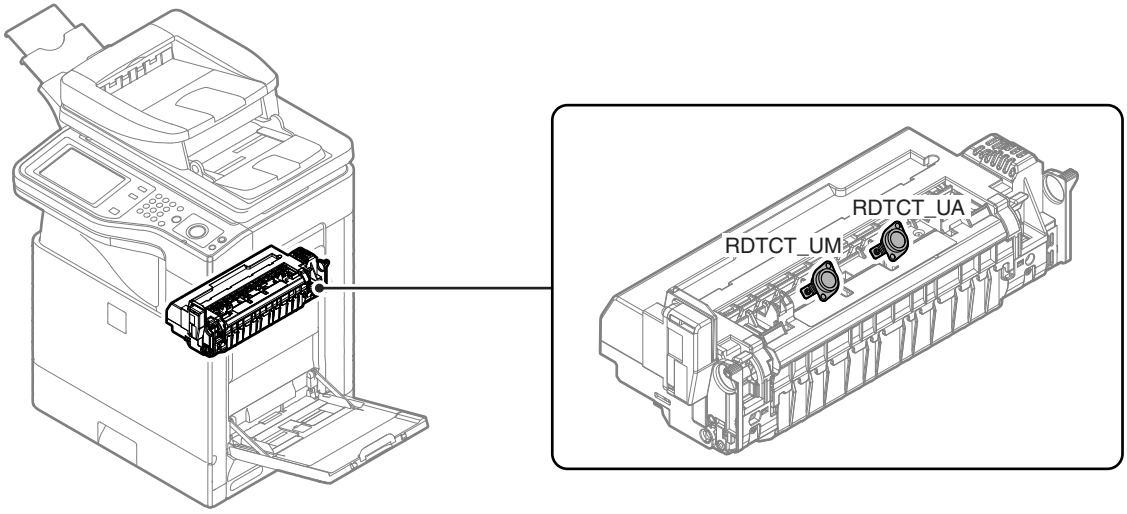
A. MX-C402SC/C382SC



Signal name	Name	Specifications	Section
F001	Fuse	AC250V T10AH (200V series) AC250V 20A (120V series)	ACDC power PWB
F002	Fuse	AC250V T10AH (200V series) (Not provided in 120V series)	ACDC power PWB
F003	Fuse	AC250V T2AH (Common in 200V series and 120V series)	ACDC power PWB
F004	Fuse	AC250V T2AH (200V series) (Not provided in 120V series)	ACDC power PWB
F101	Fuse	AC250V T2AH (Common in 200V series and 120V series)	ACDC power PWB
F201	Fuse	AC250V T5AH (Common in 200V series and 120V series)	ACDC power PWB
F301	Fuse	AC250V T2AH (Common in 200V series and 120V series)	ACDC power PWB
F401	Fuse	AC250V T4AH (Common in 200V series and 120V series)	ACDC power PWB
F402	Fuse	AC250V T6.3AH (Common in 200V series and 120V series)	ACDC power PWB
F403	Fuse	AC250V T6.3AH (Common in 200V series and 120V series)	ACDC power PWB
F404	Fuse	AC250V T6.3AH (Common in 200V series and 120V series)	ACDC power PWB
F405	Fuse	AC250V T6.3AH (Common in 200V series and 120V series)	ACDC power PWB
RDTCT_EX	External thermostat	Prevents against overheating of the fusing roller.	Fusing unit
RDTCT_EX2	External thermostat 2	Prevents against overheating of the fusing roller.	Fusing unit
RDTCT_Low	Lower thermostat	Prevents against overheating of the fusing roller.	Fusing unit
RDTCT_Main	Upper thermostat	Prevents against overheating of the fusing roller.	Fusing unit

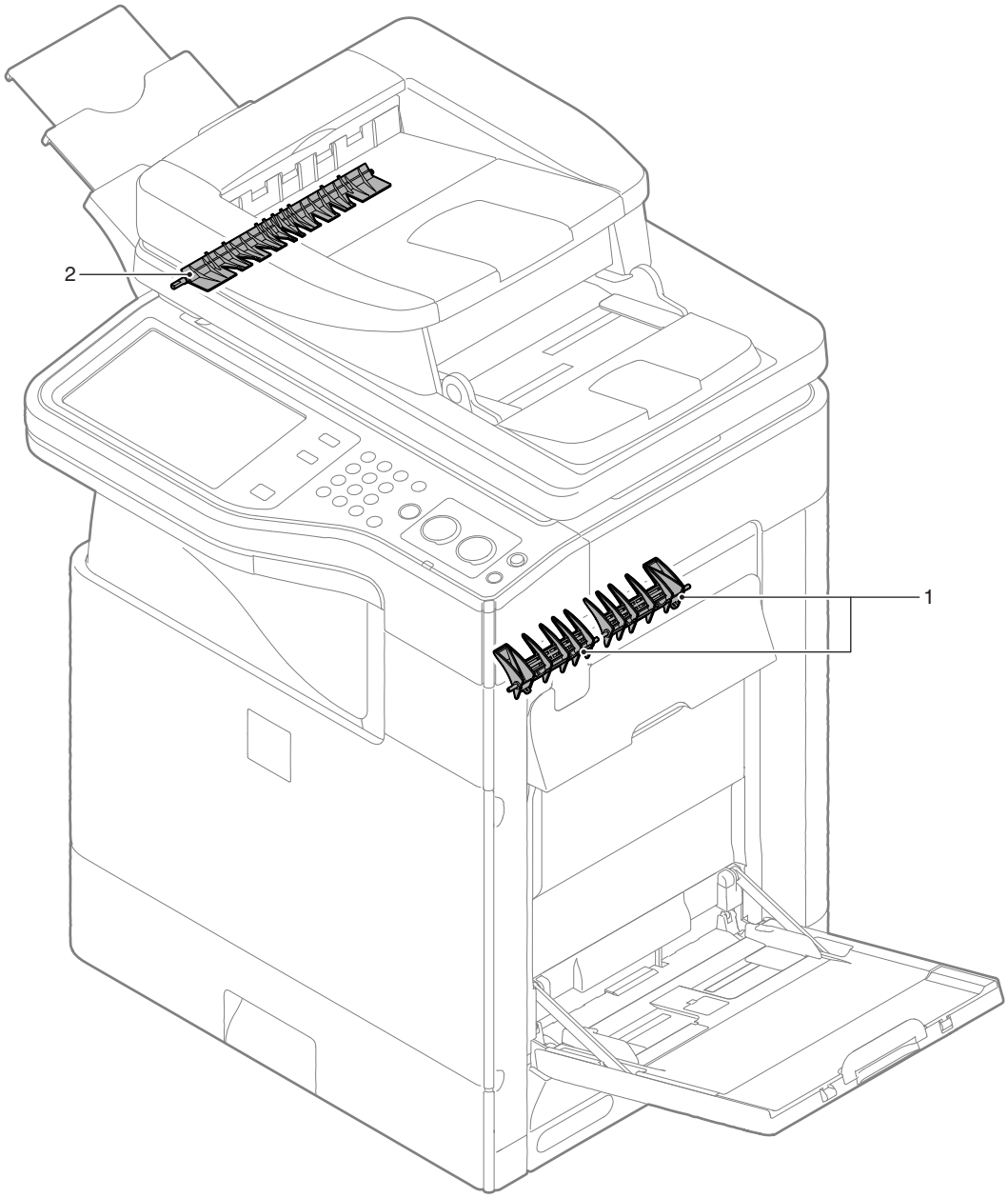
B. MX-B402SC/B382SC





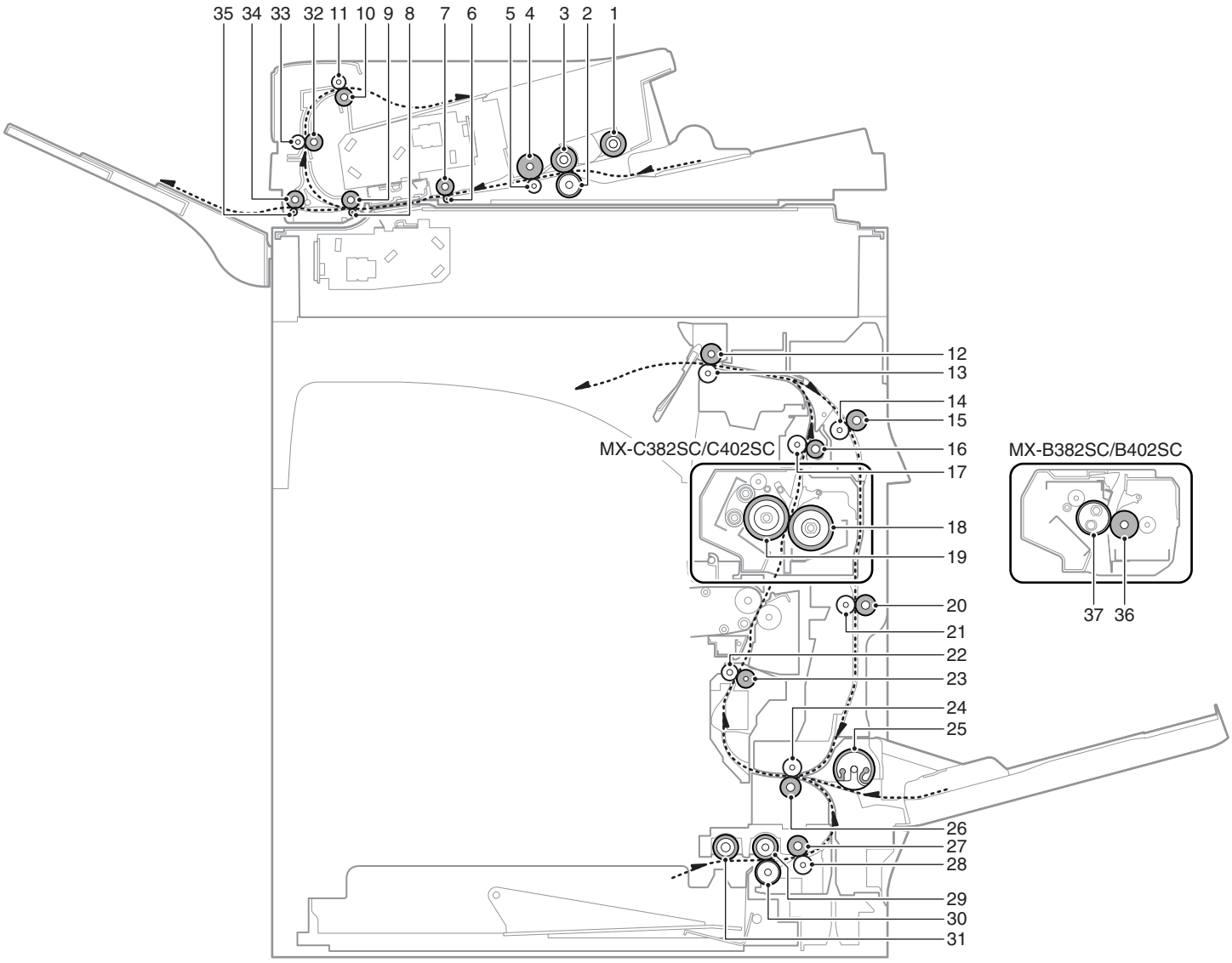
Signal name	Name	Specifications	Section
F001	Fuse	AC250V T10AH (200V series) AC250V 20A (120V series)	ACDC power PWB
F002	Fuse	AC250V T10AH (200V series) (Not provided in 120V series)	ACDC power PWB
F003	Fuse	AC250V T2AH (Common in 200V series and 120V series)	ACDC power PWB
F004	Fuse	AC250V T2AH (200V series) (Not provided in 120V series)	ACDC power PWB
F101	Fuse	AC250V T2AH (Common in 200V series and 120V series)	ACDC power PWB
F201	Fuse	AC250V T5AH (Common in 200V series and 120V series)	ACDC power PWB
F301	Fuse	AC250V T2AH (Common in 200V series and 120V series)	ACDC power PWB
F401	Fuse	AC250V T4AH (Common in 200V series and 120V series)	ACDC power PWB
F402	Fuse	AC250V T6.3AH (Common in 200V series and 120V series)	ACDC power PWB
F403	Fuse	AC250V T6.3AH (Common in 200V series and 120V series)	ACDC power PWB
F404	Fuse	AC250V T6.3AH (Common in 200V series and 120V series)	ACDC power PWB
F405	Fuse	AC250V T6.3AH (Common in 200V series and 120V series)	ACDC power PWB
RDTCT_UA	Upper thermostat (all)	Prevents against overheating of the fusing roller.	Fusing unit
RDTCT_UM	Upper thermostat (main)	Prevents against overheating of the fusing roller.	Fusing unit

14. Gates



No.	Name	Function/Operation
1	Switchback gate	Guides paper which is switched back by the paper exit roller to the switchback section in the duplex copy mode.
2	DSPF paper exit gate	Switches the document exit destination to the left paper exit tray and the DSPF upper paper exit tray.

15. Rollers



No.	Name	Function/Operation
1	Pickup roller (DSPF)	Picks up a document and feeds it to the paper feed roller.
2	Separation roller (DSPF)	Separate a document to prevent against double-feed.
3	Paper feed roller (DSPF)	Performs the paper feed operation of documents.
4	Registration roller (Drive) (DSPF)	Performs registration of document transport.
5	Registration roller (idle) (DSPF)	Applied a pressure to document and the registration roller, and provides transport power of the registration roller to document.
6	Transport roller 1 (idle) (DSPF)	Transports document from registration roller to transport roller 2.
7	Transport roller 1 (Drive) (DSPF)	Applied a pressure to document and the transport roller, and provides the transport power of the transport roller to document.
8	Transport roller 2 (idle) (DSPF)	Applied a pressure to document and the transport roller, and provides the transport power of the transport roller to document.
9	Transport roller 2 (Drive) (DSPF)	Transports document to the transport 3 roller.
10	Paper exit roller 2 (Drive)	Output the document. (Upper exit tray)
11	Paper exit roller 2 (Idle) (Drive)	Applies a pressure to document and the paper exit roller and provides transport power of the paper exit roller to document.
12	Paper exit roller (Drive)	Discharges the paper. / Transports the paper to the switchback section.
13	Paper exit roller (Idle)	Applies a pressure to the paper and the paper exit roller to give a transport power of the paper exit roller to the paper.
14	Transport roller 4 (Idle)	Applies a pressure to the paper and the transport roller to give a transport power of the transport roller to the paper.
15	Transport roller 4 (Drive)	Transports the paper switched back by the paper exit roller to the transport roller 5.
16	Transport roller 3 (Drive)	Transports the paper from the fusing roller to the paper exit roller.
17	Transport roller 3 (Idle) (for MX-C402SC/C382SC)	Applies a pressure to the paper and the transport roller to give a transport power of the transport roller to the paper.
18	Fusing roller (Heating) (for MX-C402SC/C382SC)	Heats and presses toner on the paper to fuse on the paper.

No.	Name	Function/Operation
19	Fusing roller (Pressing)	Applies a pressure to the fusing roller (heating).
20	Transport roller 5 (Drive)	Transports the paper from the transport roller 4 to the transport roller 2.
21	Transport roller 5 (Idle)	Applies a pressure to the paper and the transport roller to give a transport power of the transport roller to the paper.
22	Registration roller (Idle)	Applies a pressure to the paper and the registration roller, giving a transport power of the registration roller to the paper.
23	Registration roller (Drive)	Transports paper to the transfer section. / Controls the paper transport timing, and adjusts the relative relations between images and paper.
24	Transport roller 2 (Idle)	Applies a pressure to the paper and the transport roller to give a transport power of the transport roller to the paper.
25	Paper feed roller (Manual paper feed tray)	Transports paper to the transport roller 2.
26	Transport roller 2 (Drive)	Transports the paper transported from the transport roller 1 to the registration roller.
27	Transport roller 1 (Drive)	Transports paper which was fed from the paper feed tray 1 to the transport roller 2.
28	Transport roller 1 (Idle)	Applies a pressure to the paper and the transport roller to give a transport power of the transport roller to the paper.
29	Paper feed roller (No. 1 paper feed tray)	Transport paper to the paper transport section.
30	Separation roller (No. 1 paper feed tray)	Separates paper to prevent against double feed.
31	Paper pickup roller (No. 1 paper feed tray)	Transports paper to the paper feed roller.
32	Transport roller 3 (Drive) (DSPF)	Transports document from the transport roller 2 to the paper exit roller.
33	Transport roller 3 (idle) (DSPF)	Applied a pressure to document and the transport roller, and provides the transport power of the transport roller to document.
34	Paper exit roller (Drive) (DSPF)	Output the document. (left side exit tray)
35	Paper exit roller 1 (idle) (DSPF)	Applies a pressure to document and the paper exit roller and provides transport power of the paper exit roller to document.
36	Fusing roller (Pressing) (for MX-B402SC/B382SC)	Applies a pressure to the fusing roller (heating).
37	Fusing roller (Heating) (for MX-B402SC/B382SC)	Heats and presses toner on the paper to fuse on the paper.

[4] ADJUSTMENTS

1. General

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

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

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

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

2. Adjustment item list

Job No	Adjustment item list			Simulation
ADJ 1	Adjusting high voltage values (MX-C402SC/C382SC)	1A	Adjust the main charger grid voltage (MX-C402SC/C382SC)	8-2
		1B	Adjust the developing bias voltage (MX-C402SC/C382SC)	8-1
		1C	Transfer voltage adjustment (MX-C402SC/C382SC)	8-6
ADJ 1	Adjusting high voltage values (MX-B402SC/B382SC)	1A	Adjust the main charger grid voltage (MX-B402SC/B382SC)	8-2
		1B	Adjust the developing bias voltage (MX-B402SC/B382SC)	8-1
		1C	Transfer voltage adjustment (MX-B402SC/B382SC)	8-6
ADJ 2	Image density sensor (image registration sensor) adjustment	2A	Color image density sensor (image registration sensor F) calibration (MX-C402SC/C382SC)	44-13/44-61
		2B	Color image density sensor (image registration sensor F), black image density sensor (image registration sensor R) adjustment	44-2
ADJ 3	Image skew adjustment (LSU unit) (MX-C402SC/C382SC)			61-4
	Image skew adjustment (LSU unit) (MX-B402SC/B382SC)			64-2
ADJ 4	OPC drum phase adjustment (MX-C402SC/C382SC)	4A	OPC drum phase adjustment (Auto adjustment) (MX-C402SC/C382SC)	50-22
ADJ 5	Print engine image magnification ratio adjustment (BK) (Main scanning direction) (Print engine section) (Manual adjustment)			50-10
ADJ 6	Image off-center adjustment (Print engine section)			50-10
ADJ 7	Image registration adjustment (Print engine section) (MX-C402SC/C382SC)	7A	Image registration adjustment (Main scanning direction, sub scanning direction) (Auto adjustment) (MX-C402SC/C382SC)	50-22
		7B	Image registration adjustment (Main scanning direction) (Manual adjustment) (MX-C402SC/C382SC)	50-20
		7C	Image registration adjustment (Sub scanning direction) (Manual adjustment) (MX-C402SC/C382SC)	50-20
ADJ 8	Scan image magnification ratio adjustment (Document table mode)	8A	Scan image magnification ratio adjustment (Main scanning direction) (Document table mode)	48-1
		8B	Scan image magnification ratio adjustment (Sub scanning direction) (Document table mode)	48-1
ADJ 9	Scan image magnification ratio adjustment (Main/sub scanning direction) (DSPF mode)	9A	Scan image magnification ratio adjustment (Main scanning direction) (DSPF mode)	48-1
		9B	Scan image magnification ratio adjustment (Sub scanning direction) (DSPF mode)	48-1
ADJ 10	Scan image off-center adjustment	10A	Scan image off-center adjustment (Document table mode)	50-12
		10B	Scan image off-center adjustment (DSPF mode)	50-12
ADJ 11	Print area (Void area) adjustment (Print engine section)			50-10/50-1
ADJ 12	Copy image position, image loss adjustment	12A	Copy image position, image loss adjustment (Document table mode)	50-1 (50-2)
		12B	Adjust the original scan start position (Adjust the scanner read position in DSPF-mode front face scan)	53-8
		12C	Copy image position, image loss adjustment (DSPF mode)	50-6 (50-7)
ADJ 13	Print lead edge image position adjustment (Printer mode) (Print engine section)			50-5
ADJ 14	Copy color balance/density adjustment (MX-C402SC/C382SC)	14A (1)	CCD gamma adjustment (CCD calibration) (Normal document copy mode) (MX-C402SC/C382SC)	63-3 (63-5)
		14A (2)	CCD gamma adjustment (CCD calibration) (DSPF mode) (MX-C402SC/C382SC)	63-3
		14A (3)	Shading adjustment (DSPF mode) (MX-C402SC/C382SC)	63-2
		14B	Copy color balance adjustment (Auto adjustment) (MX-C402SC/C382SC)	46-24
		14C	Copy color balance adjustment (Manual adjustment) (MX-C402SC/C382SC)	46-21/44-21
		14D	Copy density adjustment (Each color copy mode) (Whole adjustment) (Normally unnecessary to adjust) (MX-C402SC/C382SC)	46-1
		14E	Copy density adjustment (Each monochrome copy mode) (Whole adjustment) (Normally unnecessary to adjust) (MX-C402SC/C382SC)	46-2
		14F	Copy color balance adjustment (Color balance adjustment at each density level in each color copy mode) (Normally not required) (MX-C402SC/C382SC)	46-10
		14G	Monochrome copy density/gamma adjustment (Each monochrome copy mode) (Normally not required) (MX-C402SC/C382SC)	46-16
		14H	Condition setting of document density reading operation (exposure) in the monochrome auto copy mode (Normally not required) (MX-C402SC/C382SC)	46-19
		14I	Document background density reproducibility adjustment in the monochrome auto copy mode (Normally unnecessary to adjust) (MX-C402SC/C382SC)	46-32
		14J	Copy density adjustment for low density section (Each copy mode) (Normally unnecessary to adjust) (MX-C402SC/C382SC)	46-63
		14K	Color copy text, line image edge gamma, density adjustment / Text · Map mode gamma, density adjustment (MX-C402SC/C382SC)	46-27

Job No	Adjustment item list			Simulation
ADJ 14	Copy color balance/density adjustment (MX-C402SC/C382SC)	14L	Color document reproducibility adjustment in the monochrome copy mode (Normally unnecessary to adjust) (MX-C402SC/C382SC)	46-37
		14M	Black ingredient amount adjustment in color copy mode (Normally unnecessary to adjust) (MX-C402SC/C382SC)	46-38
		14N	Sharpness adjustment in the monochrome auto copy mode (Normally unnecessary to adjust) (MX-C402SC/C382SC)	46-60
		14O	Copy high density part density correction setting (Prevents against tone gap) (Normally unnecessary to adjust) (MX-C402SC/C382SC)	46-23
		14P	Copy color balance adjustment (Single color copy mode) (Normally not required) (MX-C402SC/C382SC)	46-25
		14Q	Copy density adjustment in the DSPF mode (Normally unnecessary to adjust) (MX-C402SC/C382SC)	46-9
		14R	Auto color balance adjustment by the user (Copy color balance auto adjustment enable setting and adjustment) (MX-C402SC/C382SC)	26-53
		14S	Copy color balance adjustment (Automatic adjustment for each dither) (Normally unnecessary to adjust) (MX-C402SC/C382SC)	46-54
ADJ 14	Copy density and gradation adjustment (MX-B402SC/B382SC)	14A (1)	CCD gamma adjustment (CCD calibration) (MX-B402SC/B382SC)	63-3 (63-5)
		14A (2)	CCD gamma adjustment (CCD calibration) (DSPF mode) (MX-B402SC/B382SC)	63-3
		14A (3)	Shading adjustment (DSPF mode) (MX-B402SC/B382SC)	63-2
		14B	Copy density and gradation adjustment (Auto adjustment) (MX-B402SC/B382SC)	46-24
		14C	Copy density and gradation adjustment (Manual adjustment) (MX-B402SC/B382SC)	46-21/44-21
		14D	Copy density and gradation adjustment (Each copy mode) (Whole adjustment) (Normally unnecessary to adjust) (MX-B402SC/B382SC)	46-2
		14E	Condition setting of document density reading operation (exposure) in the auto copy mode (Normally not required) (MX-B402SC/B382SC)	46-19
		14F	Document background density reproducibility adjustment in the auto copy mode (Normally unnecessary to adjust) (MX-B402SC/B382SC)	46-32
		14G	Color document reproducibility adjustment in the copy mode (Normally unnecessary to adjust) (MX-B402SC/B382SC)	46-37
		14H	Sharpness adjustment in the auto copy mode (Normally unnecessary to adjust) (MX-B402SC/B382SC)	46-60
		14I	Copy high density part density correction setting (Prevents against tone gap) (Normally unnecessary to adjust) (MX-B402SC/B382SC)	46-23
		14J	Copy density and gradation adjustment in the DSPF mode (Normally unnecessary to adjust) (MX-B402SC/B382SC)	46-9
		14K	Auto copy density and gradation adjustment by the user (Copy auto adjustment enable setting and adjustment) (MX-B402SC/B382SC)	26-53
ADJ 15	Printer color balance/density adjustment (MX-C402SC/C382SC)	15A	Printer color balance adjustment (Auto adjustment) (MX-C402SC/C382SC)	67-24
		15B	Printer color balance adjustment (Manual adjustment) (MX-C402SC/C382SC)	67-25
		15C	Printer density adjustment (low density part density adjustment) (Normally unnecessary to adjust) (MX-C402SC/C382SC)	67-36
		15D	Printer high density part density correction setting (high density part tone gap countermeasure) (Normally unnecessary to the setting change) (MX-C402SC/C382SC)	67-34
		15E	Auto color balance adjustment by the user (Printer color balance auto adjustment ENABLE setting and adjustment) (MX-C402SC/C382SC)	26-54
		15F	Copy/Printer color balance and density adjustment (Automatic adjustment) (MX-C402SC/C382SC)	46-74
		15G	Printer color balance adjustment (Automatic adjustment for each dither) (Normally unnecessary to adjust) (MX-C402SC/C382SC)	67-54
ADJ 15	Printer density and gradation adjustment (MX-B402SC/B382SC)	15A	Printer density and gradation adjustment (Auto adjustment) (MX-B402SC/B382SC)	67-24
		15B	Printer density and gradation adjustment (Manual adjustment) (MX-B402SC/B382SC)	67-25
		15C	Printer density and gradation adjustment (low density part density and gradation adjustment) (Normally unnecessary to adjust) (MX-B402SC/B382SC)	67-36
		15D	Printer high density part density correction setting (High density part tone gap countermeasure) (Normally unnecessary to the setting change) (MX-B402SC/B382SC)	67-34
		15E	Auto density and gradation adjustment by the user (Printer auto adjustment ENABLE setting and adjustment) (MX-B402SC/B382SC)	26-54
		15F	Copy/Printer density and gradation adjustment (Automatic adjustment) (MX-B402SC/B382SC)	46-74
ADJ 16	Manual paper feed tray paper size (width) sensor adjustment			40-2
ADJ 17	Touch panel coordinate setting			65-1
ADJ 18	Image loss, void area, image off-center, image magnification ratio auto adjustment with SIM50-28	18A	Print image main scanning direction image magnification ratio automatic adjustment	50-28
		18B	Image off-center automatic adjustment (Document table mode)	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	SPF mode image off-center, image lead edge position, sub scanning direction image magnification ratio automatic adjustment (DSPF mode)	50-28
ADJ 19	Fusing paper guide position adjustment			
ADJ 20	Adjust the developing unit	20A	Adjust the developing doctor gap	
		20B	Adjust the developing roller main pole position	
		20C	Toner density control reference value setting	25-2

3. Details of adjustment

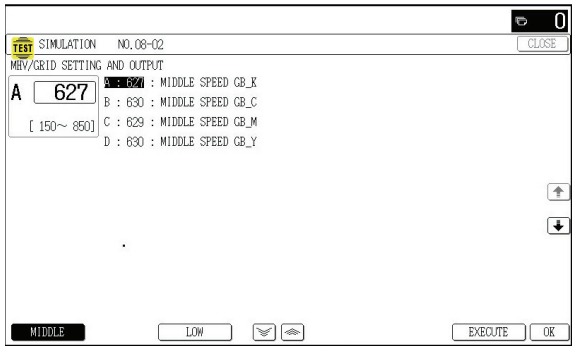
ADJ 1 Adjusting high voltage values (MX-C402SC/C382SC)

1-A Adjust the main charger grid voltage (MX-C402SC/C382SC)

This adjustment is needed in the following situations:

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

1) Enter the SIM 8-2 mode.

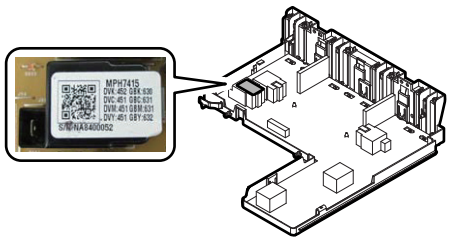


2) Select an output mode and an item to be adjusted.
3) Enter the adjustment value (specified value) in the middle speed mode, and press [OK] key.

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

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

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



NOTE: Note that the adjustment value may differ depending on the MC high voltage power PWB.

Since the adjustment value label is attached on the MC 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.

Mode	Item/Display		Content	Setting range
MIDDLE	A	MIDDLE SPEED GB_K	K charging/grid bias set value at middle speed	150 - 850
	B	MIDDLE SPEED GB_C	C charging/grid bias set value at middle speed	150 - 850
	C	MIDDLE SPEED GB_M	M charging/grid bias set value at middle speed	150 - 850
	D	MIDDLE SPEED GB_Y	Y charging/grid bias set value at middle speed	150 - 850
LOW	A	LOW SPEED GB_K	K charging/grid bias set value at low speed	150 - 850
	B	LOW SPEED GB_C	C charging/grid bias set value at low speed	150 - 850
	C	LOW SPEED GB_M	M charging/grid bias set value at low speed	150 - 850
	D	LOW SPEED GB_Y	Y charging/grid bias set value at low speed	150 - 850

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

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

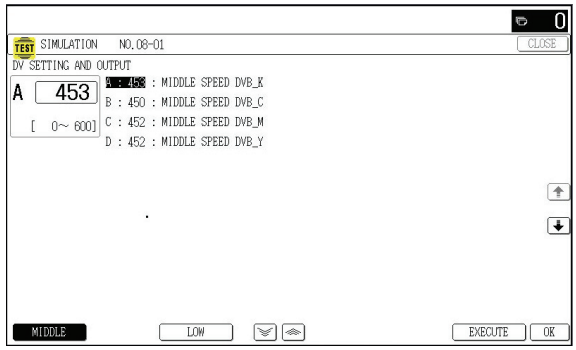
NOTE: Since the high voltage output cannot be checked with a digital multi meter in this model, a judgment of the output must be made by checking the print image quality.

1-B Adjust the developing bias voltage (MX-C402SC/C382SC)

This adjustment is needed in the following situations:

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

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



2) Select an output mode and an item to be adjusted.
3) Enter the adjustment value (specified value) in the middle speed mode, and press [OK] key.

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

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

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

NOTE: Note that the adjustment value may differ depending on the MC high voltage power PWB.

Since the adjustment value label is attached on the MC high voltage PWB, the PWB must be removed in order to check the adjustment value.

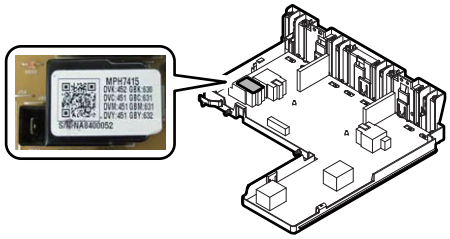
This is a troublesome procedure. Therefore, it is advisable to put down the adjustment value in advance.

Mode	Item/Display		Content	Setting range
MIDDLE	A	MIDDLE SPEED DVB_K	K developing bias set value at middle speed	0-600
	B	MIDDLE SPEED DVB_C	C developing bias set value at middle speed	0-600
	C	MIDDLE SPEED DVB_M	M developing bias set value at middle speed	0-600
	D	MIDDLE SPEED DVB_Y	Y developing bias set value at middle speed	0-600

Mode	Item/Display		Content	Setting range
LOW	A	LOW SPEED DVB_K	K developing bias set value at low speed	0-600
	B	LOW SPEED DVB_C	C developing bias set value at low speed	0-600
	C	LOW SPEED DVB_M	M developing bias set value at low speed	0-600
	D	LOW SPEED DVB_Y	Y developing bias set value at low speed	0-600

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

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



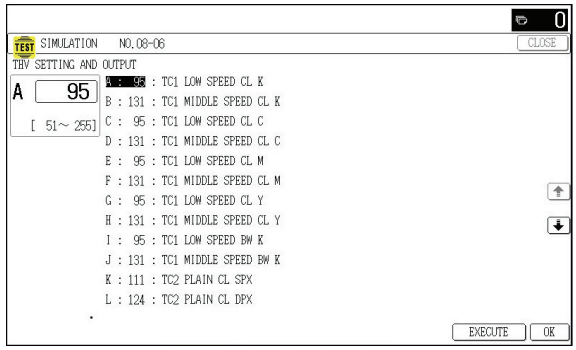
NOTE: Since the high voltage output cannot be checked with a digital multi meter in this model, a judgment of the output must be made by checking the print image quality.

1-C Transfer voltage adjustment (MX-C402SC/C382SC)

This adjustment is needed in the following situations:

* When the TC 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) Go through the modes specified in Simulation 8-6.



2) Select an item to be adjusted.

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

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

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

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

Item/Display		Content				Adjustment range	Default value	Actual output setting range	Default value of actual output value
A	TC1 LOW SPEED CL K	Primary transfer bias adjustment value	Color mode	K	Low speed mode	51 - 255	95	2 - 30μA	8μA
B	TC1 MIDDLE SPEED CL K				Middle speed mode	51 - 255	131	2 - 30μA	13μA
C	TC1 LOW SPEED CL C			C	Low speed mode	51 - 255	95	2 - 30μA	8μA
D	TC1 MIDDLE SPEED CL C				Middle speed mode	51 - 255	131	2 - 30μA	13μA
E	TC1 LOW SPEED CL M			M	Low speed mode	51 - 255	95	2 - 30μA	8μA
F	TC1 MIDDLE SPEED CL M				Middle speed mode	51 - 255	131	2 - 30μA	13μA
G	TC1 LOW SPEED CL Y			Y	Low speed mode	51 - 255	95	2 - 30μA	8μA
H	TC1 MIDDLE SPEED CL Y				Middle speed mode	51 - 255	131	2 - 30μA	13μA
I	TC1 LOW SPEED BW K		Black/White mode	K	Low speed mode	51 - 255	95	2 - 30μA	8μA
J	TC1 MIDDLE SPEED BW K				Middle speed mode	51 - 255	131	2 - 30μA	13μA

Item/Display		Content				Adjustment range	Default value	Actual output setting range	Default value of actual output value
K	TC2 PLAIN CL SPX	Secondary transfer bias adjustment value	Color mode	Standard paper mode	Front surface mode	51 - 255	111	–2 - –80μA	–25μA
L	TC2 PLAIN CL DPX				Back surface mode	51 - 255	124	–2 - –80μA	–30μA
M	TC2 PLAIN BW SPX		Black/White mode		Front surface mode	51 - 255	111	–2 - –80μA	–25μA
N	TC2 PLAIN BW DPX				Back surface mode	51 - 255	111	–2 - –80μA	–25μA
O	TC2 HEAVY CL SPX		Color mode	Heavy paper mode	Front surface mode	51 - 255	93	–2 - –80μA	–10μA
P	TC2 HEAVY CL DPX				Back surface mode	51 - 255	93	–2 - –80μA	–10μA
Q	TC2 HEAVY BW SPX		Black/White mode		Front surface mode	51 - 255	93	–2 - –80μA	–10μA
R	TC2 HEAVY BW DPX				Back surface mode	51 - 255	93	–2 - –80μA	–10μA
S	TC2 OHP CL		OHP		Color mode	51 - 255	85	–2 - –80μA	–8μA
T	TC2 OHP BW				Black/White mode	51 - 255	85	–2 - –80μA	–8μA
U	TC2 ENVELOPE CL		Envelope		Color mode	51 - 255	124	–2 - –80μA	–30μA
V	TC2 ENVELOPE BW				Black/White mode	51 - 255	124	–2 - –80μA	–30μA
W	TC2 THIN CL		Thin paper		Color mode	51 - 255	111	–2 - –80μA	–25μA
X	TC2 THIN BW				Black/White mode	51 - 255	111	–2 - –80μA	–25μA
Y	TC2 GLOSSY CL		Gloss paper		Color mode	51 - 255	72	–2 - –80μA	–10μA
Z	TC2 GLOSSY BW				Black/White mode	51 - 255	72	–2 - –80μA	–10μA
AA	TC2 CLEANING		Cleaning mode			51 - 255	67	–2 - -80μA	–8μA
AB	TC2 CLEAN LOW SPD	Secondary transfer cleaning bias adjustment value	Low speed print mode			0 - 255	16	–100V - 1500V	0V
AC	TC2 CLEAN MIDDLE SPD		Middle speed print mode			0 - 255	16	–100V - 1500V	0V
AD	TC2 CLEAN CLEANING		Cleaning mode			0 - 255	143	–100V - 1500V	800V
AE	PTC LOW SPEED CL	PTC current output adjustment value	Color mode	Low speed mode		0 - 255	133	0μA - –700μA	–300μA
AF	PTC MIDDLE SPEED CL			Middle speed mode		0 - 255	133	0μA - –700μA	–300μA
AG	PTC LOW SPEED BW		Black/White mode	Low speed mode		0 - 255	133	0μA - –700μA	–300μA
AH	PTC MIDDLE SPEED BW			Middle speed mode		0 - 255	133	0μA - –700μA	–300μA
AI	CASE VOLT LOW CL	PTC case voltage adjustment value	Color mode	Low speed mode		0 - 255	0	0V - –1000V	0V
AJ	CASE VOLT MID CL			Middle speed mode		0 - 255	0	0V - –1000V	0V
AK	CASE VOLT LOW BW		Black/White mode	Low speed mode		0 - 255	0	0V - –1000V	0V
AL	CASE VOLT MID BW			Middle speed mode		0 - 255	0	0V - –1000V	0V
AM	PEEL VOLT LOW CL	Separation discharge adjustment value	Color mode	Low speed mode		51 - 255	200	–50 - –3000V	–2200V
AN	PEEL VOLT MIDDLE CL			Middle speed mode		51 - 255	200	–50 - –3000V	–2200V
AO	PEEL VOLT LOW BW		Black/White mode	Low speed mode		51 - 255	200	–50 - –3000V	–2200V
AP	PEEL VOLT MIDDLE BW			Middle speed mode		51 - 255	200	–50 - –3000V	–2200V

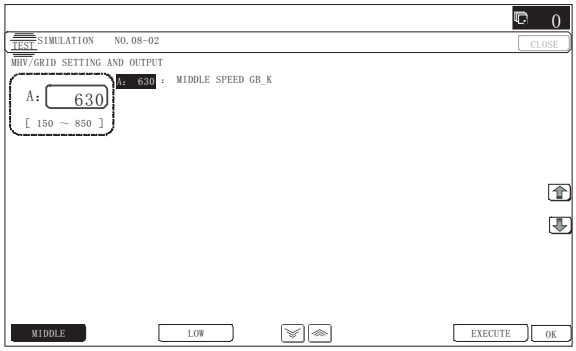
ADJ 1 Adjusting high voltage values (MX-B402SC/B382SC)

1-A Adjust the main charger grid voltage (MX-B402SC/B382SC)

This adjustment is needed in the following situations:

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

1) Enter the SIM 8-2 mode.

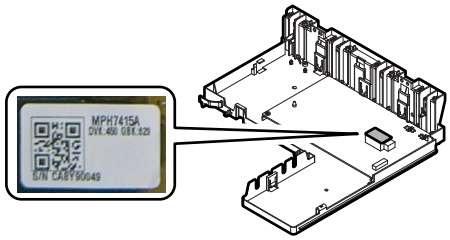


2) Select an output mode and an item to be adjusted.
3) Enter the adjustment value (specified value) in the middle speed mode, and press [OK] key.

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

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

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



NOTE: Note that the adjustment value may differ depending on the MC high voltage power PWB.

Since the adjustment value label is attached on the MC 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.

Mode	Item/Display		Content	Setting range
MIDDLE	A	MIDDLE SPEED GB_K	K charging/grid bias set value at middle speed	150 - 850
LOW	A	LOW SPEED GB_K	K charging/grid bias set value at low speed	150 - 850

GBK:XXX

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

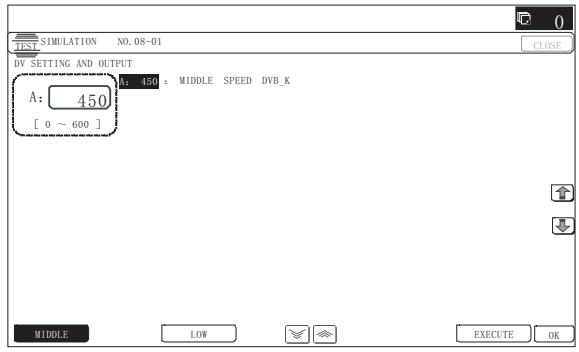
NOTE: Since the high voltage output cannot be checked with a digital multi meter in this model, a judgment of the output must be made by checking the print image quality.

1-B Adjust the developing bias voltage (MX-B402SC/B382SC)

This adjustment is needed in the following situations:

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

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



2) Select an output mode and an item to be adjusted.
3) Enter the adjustment value (specified value) in the middle speed mode, and press [OK] key.

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

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

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

NOTE: Note that the adjustment value may differ depending on the MC high voltage power PWB.

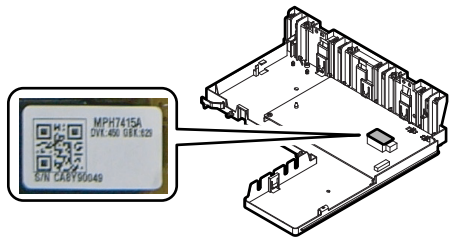
Since the adjustment value label is attached on the MC high voltage PWB, the PWB must be removed in order to check the adjustment value.

This is a troublesome procedure. Therefore, it is advisable to put down the adjustment value in advance.

Mode	Item/Display		Content	Setting range
MIDDLE	A	MIDDLE SPEED DVB_K	K developing bias set value at middle speed	0-600
LOW	A	LOW SPEED DVB_K	K developing bias set value at low speed	0-600

DVK:XXX

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



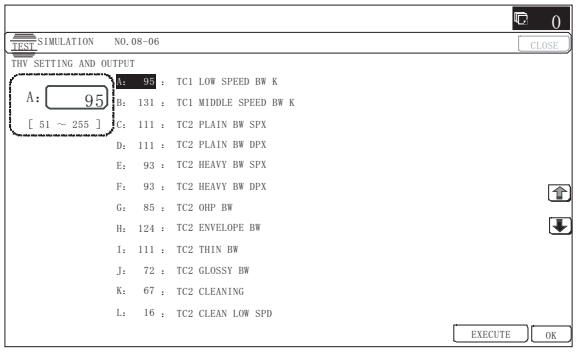
NOTE: Since the high voltage output cannot be checked with a digital multi meter in this model, a judgment of the output must be made by checking the print image quality.

1-C Transfer voltage adjustment (MX-B402SC/B382SC)

This adjustment is needed in the following situations:

* When the TC 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) Go through the modes specified in Simulation 8-6.



2) Select an item to be adjusted.

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

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

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

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

Item/Display		Content			Adjustment range	Default value	Actual output setting range	Default value of actual output value
A	TC1 LOW SPEED BW K	Primary transfer bias reference value	Low speed mode		51 - 255	95	2 - 30μA	8μA
B	TC1 MIDDLE SPEED BW K		Middle speed mode		51 - 255	131	2 - 30μA	13μA
C	TC2 PLAIN BW SPX	Secondary transfer bias reference value	Standard paper mode	Front surface mode	51 - 255	111	–2 - –80μA	–25μA
D	TC2 PLAIN BW DPX			Back surface mode	51 - 255	111	–2 - –80μA	–25μA
E	TC2 HEAVY BW SPX		Heavy paper mode	Front surface mode	51 - 255	93	–2 - –80μA	–10μA
F	TC2 HEAVY BW DPX			Back surface mode	51 - 255	93	–2 - –80μA	–10μA
G	TC2 OHP BW		OHP		51 - 255	85	–2 - –80μA	–8μA
H	TC2 ENVELOPE BW		Envelope		51 - 255	124	–2 - –80μA	–30μA
I	TC2 THIN BW		Thin paper		51 - 255	111	–2 - –80μA	–25μA
J	TC2 GLOSSY BW		Gloss paper		51 - 255	72	–2 - –80μA	–10μA
K	TC2 CLEANING		Cleaning mode		51 - 255	67	–2 - -80μA	–8μA
L	TC2 CLEAN LOW SPD	Secondary transfer cleaning bias reference value	Low speed print mode		0 - 255	16	–100V - 1500V	0V
M	TC2 CLEAN MIDDLE SPD		Middle speed print mode		0 - 255	16	–100V - 1500V	0V
N	TC2 CLEAN CLEANING		Cleaning mode		0 - 255	143	–100V - 1500V	800V
O	PTC LOW SPEED BW	PTC current output reference value	Low speed mode		0 - 255	133	0μA - –700μA	–300μA
P	PTC MIDDLE SPEED BW		Middle speed mode		0 - 255	133	0μA - –700μA	–300μA
Q	CASE VOLT LOW BW	PTC case voltage reference value	Low speed mode		0 - 255	0	0V - –1000V	0V
R	CASE VOLT MID BW		Middle speed mode		0 - 255	0	0V - –1000V	0V
S	PEEL VOLT LOW BW	Separation discharge reference value	Low speed mode		51 - 255	200	–50 - –3000V	–2200V
T	PEEL VOLT MIDDLE BW		Middle speed mode		51 - 255	200	–50 - –3000V	–2200V

ADJ 2 Image density sensor (image registration sensor) adjustment

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

This adjustment is needed in the following situations:

* When the color image density sensor (image registration sensor F) is replaced.
* When the image registration sensor unit is replace.
* U2 trouble has occurred.
* The PCU PWB has been replaced.
* The EEPROM of the PCU PWB has been replaced.

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

* Color image density sensor (image registration sensor F) calibration SIM44-13
* Color image density sensor (Image registration sensor F) calibration value setting (SIM44-61)
* Black image density sensor (image registration sensor R) calibration SIM44-2

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

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

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

2-A Color image density sensor (image registration sensor F) calibration (MX-C402SC/C382SC)

Perform the color image density sensor (image registration sensor F) calibration in one of the following methods.

* Color image density sensor (Image registration sensor F) calibration value setting (Method by SIM44-61)

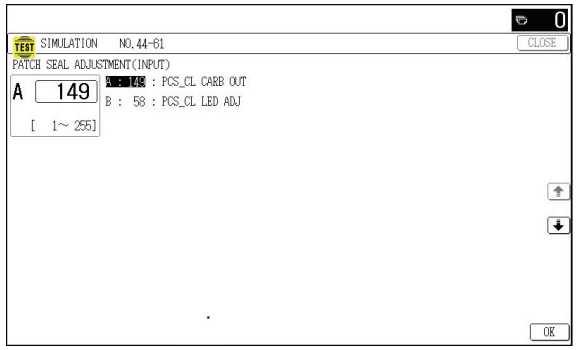
  When the registration sensor unit is replaced, the calibration value is set manually with this method. The calibration jig is not required.

  When, however, the color image density senor itself is replaced, use the calibration jig and execute SIM44-13 to perform calibration.
* Color image density sensor (Image registration sensor F) calibration value setting (Method by SIM44-13)

  When the color image density sensor itself is replaced, use the calibration jig and perform calibration with this method.

(Color image density sensor (Image registration sensor F) calibration value setting (Method by SIM44-61))

1) Enter the SIM44-61 mode.

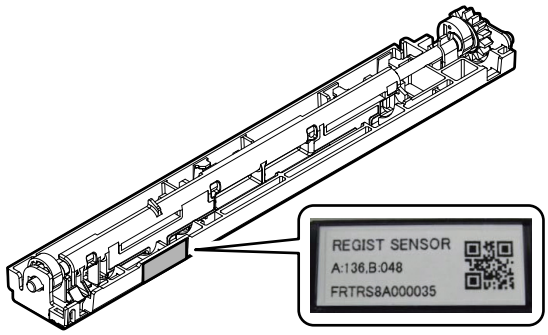


2) Select an item to be set.

Item/Display		Content	Setting range	Default value
A	PCS_CL CARB OUT	Calibration plate sensor value	1 - 255	108
B	PCS_CL LED ADJ	Color sensor light emitting quantity adjustment value	1 - 255	21

3) Enter the set value with 10-key.

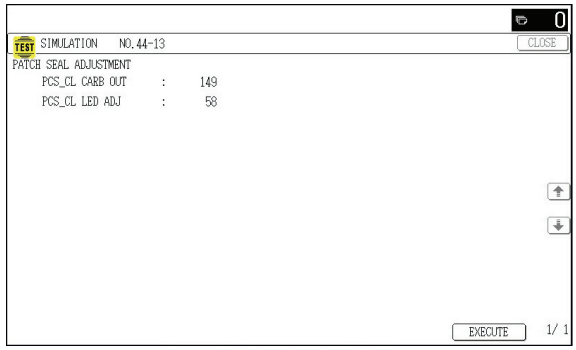
The set value is the specified on the label attached to the registration sensor unit.



4) Press [OK] key.

(Color image density sensor (Image registration sensor F) calibration (Method by SIM44-13))

1) Enter the SIM44-13 mode.



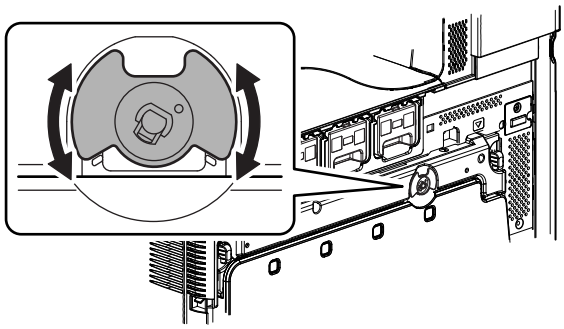
2) Press [EXECUTE] key.

The shutter plate of the color image density sensor (Image registration sensor F) is opened, and the message that the primary transfer unit is removed is displayed.

3) Open the front cover.

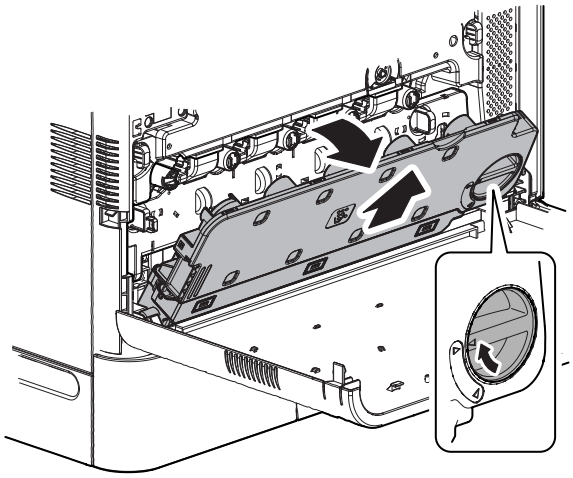
Check to confirm that the belt tension of the primary transfer unit is released (the separation lever of the primary transfer unit is under the state shown in the figure).

If the belt tension is not released, turn the separation lever to the state shown in the figure.



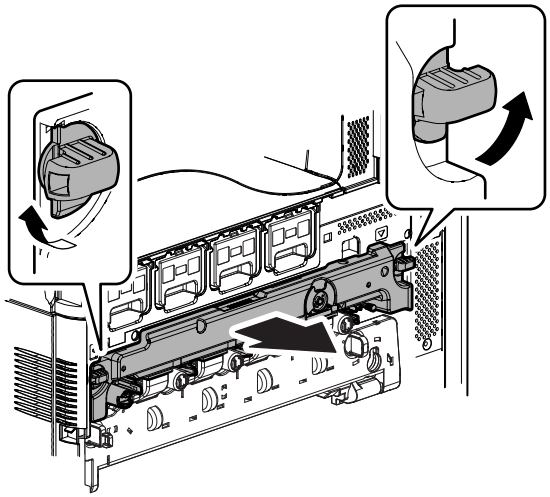
CAUTION: When the transfer belt tension of the primary transfer unit is released manually, turn on the power again after completion of the work. This procedure initializes the transfer roller to return it to the home position.

4) Turn the lock lever until it stops to release the lock, and remove the waste toner box.

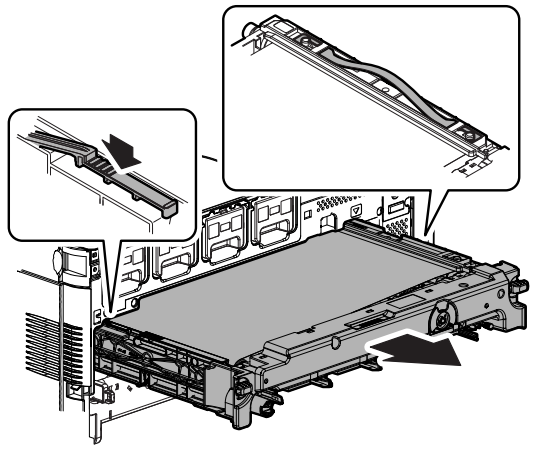


5) Open the right door.

6) Put the lock lever horizontally, release the lock, and pull out the primary transfer unit until it stops.

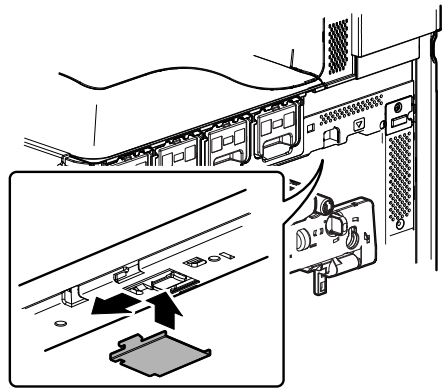


7) Hold the handle, push the lock on the left side of the primary transfer unit and remove the primary transfer unit.



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

Engage the calibration jig in the sensor housing groove, and slide it to the rear frame side.



9) Install the waste toner box, and close the right door and the front cover.

10) Press [EXECUTE] key.

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

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

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

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

In that case, check the following sections for any abnormality. If any abnormality is found, repair and execute calibration again.

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

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

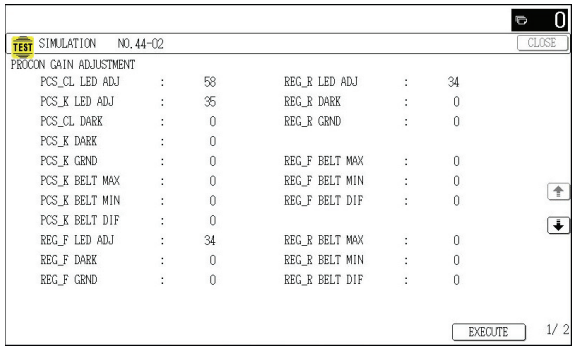
2-B Color image density sensor (image registration sensor F), black image density sensor (image registration sensor R) adjustment

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

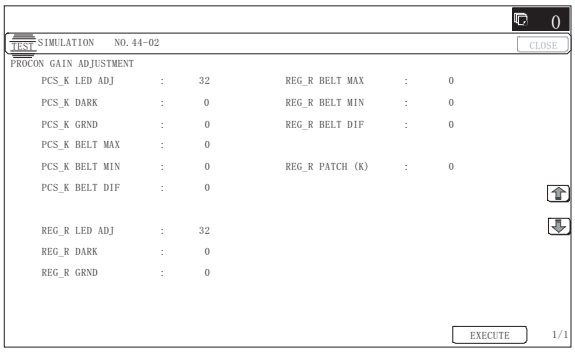
Normally, therefore, it is not required to perform this adjustment. It is performed only when the sensor is replaced or when the adjustment result is checked.

1) Enter SIM44-2 mode.

- **MX-C402SC/C382SC**



- **MX-B402SC/B382SC**



2) Press [EXECUTE] key.

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

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

- **MX-C402SC/C382SC**

Mode	Display/Item		Content	Range	Default
Adjustment value for process control operation mode	A	PCS_CL LED ADJ	Color image sensor light emitting quantity adjustment value	1 - 255	21
	B	PCS_K LED ADJ	Black image sensor light emitting quantity adjustment value	1 - 255	21
	C	PCS_CL DARK	Dark voltage of color	0 - 255	0
	D	PCS_K DARK	Dark voltage of black	0 - 255	0
	E	PCS_K GRND	Belt base detection level when completion of Item B adjustment	0 - 255	0
	F	PCS_K BELT MAX	Maximum value of belt base detection level	0 - 255	0
	G	PCS_K BELT MIN	Minimum value of belt base detection level	0 - 255	0
	H	PCS_K BELT DIF	Belt base detection level difference (Item E - Item F)	0 - 255	0
Adjustment value for image registration operation mode	I	REG_F LED ADJ	Image registration sensor light emitting quantity adjustment value F	1 - 255	56
	J	REG_R LED ADJ	Image registration sensor light emitting quantity adjustment value R	1 - 255	56
	K	REG_F DARK	Image registration sensor dark voltage F	0 - 255	0
	L	REG_R DARK	Image registration sensor dark voltage R	0 - 255	0
	M	REG_F GRND	Belt base detection level when completion of Item I adjustment	0 - 255	0
	N	REG_R GRND	Belt base detection level when completion of Item J adjustment	0 - 256	0
	O	REG_F BELT MAX	Maximum value of belt base detection level (F side)	0 - 255	0
	P	REG_F BELT MIN	Minimum value of belt base detection level (F side)	0 - 255	0
	Q	REG_F BELT DIF	Belt base detection level difference (Item O - Item P)	0 - 255	0
	R	REG_R BELT MAX	Maximum value of belt base detection level (R side)	0 - 255	0
	S	REG_R BELT MIN	Minimum value of belt base detection level (R side)	0 - 255	0
	T	REG_R BELT DIF	Belt base detection level difference (Item R - Item S)	0 - 255	0
	U	REG_F PATCH (K)	Patch detection level F for check (K)	0 - 255	0
	V	REG_F PATCH (C)	Patch detection level F for check (C)	0 - 255	0
	W	REG_F PATCH (M)	Patch detection level F for check (M)	0 - 255	0
	X	REG_F PATCH (Y)	Patch detection level F for check (Y)	0 - 255	0
	Y	REG_R PATCH (K)	Patch detection level R for check (K)	0 - 55	0
	Z	REG_R PATCH (C)	Patch detection level R for check (C)	0 - 255	0
	AA	REG_R PATCH (M)	Patch detection level R for check (M)	0 - 255	0
	AB	REG_R PATCH (Y)	Patch detection level R for check (Y)	0 - 255	0

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

Mode	Error display	Error content	
Adjustment value for process control operation mode	BK_SEN_ADJ _ERR	Black image density sensor adjustment abnormality	PCS_K LED ADJ error (The target value is not obtained after retried three times.)
	CL_SEN_ADJ _ERR	Color image sensor adjustment abnormality	PCS_CL LED ADJ error (The target value is not obtained after retried three times.)
	BELT_READ _ERR	Transfer belt surface reading abnormality	PCS_K GRND error (The surface detection level is maximum or the minimum value difference is outside a reference range.)
Adjustment value for image registration operation mode	REG_SEN_F _ADJ_ERR	Registration sensor F adjustment abnormality	REG_F LED ADJ error (The target value is not obtained after retried three times.)
	REG_SEN_R _ADJ_ERR	Registration sensor R adjustment abnormality	REG_R LED ADJ error (The target value is not obtained after retried three times.)
	REG_BELT_F _READ_ERR	F side transfer belt surface reading abnormality	REG_F GRND error (The surface detection level is maximum or the minimum value difference is outside a reference range.)
	REG_BELT_R _READ_ERR	R side transfer belt surface reading abnormality	REG_R GRND error (The surface detection level is maximum or the minimum value difference is outside a reference range.)

- **MX-B402SC/B382SC**

	Display/Item	Content	Range	Default
A	PCS_K LED ADJ	Image density sensor light emitting quantity adjustment value	1 - 255	32
B	PCS_K DARK	Dark voltage	0 - 255	0
C	PCS_K GRND	Belt base detection level when completion of Item A adjustment	0 - 255	0
D	PCS_K BELT MAX	Maximum value of belt base detection level	0 - 255	0
E	PCS_K BELT MIN	Minimum value of belt base detection level	0 - 255	0
F	PCS_K BELT DIF	Belt base detection level difference (Item D - Item E)	0 - 255	0
G	REG_R LED ADJ	Image density sensor light emitting quantity adjustment value	1 - 255	32
H	REG_R DARK	Image density sensor dark voltage	0 - 255	0
I	REG_R GRND	Belt base detection level when completion of Item G adjustment	0 - 256	0
J	REG_R BELT MAX	Maximum value of belt base detection level	0 - 255	0
K	REG_R BELT MIN	Minimum value of belt base detection level	0 - 255	0
L	REG_R BELT DIF	Belt base detection level difference (Item J - Item K)	0 - 255	0
M	REG_R PATCH (K)	Patch detection level for check	0 - 255	0

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

Error name	Error content
Image density sensor adjustment abnormality	PCS_K LED ADJ error The target is not reached by 3 times of retry.
Substrate scan abnormality	PCS_K GRND error Effective difference between the upper and lower values of the belt substrate circuit, outside the range
Registration sensor R adjustment abnormality	REG_R LED ADJ error The target is not reached by 3 times of retry.
Registration substrate R scan abnormality	REG_R GRND error Effective difference between the upper and lower values of the belt substrate circuit, outside the range

Error display	Error content	
BK_SEN_ADJ _ERR	Image density sensor adjustment abnormality	PCS_K LED ADJ error (The target value is not obtained after retried three times.)
BELT_READ _ERR	Transfer belt surface reading abnormality	PCS_K GRND error (The surface detection level is maximum or the minimum value difference is outside a reference range.)
REG_SEN_R _ADJ_ERR	Sensor adjustment abnormality	REG_R LED ADJ error (The target value is not obtained after retried three times.)
REG_BELT_R _READ_ERR	Transfer belt surface reading abnormality	REG_R GRND error (The surface detection level is maximum or the minimum value difference is outside a reference range.)

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

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

If any abnormality is found, repair and adjust again.

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

ADJ 3 Image skew adjustment (LSU unit) (MX-C402SC/C382SC)

This adjustment is needed in the following situations:

* When the color shift occurs.
* When the LSU unit is replaced.
* When the LSU unit is removed from the main unit.
* When a color image registration mistake occurs.
* When the unit is installed or when the installing site is changed. (Required depending on the cases.)
* When there is an uneven density area or a difference in color balance in the main scanning direction (back and forth).
* When the color phase is not matched by the color balance adjustment.
* When the OPC drum drive unit is replaced.
* When the primary transfer unit is replaced.

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

NOTE: Before execution of the this adjustment, perform the following procedures in advance for better efficiency of the adjustment.

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

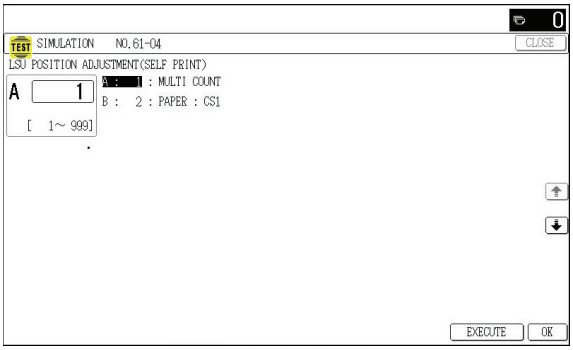
1) In the SIM50-22 mode, select ALL mode to perform the automatic image registration adjustment.
2) The current skew level is displayed on the SKEW display menu.
3) Put down the displayed skew level value.

(Meaning of the skew level value)

* When "R" is displayed in front of the value, turn the skew adjustment screw (LSU) clockwise by the value (angle).
* When "L" is displayed in front of the value, turn the skew adjustment screw (LSU) counterclockwise by the value (angle).

NOTE: The K (Black) image skew level cannot be checked with SIM50-22.

1) Enter SIM61-4 mode.



2) Select the tray with A4 (11" x 8.5") paper in it.
3) Press [EXECUTE] key.

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

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

   Method 1:
   Measure the length of the diagonal lines of the rectangle print pattern. Check the difference in the length of the diagonal lines for judgment of good or no good

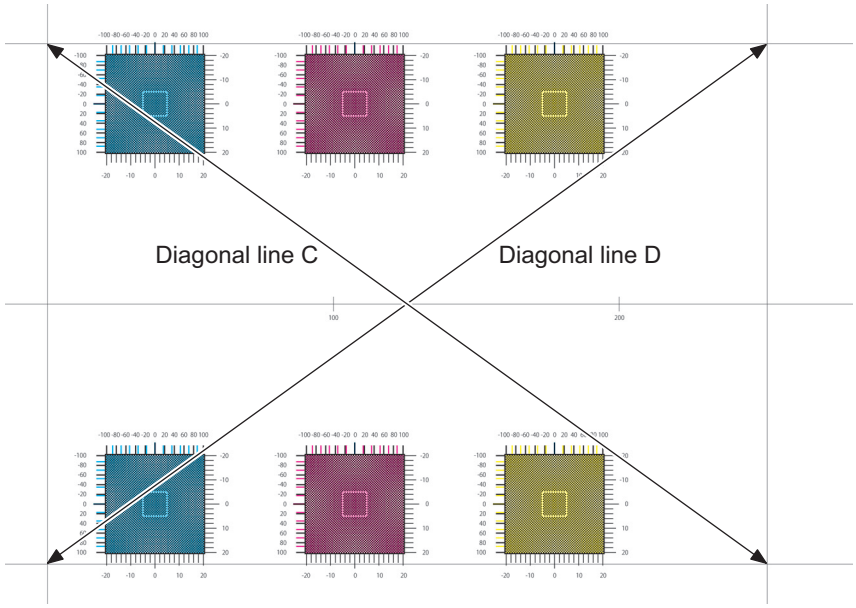
   Method 2:
   Compare the right angle of vertical side/horizontal side of the rectangle print pattern and the right angle sides of A4 (11" x 8.5") paper for judgment of good or no good.

   (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.



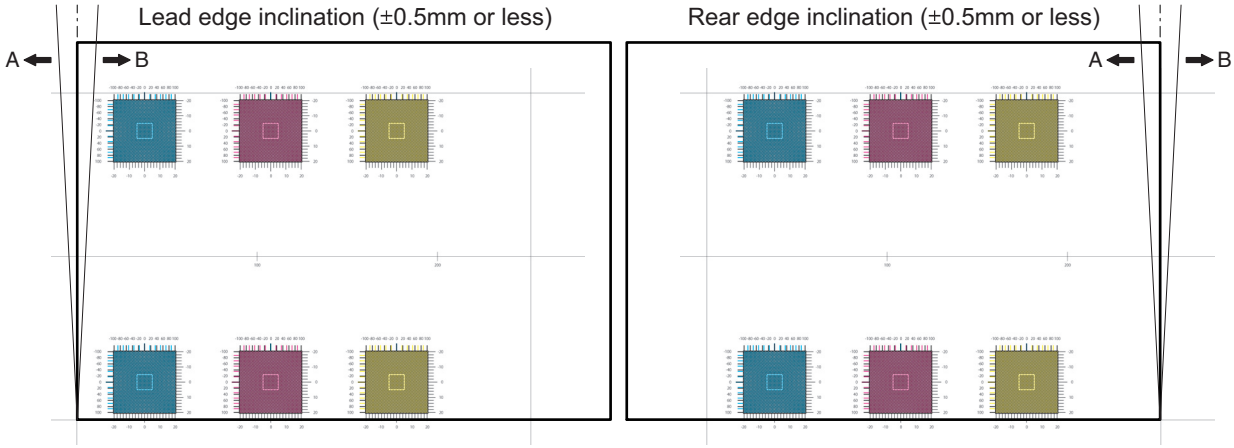
b) Calculate the difference between the measured lengths C and D of the diagonal lines.
c) Check to insure that the difference between C and D is in the following range.

   C – D = ±0.8mm

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

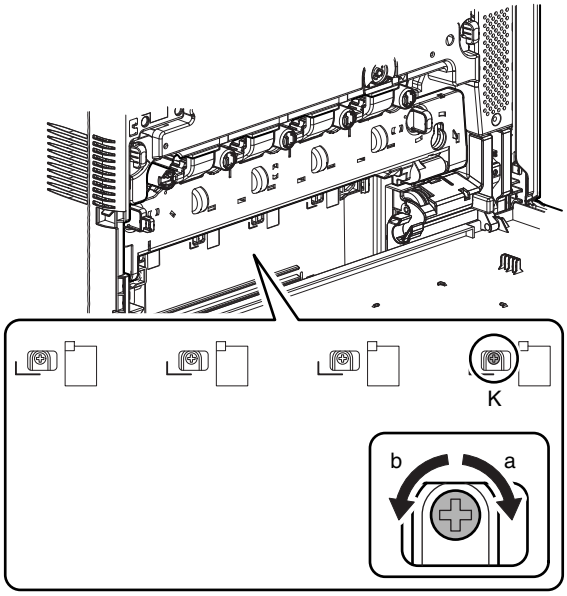
(Method 2)

a) Fit the side of A4 or 11" x 8.5" paper to the long side of the rectangle print pattern.



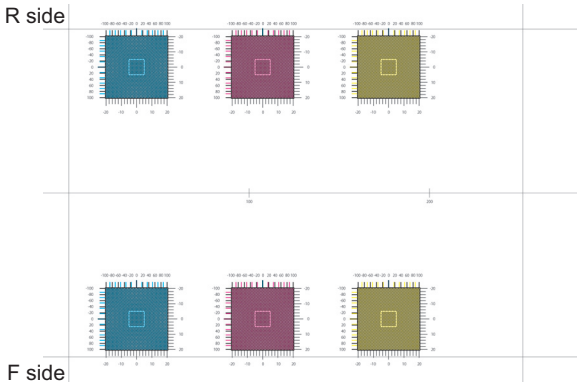
b) Measure the shift distance between vertical side of paper and side of the rectangle print pattern.
If the above distances (left and right) are 0.5mm or less, there is no need to adjust.
If not, execute the following procedures.

5) Open the front cabinet, and remove the waste toner box.
6) Turn the LSU unit image skew adjustment screw (K) to adjust.
(When Method 1 is used to check the black image for any skew (right angle) in procedure 4 in advance)
Diagonal line C is longer than diagonal line D: Turn the adjustment screw clockwise.
Diagonal line C is shorter than diagonal line D: Turn the adjustment screw counterclockwise.
(When Method 2 is used to check the black image for any skew (right angle) in procedure 4 in advance)
When the image is skewed in the arrow direction A, turn the adjustment screw clockwise. When the image is skewed in the arrow direction B, turn the adjustment screw counterclockwise.

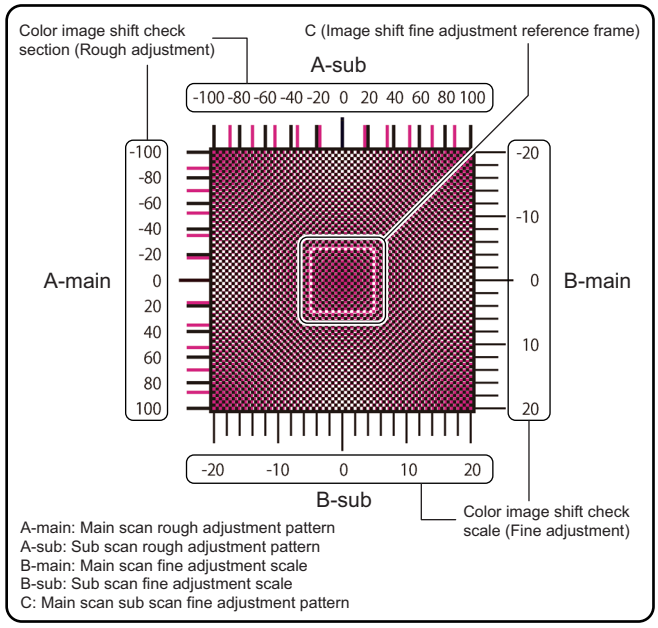


7) Install the waste toner box, and close the front cabinet.
8) Perform the procedures 3) - 4).
(Perform the procedures 3) - 8) until a satisfactory result is obtained.)
9) Enter the SIM50-22 mode to select the adjustment item of ALL, and press [EXECUTE] key.
The image registration adjustment is automatically performed and the adjustment data are displayed. Write down the display contents of SKEW C, M, and Y.
10) Turn the image skew adjustment screw of the target color to adjust.
(When the adjustment is performed with the skew level value of SIM50-22 as the reference)
* When "R" is displayed in front of the value of SKEW, turn the skew adjustment screw (LSU) clockwise by the number (angle).
* When "L" is displayed in front of the value of SKEW, turn the skew adjustment screw (LSU) counterclockwise by the number (angle).

11) Enter the SIM61-4 mode and perform the procedures of 2) - 3).
Check the printed color image skew pattern.



The sub scan rough adjustment color image shifts on the R side and the F side are in the same balance both in the rough adjustment check section and the fine adjustment check section



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

Rough adjustment pattern check:

Check the sub scan rough adjustment color image shift check section on the R side and the F side of each color, use the black scale of "0" as the center reference, and check the balance in shifts of the color image line positions in the positive and the negative directions. The balance in the R side must be the same as that in the F side.

Fine adjustment pattern check:

Check the square frames on the R side and the F side of each color. (Normally five sections of high density can be seen.) Check the sub scanning direction position of the center area of high density (one of the above five sections). These must be on the same position on the R side and the F side.

In this case, use the sub scan direction color image shift check scale (fine adjustment) as the reference.

Visually check the color density and make the darkest section as the center, and use it as the read value of the shift amount.

Check that the difference in the center position of the dark density section is within ±2 step.

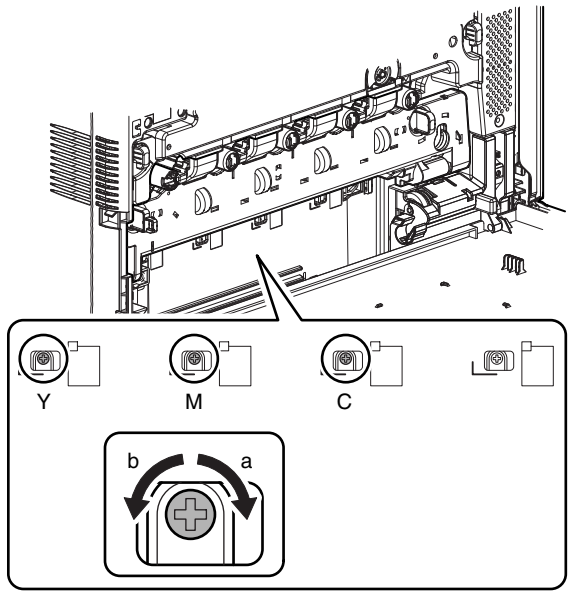
The positional relations of the front and the rear frame of the print color patterns of a same color are compared. There is no need that all the colors are in the same state. Compare only the positional relations of color patterns of a same color.

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

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

Relationship between the adjustment screw rotating angle and the change in the adjustment image position:

Adjustment screw rotating angle (degree) = Image shift amount (Adjustment scale) x 10



Repeat procedures 11) - 12) until a satisfactory result is obtained.

ADJ 3 Image skew adjustment (LSU unit) (MX-B402SC/B382SC)

This adjustment is needed in the following situations:

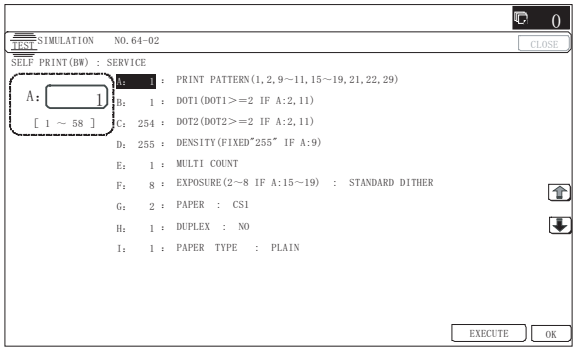
* When the LSU unit is replaced.
* When the LSU unit is removed from the main unit.

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

1) Enter SIM64-2 mode.

   Set the set items to the values shown below.

   A: 1 B: 1 C: 254 D: 255



2) Select the tray with A4 (11" x 8.5") paper in it.
3) Press [EXECUTE] key.

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

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

   Method 1:

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

   Method 2:

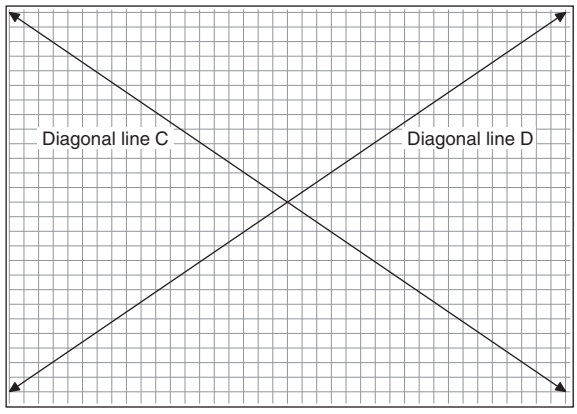
   Compare the right angle of vertical side/horizontal side of the rectangle print pattern and the right angle sides of A4 (11" x 8.5") paper for judgment of good or no good.

   (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.



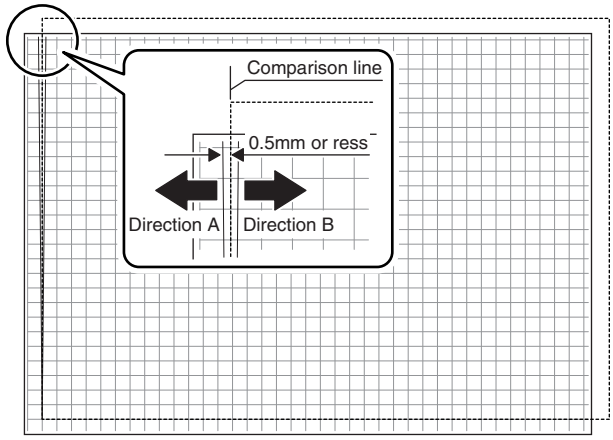
   b) Calculate the difference between the measured lengths C and D of the diagonal lines.
   c) Check to insure that the difference between C and D is in the following range.

      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 A4 or 11" x 8.5" 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 distances (left and right) are 0.5mm or less, there is no need to adjust.

      If not, execute the following procedures.
5) Open the front cabinet, and remove the waste toner box.
6) Turn the LSU unit image skew adjustment screw to adjust.

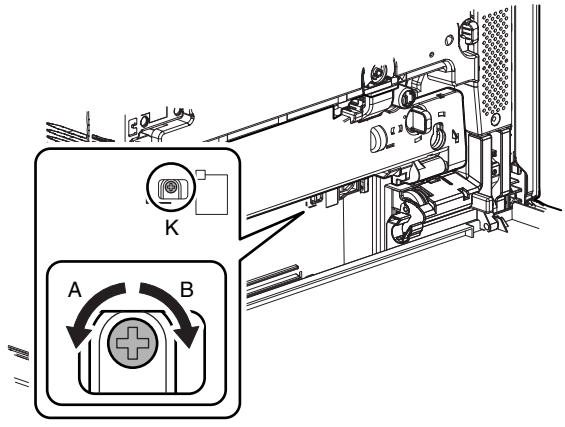
   (When Method 1 is used to check the image for any skew (right angle) in procedure 4 in advance)

   Diagonal line C is longer than diagonal line D: Turn the adjustment screw clockwise.

   Diagonal line C is shorter than diagonal line D: Turn the adjustment screw counterclockwise.

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

   When the image is skewed in the arrow direction A, turn the adjustment screw clockwise. When the image is skewed in the arrow direction B, turn the adjustment screw counterclockwise.



7) Install the waste toner box, and close the front cabinet.
8) Perform the procedures 3) - 4).

   (Perform the procedures 3) - 8) until a satisfactory result is obtained.)

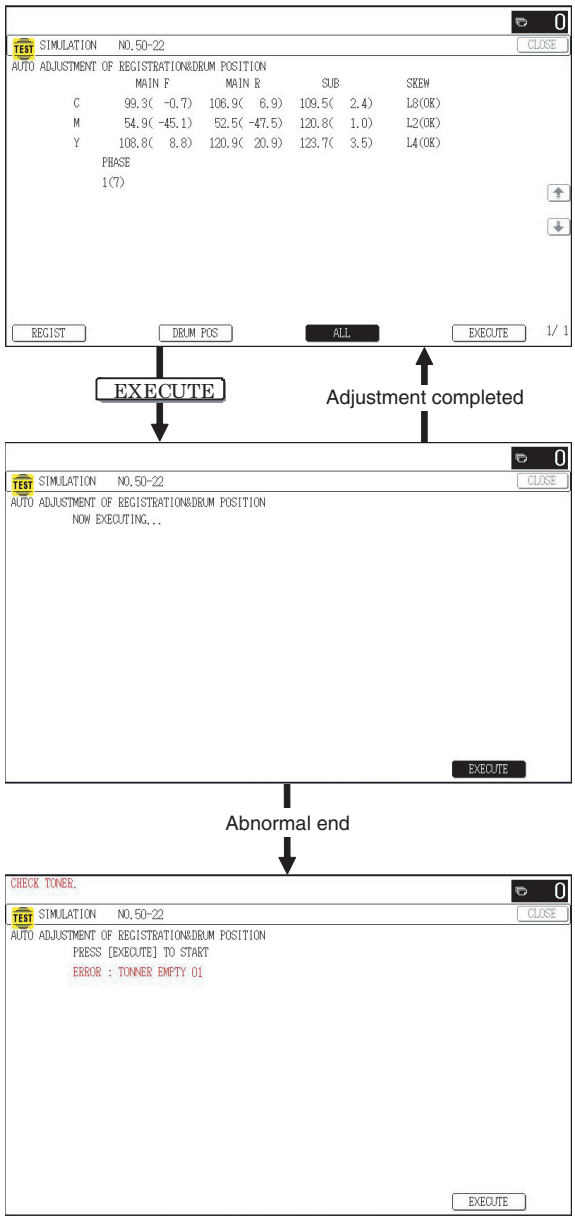
ADJ 4 OPC drum phase adjustment (MX-C402SC/C382SC)

This adjustment is needed in the following situations:

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

4-A OPC drum phase adjustment (Auto adjustment) (MX-C402SC/C382SC)

1) Enter SIM50-22 mode.



2) Press [ALL] key.

   (The machine enters the OPC drum phase adjustment mode/ image registration adjustment (auto adjustment) mode, and both adjustments are executed simultaneously in this mode.)

   The OPC drum phase adjustment and the image registration adjustment can be individually executed by [REGIST] button and [DRUM POS] button. Since, however, the image registration adjustment must be executed when the OPC drum phase adjustment is completed, both adjustment are executed in this adjustment simultaneously.

3) Press [EXECUTE] key.

   The OPC drum phase adjustment and the image registration adjustment are executed automatically.

* After completion of the adjustment, the drum motor stops and [EXECUTE] button returns to the normal display and the adjustment result is displayed.
* When terminated abnormally, "ERROR" and the content are displayed.
* For details, refer to SIM50-22.

When an error occurs, check the following conditions.

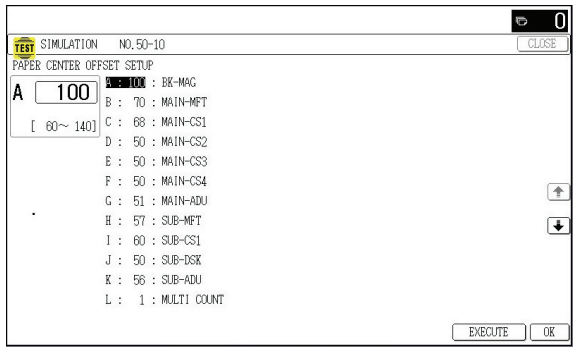
* OPC drum drive section
* Transfer belt drive section
* Paper feed drive section
* Each motor speed set value (Set value of SIM48-6)

ADJ 5 Print engine image magnification ratio adjustment (BK) (Main scanning direction) (Print engine section) (Manual adjustment)

This adjustment is needed in the following situations:

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

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



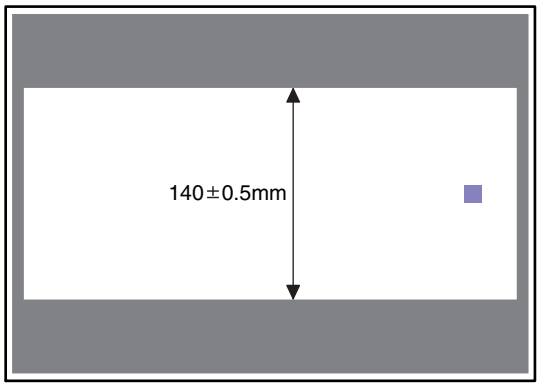
2) Select A4 (11" x 8.5") paper.
3) Press [EXECUTE] key.

   The check pattern is printed out.

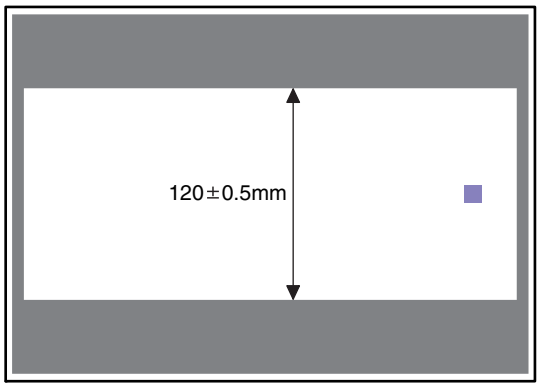
4) Check that the inside dimension of the printed halftone is 140 ± 0.5mm. (MX-C402SC/C382SC)

   Check that the inside dimension of the printed halftone is 120 ± 0.5mm. (MX-B402SC/B382SC)

(MX-C402SC/C382SC)



(MX-B402SC/B382SC)



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

5) Change the set value of set item A BK-MAG.

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) - 5) until a satisfactory result is obtained.

ADJ 6 Image off-center adjustment (Print engine section)

This adjustment is needed in the following situations:

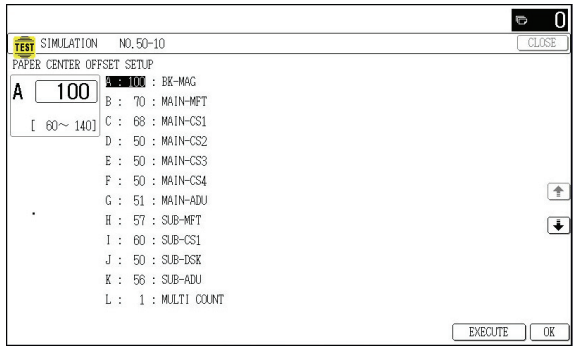
* When the LSU is replaced or removed.
* When a paper tray is replaced.
* When the paper tray section is disassembled.
* When [ADJ 5] print engine image magnification ratio (BK) (main scanning direction) is performed.
* When the manual feed tray is replaced.
* When the manual feed tray is disassembled.
* When the switchback 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 print engine image magnification ratio adjustment (BK) (main scanning direction) has been properly adjusted.

1) Enter SIM50-10 mode.



2) Select a target paper feed tray to be adjusted with the scroll keys.

	Display/Item		Content		Setting range		Default
A	BK-MAG		Main scan print magnification ratio BK		60 - 140		100
B	MAIN-MFT		Print off center adjustment value (Manual paper feed)		1 - 99		65
C	MAIN-CS1		Print off center adjustment value (Tray 1)		1 - 99		65
D	MAIN-CS2		Print off center adjustment value (Tray 2)		1 - 99		50
E	MAIN-CS3		Print off center adjustment value (Tray 3)		1 - 99		50
F	MAIN-CS4		Print off center adjustment value (Tray 4)		1 - 99		50
G	MAIN-ADU		Print off center adjustment value (ADU) NOTE: Before execution of this adjustment, check to insure that the adjustment items A - F have been properly adjusted. If not, this adjustment cannot be made properly.		1 - 99		50
H	SUB-MFT		Registration motor ON Timing adjustment	Manual paper feed	1 - 99		60
I	SUB-CS1			Standard tray	1 - 99		60
J	SUB-DSK			DESK	1 - 99		50
K	SUB-ADU			ADU	1 - 99		50
L	MULTI COUNT		Number of print		1 - 999		1
M	PAPER	MFT	Tray selection	Manual paper feed	1 - 5	1	2 (CS1)
		CS1		Tray 1		2	
		CS2		Tray 2		3	
		CS3		Tray 3		4	
		CS4		Tray 4		5	
N	DUPLEX	YES	Duplex print selection	Yes	0 - 1	0	1 (NO)
		NO		No		1	

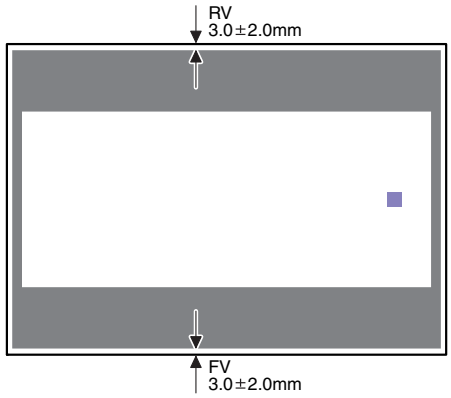
3) Set A4 (11" x 8.5") paper in the paper feed tray selected in procedure 2).

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 ≤ 8.0mm
RV = 3.0 ± 2.0mm
FV = 3.0 ± 2.0mm

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

6) Change the adjustment value.

Enter the adjustment value and press [OK] 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 5) - 6) until the conditions of procedure 5) are satisfied.

ADJ 7 Image registration adjustment (Print engine section) (MX-C402SC/C382SC)

This adjustment is needed in the following situations:

* When the color shift occurs.
* When the LSU (writing) unit is replaced.
* When the LSU (writing) unit is removed from the main unit.
* When the color image registration mistake in the main scanning direction occurs.
* When the color image registration mistake in the sub scanning direction occurs
* When the unit is installed or when the installing place is changed.
* When maintenance work is performed. (Replacement of the OPC drum, the OPC cartridge, the transfer unit, the transfer belt, etc.)
* When [ADJ 5] print engine image magnification ratio (BK) (main scanning direction) is performed.
* U2 trouble has occurred.
* The PCU PWB has been replaced.
* The EEPROM of the PCU PWB has been replaced.

Note before adjustment

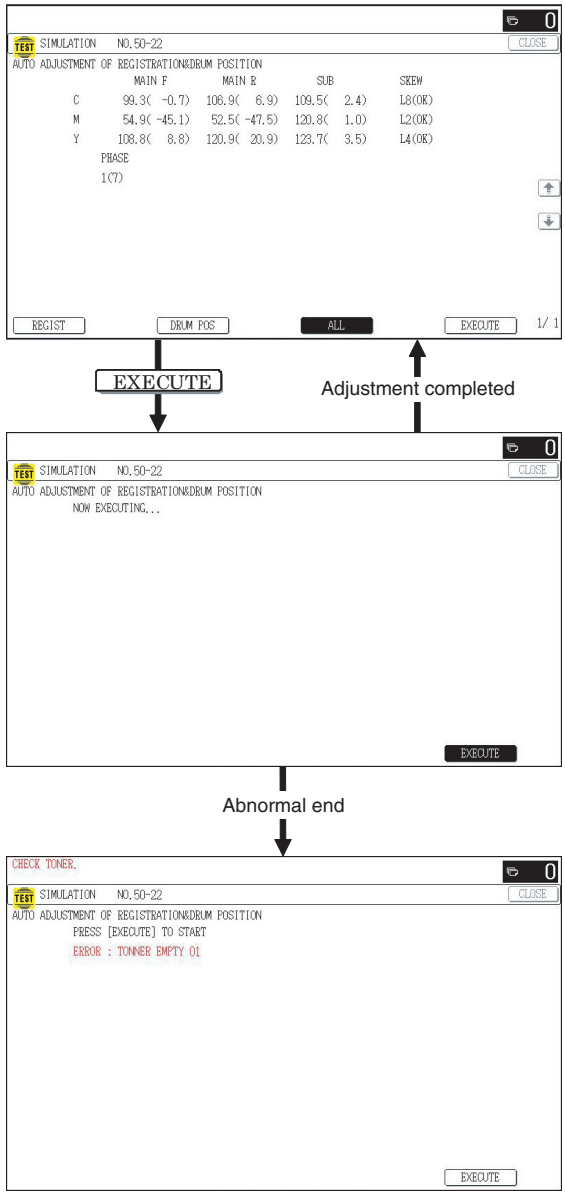
(Before execution of this adjustment, all the following adjustments must have been completed.)

* [ADJ 3] image skew adjustment (LSU (writing) unit)
* [ADJ 5] print engine image magnification ratio (BK) (main scanning direction) (print engine section)

7-A Image registration adjustment (Main scanning direction, sub scanning direction) (Auto adjustment) (MX-C402SC/C382SC)

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

1) Enter SIM50-22 mode.



2) Select the [ALL] adjustment mode.

3) Press [EXECUTE] key.

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

It takes about 20 sec to complete the adjustment.

* When terminated abnormally, "ERROR" and the content are displayed.
* For details, refer to SIM50-22.

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

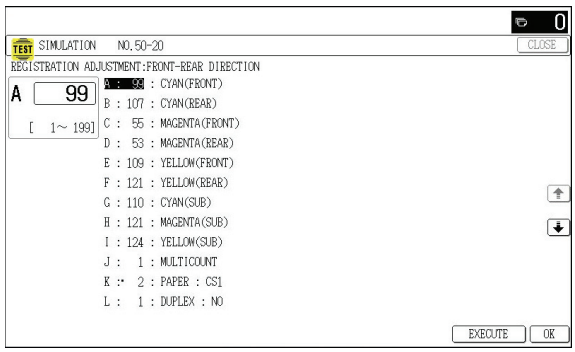
* Image registration adjustment (Main scanning direction) (Manual adjustment) (SIM50-20)
* Image registration adjustment (Sub scanning direction) (Manual adjustment) (SIM50-20)

7-B Image registration adjustment (Main scanning direction) (Manual adjustment) (MX-C402SC/C382SC)

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

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

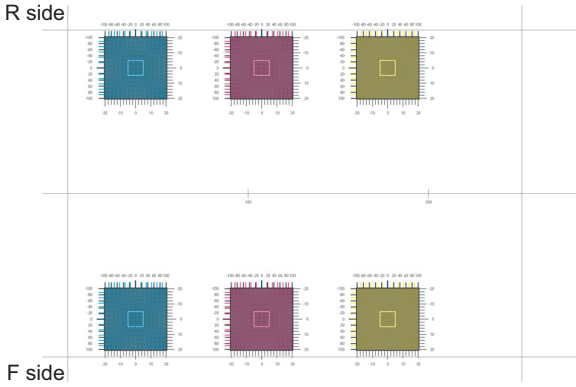
1) Enter SIM50-20 mode.



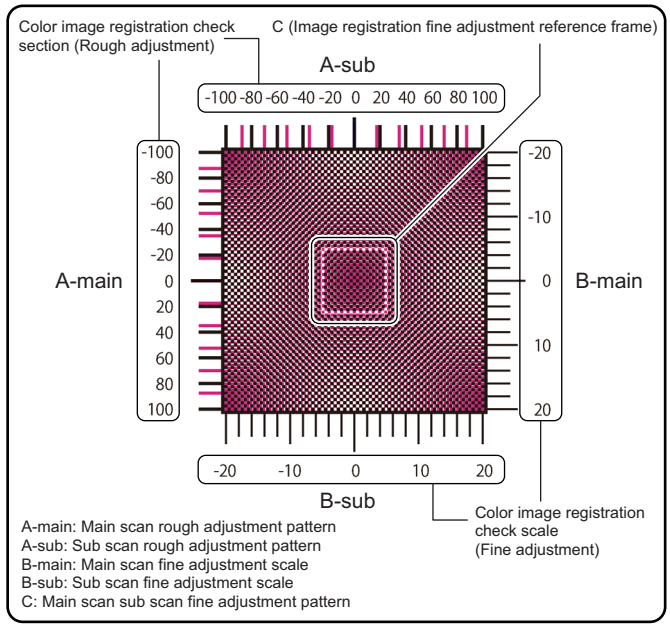
2) Select the paper feed tray with A4 (11" x 8.5") paper.

3) Press [EXECUTE] key.

The image registration adjustment pattern is printed.



The color image registrations of all the colors on the F side and on the R side must be within the specified range.



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

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

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

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

Rough adjustment pattern check:

Check the color image registration check section, and use the black scale of "0" as the center reference, and check the balance in shifts of the color image line positions in the positive and the negative directions. With the scale of "0" as the center reference, the color image line on the positive side must be on the symmetrical position of that on the negative side.

Fine adjustment pattern check:

Check to confirm that the dark area (one of the five areas which are normally to be seen) is at the center of the image registration fine adjustment reference frame in the square frame.

In this case, use the color image registration check scale (fine adjustment) as the reference.

Check to confirm that the center position of the dark section is within ±2 step.

(If the fine adjustment print pattern is located in the range of 0 ±2 from the fine adjustment reference pattern scale, the adjustment is not required.)

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

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

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

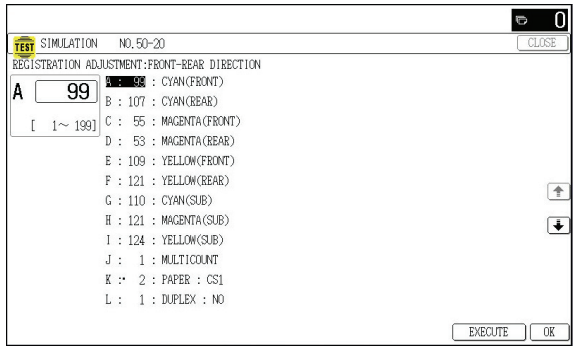
NOTE: If either of front or rear adjustment value is changed, the other adjustment print pattern position may be varied. Be careful of that.

7-C Image registration adjustment (Sub scanning direction) (Manual adjustment) (MX-C402SC/C382SC)

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

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

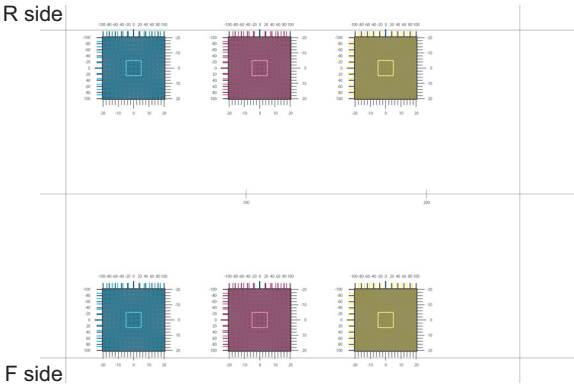
1) Enter SIM50-20 mode.



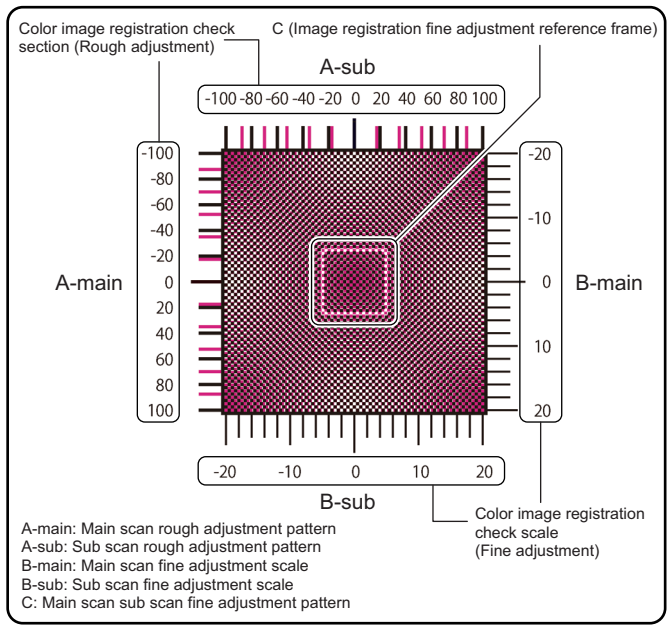
2) Select the paper feed tray with A4 (11" x 8.5") paper.

3) Press [EXECUTE] key.

The image registration adjustment pattern is printed.



The color image registrations of all the colors on the F side and on the R side must be within the specified range.



4) Check the rough adjustment and the fine adjustment print pattern positions of each color on the front frame side and on the rear frame side.

Visually check the color density and make the darkest section as the center, and use it as the read value of the shift amount.

The image registration on the front frame side and that on the rear frame side are independently adjusted.

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

Rough adjustment pattern check:

Check the color image registration check section, and use the black scale of "0" as the center reference, and check the balance in shifts of the color image line positions in the positive and the negative directions. With the scale of "0" as the center reference, the color image line on the positive side must be on the symmetrical position of that on the negative side.

Fine adjustment pattern check:

Check to confirm that the dark area (one of the five areas which are normally to be seen) is at the center of the image registration fine adjustment reference frame in the square frame.

In this case, use the color image registration check scale (fine adjustment) as the reference.

Check to confirm that the center position of the dark section is within ±2 step.

(If the fine adjustment print pattern is located in the range of 0 ±2 from the fine adjustment reference pattern scale, the adjustment is not required.)

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

Display/Item		Content	Adjustment value range	Default
G	CYAN (SUB)	Image registration adjustment value (Sub scanning direction) (Cyan)	1 - 199	100
I	MAGENTA (SUB)	Image registration adjustment value (Sub scanning direction) (Magenta)	1 - 199	100
H	YELLOW (SUB)	Image registration adjustment value (Sub scanning direction) (Yellow)	1 - 199	100

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

ADJ 8 Scan image magnification ratio adjustment (Document table mode)

This adjustment is needed in the following situations:

* When the copy magnification ratio is not proper.
* 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.

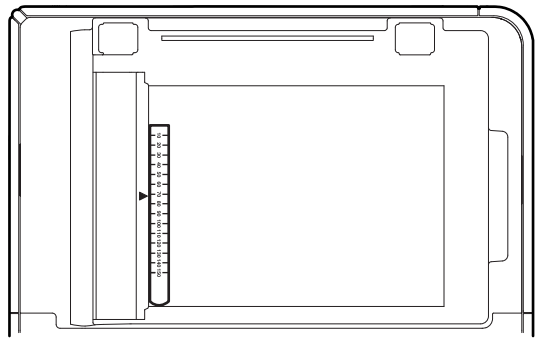
8-A Scan image magnification ratio adjustment (Main scanning direction) (Document table mode)

NOTE: It is advisable to set the image magnification ratio adjustment value in the main scanning direction to the default.

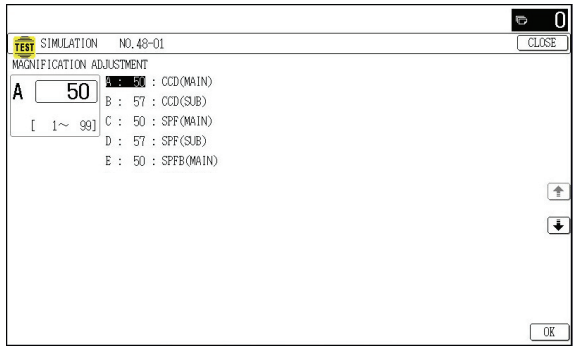
If the adjustment value is set to other than the default value, image quality may be affected.

Changing the adjustment value to other than the default value is allowed only when a high emphasis is placed on the accuracy of the image magnification ratio.

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



2) Enter the simulation 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

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

4) Check that the copy magnification ratio is within the specified range (100 ± 1.5%).

If the copy magnification ratio is within the specified range (100 ± 1.5%), the adjustment is completed. If the copy magnification ratio is not within the specified range, perform the following procedure.

5) Change the adjustment value of the adjustment item CCD (MAIN) of SIM48-1.

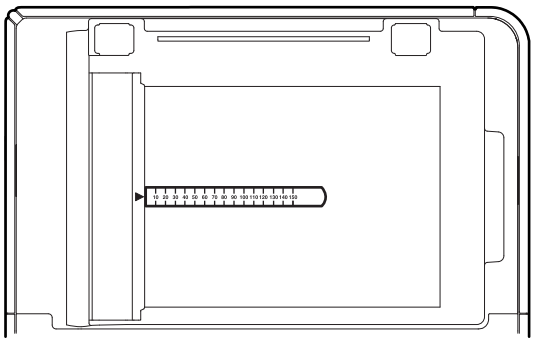
When the adjustment value is increased, the copy magnification ratio is increased.

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

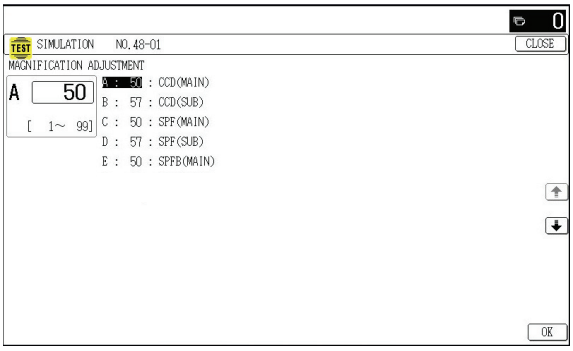
Repeat the procedures 3) - 5) until the copy magnification ratio is within the specified range (100 ±1.5%).

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

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



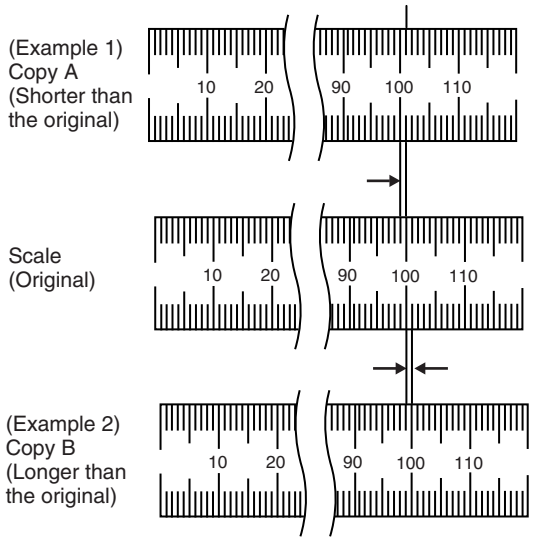
2) Enter the simulation 48-1 mode.



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

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

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



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 adjustment value of the adjustment item CCD (SUB) of SIM48-1.

   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%).

ADJ 9 Scan image magnification ratio adjustment (Main/sub scanning direction) (DSPF mode)

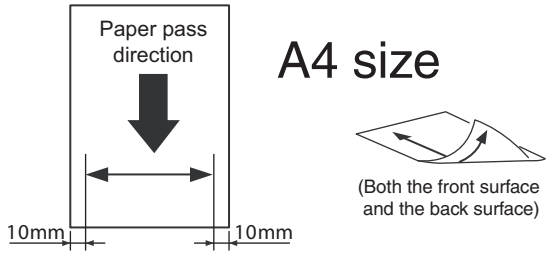
NOTE: To execute this adjustment, the CCD unit must have been properly installed. To execute this adjustment, the OC mode adjustment when copying must have been completed.

9-A Scan image magnification ratio adjustment (Main scanning direction) (DSPF mode)

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

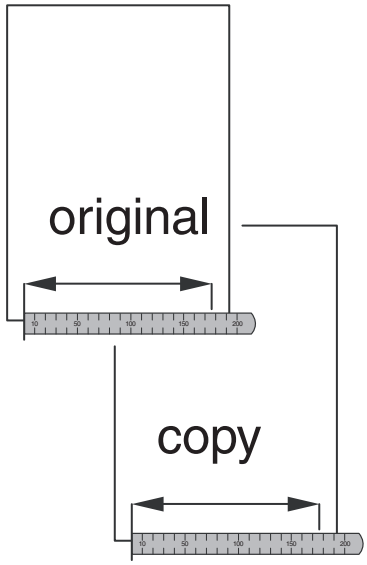
   The adjustment chart is prepared by the following procedures.

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



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:

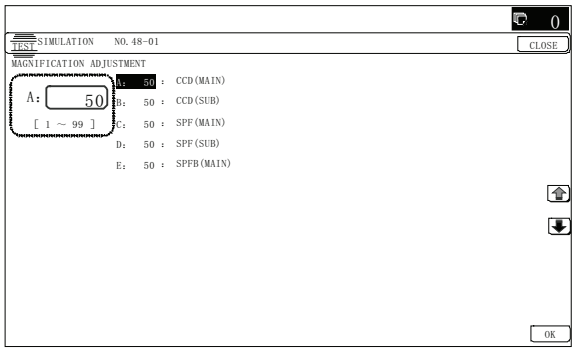
Image magnification ratio = Original size / Original size x 100 (%)

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

If the image magnification ratio is within the specified range (100 ± 1.5%), there is no need to perform the adjustment.

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

5) Enter the SIM48-1 mode.



Item	Display	Content	Setting range	Default value
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

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%.

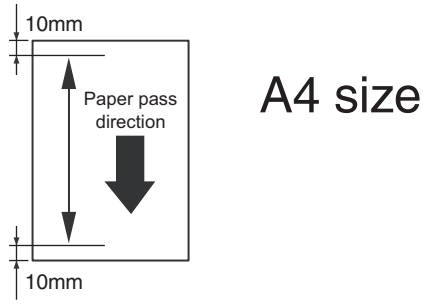
Repeat the procedures of 2) - 7) until a satisfactory result is obtained.

9-B Scan image magnification ratio adjustment (Sub scanning direction) (DSPF mode)

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

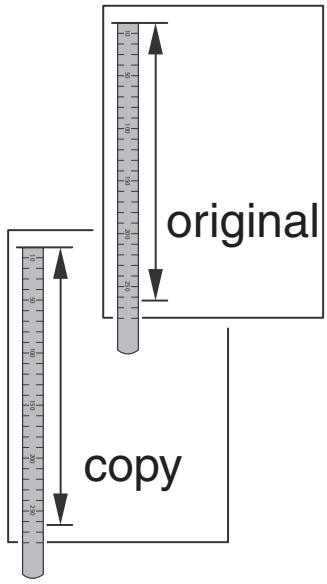
The adjustment chart is prepared by the following procedures.

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



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:

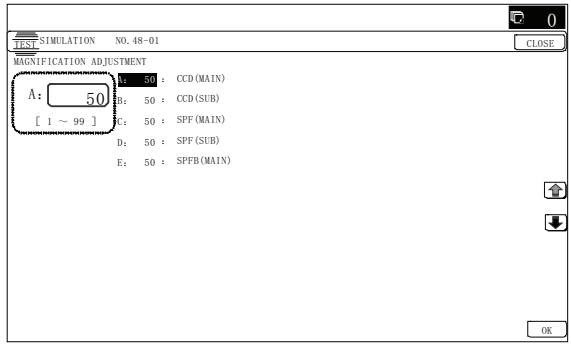
Image magnification ratio = Original size / Original size x 100 (%)

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

If the image magnification ratio is within the specified range (100 ± 1.5%), there is no need to perform the adjustment.

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

5) Enter the SIM48-1 mode.



Item	Display	Content	Setting range	Default value
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

6) Select an adjustment item of SPF (MAIN)/SPFB (MAIN) 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 2) - 7) until a satisfactory result is obtained.

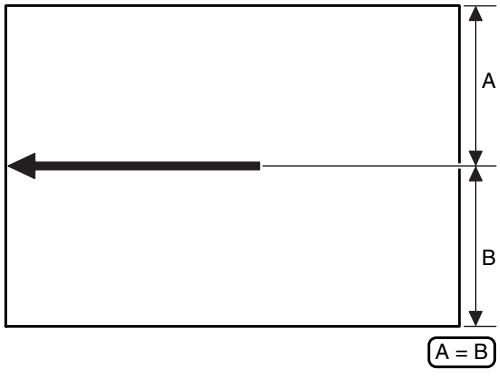
ADJ 10 Scan image off-center adjustment

This adjustment is needed in the following situations:

* When the scanner (reading) section is disassembled.
* When the scanner (reading) unit is replaced.
* When the DSPF section is disassembled.
* When the DSPF unit is installed.
* When the DSPF 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.

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

1) Make an adjustment chart. (Draw a line at the center in parallel with the paper transport direction.)

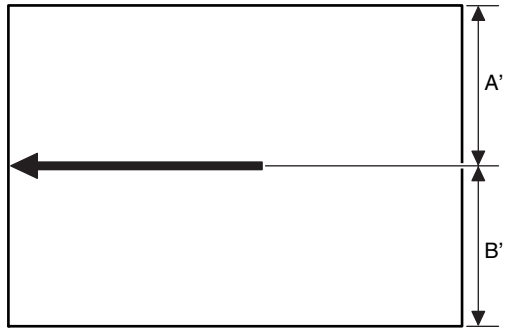


A = B

2) Make a copy of the adjustment chart in the document table mode.

3) Check the copy image center position.

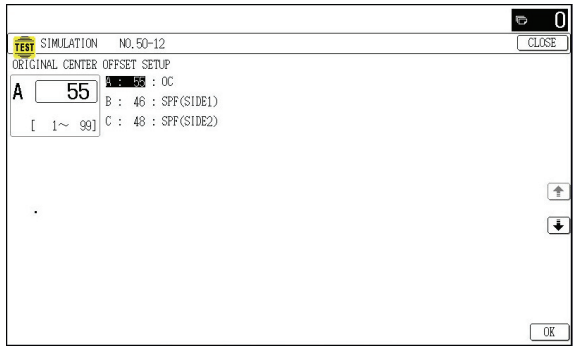
   If A' - B' = ± 4.0mm, the adjustment is not required.



A' - B' = ±1.0mm
(100%)

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

4) Enter the simulation 50-12 mode.



5) Select the adjustment mode OC.

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

   When the set value is increased, the main scanning print position is shifted to the front side by 0.1mm.

7) Make a copy, and check the position of the copy image center.

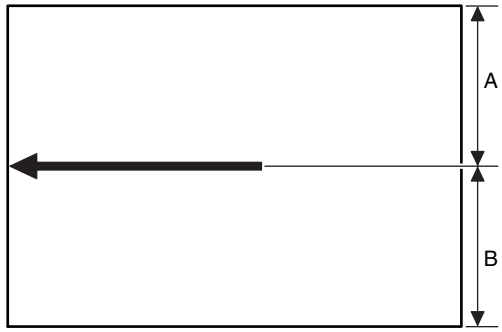
   Change the adjustment value and perform procedures 5) - 6) until the above condition is satisfied.

10-B Scan image off-center adjustment (DSPF mode)

NOTE: To execute this adjustment, the paper off-center must have been adjusted properly.

1) Make an adjustment chart. (Draw a line at the center of both surfaces in parallel with the paper transport direction.)

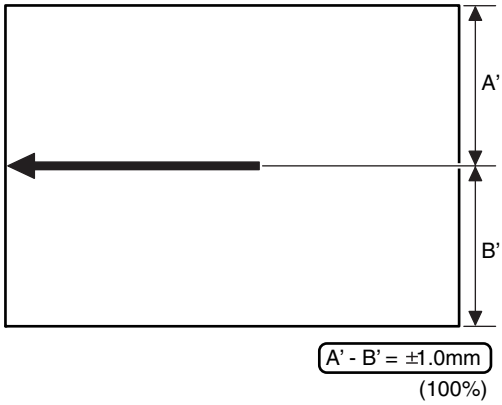
Front surface



A = B

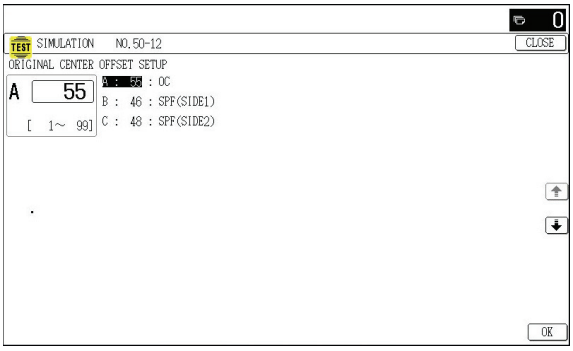
Back surface

2) Set the adjustment chart on the DSPF, and make a copy in the duplex copy mode.
3) Check the copy image center position.
   (Single) If A' - B' = ± 5.0mm, the adjustment is not required.
   (Duplex) If A' - B' = ± 5.4mm, the adjustment is not required.



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

4) Enter the simulation 50-12 mode.



5) Select the adjustment mode.

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

6) Enter the adjustment value with 10-key, and press [OK] key.
   When the set value is increased, the main scanning print position is shifted to the front side by 0.1mm.
7) Make a copy, and check the position of the copy image center.
   Change the adjustment value and perform procedures 4) - 6) until the above condition is satisfied.

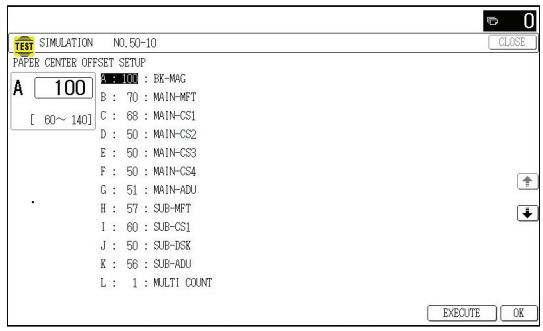
ADJ 11 Print area (Void area) adjustment (Print engine section)

This adjustment is needed in the following situations:

* When the LSU is replaced or removed.
* When a paper tray is replaced.
* When the paper tray section is disassembled.
* When the manual feed tray is replaced.
* When the manual feed tray is disassembled.
* When the switchback 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.

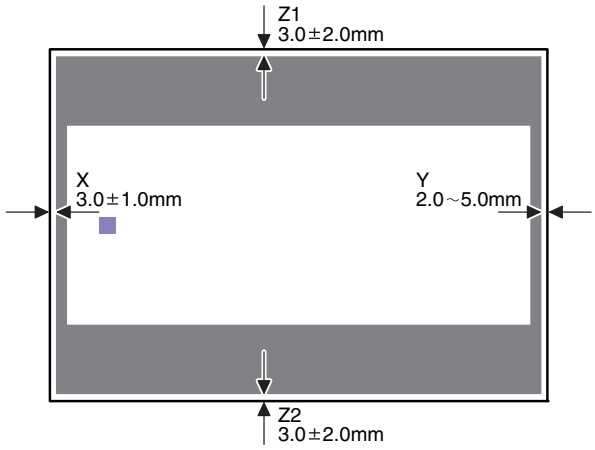
NOTE: Before execution of this adjustment, be sure to execute ADJ 5 Print image magnification ratio adjustment (BK) (Main scanning direction) (Print engine section) in advance.

1) Enter SIM50-10 mode.



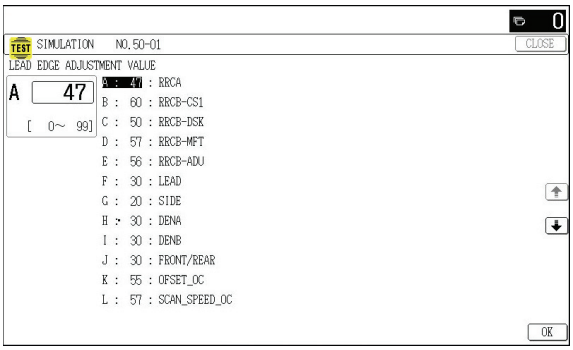
2) Set A4 (11" x 8.5") paper in the paper feed tray of the adjustment target.
3) Select the paper feed tray of the adjustment target.
4) Press [EXECUTE] key.
   The adjustment pattern is printed.
5) Check the adjustment pattern to confirm that the items below are in the range of the standard values.

	Content	Standard adjustment value
X	Lead edge void area	3.0 ± 1.0mm
Y	Rear edge void area	2.0 - 5.0mm
Z1/Z2	FRONT/REAR void area	3.0 ± 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.

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



7) Select the adjustment item DEN A, DEN B, FRONT/REAR with the scroll key, and enter the adjustment value and press [OK] key.

Display/Item			Content		Setting range	Default
A	Lead edge adjustment value	RRCA	Document lead edge reference position (OC)		0 - 99	50
B		RRCB-CS1	Registration motor ON timing adjustment	Standard Tray	1 - 99	65
C		RRCB-DSK		Desk	1 - 99	65
D		RRCB-MFT		Manual paper feed	1 - 99	50
E		RRCB-ADU		ADU	1 - 99	50
F	Image loss area setting value	LEAD	Lead edge image loss area setting		0 - 99	30
G		SIDE	Side image loss area adjustment		0 - 99	20
H	Void area adjustment	DENA	Lead edge void area adjustment		1 - 99	60
I		DENB	Rear edge void area adjustment		1 - 99	60
J		FRONT/REAR	FRONT/REAR void area adjustment		1 - 99	30
K	Off-center adjustment	OFSET_OC	OC document off-center adjustment		1 - 99	50
L	Magnification ratio correction	SCAN_SPEED_OC	SCAN sub scanning magnification ratio adjustment (CCD)		1 - 99	50
M	Sub scanning direction print area correction value	DENB-MFT	Manual feed correction value		1 - 99	50
N		DENB-CS1	Tray 1 correction value		1 - 99	50
O		DENB-CS2	Tray 2 correction value		1 - 99	50
P		DENB-CS3	Tray 3 correction value		1 - 99	50
Q		DENB-CS4	Tray 4 correction value		1 - 99	50
R		DENB-ADU	ADU correction value		1 - 99	50

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

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

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

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 M, N, O, P, Q, R (DENB-XXX) in SIM50-1 and adjust.

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

Adjustment value of item M, N, O, P, Q, R (DENB-XXX) fine adjusts to adjustment item I (DENB) for each paper tray.

After execution of the above, perform procedures 1) - 5) 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-CS1, RRCB-DSK, RRCB-MFT, RRCB-ADUB (RRCB-XXX) of SIM 50-1.

Repeat the above procedures until a satisfactory result is obtained.

ADJ 12 Copy image position, image loss adjustment

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

This adjustment is needed in the following situations:

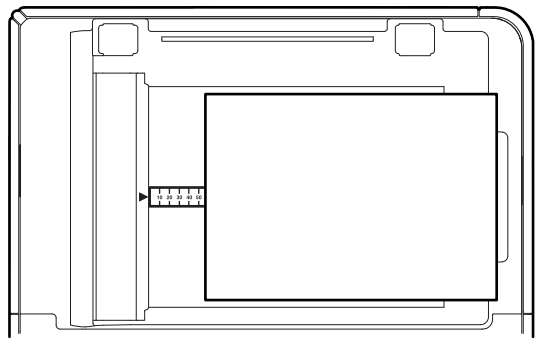
* When the scanner (reading) section is disassembled.
* When the scanner (reading) unit is replaced.
* When the LSU is replaced or removed.
* When the registration roller section is disassembled.
* U2 trouble has occurred.
* The PCU PWB has been replaced.
* The EEPROM of the PCU PWB has been replaced.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

NOTE: Before executing this adjustment, be sure to confirm that the ADJ 11 Print area (Void area) adjustment (Print engine section) has been completed normally.

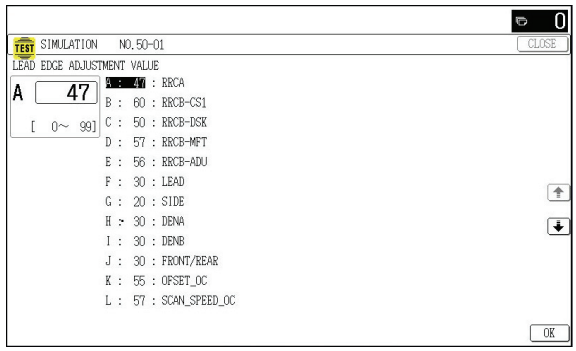
1) Place a scale on the document table as shown in the figure below.

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

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



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



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

Display/Item			Content		Setting range	Default
A	Lead edge adjustment value	RRCA	Document lead edge reference position (OC)		0 - 99	50
B		RRCB-CS1	Registration motor ON timing adjustment	Standard Tray	1 - 99	65
C		RRCB-DSK		Desk	1 - 99	65
D		RRCB-MFT		Manual paper feed	1 - 99	50
E		RRCB-ADU		ADU	1 - 99	50
F	Image loss area setting value	LEAD	Lead edge image loss area setting		0 - 99	30
G		SIDE	Side image loss area adjustment		0 - 99	20
H	Void area adjustment	DENA	Lead edge void area adjustment		1 - 99	60
I		DENB	Rear edge void area adjustment		1 - 99	60
J		FRONT/REAR	FRONT/REAR void area adjustment		1 - 99	30
K	Off-center adjustment	OFSET_OC	OC document off-center adjustment		1 - 99	50
L	Magnification ratio correction	SCAN_SPEED_OC	SCAN sub scanning magnification ratio adjustment (CCD)		1 - 99	50
M	Sub scanning direction print area correction value	DENB-MFT	Manual feed correction value		1 - 99	50
N		DENB-CS1	Tray 1 correction value		1 - 99	50
O		DENB-CS2	Tray 2 correction value		1 - 99	50
P		DENB-CS3	Tray 3 correction value		1 - 99	50
Q	Sub scanning direction print area correction value	DENB-CS4	Tray 4 correction value		1 - 99	50
R		DENB-ADU	ADU correction value		1 - 99	50

4) Perform the image lead edge reference position adjustment.

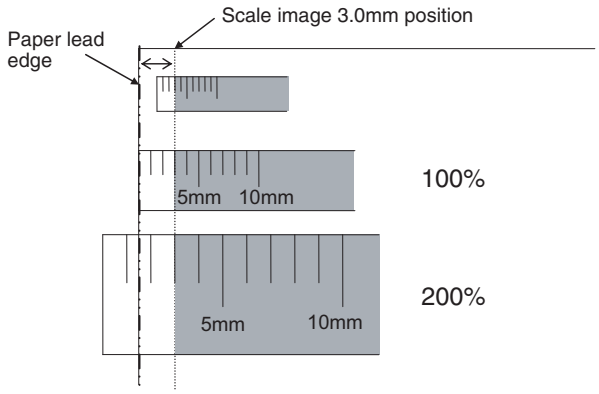
Shift from the simulation mode to the copy mode and make a copy in 100% mode and in 200% mode.

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

If not, change and adjust the RRCA value.

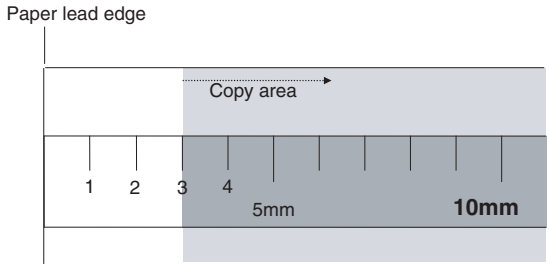
(Adjust so that the lead edge image from 3.0mm is not copied in either of different copy magnification ratios.)

Repeat the above procedures until a satisfactory result is obtained.



5) Image loss adjustment

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



Void area: 3.0mm, Image loss: 3.0mm

Display/Item	Content		Adjustment range	Default	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.

12-B Adjust the original scan start position (Adjust the scanner read position in DSPF-mode front face scan)

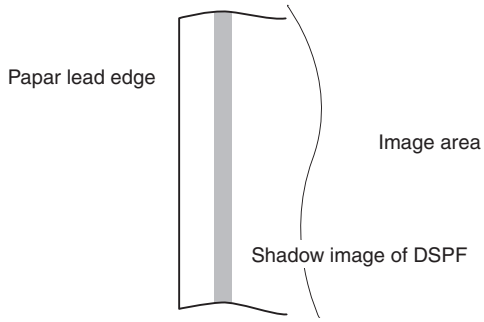
This adjustment is needed in the following situations:

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

This adjustment is intended to adjust the scanner read position in DSPF-mode scan.

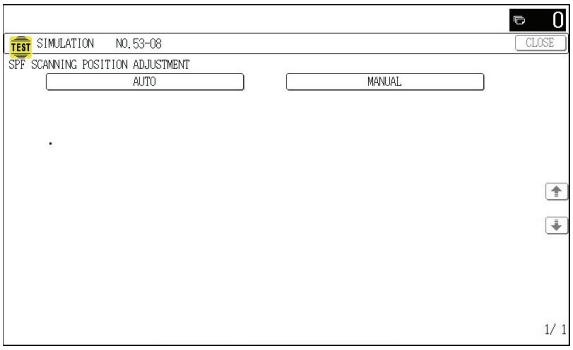
An incorrect adjustment would deviate the scanner stop position from the required position, thus possibly causing a shadow of the original table to appear at the leading edge of an image generated by DSPF mode scan.

1) Make a copy in DSPF mode, and make sure that the printed image at the leading edge of the copied image is free from shadows.



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

2) Go through the modes specified in Simulation 53-8. Select the [MANUAL] mode.



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

<<Description of adjustment display>>

Item	Display item	Description	Set range	Default value
A	ADJUST VALUE	DSPF scan position adjustment	1 - 99	70

- When the set value is increased, the distance from the home position to the DSPF scan position is increased.
- When the set value is changed by 1, the scan position is changed by 0.1mm.
- Repeat the procedures of 1) - 3) until a satisfactory result is obtained.
- NOTE: After execution of this adjustment, be sure to execute ADJ 12C Copy image position, image loss adjustment (DSPF mode).

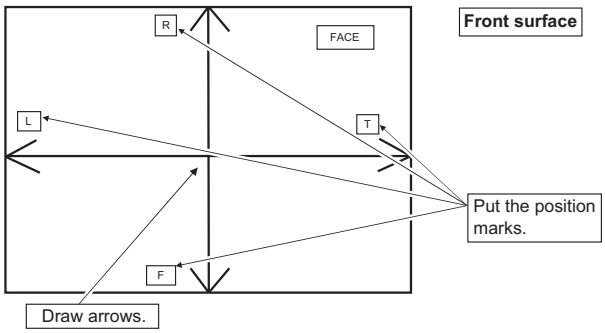
12-C Copy image position, image loss adjustment (DSPF mode)

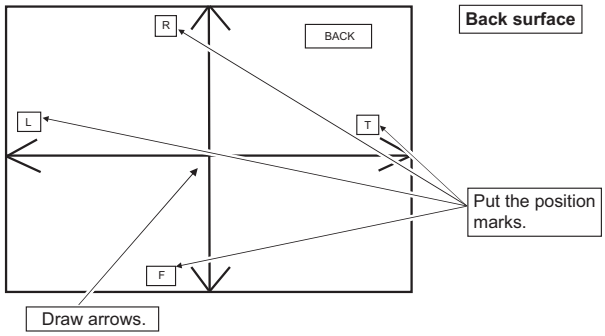
1) Prepare the adjustment chart.

The adjustment chart can be made by the following procedures.

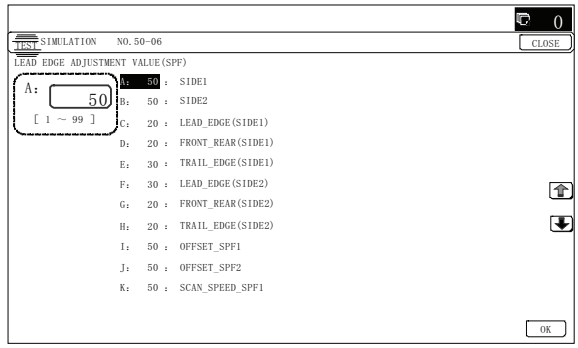
Use A4 (11" x 8.5") paper and draw arrow marks vertically and horizontally on the front and the back surfaces.

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





2) Enter the SIM50-6 mode.



Item/Display			Content	Setting range	Default value
A	SIDE1		Front surface document scan position adjustment (CCD)	1 - 99	50
B	SIDE2		Back surface document scan position adjustment (CCD)	1 - 99	50
C	Image loss amount setting SIDE1	LEAD_EDGE (SIDE1)	Front surface lead edge image loss amount setting	0 - 99	20
D		FRONT_REAR (SIDE1)	Front surface side image loss amount setting	0 - 99	20
E		TRAIL_EDGE (SIDE1)	Front surface rear edge image loss amount setting	0 - 99	30
F	Image loss amount setting SIDE2	LEAD_EDGE (SIDE2)	Back surface lead edge image loss amount setting	0 - 99	30
G		FRONT_REAR (SIDE2)	Back surface side image loss amount setting	0 - 99	20
H		TRAIL_EDGE (SIDE2)	Back surface rear edge image loss amount setting	0 - 99	20
I	OFSET_SPF1		DSPF front surface document off-center adjustment	1 - 99	50
J	OFSET_SPF2		DSPF back surface document off-center adjustment	1 - 99	50
K	SCAN_SPEED_SPF1		DSPF document front surface magnification ratio (Sub scan)	1 - 99	50

(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)

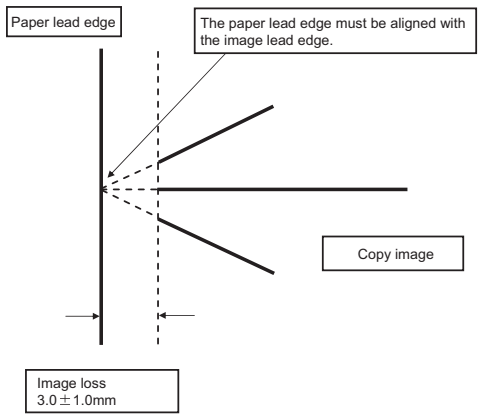
LEAD EDGE(SIDE 2):

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 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 document lead edge scan position adjustment

SIDE2:

Back surface document lead edge scan position adjustment

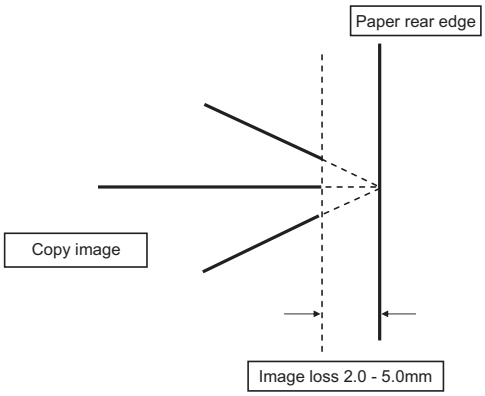
(When the adjustment value is increased, the print image position is shifted to the delaying direction for the paper.)

(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 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)

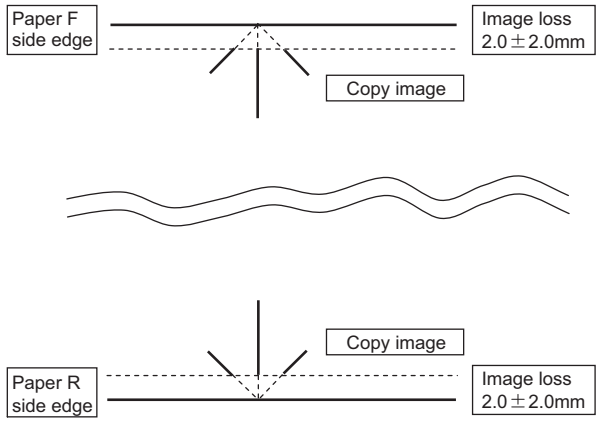
(When the adjustment value is increased, the rear edge image loss is increased.)

(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 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.

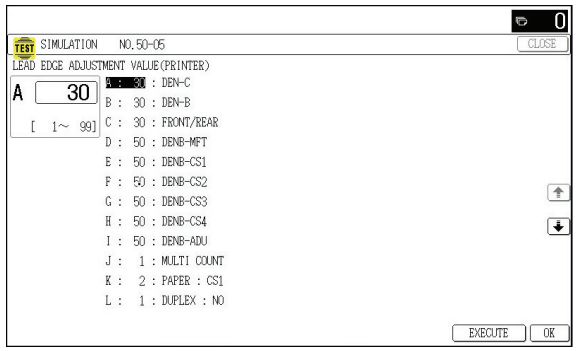
ADJ 13 Print lead edge image position adjustment (Printer mode) (Print engine section)

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 image position (standard value: 3mm).

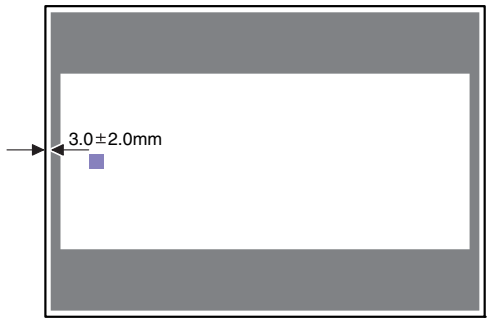
1) Enter the simulation 50-5 mode.



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

Display/Item			Content		Setting range		Default
A	DEN-C		Printer lead edge image position adjustment		1 - 99		30
B	DEN-B		Rear edge void area adjustment		1 - 99		30
C	FRONT/REAR		FRONT/REAR void area adjustment		1 - 99		30
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-ADU		ADU rear edge void area adjustment correction value		1 - 99		57
J	MULTI COUNT		Number of print		1 - 999		1
K	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	
L	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.
   Standard adjustment value: 3.0 ± 2.0mm



   If an adjustment is required, perform the following procedures.
5) Select the adjustment target of the paper feed mode adjustment item DENC with the scroll key.
6) Enter the adjustment value and press [OK] 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.
   Perform the procedures 4) - 6) until a satisfactory result is obtained.

ADJ 14 Copy color balance/density adjustment (MX-C402SC/C382SC)

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

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

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

1) The following adjustment items must be adjusted properly.

Job No	Adjustment Item List			Simulation
ADJ 2	Image density sensor, image registration sensor adjustment	ADJ 2A	Color image sensor calibration	44-13
		ADJ 2B	Color image density sensor, black image density sensor, image registration sensor adjustment	44-2
ADJ 3	Image skew adjustment (LSU unit)			64-1/61-4
ADJ 4	OPC drum phase adjustment	ADJ 4A	OPC drum phase adjustment (Auto adjustment)	50-22
ADJ 7	Image registration adjustment (Print engine section)	ADJ 7A	Image registration adjustment (Main scanning direction, sub scanning direction) (Auto adjustment)	50-22
		ADJ 7B	Image registration adjustment (Main scanning direction) (Manual adjustment)	50-20
		ADJ 7C	Image registration adjustment (Sub scanning direction) (Manual adjustment)	50-21

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

1) The following items must be adjusted properly.

Job No	Adjustment item list			Simulation
ADJ 1	Adjusting high voltage values	ADJ 1A	Adjust the main charger grid voltage	8-2
		ADJ 1B	Adjust the developing bias voltage	8-1
		ADJ 1C	Transfer voltage adjustment	8-6
ADJ 14A	CCD gamma adjustment (CCD calibration)			63-3

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

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

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

There are following four, major cases.

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

(2) Copy color balance and density check

(Note)

Before checking the copy color balance and density, be sure to execute the following jobs.

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

(Method)

Make a copy of the gray test chart (UKOG-0162FCZZ) and a copy of the servicing color test chart (UKOG-0326FCZZ/UKOG-0326FC11), and check that they are proper.

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

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

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

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

b. Note for checking the monochrome copy mode density

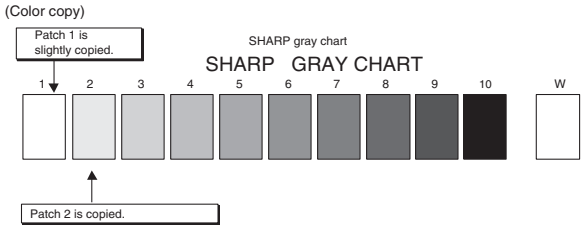
To check the density, use the gray test chart (UKOG-0162FCZZ). Set the copy density level to "Manual 3" in the Text/Printed Photo mode (Manual).

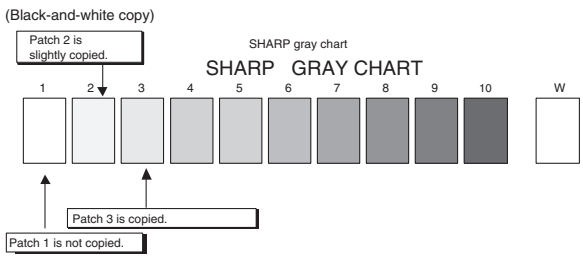
In addition, all the color balance adjustments in the user adjustment mode must be set to the default (center).

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

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

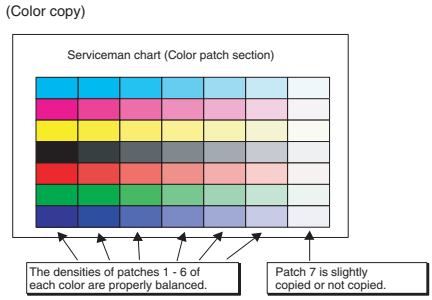
NOTE: For the color (gray) balance, use the servicing color test chart (UKOG-0326FCZZ/UKOG-0326FC11) to check.





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

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



14-A (1) CCD gamma adjustment (CCD calibration) (Normal document copy mode) (MX-C402SC/C382SC)

This adjustment is needed in the following situations:

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

(1) Note before adjustment

1) Check that the table glass, No. 1, 2, 3 mirrors, and the lens surface are free from dirt and dust.

   (If there is some dust and dirt, wipe and clean with alcohol.)

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

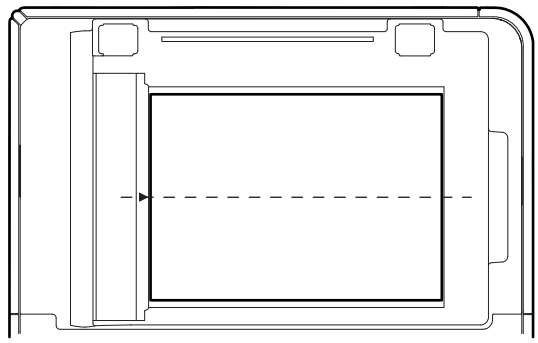
   If they are dirty, clean them.

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

(2) Adjustment procedures

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

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



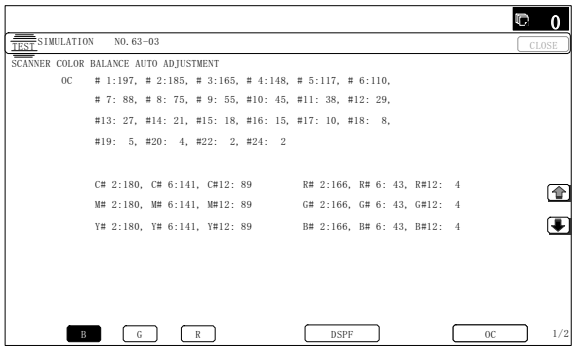
If the SIT chart is not available, execute SIM 63-5 to set the CCD gamma to the default. In this case, however, the adjustment accuracy is lower when compared with the adjustment method using the SIT chart.

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

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

2) Enter the SIM 63-3 mode and press [EXECUTE] key.

The automatic operation is started. During the adjustment, [EXECUTE] is highlighted. After completion of the adjustment, [EXECUTE] returns to the normal display.



NOTE: Since the SIT chart (UKOG-0280FCZZ or UKOG-0280FC Z1) 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.

14-A (2) CCD gamma adjustment (CCD calibration) (DSPF mode) (MX-C402SC/C382SC)

This adjustment is required in the following cases:

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

(1) Note before adjustment

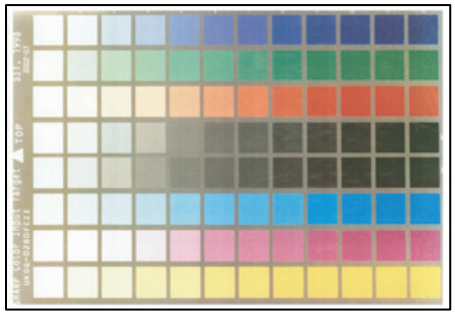
1) Check to insure that there is no dirt or dust on the SPF scanning glass, the mirror, and the lens surface. (If there is, clean it with alcohol.)
2) Check to confirm that the patches in BK1 and BK2 arrays of the SIT chart (UKOG-0280FCZZ or UKOG-0280FCZ1) are free from dirt and scratches.

   If they are dirty, clean them.

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

   NOTE:

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



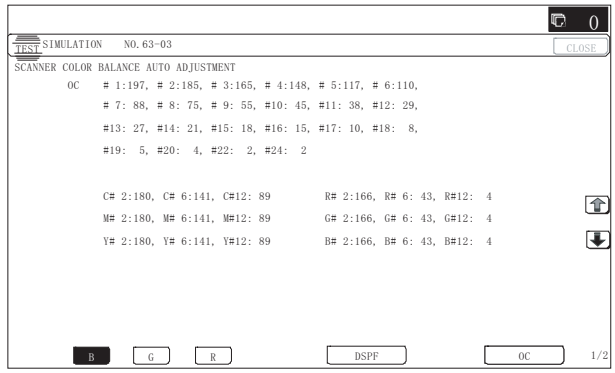
(2) Adjustment procedures

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

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

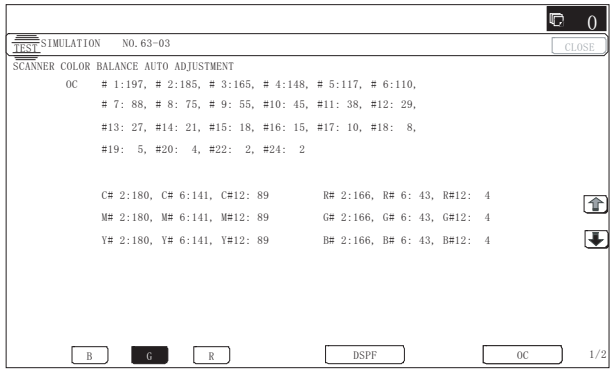
NOTE: UKOG-0280FCZZ is equivalent to UKOG-0280FCZ1.

2) Enter the SIM 63-03 mode.

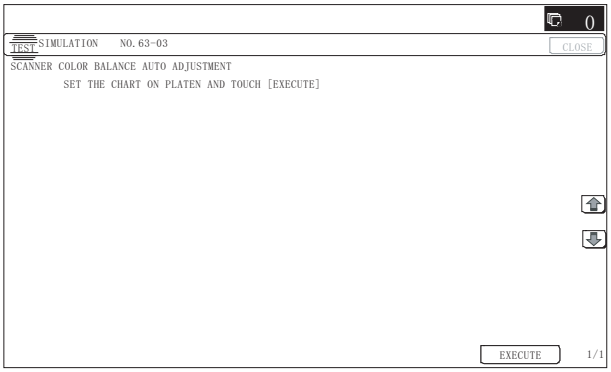


3) When a color button is selected, the adjustment value of the selected color is displayed.
   * When [B] (Blue), [G] (Green), or [R] (Red) button is selected, the selected button is highlighted and the adjustment value of the selected color is displayed.
   * Only one color button can be selected, and the selected button is highlighted. In the initial state, [B] is selected.
   * If there is a page over [↑], an active display is shown and the page moves up. If there is no page upward, the display grays out and the operation is invalid.

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

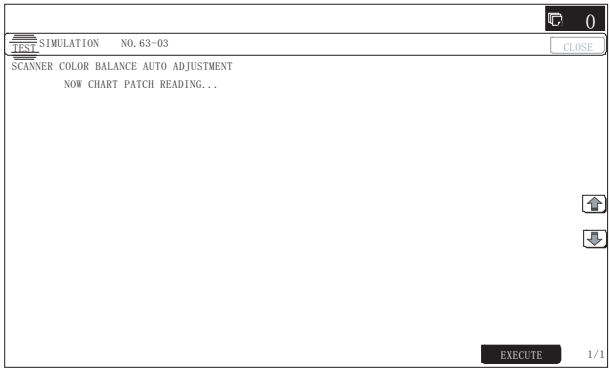


4) When [DSPF] button is pressed, it is highlighted, and the color automatic adjustment execution screen is displayed.



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

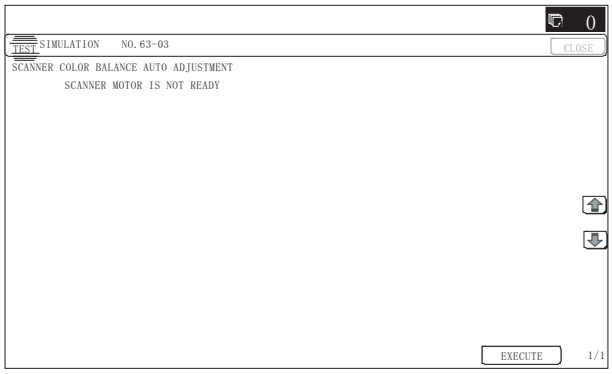
* When [EXECUTE] button is pressed during the automatic adjustment, the automatic adjustment is interrupted.



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

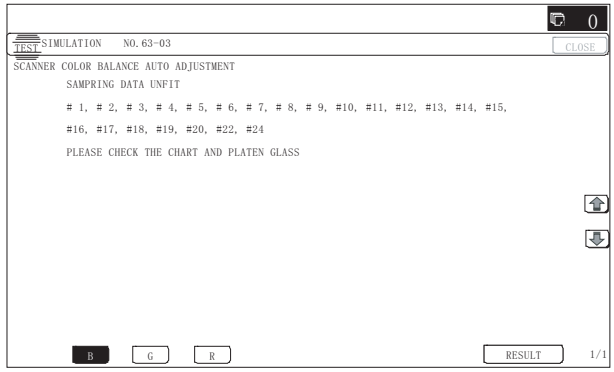
* When an error occurs in execution, the following screen is displayed.

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

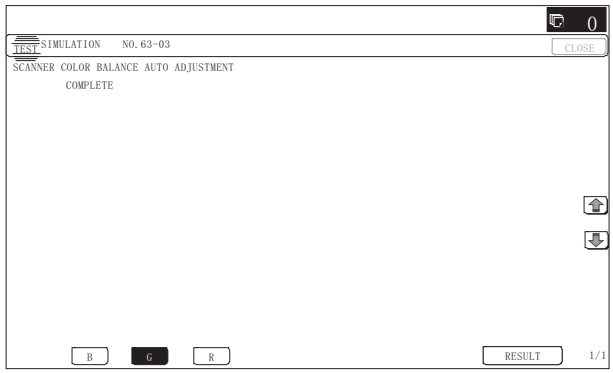


* When an error occurs in the automatic adjustment, all the error patch numbers are displayed.

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



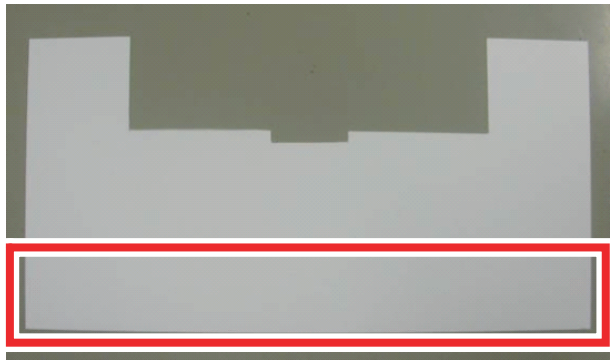
* When the operation is completed normally, "COMPLETE" is displayed. When [RESULT] button is pressed, the display returns to the initial screen. (The calculation result of normal completion is displayed.)



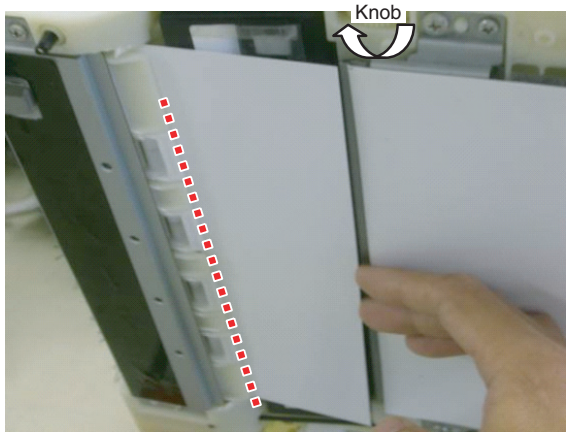
14-A (3) Shading adjustment (DSPF mode) (MX-C402SC/C382SC)

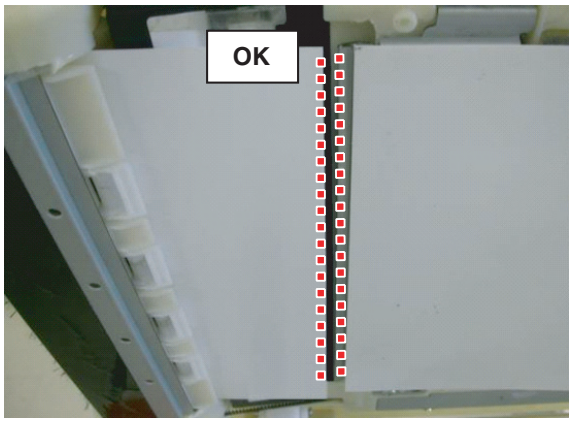
1) Open the DSPF, insert the shading sheet SC-P (UKOG-0340FCZZ) for the DSPF from the DSPF scanning section, and place the chart evenly to the four scanning rear rollers so that it is not tilted.

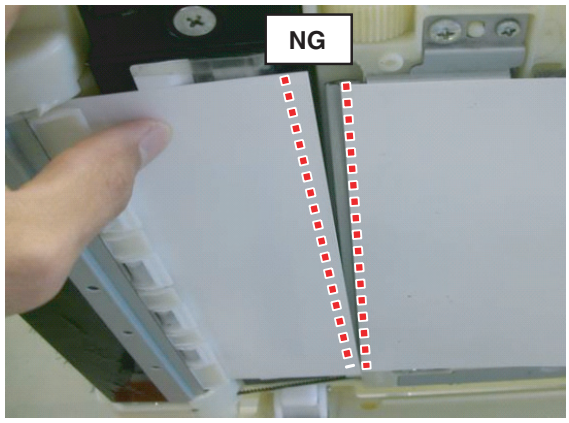
* Do not touch the rear edge of the chart to keep it clean.



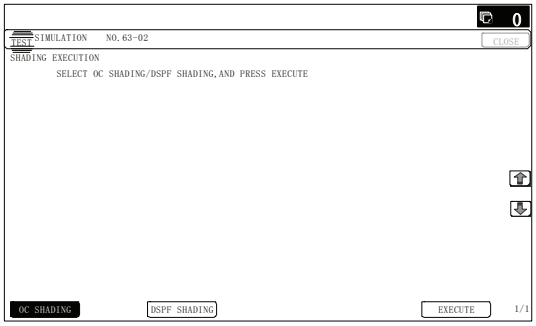
2) Rotate the knob to insert the sheet until the rear edge of the chart just reaches the cabinet. (Check to confirm that the black sections (0mm - 2mm) of the scanning guide are in parallel.)
   * Place the chart evenly to the four scanning rear rollers.







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



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

<Descriptions of keys>

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

<Result display>

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

14-B Copy color balance adjustment (Auto adjustment) (MX-C402SC/C382SC)

This adjustment is needed in the following situations:

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

a. General

The color balance adjustment (auto adjustment) is used to adjust the copy density of Cyan, Magenta, Yellow, and Black with SIM 46-24 or the user program automatically.
(When this adjustment is executed, the color balance adjustments of all the copy modes are revised.)

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

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

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

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

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

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

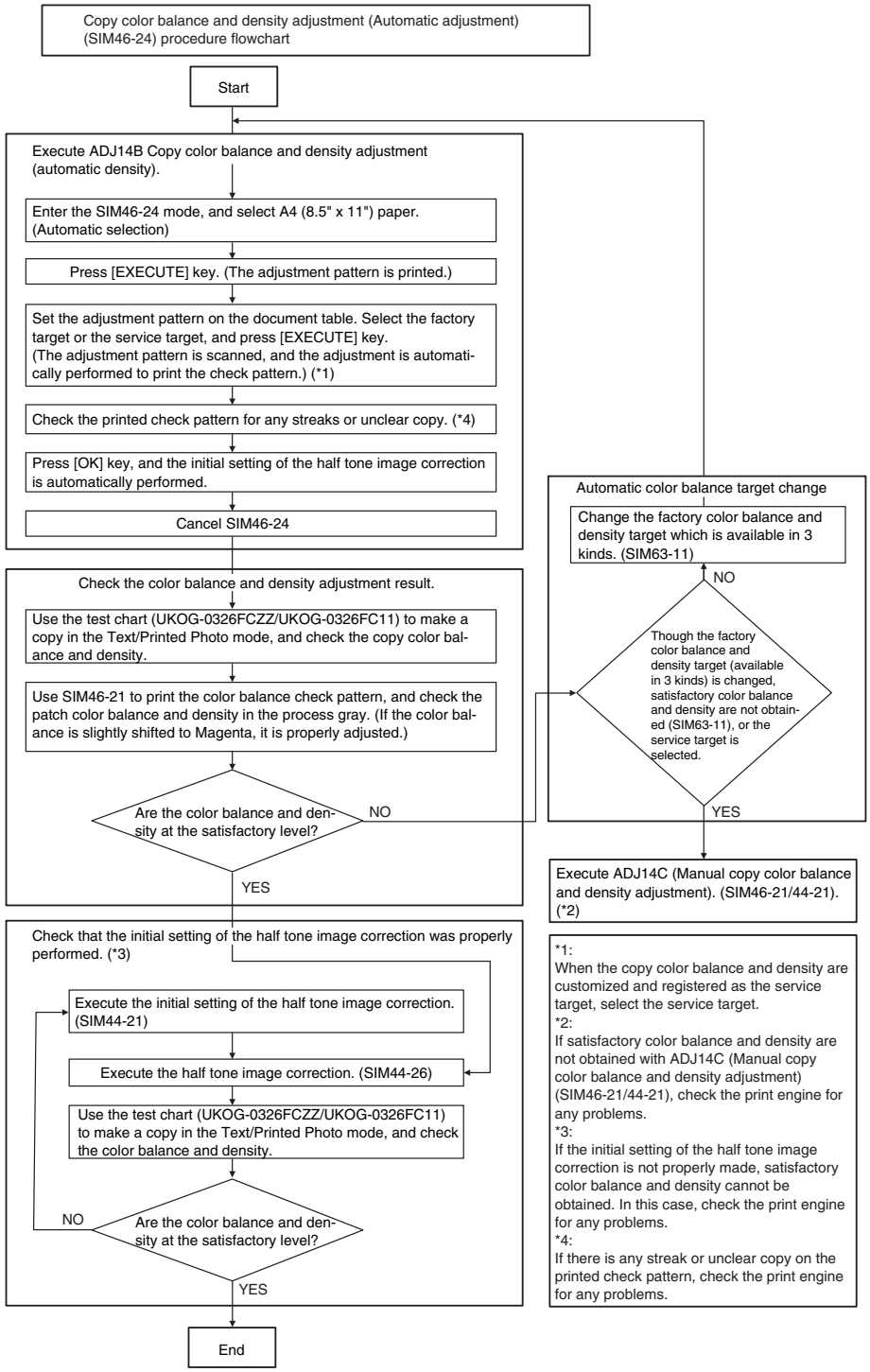
   To perform the adjustment, the above difference must be fully understood.

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

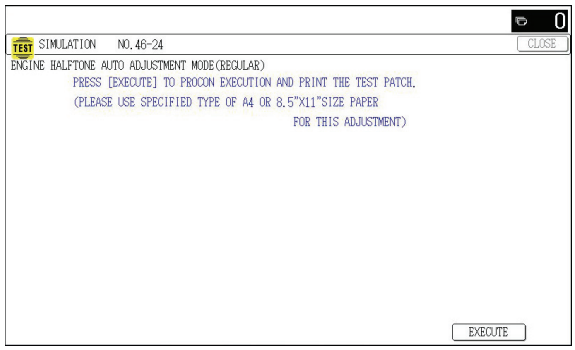
1) The print engine section must have been adjusted properly.
2) The CCD gamma adjustment must have been adjusted properly.
3) For the color balance adjustment, use the recommended color paper. (For the recommended paper, refer to [2].)
   If the other kind of paper is used for the color balance adjustment, the proper image quality (color balance, density) may not be obtained.
4) When setting the adjustment pattern on the document table in the automatic color balance adjustment procedures, place 5 sheets of white paper on the adjustment pattern in order to prevent back copying and adverse effects of paper wrinkles as far as possible. Also note that the adjustment pattern should be placed to the center reference.
5) The scan image off-center adjustment and the engine image off-center adjustment must have been properly adjusted.

c. Adjustment procedure

(Auto color balance adjustment by the serviceman)



1) Enter the SIM 46-24 mode.

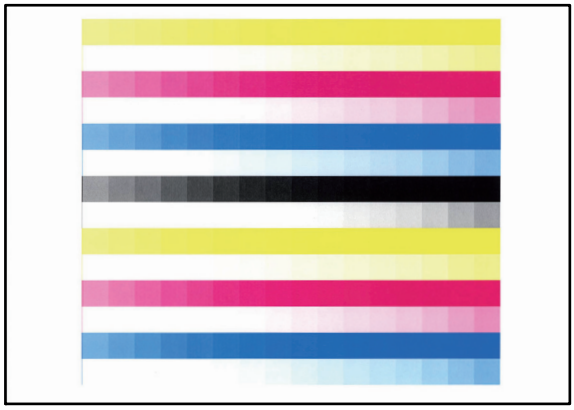


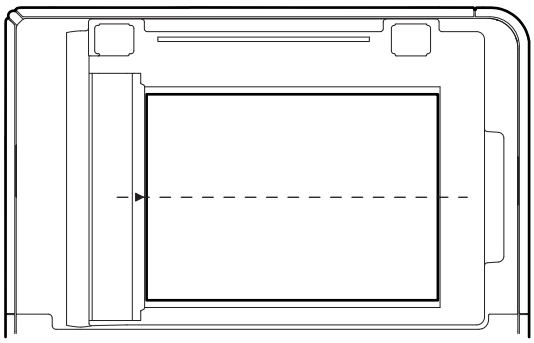
2) Press [EXECUTE] key. (A4 or 11" x 8.5" paper is automatically selected.)

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

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

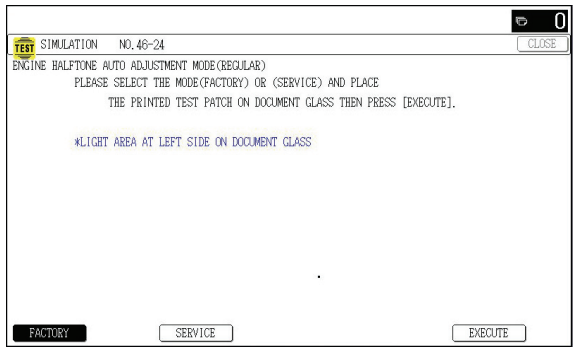
   Set the printed color patch image (adjustment pattern) on the document table. Place the color patch image so that the fine lines are on the left side **in the center reference**. At that time, place 5 sheets of white paper on the printed color patch image (adjustment pattern).





4) Select [FACTORY] target on the operation panel, and press [EXECUTE] key.

   When the color balance is customized with the manual color balance adjustment (SIM 46-21) according to the user's request and the color balance is registered as the service target with SIM 63-7, if the color balance is adjusted to that color balance, select the service target.



   The copy color balance adjustment is automatically executed to print the color balance check patch image. Wait until the operation panel shown in procedure 5) is displayed.

   Remark:

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

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

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

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

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

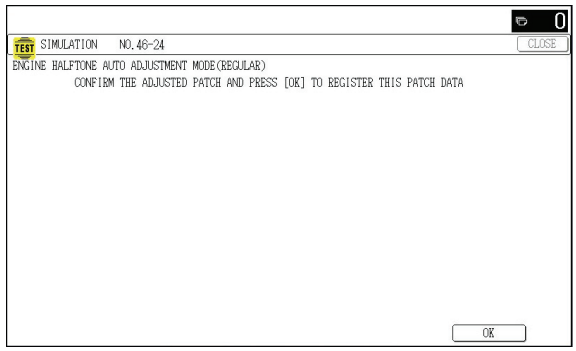
   When shipping, the service target gamma data and the factory target gamma data are the same.

   Both are set to the standard color balance when shipping.

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

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

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

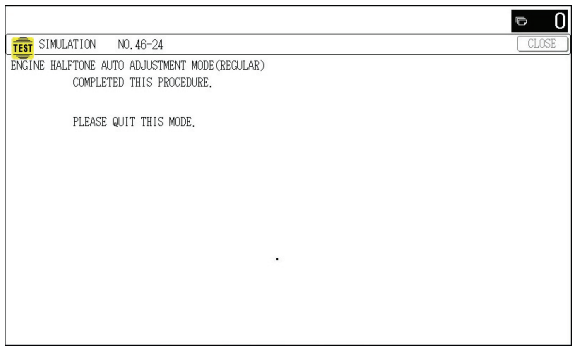


Remark:

After pressing [OK] key on the operation panel, 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.

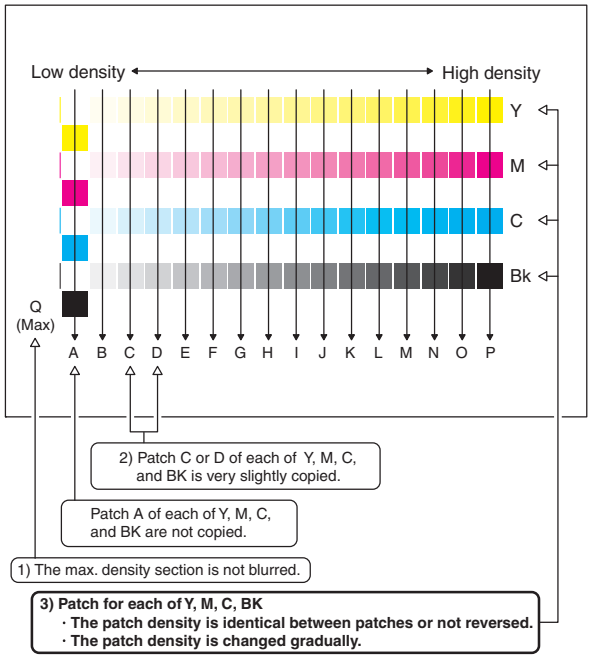


6) Check the color balance and density.

There are following three methods in the color balance and density check.

(Method 1)

Check to insure that the printed color balance check patch image is within the following specifications.



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

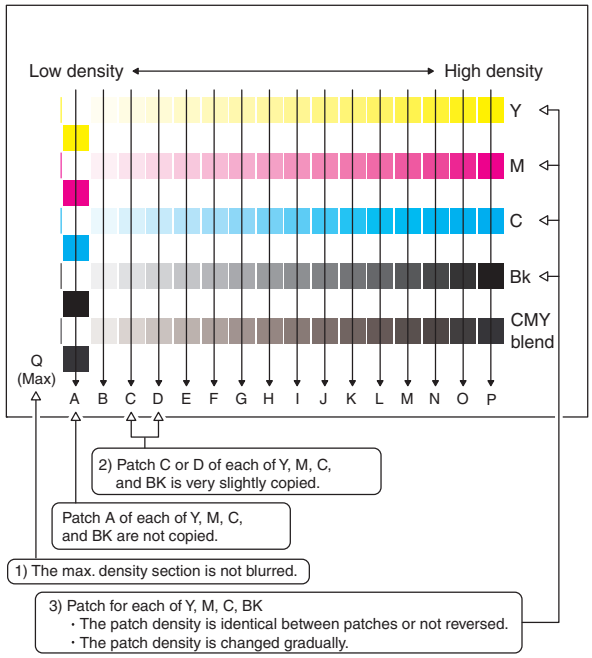
The density level of each color must be almost at the same level.

- Patch B may not be copied.
- Patch A must not be copied.

If there is any abnormality, adjust again.

(Method 2)

By printing the color balance adjustment sheet with SIM 46-21 and comparing each process (CMY) black patch color balance with the black patch, the color balance adjustment can be checked more precisely.



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

(Method 3)

Use the servicing color test chart (UKOG-0326FCZZ/UKOG-0326FC11) in the Text/Photo mode (Manual) to check the copy color balance and density. (Refer to the item of the copy color balance and density check.)

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

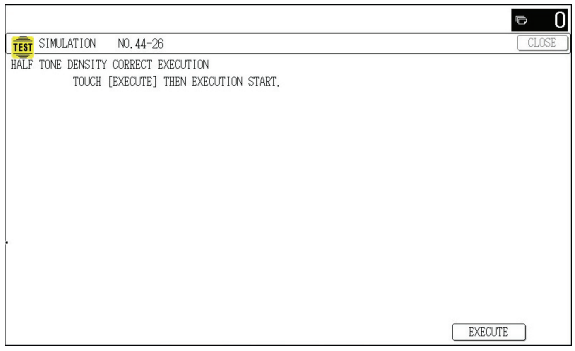
If a satisfactory result is not obtained with the above procedure, perform the manual color balance adjustment (ADJ 14C).

Also when the service target is selected in procedure 4) to execute the automatic adjustment and a satisfactory result is not obtained, perform the manual color balance adjustment (ADJ 14C).

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

If the copy color balance and density are not satisfactory, perform the following procedures.

9) Execute the initial setting of the halftone image correction. (SIM 44-21)

10) Execute the halftone image correction. (Forcible execution) (SIM44-26)

11) Use the servicing color test chart (UKOG-0326FCZZ/UKOG-0326FC11) in the Text/Printed Photo mode (Manual) to check the copy color balance/density. (Refer to the item of the copy color balance and density check.)

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

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

If the automatic adjustment cannot obtain satisfactory results of the copy color balance and density, use SIM 46-21 (ADJ 14C) (Manual adjustment).

14-C Copy color balance adjustment (Manual adjustment) (MX-C402SC/C382SC)

This adjustment is needed in the following situations:

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

a. General

The color balance adjustment (Manual adjustment) is used to adjust the copy density (17 point for each color) of CMYK. This is used at the following situation. When the result of auto adjustment described above is not existing within the range of reference. When a fine adjustment is required. When there is request from the user for changing (customizing) the color balance.

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

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

b. Note for the color balance adjustment (Manual adjustment)

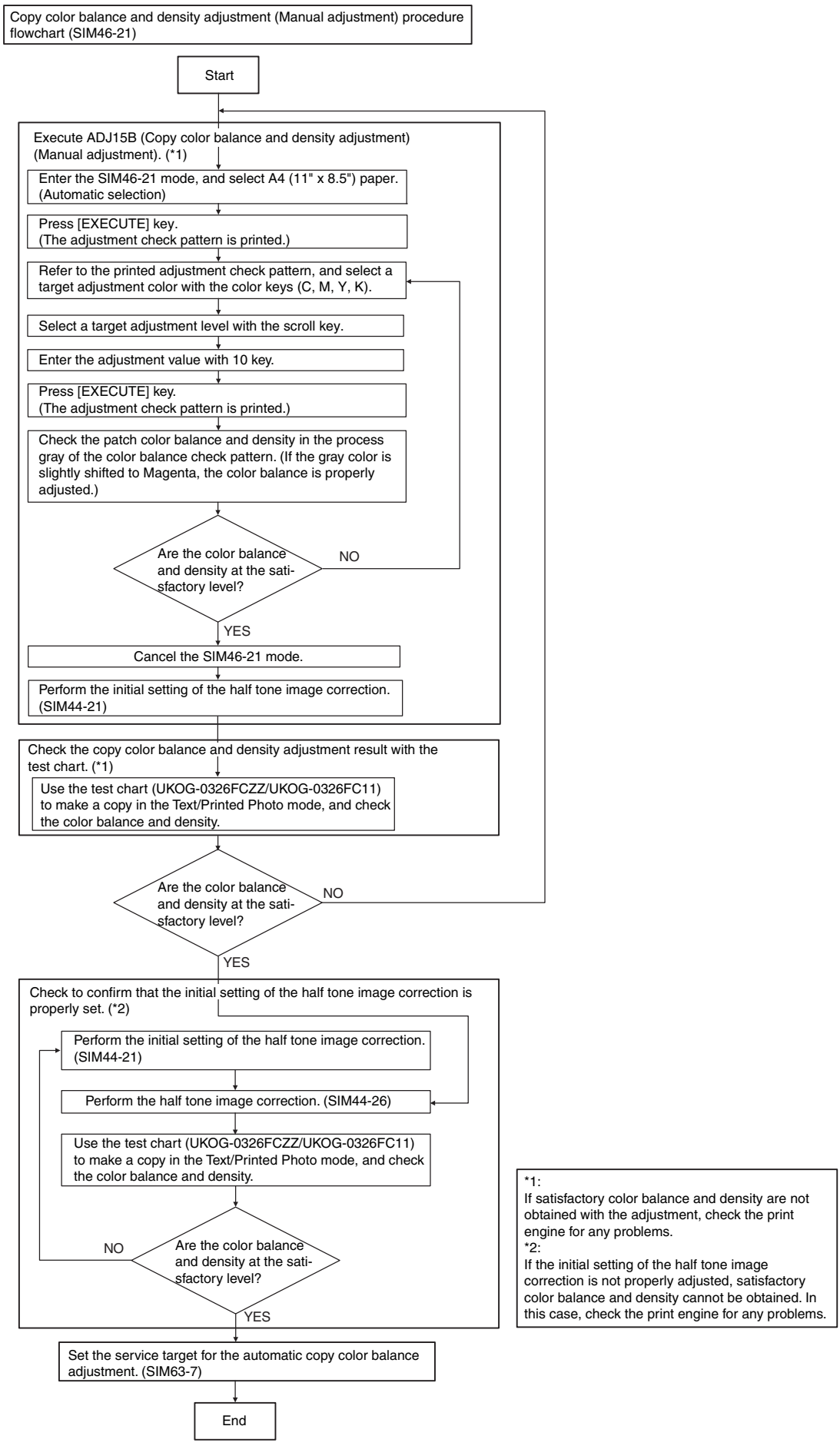
1) The print engine section must have been properly adjusted.

2) The CCD gamma must have been properly adjusted.

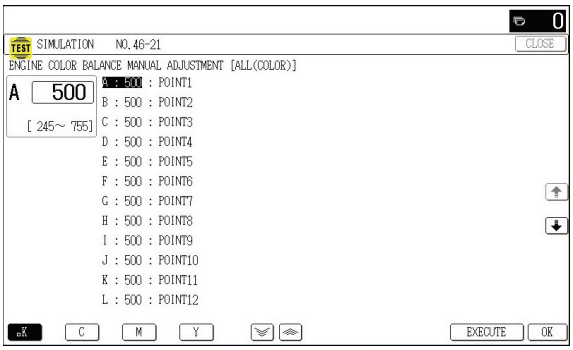
3) For the color balance adjustment, use the recommended color paper. (For the recommended paper, refer to [2].)

If the other kind of paper is used for the color balance adjustment, the proper image quality (color balance, density) may not be obtained.

c. Adjustment procedure



1) Enter the SIM46-21 mode.

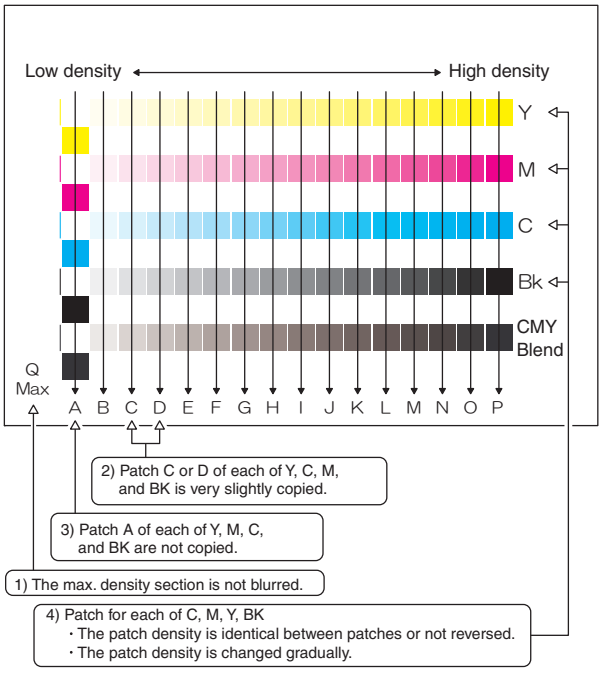


2) Press [EXECUTE] key. (A4 or 11" x 8.5" paper is automatically selected.)

The color balance adjustment pattern is printed.

3) Check that the following specification is satisfied or the color balance is satisfactory.

If not, execute the following procedures.



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

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

Patch B may not be copied.

Patch A must not be copied.

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

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

4) Select the color to be adjusted with the color select key, and select the adjustment point with the scroll key.

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

The adjustment value is set in the range of 245 - 755 (1 - 999). When SIM 46-24 is used to adjust the automatic color balance and density, all the set values of this simulation are set to 500.

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

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

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

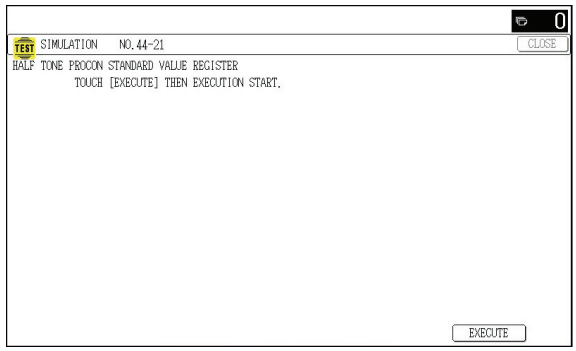
Then, adjust each patch density individually. This is an efficient way of adjustment.

Referring to the black/gray patches, adjust so that each process (CMY) black/gray patch color balance of A - Q (MAX) approaches the black/gray patch level as far as possible.

6) Make a copy of the servicing color test chart (UKOG-0326FCZZ/UKOG-0326FC11) and a user's document according to necessity in the normal copy mode, the text/Printed Photo mode (Manual) to check the adjustment result.

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

7) Execute SIM 44-21. (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.

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

Immediately after execution of ADJ 14C (Color balance adjustment, Manual) with SIM 46-21, be sure to execute this procedure.

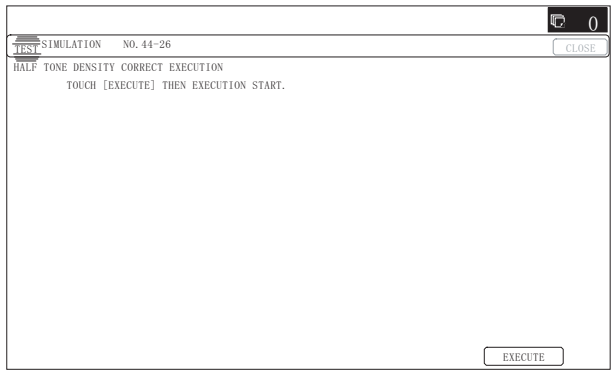
When ADJ 14B (Color balance adjustment, Auto) is executed with SIM 46-24, this procedure is automatically executed.

When [EXECUTE] key is pressed, it is highlighted and the operation is started.

8) Use SIM 44-26 to execute the 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.

9) Make a copy of the servicing color test chart (UKOG-0326FCZZ/UKOG-0326FC11) and a user's document according to necessity in the Text/Printed Photo mode (Manual) and check the adjustment result again. (Refer to the item of the copy color balance/density check.)

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

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

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

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

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

In the next color balance adjustment, select the service target color balance in the automatic color balance adjustment mode to make an adjustment to the similar color balance as the registered color balance.

(Gamma setting of auto color balance adjustment service color balance target)

a. General

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

There are following three kinds of the target.

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

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

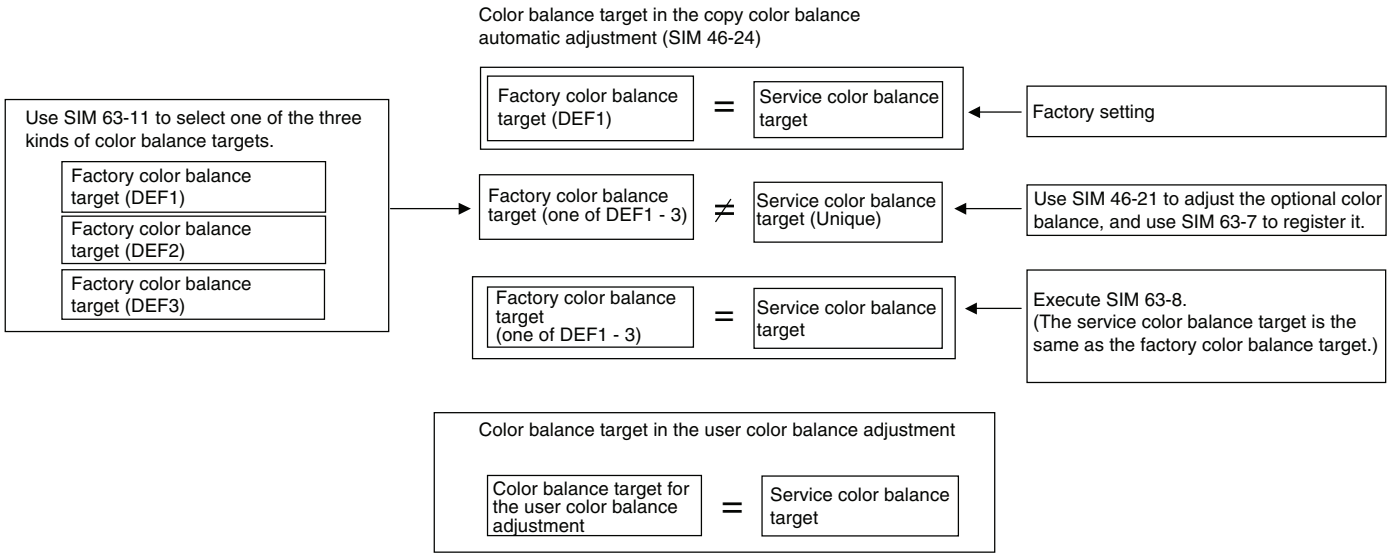
This adjustment is required in the following cases.

* When the copy color balance/density adjustment (manual adjustment) is executed with SIM 46-21).
* U2 trouble has occurred.
* When the MFP PWB is replaced.
* When the EEPROM on the MFP PWB is replaced.
* The scanner control PWB has been replaced.
* The EEPROM on the scanner control PWB has been replaced.
* When the user requests for customizing the color balance.
* When the service color balance target gamma is judged as improper.

(Each color balance target for the copy color balance adjustment)

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

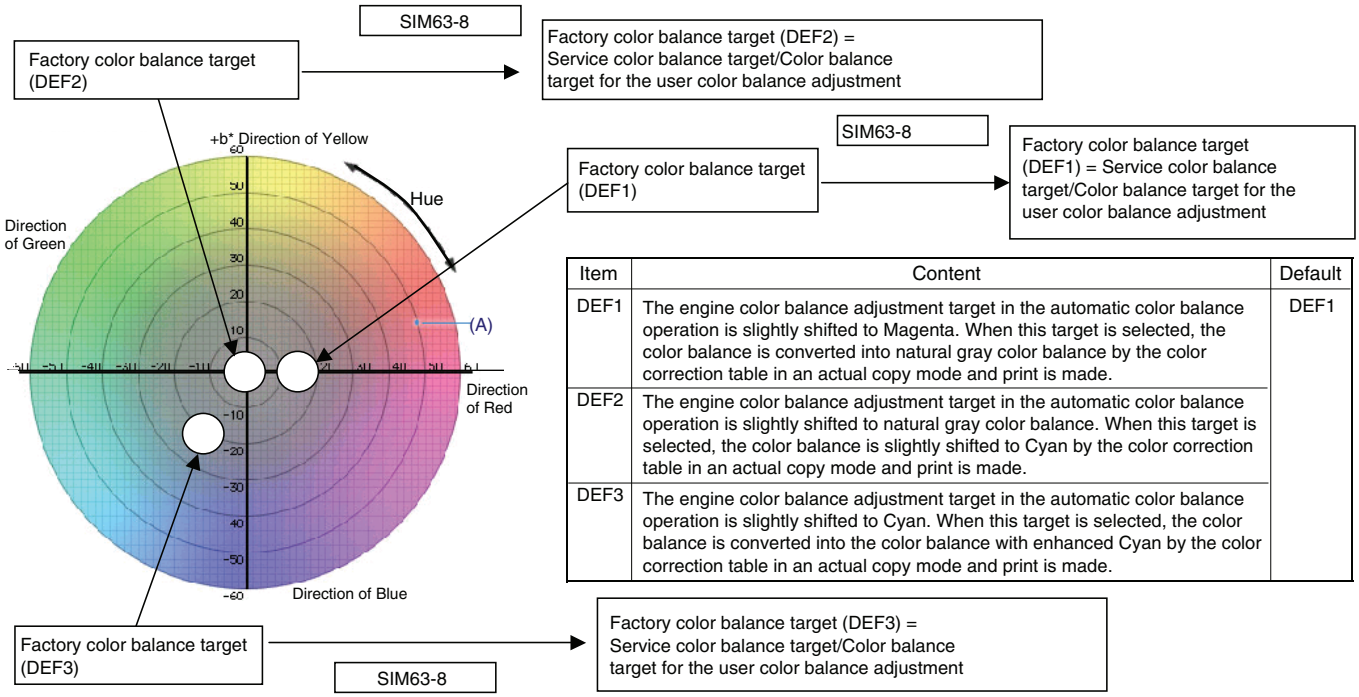
- Relationship between the factory target and the service target and the color balance target for the user color balance adjustment in the copy color balance adjustment (SIM 46-24)



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

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

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



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

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

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

- Color balance target in the user color balance adjustment

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

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

This procedure must be executed only when the color balance is customized with SIM 46-21. If the color balance is not customized, this procedure is not required.

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

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

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

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

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

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

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

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

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

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

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

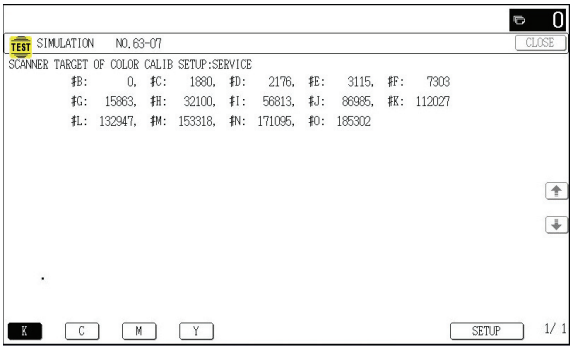
b. Setting procedure

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

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

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

2) Enter the SIM 63-7 mode.



3) Press [SETUP] key.

4) Set the color patch image (adjustment pattern) correctly adjusted and printed in the copy color balance adjustment (Manual adjustment) (SIM 46-21) (ADJ 14C) on the document table.

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

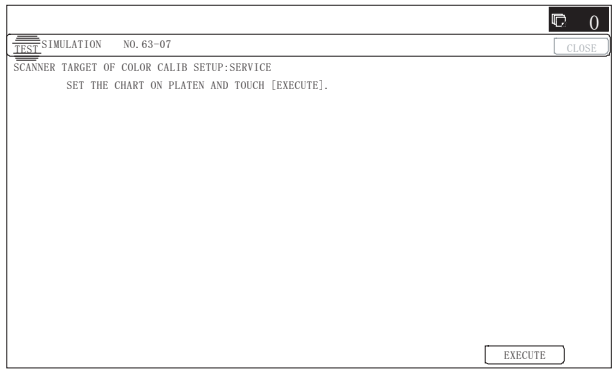
   (When the color patch image (adjustment pattern) is printed by SIM 64-7, set the item B (PROC ADJ) to "0 (YES)" and press [EXECUTE] key to print.)

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

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

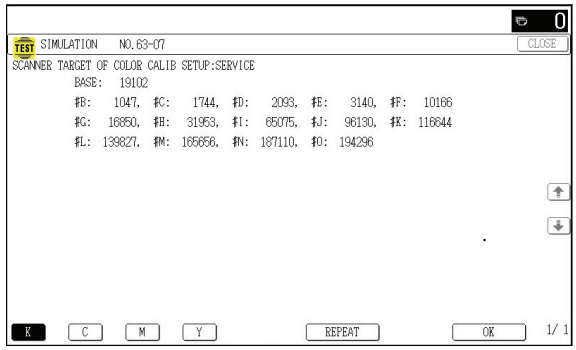
   If the color balance could not be adjusted satisfactorily with SIM 46-21 (Color balance adjustment (Manual)), do not execute SIM 63-7 to register the service color balance target data.

5) Press [EXECUTE] key.



   The color patch image (adjustment pattern) is read.

6) Press [REPEAT] key, set the second color patch image (adjustment pattern), and execute the procedure 5) again.



   The color balance (gamma) target set level of each color (KCMY) can be checked with K/C/M/Y keys.

   Check that the set level is increased in the sequence of B - Q (MAX). If there is no variation or variation is reversed, it is judged as abnormal.

   In case of an abnormality, repair the problem and try again.

7) Press [OK] key.

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

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

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

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

1) Enter the SIM 63-8 mode.

2) Press [EXECUTE] key.

3) Press [YES] key.

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

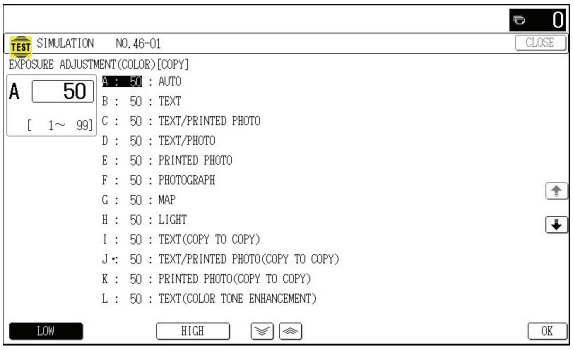
14-D Copy density adjustment (Each color copy mode) (Whole adjustment) (Normally unnecessary to adjust) (MX-C402SC/C382SC)

This adjustment is needed in the following situations:

* When there is necessity to change the copy density of the low density and high density part at each copy density individually.
* When there is necessity to change the density gradient of the copy by each the copy mode individually.
* When there is necessity to change all copy density by each the copy mode individually.
* U2 trouble has occurred.
* When the MFP PWB is replaced.
* When the EEPROM on the MFP PWB is replaced.

The density is adjusted in each copy mode individually. Normally individual adjustments are not required. When there is a request from the user, execute this adjustment.

1) Enter the SIM 46-1 mode.



2) Select the copy mode to be adjusted with the scroll key.

Display/Item		Content		Setting range	Default
A	AUTO	Auto	LOW	1 - 99	50
			HIGH	1 - 99	50
B	TEXT	Text	LOW	1 - 99	50
			HIGH	1 - 99	50
C	TEXT/PRINTED PHOTO	Text/Printed Photo	LOW	1 - 99	50
			HIGH	1 - 99	50
D	TEXT/PHOTO	Text/Photograph	LOW	1 - 99	50
			HIGH	1 - 99	50
E	PRINTED PHOTO	Printed Photo	LOW	1 - 99	50
			HIGH	1 - 99	50
F	PHOTOGRAPH	Photograph	LOW	1 - 99	50
			HIGH	1 - 99	50
G	MAP	Map	LOW	1 - 99	50
			HIGH	1 - 99	50
H	LIGHT	Light document	LOW	1 - 99	50
			HIGH	1 - 99	50
I	TEXT (COPY TO COPY)	Text (Copy document)	LOW	1 - 99	50
			HIGH	1 - 99	50
J	TEXT/PRINTED PHOTO (COPY TO COPY)	Text/Printed Photo (Copy document)	LOW	1 - 99	50
			HIGH	1 - 99	50
K	PRINTED PHOTO (COPY TO COPY)	Printed Photo (Copy document)	LOW	1 - 99	50
			HIGH	1 - 99	50
L	TEXT (COLOR TONE ENHANCEMENT)	Text (Color tone enhancement)	LOW	1 - 99	50
			HIGH	1 - 99	50
M	TEXT/PRINTED PHOTO (COLOR TONE ENHANCEMENT)	Text/Printed Photo (Color tone enhancement)	LOW	1 - 99	50
			HIGH	1 - 99	50
N	TEXT/PHOTO (COLOR TONE ENHANCEMENT)	Text/Photograph (Color tone enhancement)	LOW	1 - 99	50
			HIGH	1 - 99	50
O	PRINTED PHOTO (COLOR TONE ENHANCEMENT)	Printed Photo (Color tone enhancement)	LOW	1 - 99	50
			HIGH	1 - 99	50
P	PHOTOGRAPH (COLOR TONE ENHANCEMENT)	Photograph (Color tone enhancement)	LOW	1 - 99	50
			HIGH	1 - 99	50
Q	MAP (COLOR TONE ENHANCEMENT)	Map (Color tone enhancement)	LOW	1 - 99	50
			HIGH	1 - 99	50
R	SINGLE COLOR	Single color	LOW	1 - 99	50
			HIGH	1 - 99	50
S	SINGLE COLOR (COPY TO COPY)	Single color (Copy document)	LOW	1 - 99	50
			HIGH	1 - 99	50
T	TWO COLOR	Two-color (Red/Black) copy	LOW	1 - 99	50
			HIGH	1 - 99	50
U	TWO COLOR (COPY TO COPY)	Two-color (Red/Black) copy (Copy document)	LOW	1 - 99	50
			HIGH	1 - 99	50

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

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

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

4) Make a copy and check the adjustment result.

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

Repeat switching the adjustment mode (SIM 46-1) and the normal copy mode and changing the adjustment value and checking the adjustment result until a satisfactory result is obtained.

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

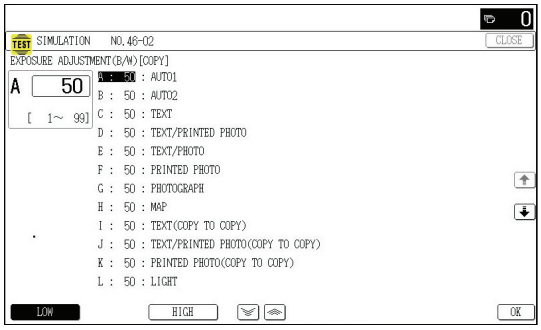
14-E Copy density adjustment (Each monochrome copy mode) (Whole adjustment) (Normally unnecessary to adjust) (MX-C402SC/C382SC)

This adjustment is needed in the following situations:

* When there is necessity to change copy density of the low density and high density part at each copy mode individually.
* When there is necessity to change the density gradient of the copy by each the copy mode individually.
* When there is necessity to change all copy density by each the copy mode individually.
* U2 trouble has occurred.
* When the MFP PWB is replaced.
* When the EEPROM on the MFP PWB is replaced.

The density is adjusted in each copy mode individually. Normally individual adjustments are not required. When there is a request from the user, execute this adjustment.

1) Enter the SIM 46-2 mode.



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

Repeat switching the adjustment mode (SIM 46-2) and the normal copy mode and changing the adjustment value and checking the adjustment result until a satisfactory result is obtained.

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

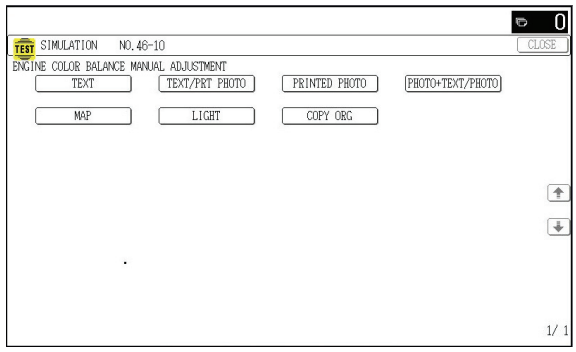
14-F Copy color balance adjustment (Color balance adjustment at each density level in each color copy mode) (Normally not required) (MX-C402SC/C382SC)

This adjustment is needed in the following situations:

* When there is necessity to change the color balance and gamma by each the copy mode individually.
* U2 trouble has occurred.
* When the MFP PWB is replaced.
* When the EEPROM on the MFP PWB is replaced.

This is to adjust the color balance at each density level in each color copy mode. Normally individual adjustments are not required. This adjustment is executed when there is a request from the user.

1) Enter the SIM 46-10 mode.



2) Select the copy mode to be adjusted.
3) Select a color to change the adjustment value with the color key.
4) Select the density level (point) to be adjusted with the scroll key.

Item/Display		Density level (Point)	Adjustment value range	Default
A	POINT1	Point 1	245 - 755	500
B	POINT2	Point 2	245 - 755	500
C	POINT3	Point 3	245 - 755	500
D	POINT4	Point 4	245 - 755	500
E	POINT5	Point 5	245 - 755	500
F	POINT6	Point 6	245 - 755	500
G	POINT7	Point 7	245 - 755	500
H	POINT8	Point 8	245 - 755	500
I	POINT9	Point 9	245 - 755	500
J	POINT10	Point 10	245 - 755	500
K	POINT11	Point 11	245 - 755	500
L	POINT12	Point 12	245 - 755	500
M	POINT13	Point 13	245 - 755	500
N	POINT14	Point 14	245 - 755	500
O	POINT15	Point 15	245 - 755	500
P	POINT16	Point 16	245 - 755	500
Q	POINT17	Point 17	245 - 755	500

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

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

When the arrow key is pressed, the color densities selected with the color keys are collectively adjusted.

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

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

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

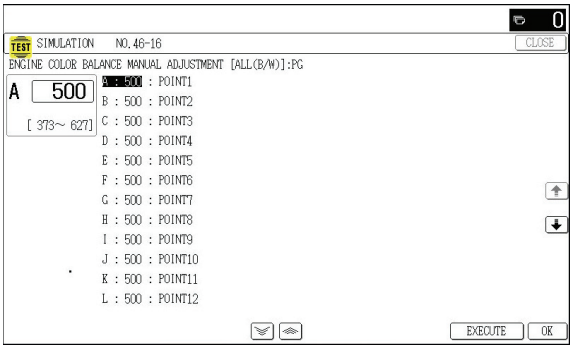
14-G Monochrome copy density/gamma adjustment (Each monochrome copy mode) (Normally not required) (MX-C402SC/C382SC)

This adjustment is needed in the following situations:

* When there is necessity to change the gamma in monochrome mode.
* U2 trouble has occurred.
* When the MFP PWB is replaced.
* When the EEPROM on the MFP PWB is replaced.

This is to adjust each density level in each monochrome copy mode. Normally individual adjustments are not required. This adjustment is executed when there is a request from the user.

1) Enter the SIM 46-16 mode.



2) Select the density level (point) to be adjusted with the scroll key.

Item/Display		Density level (Point)	Adjustment value range	Default
A	POINT1	Point 1	373 - 627	500
B	POINT2	Point 2	373 - 627	500
C	POINT3	Point 3	373 - 627	500
D	POINT4	Point 4	373 - 627	500
E	POINT5	Point 5	373 - 627	500
F	POINT6	Point 6	373 - 627	500
G	POINT7	Point 7	373 - 627	500
H	POINT8	Point 8	373 - 627	500
I	POINT9	Point 9	373 - 627	500
J	POINT10	Point 10	373 - 627	500
K	POINT11	Point 11	373 - 627	500
L	POINT12	Point 12	373 - 627	500
M	POINT13	Point 13	373 - 627	500
N	POINT14	Point 14	373 - 627	500
O	POINT15	Point 15	373 - 627	500
P	POINT16	Point 16	373 - 627	500
Q	POINT17	Point 17	373 - 627	500

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

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

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

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

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

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

14-H Condition setting of document density reading operation (exposure) in the monochrome auto copy mode (Normally not required) (MX-C402SC/C382SC)

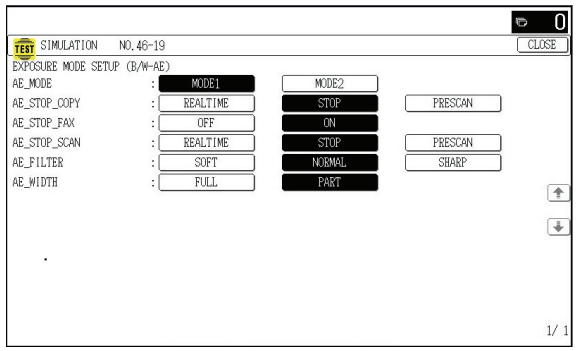
Use for setting the condition of read operation (Exposure) for document density in monochrome auto copy mode.

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

This adjustment is required in the following cases.

* When a copy with correct density is not obtained in monochrome auto mode.
* U2 trouble has occurred.
* When the MFP PWB is replaced.
* When the EEPROM on the MFP PWB is replaced.

1) Enter the SIM 46-19 mode.



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	PART
		PART	

NOTE: MODE1: High gamma (Improves the image contrast)

MODE2: Normal gamma

STOP:

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

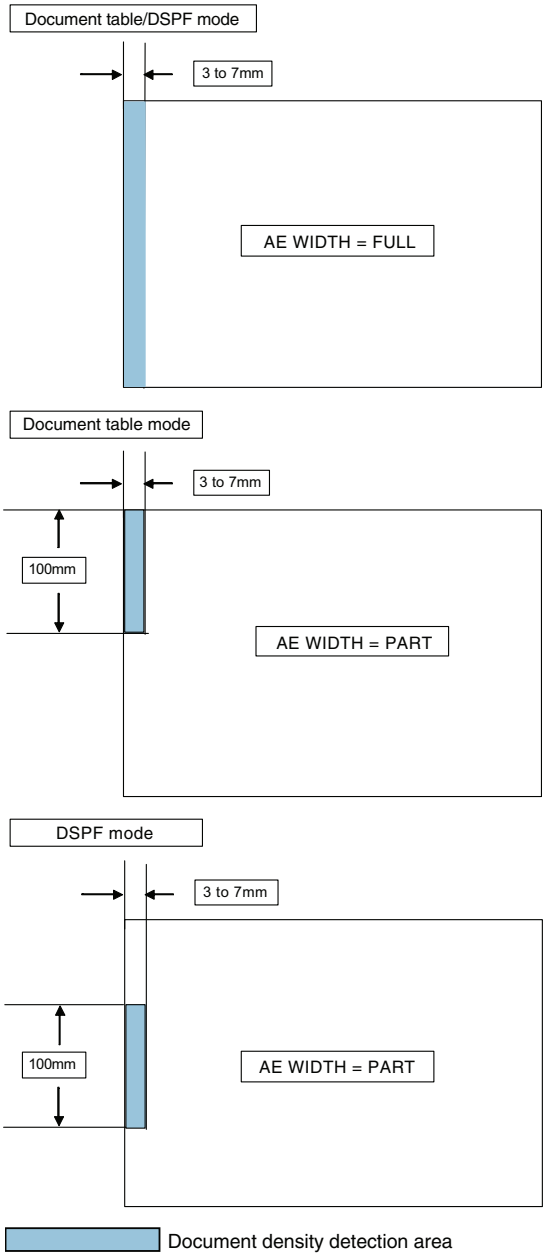
REALTIME:
Reads the density of width of the document one by one, decides the output image density according to the density of each part of the document. (The output image density may be not constant at whole area.)

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

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

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

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



14-I Document background density reproducibility adjustment in the monochrome auto copy mode (Normally unnecessary to adjust) (MX-C402SC/C382SC)

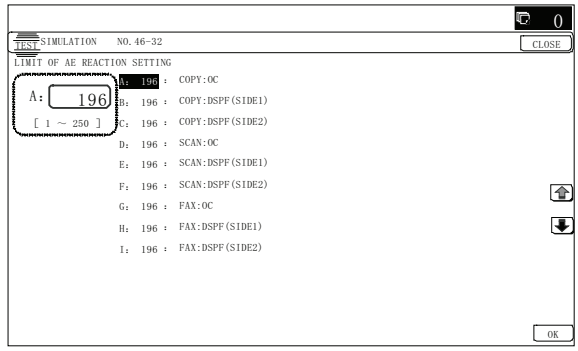
Use for the reproducibility adjustment of document background density in monochrome auto copy mode.

When there is a desire to no reproducing the document background or reproducing the low density image, adjust this.

This adjustment is required in the following cases.

* When there is a desire not to reproduce the background of the document. When there is a desire to reproduce the low density image of the document.
* U2 trouble has occurred.
* When the MFP PWB is replaced.
* When the EEPROM on the MFP PWB is replaced.
* When there is request from the user.

1) Enter the SIM 46-32 mode.



2) Select the adjusting mode "COPY: OC", "COPY: DSPF" 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

14-J Copy density adjustment for low density section (Each copy mode) (Normally unnecessary to adjust) (MX-C402SC/C382SC)

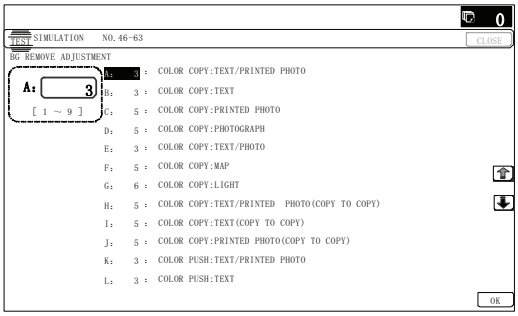
Use to adjust image density low density area in copy mode.

When there is a desire to no reproducing the document background or reproducing the low density image, adjust this.

This adjustment is required in the following cases.

* When there is a desire not to reproduce the background of the document. When there is a desire to reproduce the low density image of the document.
* U2 trouble has occurred.
* When the MFP PWB is replaced.
* When the EEPROM on the MFP PWB is replaced.
* When there is request from the user.

1) Enter the SIM 46-63 mode.



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

Display/Item		Content	Set value	Default
A	COLOR COPY : TEXT/PRINTED PHOTO	Text print (color copy)	1 - 9	3
B	COLOR COPY : TEXT	Text (color copy)	1 - 9	3
C	COLOR COPY : PRINTED PHOTO	Printed photo (color copy)	1 - 9	5
D	COLOR COPY : PHOTOGRAPH	Photograph (color copy)	1 - 9	5
E	COLOR COPY : TEXT/PHOTO	Text/Photograph (color copy)	1 - 9	3
F	COLOR COPY : MAP	map (color copy)	1 - 9	5
G	COLOR COPY : LIGHT	Light document (color copy)	1 - 9	6
H	COLOR COPY : TEXT/PRINTED PHOTO (COPY TO COPY)	Copy document, Text print (color copy)	1 - 9	5
I	COLOR COPY : TEXT (COPY TO COPY)	Copy document, Text (color copy)	1 - 9	5
J	COLOR COPY : PRINTED PHOTO (COPY TO COPY)	Copy document, Printed photo (color copy)	1 - 9	5
K	COLOR PUSH:TEXT/ PRINTED PHOTO	Text print (color PUSH)	1 - 9	3
L	COLOR PUSH:TEXT	Text (color PUSH)	1 - 9	3
M	COLOR PUSH:PRINTED PHOTO	Printed photo (color PUSH)	1 - 9	5
N	COLOR PUSH:PHOTOGRAPH	Photograph (color PUSH)	1 - 9	5
O	COLOR PUSH:TEXT/ PHOTO	Text/Photograph (color PUSH)	1 - 9	3
P	COLOR PUSH:MAP	map (color PUSH)	1 - 9	5

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

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

If a satisfactory result is not obtained, adjust by ADJ14D and ADJ14E.

14-K Color copy text, line image edge gamma, density adjustment / Text · Map mode gamma, density adjustment (MX-C402SC/C382SC)

(Adjustment 1)

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

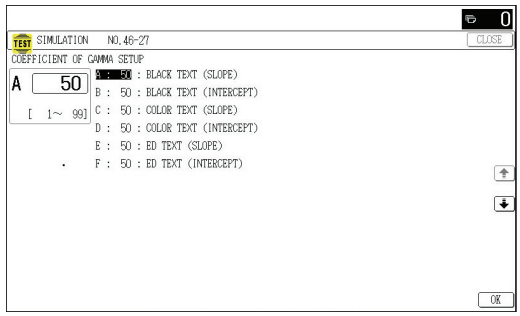
With this adjustment, the density and the thickness of fine text and lines can be varied.

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

This adjustment is required in the following cases.

* When the reproducibility of text and line copy image is to be changed.
* U2 trouble has occurred.
* When the MFP PWB is replaced.
* When the EEPROM on the MFP PWB is replaced.

1) Enter the SIM 46-27 mode.



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

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

3) Enter the adjustment value with 10-key.

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

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

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

4) Press [OK] key.

5) Make a copy in monochrome text/printed photo copy mode (manual), check the copy.

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

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

Repeat the above procedures until a satisfactory result is obtained.

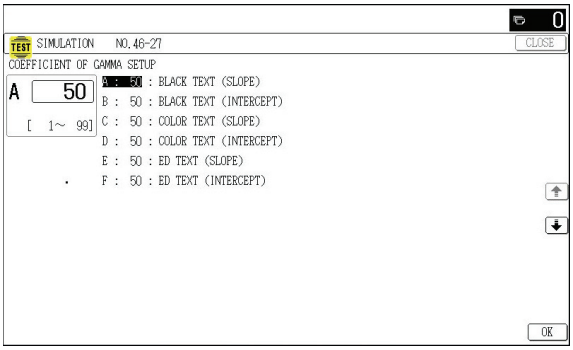
(Adjustment 2)

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

This adjustment is required in the following cases.

* To change the contrast and the density of the Text/Map copy mode images.
* U2 trouble has occurred.
* When the MFP PWB is replaced.
* When the EEPROM on the MFP PWB is replaced.

1) Enter the SIM 46-27 mode.



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

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

3) Enter the adjustment value with 10-key.

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

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

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

4) Press [OK] key.

5) Make a copy in the Text/Map copy mode (manual), and check the output print.

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

Repeat the above procedures until a satisfactory result is obtained.

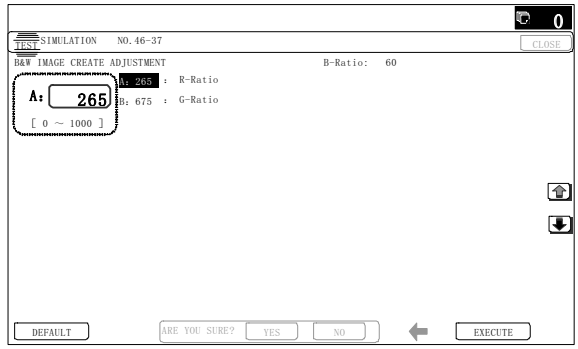
14-L Color document reproducibility adjustment in the monochrome copy mode (Normally unnecessary to adjust) (MX-C402SC/C382SC)

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

This adjustment is required in the following cases.

* When there is desire to change reproducibility of yellow/red image in case of making a color copy of the color document in monochrome copy mode.
* U2 trouble has occurred.
* When the MFP PWB is replaced.
* When the EEPROM on the MFP PWB is replaced.

1) Enter the SIM 46-37 mode.



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

Display/Item (Copy mode)		Content	Adjustment range	Default
A	R-Ratio	Gray making setting (R)	0 - 1000	116
B	G-Ratio	Gray making setting (G)	0 - 1000	843

3) Enter the adjustment value with 10-key.

When [DEFAULT] key is pressed, the value is set to the default value.

When the adjustment values of the adjustment 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 the adjustment item A is decreased and the adjustment value of the adjustment item B is increased, the copy density of red images is increased. When the adjustment value of the adjustment item A is increased and the adjustment value of the adjustment item B is decreased, the copy density of red images is decreased.

4) Press [EXECUTE] key.

5) Press [YES] key.

6) Make a copy in the Monochrome Text/Printed Photo copy mode (manual), and check the copy.

If a satisfactory result is not obtained, return to SIM46-37 and change the adjustment value.

Repeat the above operation until a satisfactory result is obtained.

14-M Black ingredient amount adjustment in color copy mode (Normally unnecessary to adjust) (MX-C402SC/C382SC)

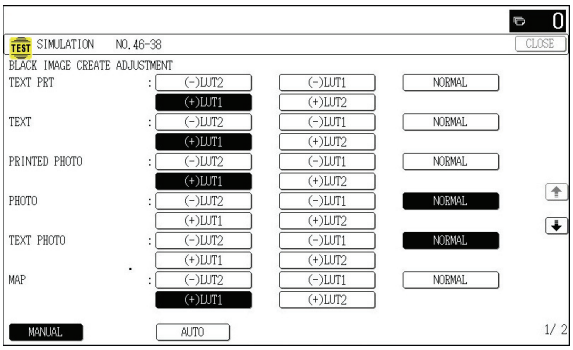
Use to adjust the black ingredient amount in the color copy mode. (except character and line image)

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

This adjustment is required in the following cases.

* When reproduction as solid of black image is required.
* To make the black background and the dark area darker
* When change of gradation of the shade part is required.
* U2 trouble has occurred.
* When the MFP PWB is replaced.
* When the EEPROM on the MFP PWB is replaced.

1) Enter the SIM 46-38 mode.



2) Select the AUTO MODE or the MANUAL MODE.

3) Select the mode to be adjusted with the scroll key.

Display/Item (Copy mode)		Select button	Content	Default
MANUAL	TEXT PRT	(-) LUT2	Text print (Manual)	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	TEXT	(-) LUT2	Text (Manual)	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	PRINTED PHT	(-) LUT2	Printed photo (Manual)	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	PHOTO	(-) LUT2	Photograph (Manual)	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	TEXT PHOTO	(-) LUT2	Text/ Photograph (Manual)	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	MAP	(-) LUT2	Map (Manual)	(+) LUT1
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
AUTO	AUTO0	(-) LUT2	Auto mode judgment 0	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	AUTO1	(-) LUT2	Auto mode judgment 1	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	AUTO2	(-) LUT2	Auto mode judgment 2	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	AUTO3	(-) LUT2	Auto mode judgment 3	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	AUTO4	(-) LUT2	Auto mode judgment 4	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	AUTO5	(-) LUT2	Auto mode judgment 5	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	AUTO6	(-) LUT2	Auto mode judgment 6	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		

4) Press the black ingredient amount select button.

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

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

When a dark color image is reproduced in the black:
Selects - button

5) Make a copy in color copy mode and check the copy.

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

Repeat the above procedures until a satisfactory result is obtained.

14-N Sharpness adjustment in the monochrome auto copy mode (Normally unnecessary to adjust) (MX-C402SC/C382SC)

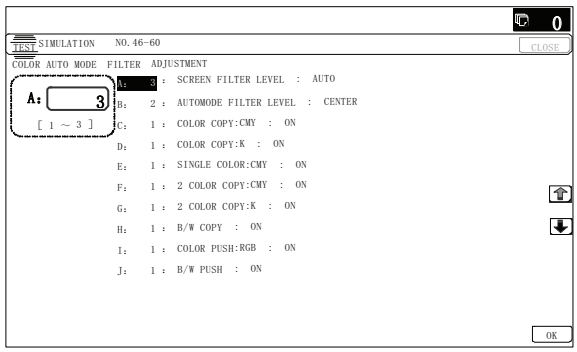
Use for sharpness adjustment of the high density image in color auto copy mode.

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

This adjustment is required in the following cases.

* When changing the sharpness of copy image in auto copy mode. (obtain crispy image) (decreases moire)
* When there is desire to improving smoothness in the image shade part (for decrease of asperity)
* To make the black background and the dark area darker.
* To reproduce the gradation change in the dark area.
* U2 trouble has occurred.
* When the MFP PWB is replaced.
* When the EEPROM on the MFP PWB is replaced.

1) Enter the SIM 46-60 mode.



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

Item/Display			Content		Setting range	Default value	Remarks
A	SCREEN FILTER LEVEL	H	Sharpness (filter) adjustment of dot pattern image in auto copy mode	Strong emphasis	1	3 (Auto)	Applied to the auto copy mode only.
		L		Soft emphasis	2		
		AUTO		Auto	3		
B	AUTOMODE FILTER LEVEL	SOFT	Sharpness (filter) adjustment for the auto copy mode	SOFT	1	2 (CENTER)	Applied to the auto copy mode only.
		CENTER		CENTER	2		
		HIGH		HIGH	3		
C	COLOR COPY : CMY	OFF	Soft filter applying setting to C, M, Y image in color copy mode	OFF	0	1 (ON)	When it is set to ON, the soft filter is applied and the smoothness in the dark image area is improved. (Roughness is reduced.)
		ON		ON	1		
D	COLOR COPY : K	OFF	Soft filter applying setting to K image in color copy mode	OFF	0	1 (ON)	
		ON		ON	1		
E	SINGLE COLOR : CMY	OFF	Soft filter applying setting to C, M, Y image in single color copy mode	OFF	0	1 (ON)	
		ON		ON	1		
F	2 COLOR COPY : CMY	OFF	Setting of YES/NO of applying the soft filter to C/M/Y images of the 2-color copy mode	OFF	0	1 (ON)	
		ON		ON	1		
G	2 COLOR COPY : K	OFF	Setting of YES/NO of applying the soft filter to K images of the 2-color copy mode	OFF	0	1 (ON)	
		ON		ON	1		
H	B/W COPY	OFF	Soft filter applying setting in monochrome copy mode	OFF	0	1 (ON)	
		ON		ON	1		
I	COLOR PUSH : RGB	OFF	Soft filter applying setting to image in push scan color mode	OFF	0	1 (ON)	
		ON		ON	1		
J	B/W PUSH	OFF	Soft filter applying setting to image in push scan monochrome mode	OFF	0	1 (ON)	
		ON		ON	1		

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.

14-O Copy high density part density correction setting (Prevents against tone gap) (Normally unnecessary to adjust) (MX-C402SC/C382SC)

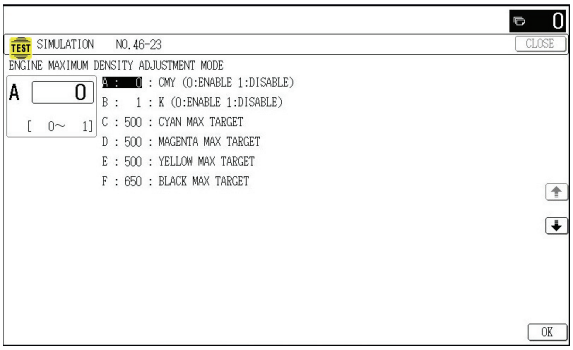
If a tone gap occurs on part of high density in color mode, or if there is necessity to increase the density of the part of high density, change the setting.

This setting 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 necessity to increase the density of the part of high density.
* The CCD unit has been replaced.
* U2 trouble has occurred.
* When the MFP PWB is replaced.
* When the EEPROM on the MFP PWB is replaced.

a. Adjustment procedure

1) Enter the SIM 46-23 mode.



2) Select the item A, B with the scroll key.

Display/Item		Content		Setting range	Default
A	CMY (0:ENABLE 1:DISABLE)	0	CMY engine maximum density correction mode Enable	0 - 1	0
		1	CMY engine maximum density correction mode Disable		
B	K (0: ENABLE 1: DISABLE)	0	K engine maximum density correction mode Enable	0 - 1	1
		1	K engine maximum density correction mode Disable		
C	CYAN MAX TARGET	Scanner target value for CYAN maximum density correction		0 - 999	629
D	MAGENTA MAX TARGET	Scanner target value for MAGENTA maximum density correction		0 - 999	532
E	YELLOW MAX TARGET	Scanner target value for YELLOW maximum density correction		0 - 999	500
F	BLACK MAX TARGET	Scanner target value for BLACK maximum density correction		0 - 999	500

* If a tone gap occurs on part of high density, set 0 to item A and B.
  The density of high density part decreases. However, the tone gap is better.
* In case of more increase of the density on high density part, set 1 to item A and B.
  The tone gap may occur in high density part.

3) Press [OK] key.

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

If these values is changed, be sure to execute the copy color balance density adjustment ADJ 14B. (Auto adjustment)

14-P Copy color balance adjustment (Single color copy mode) (Normally not required) (MX-C402SC/C382SC)

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

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

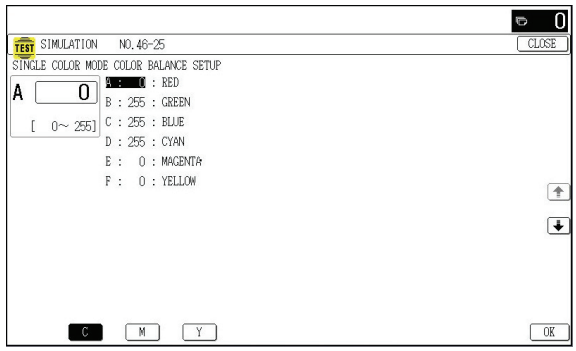
This adjustment is not required normally, but executed when there is a request from the user.

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

* The CCD unit has been replaced.
* U2 trouble has occurred.
* When the MFP PWB is replaced.
* When the EEPROM on the MFP PWB is replaced.

a. Adjustment procedure

1) Enter the SIM 46-25 mode.



2) Select the color to be adjusted with the scroll key.
3) Select the color (Y, M, C) to be adjusted.
4) Enter the adjustment value with 10-key.

Display/Item		Adjustment range	Default		
			C	M	Y
A	RED	0 - 255	0	255	200
B	GREEN	0 - 255	255	0	255
C	BLUE	0 - 255	255	200	0
D	YELLOW	0 - 255	0	0	255
E	MAGENTA	0 - 255	0	255	0
F	CYAN	0 - 255	255	0	0

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

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

Repeat the above procedures until a satisfactory result is obtained.

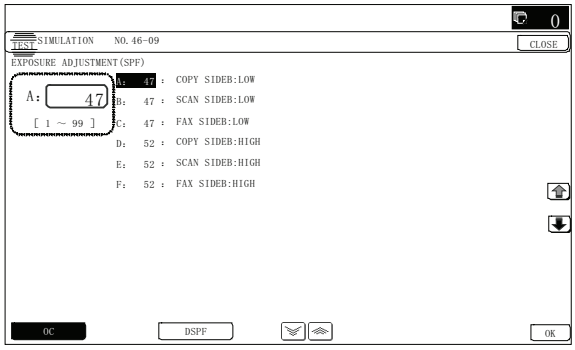
14-Q Copy density adjustment in the DSPF mode (Normally unnecessary to adjust) (MX-C402SC/C382SC)

This setting normally not required. When, however, there are case of following, change 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 LOW)". When adjusting density on high density part, select "D (COPY HIGH)".

Item/Display			Content	Setting range	Default value
A	OC	COPY SIDEB : LOW	DSPF copy mode exposure adjustment SIDEB (Low density)	1 - 99	53
B		SCAN SIDEB : LOW	DSPF scanner mode exposure adjustment SIDEB (Low density)	1 - 99	53
C		FAX SIDEB : LOW	DSPF FAX mode exposure adjustment SIDEB (Low density)	1 - 99	53
D		COPY SIDEB : HIGH	DSPF copy mode exposure adjustment SIDEB (High density)	1 - 99	51
E		SCAN SIDEB : HIGH	DSPF scanner mode exposure adjustment SIDEB (Low density)	1 - 99	51
F		FAX SIDEB : HIGH	DSPF FAX mode exposure adjustment SIDEB (High density)	1 - 99	51
A	DSPF	COPY SIDEA : LOW	DSPF copy mode exposure adjustment SIDEA (Low density)	1 - 99	50
B		SCAN SIDEA : LOW	DSPF scanner mode exposure adjustment SIDEA (Low density)	1 - 99	50
C		FAX SIDEA : LOW	DSPF FAX mode exposure adjustment SIDEA (Low density)	1 - 99	50
D		COPY SIDEA : HIGH	DSPF copy mode exposure adjustment SIDEA (High density)	1 - 99	45
E		SCAN SIDEA : HIGH	DSPF scanner mode exposure adjustment SIDEA (High density)	1 - 99	45
F		FAX SIDEA : HIGH	DSPF FAX mode exposure adjustment SIDEA (High density)	1 - 99	45
G		BALANCE SIDEA : R	DSPF color balance R	1 - 99	52
H		BALANCE SIDEA : G	DSPF color balance G	1 - 99	50
I		BALANCE SIDEA : B	DSPF color 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 single color copy mode and check the copy.

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

Repeat the above procedures until a satisfactory result is obtained.

14-R Auto color balance adjustment by the user (Copy color balance auto adjustment enable setting and adjustment) (MX-C402SC/C382SC)

a. General

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

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

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

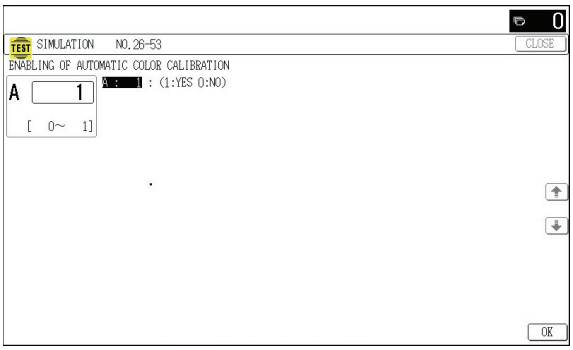
When set to ENABLE, give enough explanations on the operating procedures, notes, and operations to the user.

This adjustment is required in the following cases.

* U2 trouble has occurred.
* When the MFP PWB is replaced.
* When the EEPROM on the MFP PWB is replaced.
* When the PCU PWB is replaced.
* When the EEPROM of the PCU PWB is replaced.

b. Setting procedure

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 color calibration (automatic adjustment of copy color balance and density) is not displayed in the user program mode.

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

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

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

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

5) Set the color patch image (adjustment pattern) printed in procedure 4) on the document table.

   Set the patch image so that the light density area is on the left side.

   At that time, place 5 sheets of white paper on the above color patch image (adjustment pattern).

6) Press [EXECUTE] key, and the copy color balance adjustment is executed automatically. After completion of the adjustment, the display returns to the original operation screen.

14-S Copy color balance adjustment (Automatic adjustment for each dither) (Normally unnecessary to adjust) (MX-C402SC/C382SC)

a. General

This adjustment is to adjust the color balance and the density in the monochrome mode, the heave paper mode, the black text, color text edge, the line image edge, the text mode, and the map mode.

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

b. Note for execution of the color balance adjustment (Automatic adjustment for each dither)

1) For the color balance adjustment, use the recommended color paper. (For the recommended paper,. Refer to [2].)

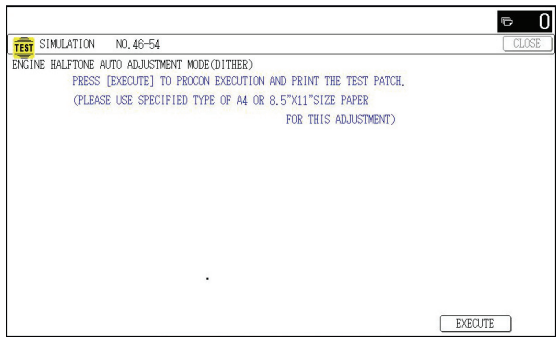
   If the other kind of paper is used for the color balance adjustment, the proper image quality (color balance, density) may not be obtained.

2) When setting the adjustment pattern on the document table in the automatic color balance adjustment procedures, place 5 sheets of white paper on the adjustment pattern in order to prevent back copying and adverse effects of paper wrinkles as far as possible. Also note that the adjustment pattern should be placed to the center reference.

3) The scan image off-center adjustment and the engine image off-center adjustment must have been properly adjusted.

c. Adjustment procedures

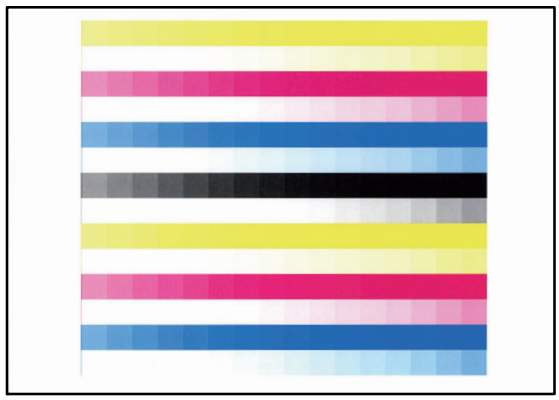
1) Enter the SIM46-54 mode.

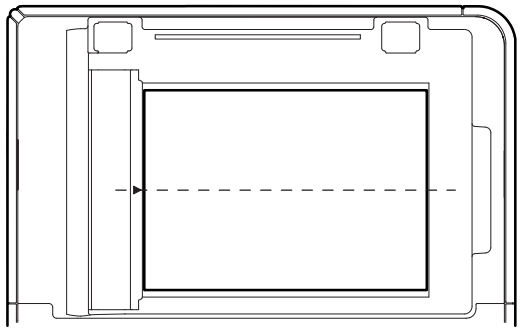


2) Press [EXECUTE] key. (A4 or 11" x 8.5" paper is automatically selected.) The color patch image (adjustment pattern) is printed.

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

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





4) Press [EXECUTE] key.

The color balance adjustment is automatically performed.

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

If there is any abnormality, adjust again.

5) Press [OK] key.

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

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

Select item (Mode/Image)	Content
Heavy Paper *1	Adjustment item to improve the color balance in the heavy paper mode
Black Edge	Adjustment item (K) to improve the reproduction of lines, text density, and thickness
Color Edge	Adjustment item (Color) to improve the reproduction of lines, text density, and thickness
B/W	Adjustment item to improve the density and gradation in the monochrome mode
Color Ed	Adjustment item to improve the color balance in the text mode and the map mode.

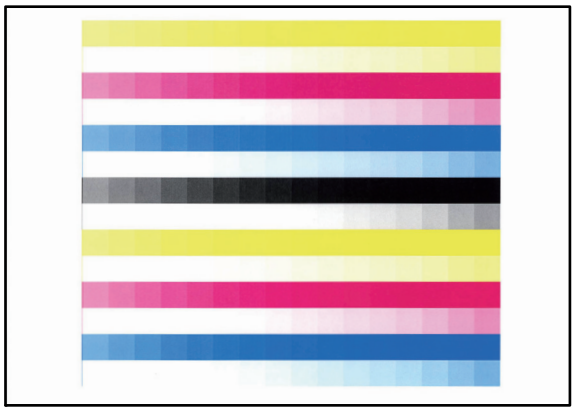
*1: When performing adjustments in the heavy paper mode, load paper in the manual paper feed tray.

7) Press [EXECUTE] key. (A4 or 11" x 8.5" paper is automatically selected.)

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

8) Set the color patch image (adjustment pattern) paper printed in procedure 7) on the document table.

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



9) Press [EXECUTE] key.

The color balance adjustment is automatically performed, and the machine goes to the state of procedure 6).

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

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

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

ADJ 14 Copy density and gradation adjustment (MX-B402SC/B382SC)

(1) Note before execution of the copy density and gradation adjustment

* After completion of this adjustment, the printer density and gradation adjustment must be executed.
* Requisite conditions before execution of the copy density and gradation adjustment

  Before execution of the copy density and gradation adjustment, check to insure that the adjustments which affect the copy density adjustment have been completed.

  The importance levels of them are shown below.

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

1) The following adjustment items must be adjusted properly.

Job No	Adjustment Item List			Simulation
ADJ 2	Image density sensor adjustment	ADJ 2A	Image density sensor adjustment	44-2

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

1) The following items must be adjusted properly.

Job No	Adjustment item list			Simulation
ADJ 1	Adjusting high voltage values	ADJ 1A	Adjust the main charger grid voltage	8-2
		ADJ 1B	Adjust the developing bias voltage	8-1
		ADJ 1C	Transfer voltage adjustment	8-6
ADJ 12	CCD gamma adjustment (CCD calibration)			63-3

(Relationship between the servicing job contents and the copy density and gradation adjustment)

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

Follow the flowchart of the copy density and gradation adjustment procedures depending on the actual conditions.

There are following four, major cases.

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

(2) Copy density and gradation check

(Note)

Before checking the copy density and gradation, be sure to execute the following jobs.

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

(Method)
Make a copy of the gray test chart (UKOG-0162FCZZ) and a copy of the servicing color test chart (UKOG-0326FCZZ/UKOG-0326FC11), and check that they are proper.

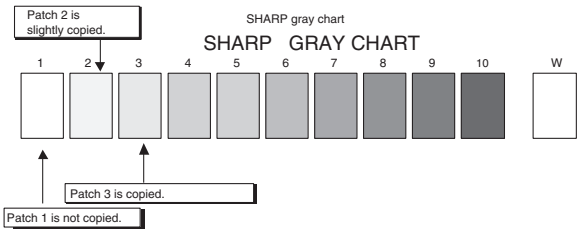
- Note for checking the copy mode density and gradation

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

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

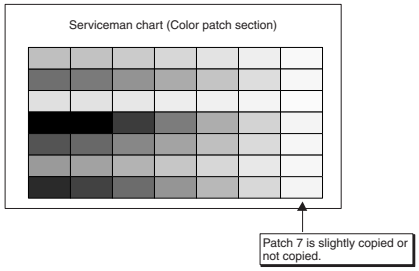
[Check with the gray test chart (UKOG-0162FCZZ)]

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



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

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



14-A (1) CCD gamma adjustment (CCD calibration) (MX-B402SC/B382SC)

This adjustment is needed in the following situations:

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

(1) Note before adjustment

1) Check that the table glass, No. 1, 2, 3 mirrors, and the lens surface are free from dirt and dust.

   (If there is some dust and dirt, wipe and clean with alcohol.)

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

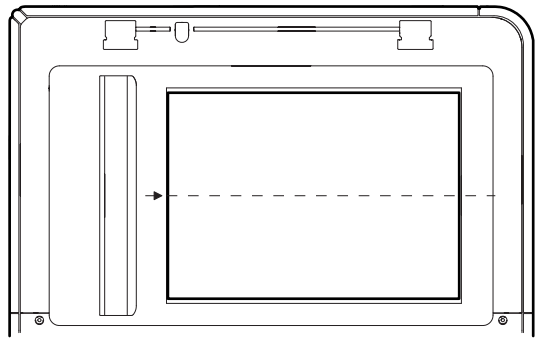
   If they are dirty, clean them.

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

(2) Adjustment procedures

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

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



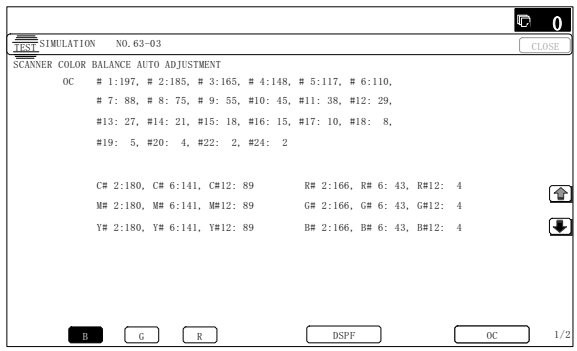
   If the SIT chart is not available, execute SIM 63-5 to set the CCD gamma to the default. In this case, however, the adjustment accuracy is lower when compared with the adjustment method using the SIT chart.

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

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

2) Enter the SIM 63-3 mode and press [EXECUTE] key.

   The automatic operation is started. During the adjustment, [EXECUTE] is highlighted. After completion of the adjustment, [EXECUTE] returns to the normal display.



NOTE: Since the SIT chart (UKOG-0280FCZZ or UKOG-0280FC Z1) 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.

14-A (2) CCD gamma adjustment (CCD calibration) (DSPF mode) (MX-B402SC/B382SC)

This adjustment is required in the following cases:

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

(1) Note before adjustment

1) Check to insure that there is no dirt or dust on the SPF scanning glass, the mirror, and the lens surface. (If there is, clean it with alcohol.)

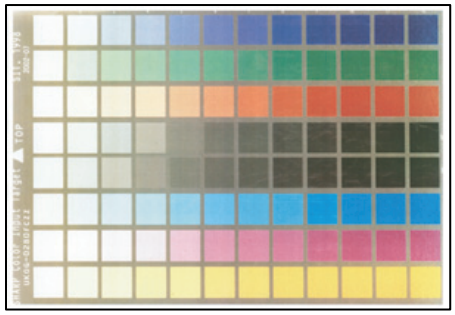
2) Check to confirm that the patches in BK1 and BK2 arrays of the SIT chart (UKOG-0280FCZZ or UKOG-0280FCZ1) are free from dirt and scratches.

If they are dirty, clean them.

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

NOTE:

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



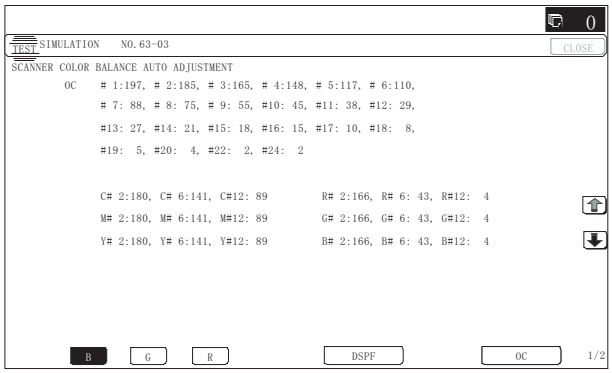
(2) Adjustment procedures

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

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

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

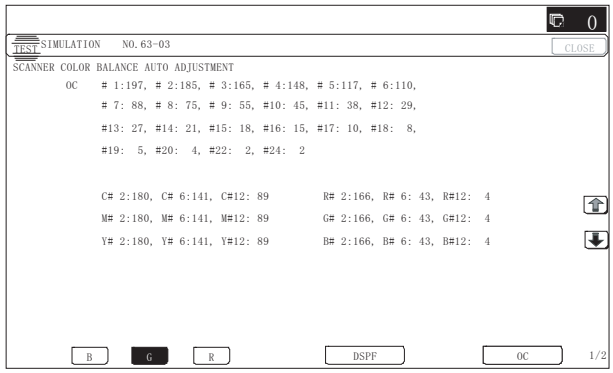
2) Enter the SIM 63-03 mode.



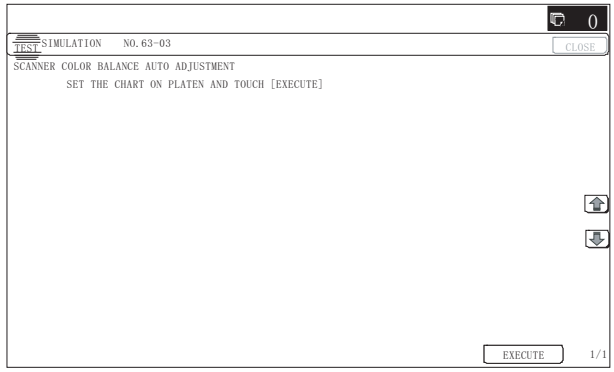
3) When a color button is selected, the adjustment value of the selected color is displayed.

* When [B] (Blue), [G] (Green), or [R] (Red) button is selected, the selected button is highlighted and the adjustment value of the selected color is displayed.
* Only one color button can be selected, and the selected button is highlighted. In the initial state, [B] is selected.
* If there is a page over [↑], an active display is shown and the page moves up. If there is no page upward, the display grays out and the operation is invalid.

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

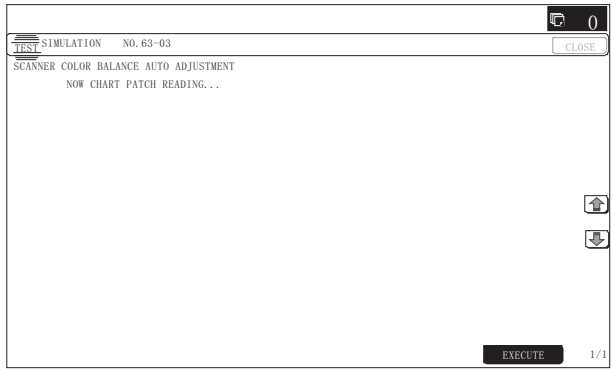


4) When [DSPF] button is pressed, it is highlighted, and the color automatic adjustment execution screen is displayed.



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

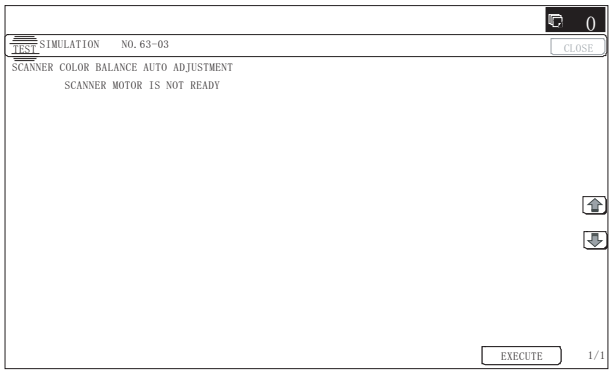
* When [EXECUTE] button is pressed during the automatic adjustment, the automatic adjustment is interrupted.



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

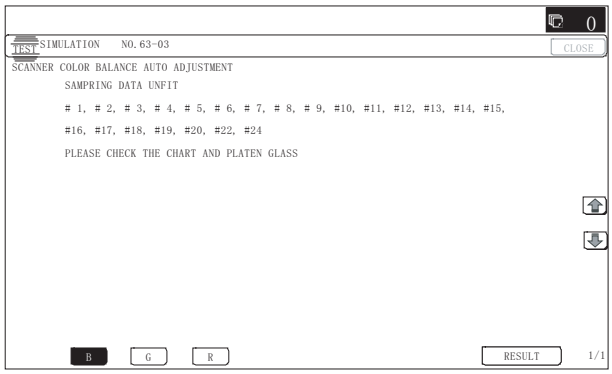
* When an error occurs in execution, the following screen is displayed.

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

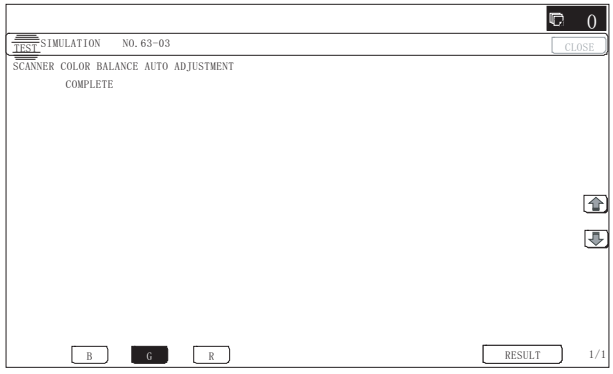


* When an error occurs in the automatic adjustment, all the error patch numbers are displayed.

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



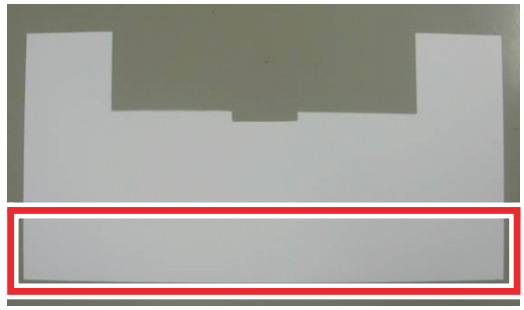
* When the operation is completed normally, "COMPLETE" is displayed. When [RESULT] button is pressed, the display returns to the initial screen. (The calculation result of normal completion is displayed.)



14-A (3) Shading adjustment (DSPF mode) (MX-B402SC/B382SC)

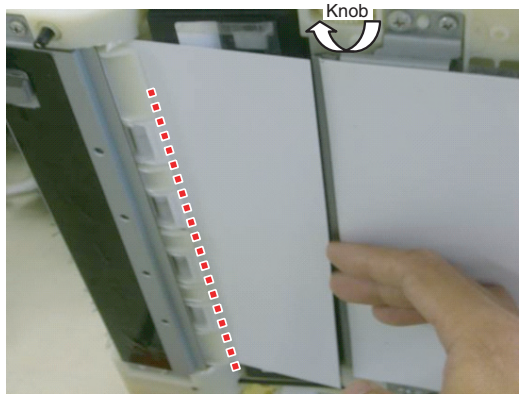
1) Open the DSPF, insert the shading sheet SC-P (UKOG-0340FCZZ) for the DSPF from the DSPF scanning section, and place the chart evenly to the four scanning rear rollers so that it is not tilted.

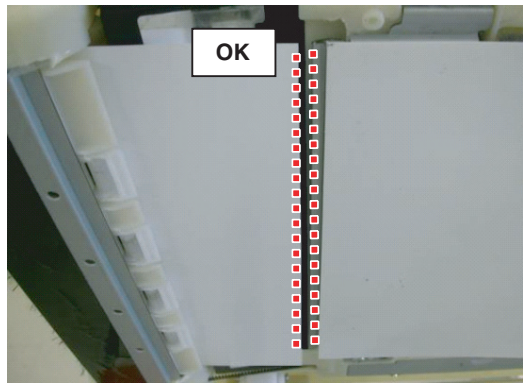
   * Do not touch the rear edge of the chart to keep it clean.

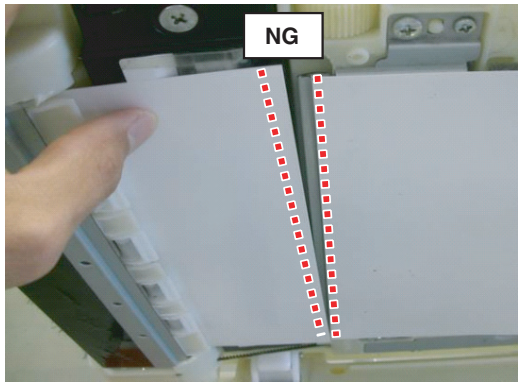


2) Rotate the knob to insert the sheet until the rear edge of the chart just reaches the cabinet. (Check to confirm that the black sections (0mm - 2mm) of the scanning guide are in parallel.)

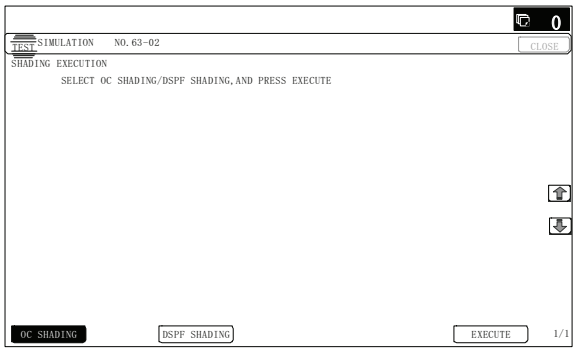
   * Place the chart evenly to the four scanning rear rollers.







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



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

<Descriptions of keys>

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

<Result display>

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

14-B Copy density and gradation adjustment (Auto adjustment) (MX-B402SC/B382SC)

This adjustment is needed in the following situations:

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

a. General

The copy density and gradation adjustment (auto adjustment) is used to adjust the copy density and gradation automatically by SIM46-24 or the user program.

(When this adjustment is executed, the density and gradation adjustments of all the copy modes are revised.)

There are following two modes in the auto adjustment.

1) Auto copy density and gradation adjustment by the serviceman (SIM 46-24 is used.)
2) Auto copy density and gradation adjustment by the user (The user program mode is used.)

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

   It is used by the user to reset the copy density and gradation to the normal levels when any trouble occurs in the copy density and gradation.

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

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

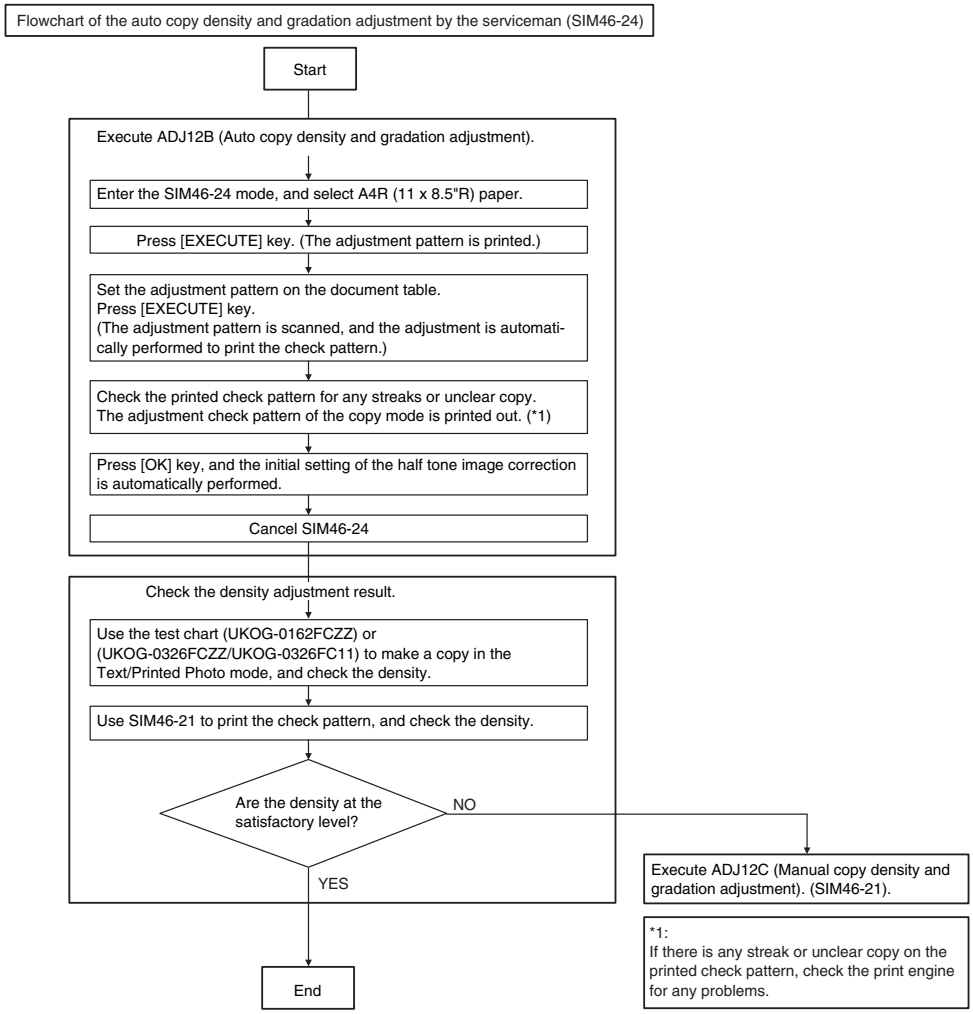
   To perform the adjustment, the above difference must be fully understood.

b. Note for execution of the copy density and gradation adjustment (Auto adjustment)

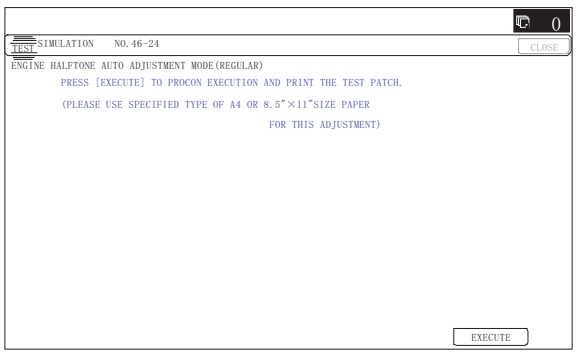
1) The print engine section must have been adjusted properly.
2) The CCD gamma adjustment must have been adjusted properly.
3) When setting the adjustment pattern on the document table in the copy density and gradation automatic adjustment procedures, place 5 sheets of white paper on the adjustment pattern in order to prevent back copying and adverse effects of paper wrinkles as far as possible. Also note that the adjustment pattern should be placed to the center reference.
4) The scan image off-center adjustment and the engine image off-center adjustment must have been properly adjusted.

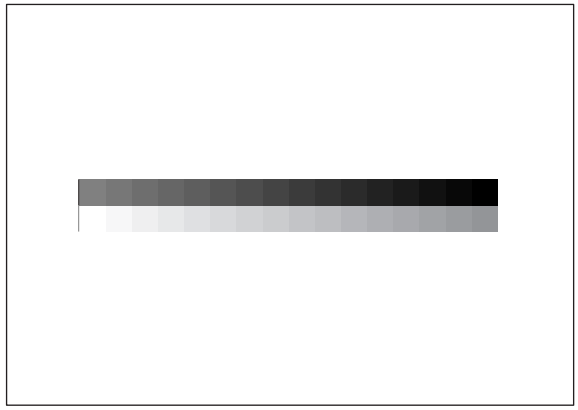
c. Adjustment procedure

(Auto copy density and gradation adjustment by the serviceman)



1) Enter the SIM 46-24 mode.



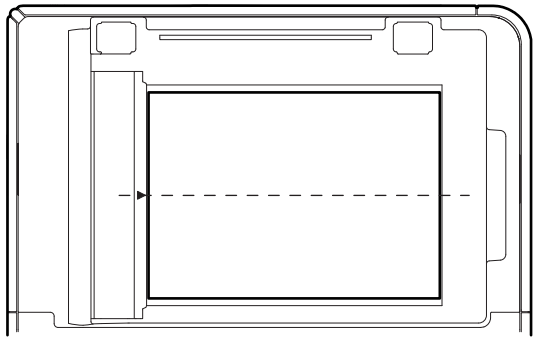


2) Press [EXECUTE] key. (A4 or 11" x 8.5" paper is automatically selected.)

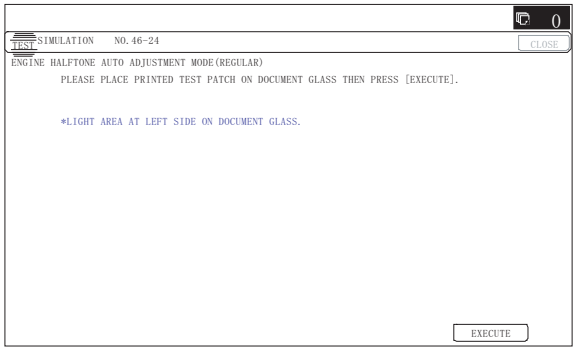
   The patch image (adjustment pattern) is printed out.

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

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



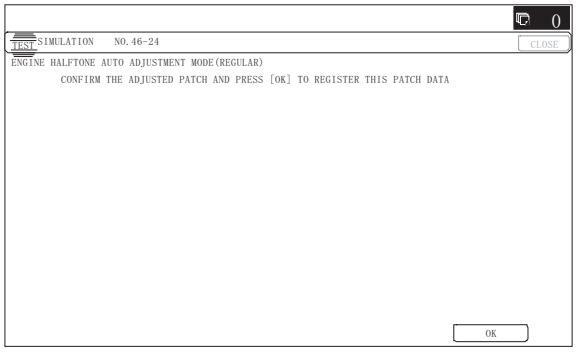
4) Press [EXECUTE] key.



The copy adjustment is automatically executed to print the 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 half tone image correction is performed.

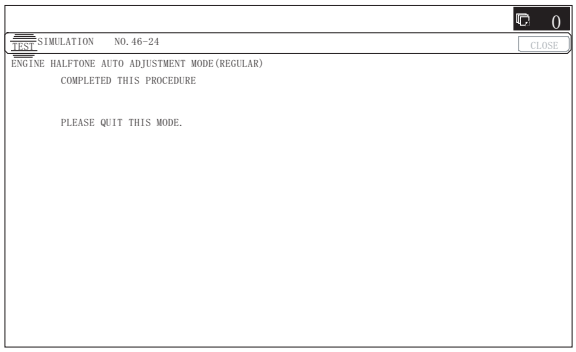


Remark:

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

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

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

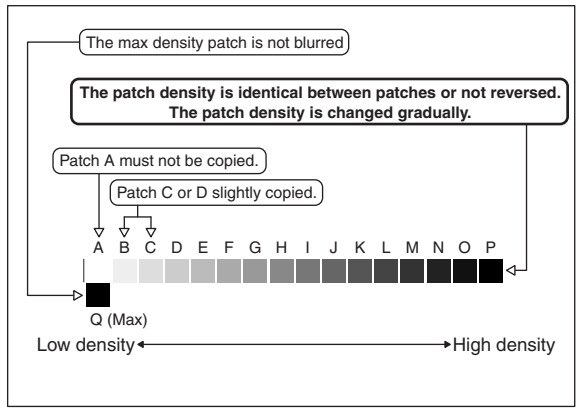


6) Check the density and gradation.

There are following three methods in the density and gradation check.

(Method 1)

Check to insure that the printed check patch image is within the following specifications.



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

- Patch C or D slightly copied.
- Patch A must not be copied.

If there is any abnormality, adjust again.

(Method 2)

Use the gray test chart (UKOG-0162FCZZ) or the service color test chart (UKOG-0326FCZZ/UKOG-0326FC11) in the Text/Photo mode (manual) to check the copy density and gradation. (Refer to the items of the copy density and gradation check.)

If a satisfactory result is not obtained by the automatic copy density and gradation adjustment, use ADJ12C Manual adjustment (SIM46-21) to adjust.

14-C Copy density and gradation adjustment (Manual adjustment) (MX-B402SC/B382SC)

This adjustment is needed in the following situations:

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

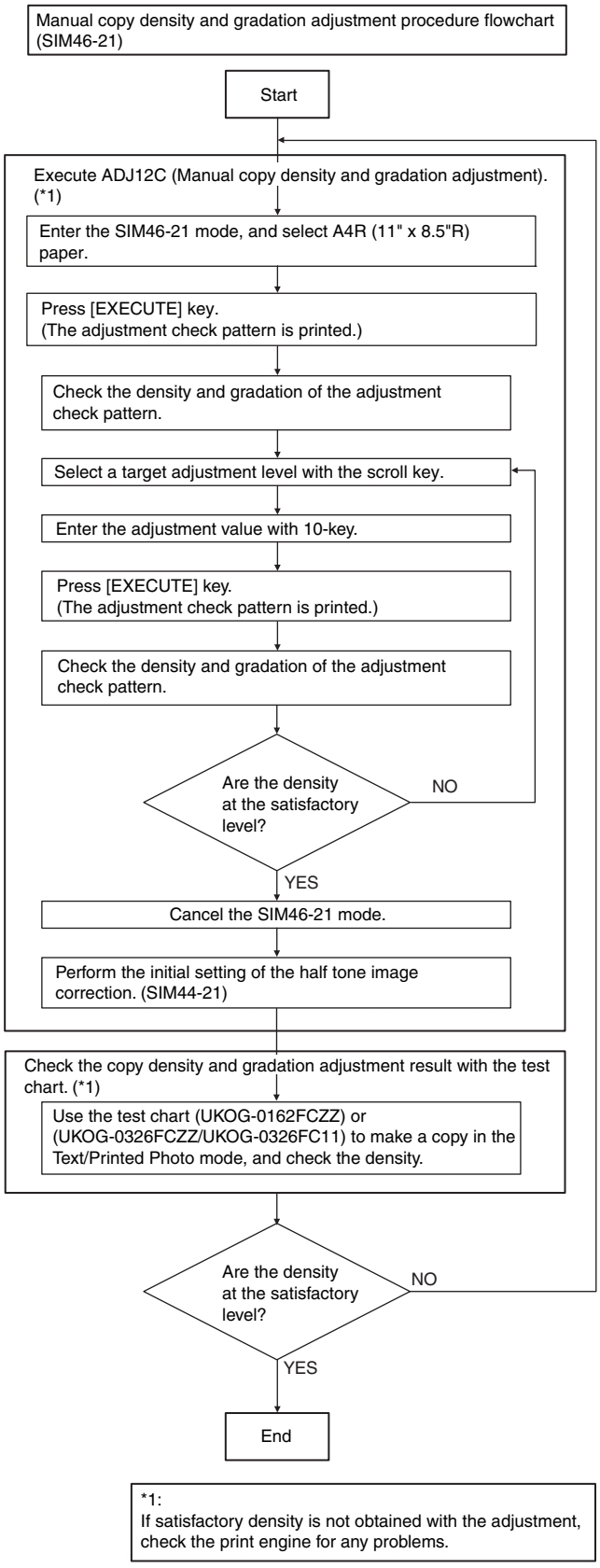
a. General

The copy density and gradation adjustment (manual adjustment) is executed when the above automatic adjustment cannot obtain the specified range, when a fine adjustment is required, or when a request for customization is made by the user.

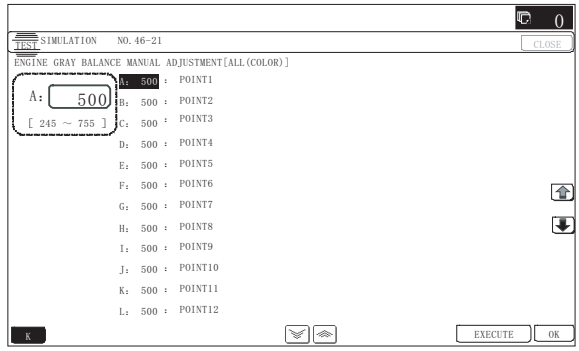
b. Note for the copy density and gradation adjustment (Manual adjustment)

1) The print engine section must have been properly adjusted.
2) The CCD gamma must have been properly adjusted.

c. Adjustment procedure



1) Enter the SIM46-21 mode.

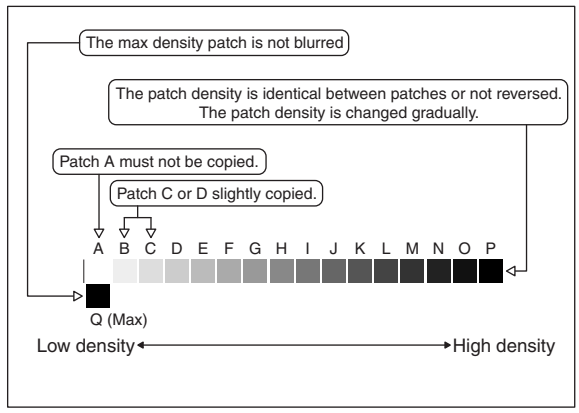


2) Press [EXECUTE] key. (A4 or 11" x 8.5" paper is automatically selected.)

   The adjustment pattern is printed.

3) Check that the following specification is satisfied or the density and gradation 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 C or D slightly copied.

   Patch A must not be copied.

   If the above conditions are not satisfied, execute the following procedures.

4) Select the adjustment point to be adjusted with the scroll key.

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

   The adjustment value is set in the range of 245 - 755 (1 - 999). When SIM 46-24 is used to adjust the automatic density and gradation, all the set values of this simulation are set to 500.

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

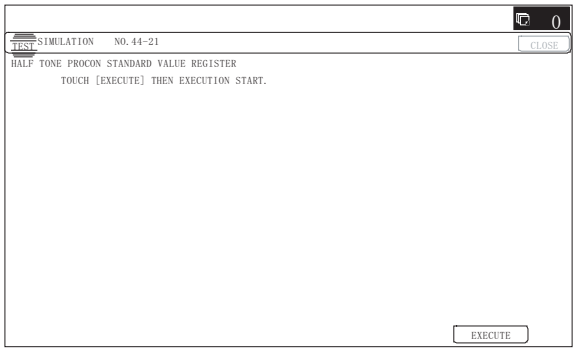
   Repeat procedures of 2) - 5) until the condition of 3) is satisfied.

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

   Then, adjust each patch density and gradation individually. This is an efficient way of adjustment.

6) Check the density and gradation of the adjustment check pattern.

7) Execute SIM 44-21. (Execute the initial setting of the half tone image correction.)



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

After completion of the operation, the simulation is canceled.

This procedure is to save the copy density and gradation adjustment data as the reference data for the half tone correction.

Immediately after execution of ADJ 12C (Copy density and gradation adjustment (Manual)) with SIM 46-21, be sure to execute this procedure.

When ADJ 12B (Copy density and gradation adjustment (Auto)) is executed with SIM 46-24, this procedure is automatically executed.

When [EXECUTE] key is pressed, it is highlighted and the operation is started.

8) Copy the gray test chart (UKOG-0162FCZZ) or the service color test chart (UKOG-0326FCZZ/UKOG-0326FC11), or a user document if necessary, in the Text/Printed Photo mode (manual) to check the adjustment result again. (Refer to the item of the copy density and gradation check.)

If the copy density and gradation 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.

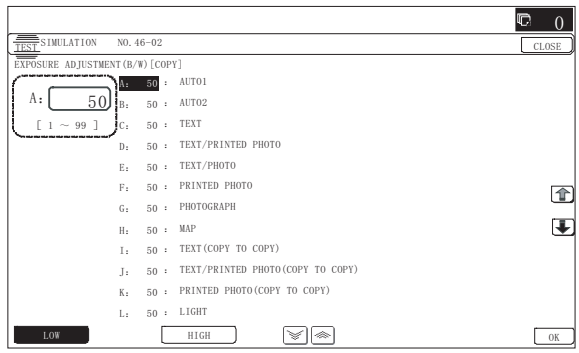
14-D Copy density and gradation adjustment (Each copy mode) (Whole adjustment) (Normally unnecessary to adjust) (MX-B402SC/B382SC)

This adjustment is needed in the following situations:

* When there is necessity to change copy density of the low density and high density part at each copy mode individually.
* When there is necessity to change the density gradient of the copy by each the copy mode individually.
* When there is necessity to change all copy density by each the copy mode individually.
* U2 trouble has occurred.
* When the MFP PWB is replaced.
* When the EEPROM on the MFP PWB is replaced.

The density and gradation is adjusted in each copy mode individually. Normally individual adjustments are not required. When there is a request from the user, execute this adjustment.

1) Enter the SIM 46-2 mode.



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

Repeat switching the adjustment mode (SIM 46-2) and the normal copy mode and changing the adjustment value and checking the adjustment result until a satisfactory result is obtained.

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

14-E Condition setting of document density reading operation (exposure) in the auto copy mode (Normally not required) (MX-B402SC/B382SC)

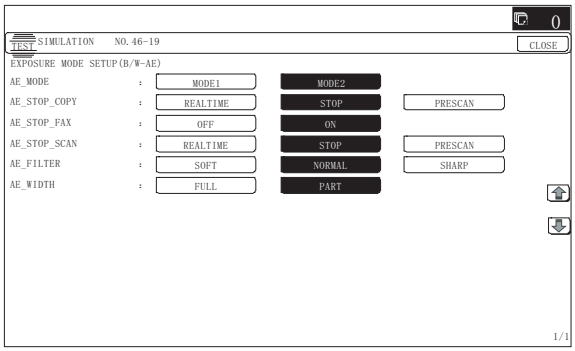
Use for setting the condition of read operation (Exposure) for document density in monochrome auto copy mode.

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

This adjustment is required in the following cases.

* When a copy with correct density is not obtained in auto mode.
* U2 trouble has occurred.
* When the MFP PWB is replaced.
* When the EEPROM on the MFP PWB is replaced.

1) Enter the SIM 46-19 mode.



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	MODE2
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	PART
		PART	

NOTE: MODE1: High gamma (Improves the image contrast)

MODE2: Normal gamma

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

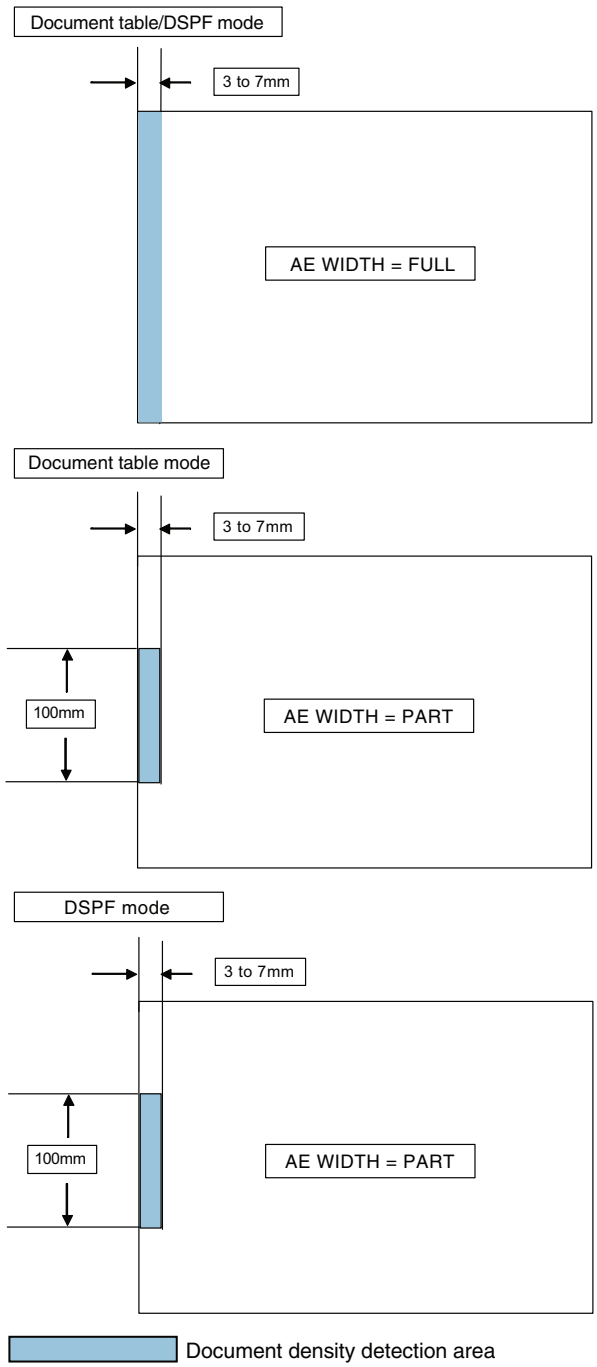
REALTIME:
Reads the density of width of the document one by one, decides the output image density according to the density of each part of the document. (The output image density may be not constant at whole area.)

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

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

Operation in 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.



14-F Document background density reproducibility adjustment in the auto copy mode (Normally unnecessary to adjust) (MX-B402SC/B382SC)

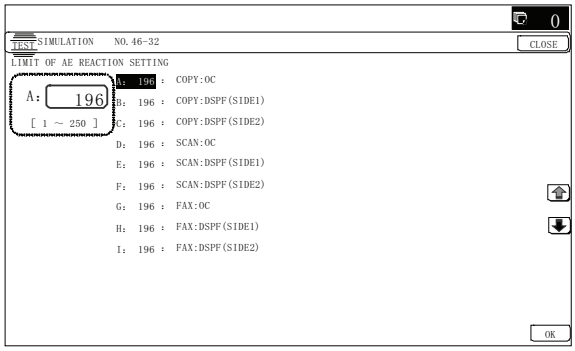
Use for the reproducibility adjustment of document background density in auto copy mode.

When there is a desire to no reproducing the document background or reproducing the low density image, adjust this.

This adjustment is required in the following cases.

* When there is a desire not to reproduce the background of the document. When there is a desire to reproduce the low density image of the document.
* U2 trouble has occurred.
* When the MFP PWB is replaced.
* When the EEPROM on the MFP PWB is replaced.
* When there is request from the user.

1) Enter the SIM 46-32 mode.



2) Select the adjusting mode "COPY: OC", "COPY: DSPF" 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 SIDE1)	1 - 250	196
C	COPY : DSPF (SIDE2)	Copy mode (for DSPF SIDE2)	1 - 250	196
D	SCAN : OC	Scanner mode (for OC)	1 - 250	196
E	SCAN : DSPF (SIDE1)	Scanner mode (for DSPF SIDE1)	1 - 250	196
F	SCAN : DSPF (SIDE2)	Scanner mode (for DSPF SIDE2)	1 - 250	196
G	FAX : OC	FAX mode (for OC)	1 - 250	196
H	FAX : DSPF (SIDE1)	FAX mode (for DSPF SIDE1)	1 - 250	196
I	FAX : DSPF (SIDE2)	FAX mode (for DSPF SIDE2)	1 - 250	196

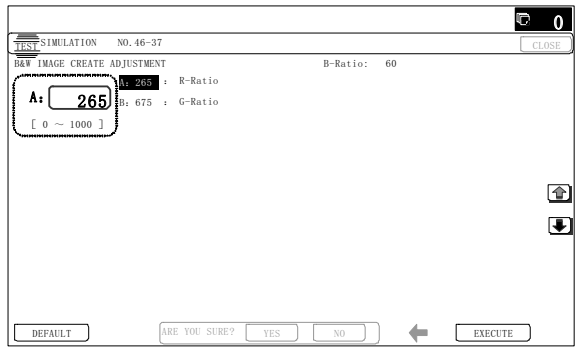
14-G Color document reproducibility adjustment in the copy mode (Normally unnecessary to adjust) (MX-B402SC/B382SC)

Use to adjust the reproducibility for the red image and the yellow image when printing color document that included the red/yellow image in 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 copy of the color document.
* U2 trouble has occurred.
* When the MFP PWB is replaced.
* When the EEPROM on the MFP PWB is replaced.

1) Enter the SIM 46-37 mode.



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

Display/Item (Copy mode)		Content	Adjustment range	Default
A	R-Ratio	Gray making setting (R)	0 - 1000	116
B	G-Ratio	Gray making setting (G)	0 - 1000	843

3) Enter the adjustment value with 10-key.

   When [DEFAULT] key is pressed, the value is set to the default value.

   When the adjustment values of the adjustment 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 the adjustment item A is decreased and the adjustment value of the adjustment item B is increased, the copy density of red images is increased. When the adjustment value of the adjustment item A is increased and the adjustment value of the adjustment item B is decreased, the copy density of red images is decreased.

4) Press [EXECUTE] key.

5) Press [YES] key.

6) Make a copy in the Text/Printed Photo copy mode (manual), and check the copy.

   If a satisfactory result is not obtained, return to SIM46-37 and change the adjustment value.

   Repeat the above operation until a satisfactory result is obtained.

14-H Sharpness adjustment in the auto copy mode (Normally unnecessary to adjust) (MX-B402SC/B382SC)

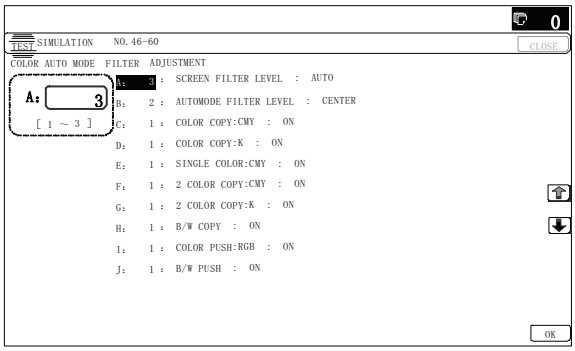
Use for sharpness adjustment of the high density image in auto copy mode.

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

This adjustment is required in the following cases.

* When changing the sharpness of copy image in auto copy mode. (obtain crispy image) (decreases moire)
* When there is desire to improving smoothness in the image shade part (for decrease of asperity)
* U2 trouble has occurred.
* When the MFP PWB is replaced.
* When the EEPROM on the MFP PWB is replaced.

1) Enter the SIM 46-60 mode.



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

Display/Item			Content		Setting range	Default	NOTE
A	SCREEN FILTER LEVEL	H	Sharpness (filter) adjustment of dot pattern image in auto copy mode	Strong emphasis	1	3 (Auto)	Apply to auto copy mode only
		L		Soft emphasis	2		
		AUTO		Auto	3		
B	AUTOMODE FILTER LEVEL	SOFT	Sharpness (filter) adjustment of Text/ Printed Photo/Text Document image in auto copy mode	SOFT	1	2 (CENTER)	Apply to auto copy mode (Text/Printed Photo/Text Document)
		CENTER		CENTER	2		
		HIGH		HIGH	3		
C	B/W COPY	OFF	Soft filter applying setting in monochrome copy mode	OFF	0	1 (ON)	
		ON		ON	1		
D	COLOR PUSH:RGB	OFF	Soft filter applying setting to image in push scan color mode	OFF	0	1 (ON)	
		ON		ON	1		
E	B/W PUSH	OFF	Soft filter applying setting to image in push scan monochrome mode	OFF	0	1(ON)	
		ON		ON	1		

3) Input numeric value corresponding to sharpness level (filter process mode).
   - Adjustment item A:

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

     Input small numeric value to obtain crispy image. Input large numeric value to decrease moire.
   - Adjustment item B:

     Select HIGH to obtain clear images. Select SOFT to reduce moire.
   - Adjustment item C - J:

     When setting ON, smoothness in the image shade part improves by applying soft filter. (asperity decreases)
4) Press [OK] key.
5) Make a copy and check the copy image.

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

Repeat the above procedures until a satisfactory result is obtained.

14-I Copy high density part density correction setting (Prevents against tone gap) (Normally unnecessary to adjust) (MX-B402SC/B382SC)

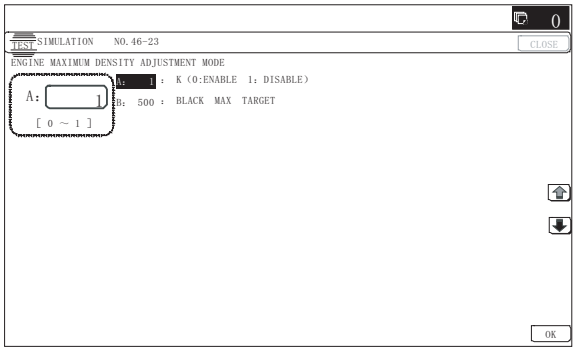
If a tone gap occurs on part of high density in copy mode, or if there is necessity to increase the density of the part of high density, change the setting.

This setting 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 necessity to increase the density of the part of high density.
* The carriage unit has been replaced.
* U2 trouble has occurred.
* When the MFP PWB is replaced.
* When the EEPROM on the MFP PWB is replaced.

a. Adjustment procedure

1) Enter the SIM 46-23 mode.



2) Select the item A 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.

  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.

  The tone gap may occur in high density part.

3) Press [OK] key.

NOTE: When the value of item B (MAX TARGET) is changed, the density in the high density section is changed.

If these values is changed, be sure to execute the copy density and gradation adjustment ADJ 12B. (Auto adjustment)

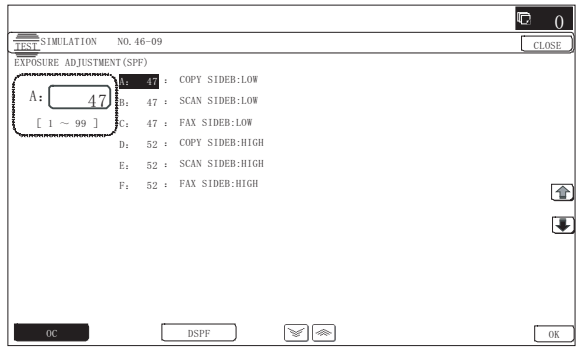
14-J Copy density and gradation adjustment in the DSPF mode (Normally unnecessary to adjust) (MX-B402SC/B382SC)

This setting normally not required. When, however, there are case of following, change 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 carriage 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 LOW)". When adjusting density on high density part, select "D (COPY HIGH)".

Item/Display			Content	Setting range	Default value
A	OC	COPY SIDEB : LOW	DSPF copy mode exposure adjustment SIDEB (Low density)	1 - 99	53
B		SCAN SIDEB : LOW	DSPF scanner mode exposure adjustment SIDEB (Low density)	1 - 99	53
C		FAX SIDEB : LOW	DSPF FAX mode exposure adjustment SIDEB (Low density)	1 - 99	53
D		COPY SIDEB : HIGH	DSPF copy mode exposure adjustment SIDEB (High density)	1 - 99	51
E		SCAN SIDEB : HIGH	DSPF scanner mode exposure adjustment SIDEB (Low density)	1 - 99	51
F		FAX SIDEB : HIGH	DSPF FAX mode exposure adjustment SIDEB (High density)	1 - 99	51
A	DSPF	COPY SIDEA : LOW	DSPF copy mode exposure adjustment SIDEA (Low density)	1 - 99	50
B		SCAN SIDEA : LOW	DSPF scanner mode exposure adjustment SIDEA (Low density)	1 - 99	50
C		FAX SIDEA : LOW	DSPF FAX mode exposure adjustment SIDEA (Low density)	1 - 99	50
D		COPY SIDEA : HIGH	DSPF copy mode exposure adjustment SIDEA (High density)	1 - 99	45
E		SCAN SIDEA : HIGH	DSPF scanner mode exposure adjustment SIDEA (High density)	1 - 99	45
F		FAX SIDEA : HIGH	DSPF FAX mode exposure adjustment SIDEA (High density)	1 - 99	45
G		BALANCE SIDEA : R	DSPF color balance R	1 - 99	52
H		BALANCE SIDEA : G	DSPF color balance G	1 - 99	50
I		BALANCE SIDEA : B	DSPF color 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 single copy mode and check the copy.

Repeat the above procedures until a satisfactory result is obtained.

14-K Auto copy density and gradation adjustment by the user (Copy auto adjustment enable setting and adjustment) (MX-B402SC/B382SC)

a. General

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

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 density and gradation and the user's operational ability are judged enough to execute the adjustment.

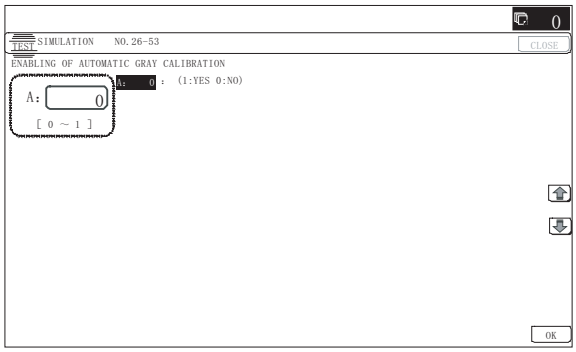
When set to ENABLE, give enough explanations on the operating procedures, notes, and operations to the user.

This adjustment is required in the following cases.

* U2 trouble has occurred.
* When the MFP PWB is replaced.
* When the EEPROM on the MFP PWB is replaced.
* When the PCU PWB is replaced.
* When the EEPROM of the PCU PWB is replaced.

b. Setting procedure

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 calibration (automatic adjustment of copy density and gradation) is not displayed in the user program mode.

(Auto calibration by the user (Auto copy density and gradation adjustment))

1) Enter the system setting mode.
2) Enter the copy setting mode.
3) Press the auto 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 light density area is on the left side in the center reference.

At that time, place 5 sheets of white paper on the above patch image (adjustment pattern).

6) Press [EXECUTE] key, and the copy adjustment is executed automatically. After completion of the adjustment, the display returns to the original operation screen.

ADJ 15 Printer color balance/density adjustment (MX-C402SC/C382SC)

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

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

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

(This adjustment is required in the following cases.)

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

(2) Printer color balance/density check

(Note)

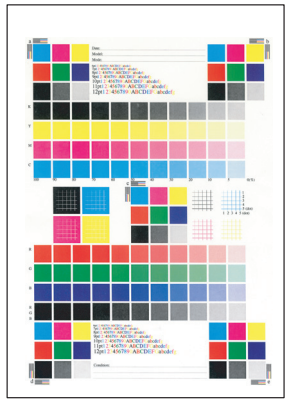
Before checking the printer color balance and the density, be sure to execute the following procedures in advance.

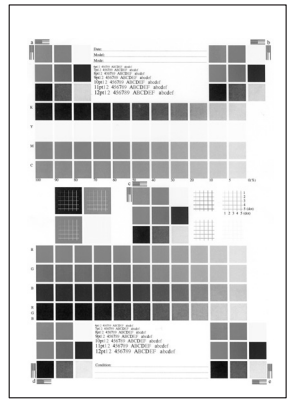
* Execute the high density image correction (Process correction) forcibly. (SIM 44-6)
* The half-tone image correction is forcibly executed. (SIM 44-26)

(Method 1)

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

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

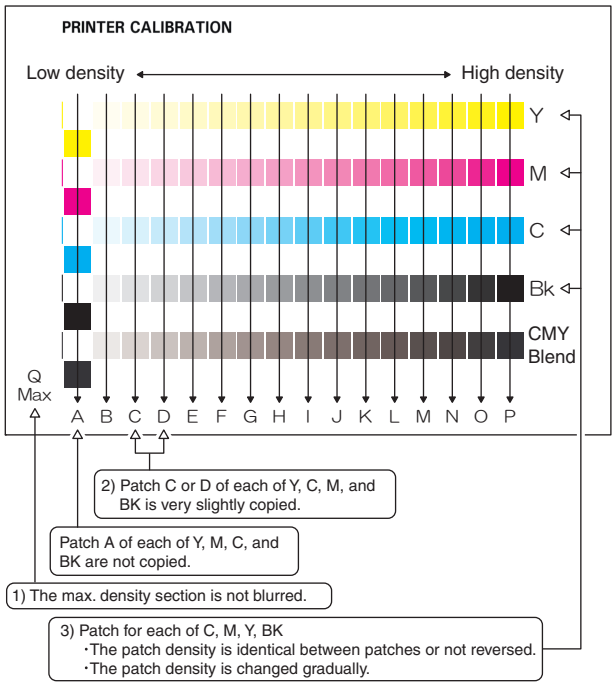




The print density must be changed gradually from the lighter level to the darker level. The density changing direction must not be reversed. The density level of each color must be almost at the same level.

(Method 2)

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



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

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

Patch B may not be copied.

Patch A must not be copied.

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

15-A Printer color balance adjustment (Auto adjustment) (MX-C402SC/C382SC)

a. General

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

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

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

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

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

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

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

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

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

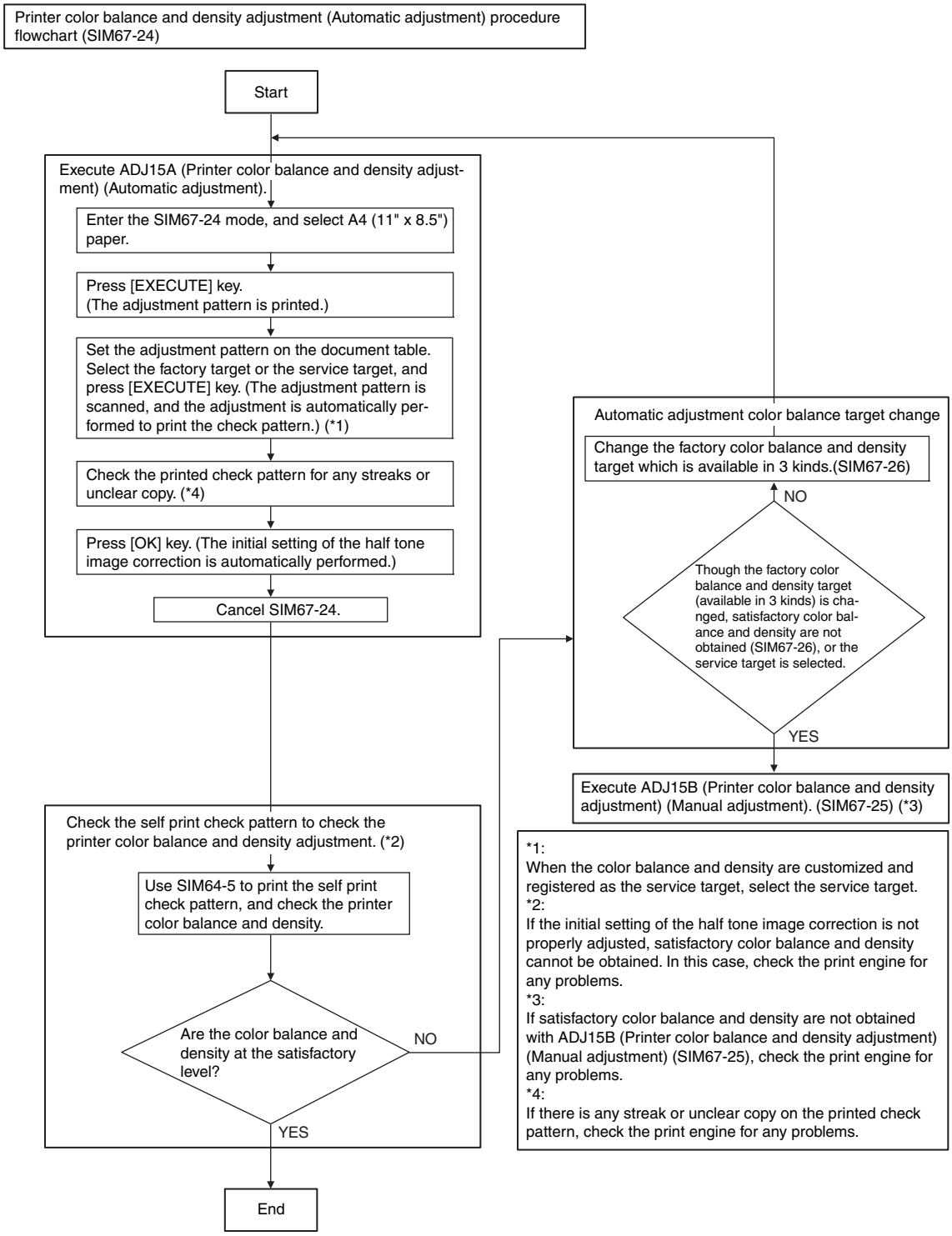
b. Note for execution of the color balance adjustment (Auto adjustment)

1) The copy color balance adjustment must have been completed properly.
2) For the color balance adjustment, use the recommended color paper. (For the recommended paper, refer to [2].)

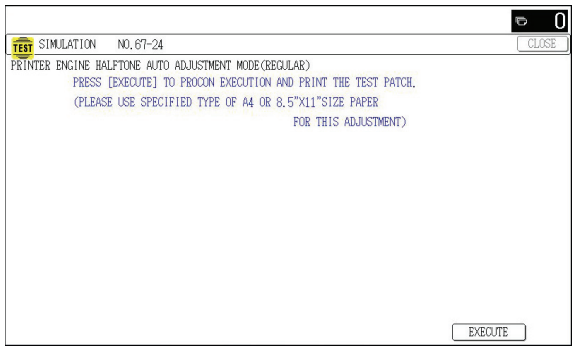
   If the other kind of paper is used for the color balance adjustment, the proper image quality (color balance, density) may not be obtained.
3) When setting the adjustment pattern on the document table in the automatic color balance adjustment procedures, place 5 sheets of white paper on the adjustment pattern in order to prevent back copying and adverse effects of paper wrinkles as far as possible. Also note that the adjustment pattern should be placed to the center reference.
4) The scan image off-center adjustment and the engine image off-center adjustment must have been properly adjusted.

c. Adjustment procedure

(Auto color balance adjustment by the serviceman)



1) Enter the SIM 67-24 mode.

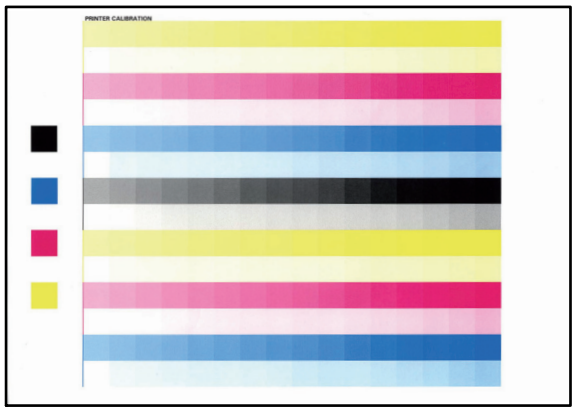


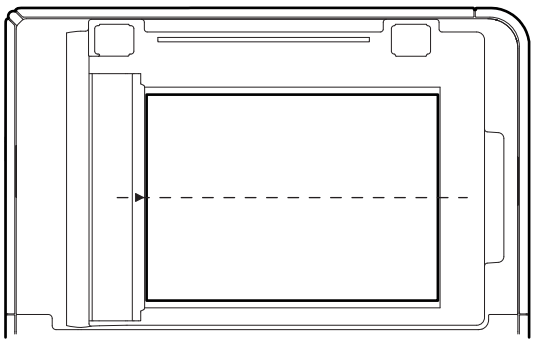
2) Press [EXECUTE] key. (A4 or 11" x 8.5" paper is automatically selected.)

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

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

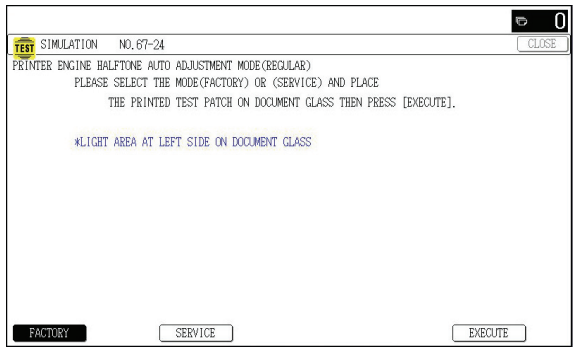
   Set the printed color patch image (adjustment pattern) on the document table. Place the color patch image so that the fine lines are on the left side **in the center reference**. At that time, place 5 sheets of white paper on the printed color patch image (adjustment pattern).





4) Press [FACTORY] key on the operation panel, and press [EXECUTE] key.

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



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

   Remark:

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

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

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

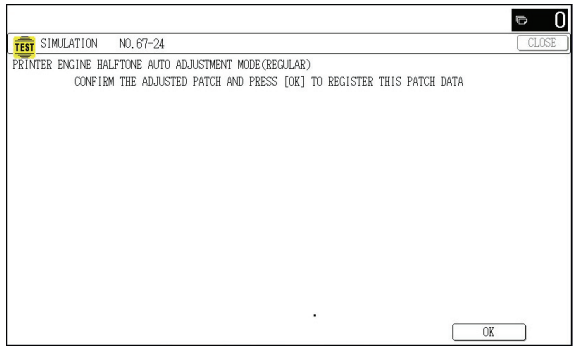
   Factory target color balance: Standard color balance (It can be selected from the three kinds of fixed color balances with SIM 67-27.)

   Service target color balance: The color balance can be customized according to the user's request. (Variable) When shipping, the service target gamma data and the factory target gamma data are the same.

   Both are set to the standard color balance when shipping.

   For the service target, the customized color balance gamma can be registered with SIM 67-28.

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

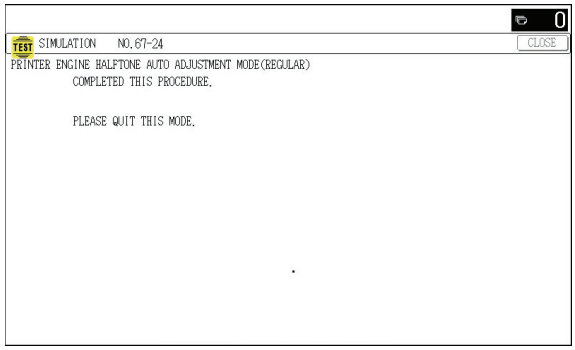


Remark:

After pressing [OK] key, the initial setting of the 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.

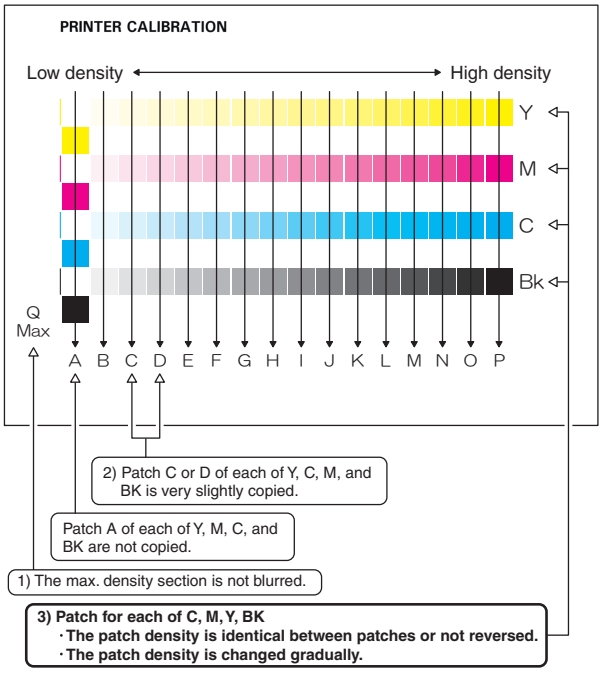


6) Check the color balance and density.

There are two methods to check the color balance and density.

(Method 1)

Check to insure that the printed color balance check patch image is within the following specifications.



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

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

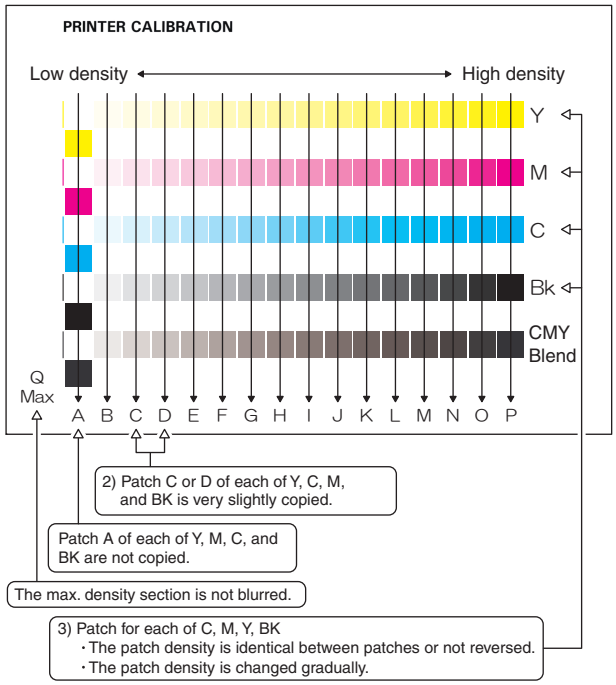
Patch B may not be copied.

Patch A must not be copied.

If there is any abnormality, adjust again.

(Method 2)

By printing the color balance adjustment sheet with SIM 67-25 and comparing each process (CMY) black patch color balance with the black patch, the color balance adjustment can be checked more precisely.



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

(Method 3)

Use SIM64-5 to print the print test pattern, and check the color balance and density.

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

Use SIM64-5 to print the print test pattern, and check the color balance and density. (Refer to the item of the printer color balance and density check.)

When the factory target is selected in the procedure 4) and the auto adjustment is executed but a satisfactory result is not obtained on the color balance and the density, use SIM 67-26 to change the factory color balance target and repeat the procedures from 1).

If a satisfactory result is not obtained with the above procedure, perform the manual color balance adjustment (ADJ 15B).

Cancel SIM 67-25.

15-B Printer color balance adjustment (Manual adjustment) (MX-C402SC/C382SC)

This adjustment is needed in the following situations:

* When the copy color balance/density adjustment is required. Refer to the page of the ADJ print color balance/density adjustment.
* After the copy color balance/density adjustment.

a. General

The color balance adjustment (Manual adjustment) is used to adjust the printer density (17 pts for each color) of C, M, Y and K. This is used at the following situation. When the result of auto adjustment described above is not existing within the range of reference. When a fine adjustment is required. When there is request from the user for changing (customizing) the color balance.

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

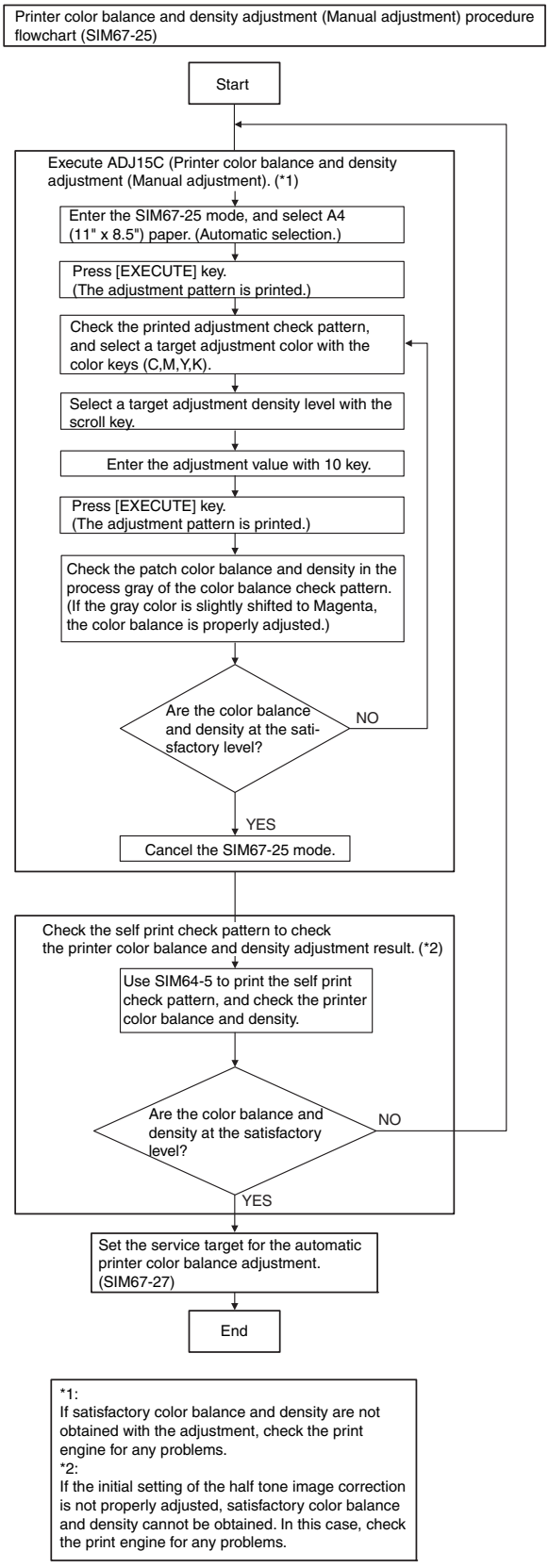
If the color balance is improper, execute the automatic color balance adjustment in advance, and execute this adjustment for better efficiency.

b. Note for the color balance adjustment (Manual adjustment)

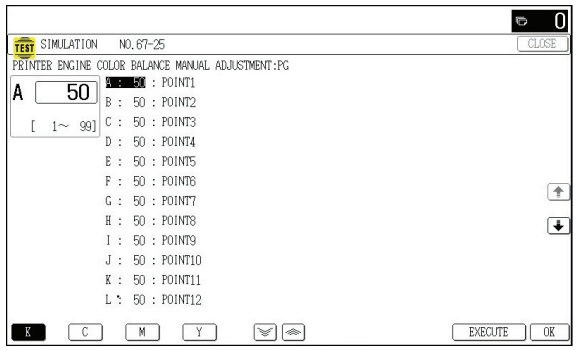
1) After execution of the copy color balance/density adjustment.
2) For the color balance adjustment, use the recommended color paper. (For the recommended paper, refer to [2].)

   If the other kind of paper is used for the color balance adjustment, the proper image quality (color balance, density) may not be obtained.

c. Adjustment procedure



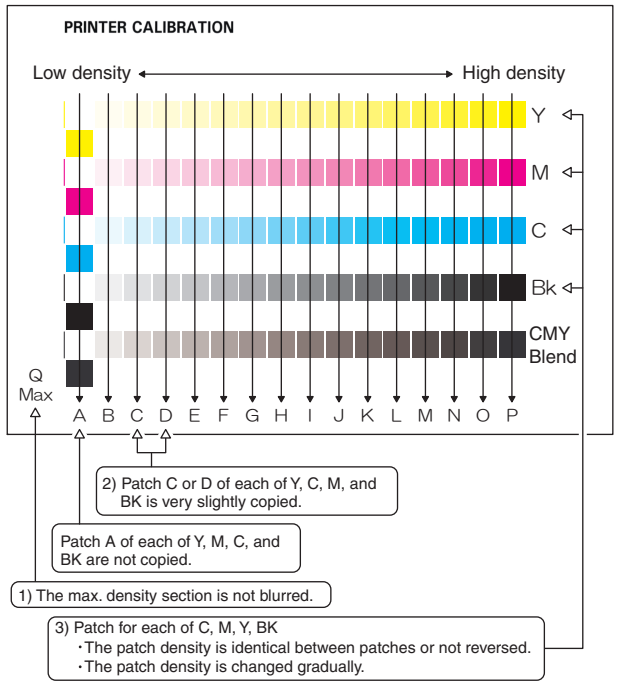
1) Enter the SIM 67-25 mode.



2) Press [EXECUTE] key. (A4 or 11" x 8.5" paper is automatically selected.)

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

   If not, execute the following procedures.



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

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

Patch B may not be copied.

Patch A must not be copied.

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

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

4) Select the color to be adjusted with the color select key, and select the adjustment point with the scroll key.

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

The adjustment value is set in the range of 0 - 255 (1 - 99). When SIM 67-24 is used to adjust the automatic color balance and density, all the set values of this simulation are set to 50.

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

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

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

Then, adjust each patch density individually. This is an efficient way of adjustment.

Referring to the black/gray patches, adjust so that each process (CMY) black/gray patch color balance of A - Q (MAX) approaches the black/gray patch level as far as possible.

6) Cancel SIM 67-25.

7) Use SIM 64-5 to print the print test pattern and check the print color balance and the density.

NOTE: If the color balance is customized, use SIM 67-27 to register the color balance as the service target. If the color balance is not customized, this procedure is not required.

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

In the next color balance adjustment, select the service target color balance in the automatic color balance adjustment mode to make an adjustment to the similar color balance as the registered color balance.

(Gamma setting of auto color balance adjustment service color balance target)

a. General

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

There are following three kinds of the target.

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

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

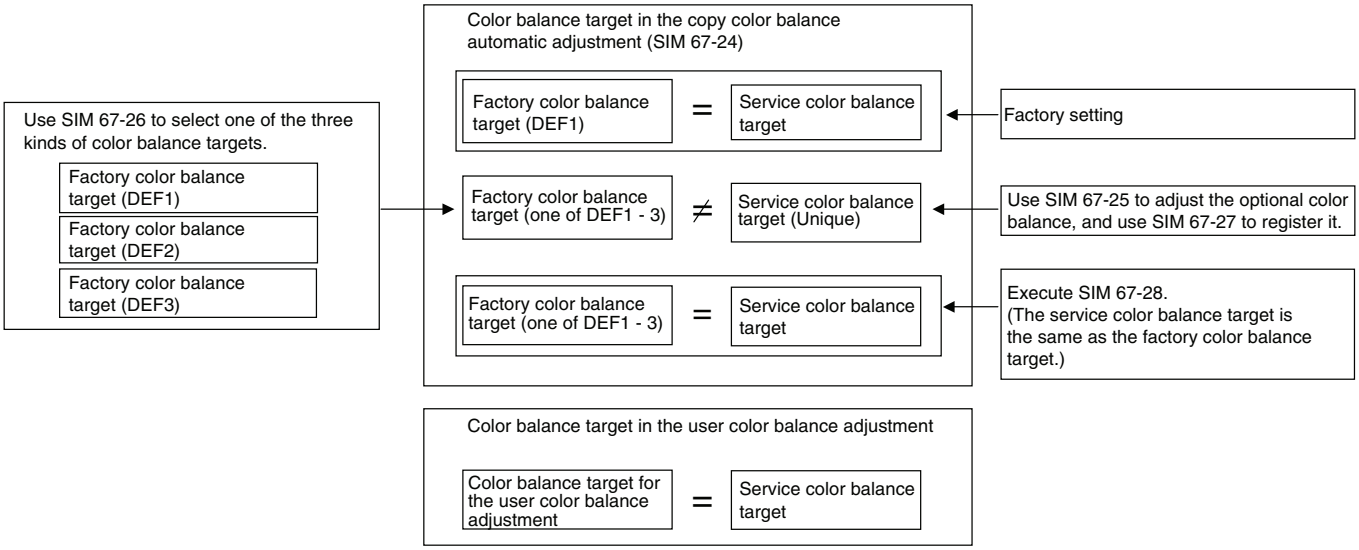
This adjustment is required in the following cases.

* When the copy color balance/density adjustment (manual adjustment) is executed with SIM 67-25.
* U2 trouble has occurred.
* When the MFP PWB is replaced.
* When the EEPROM on the MFP PWB is replaced.
* When the user requests for customizing the color balance.
* When the service color balance target gamma is judged as improper.

- Color balance target for the printer color balance adjustment

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

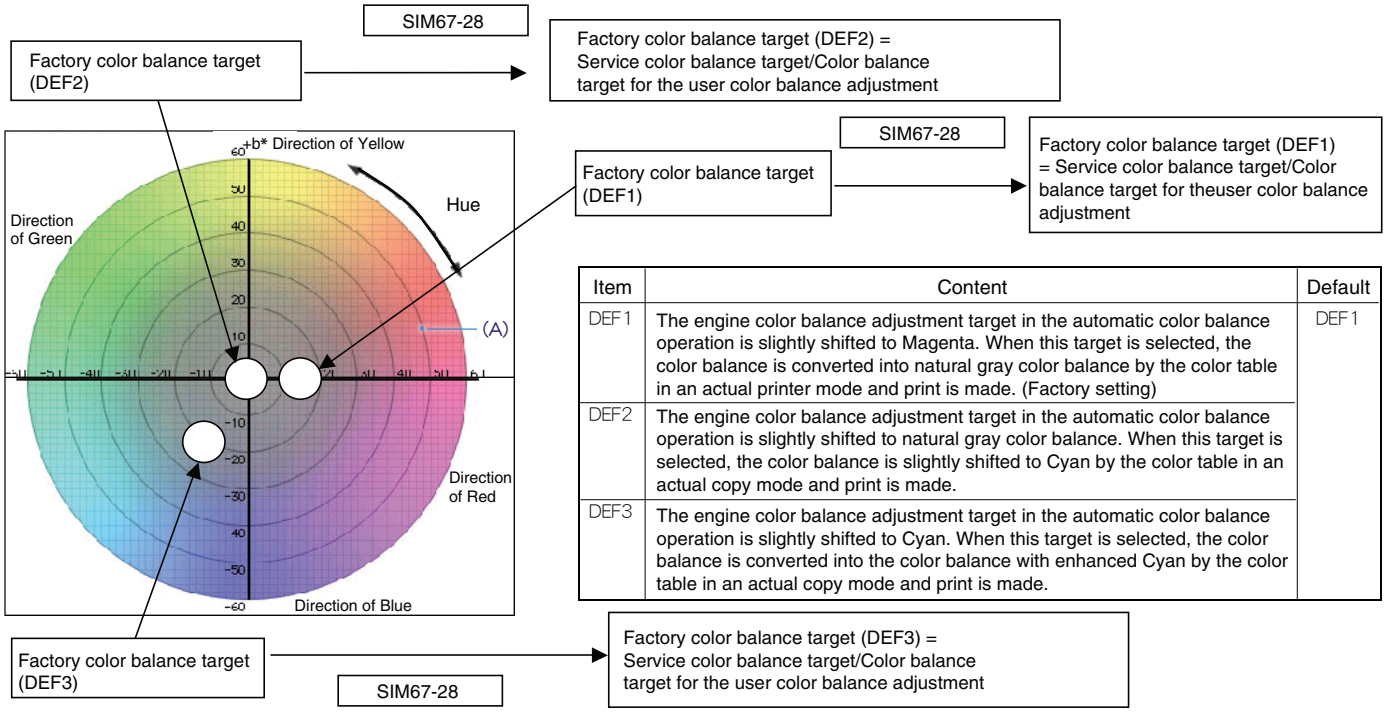
- Relationship between the factory target and the service target and the color balance target for the user color balance adjustment in the printer color balance adjustment (SIM 67-24)



- Factory target in the printer color balance adjustment (SIM 67-24)

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

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



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

- Service color balance target in the copy color balance adjustment (SIM 67-28).

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

- Color balance target in the user color balance adjustment

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

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

This procedure must be executed only when the color balance is customized with SIM 67-25. If the color balance is not customized, this procedure is not required.

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

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

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

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

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

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

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

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

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

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

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

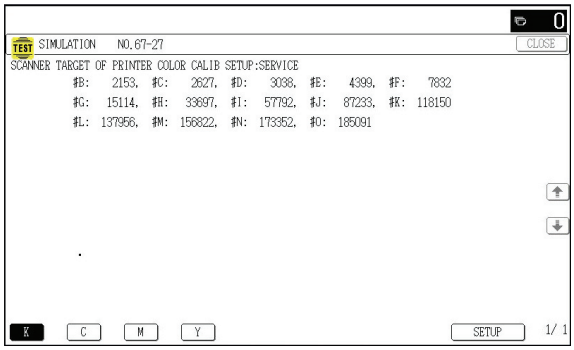
b. Setting procedure

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

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

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

2) Enter the SIM 67-27 mode.



3) Press [SETUP] key.

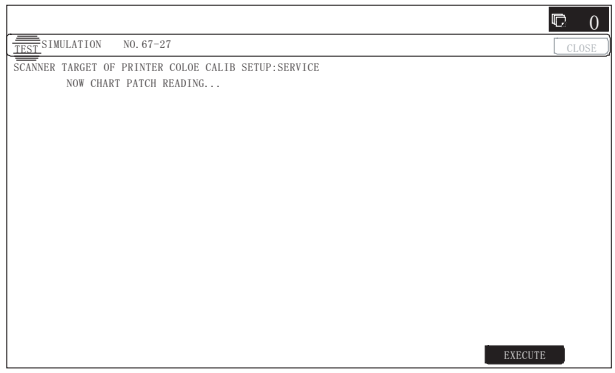
4) Set the color patch image (adjustment pattern) correctly adjusted and printed in the printer color balance adjustment (Manual adjustment) (SIM 67-25) (ADJ 15B) on the document table.

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

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

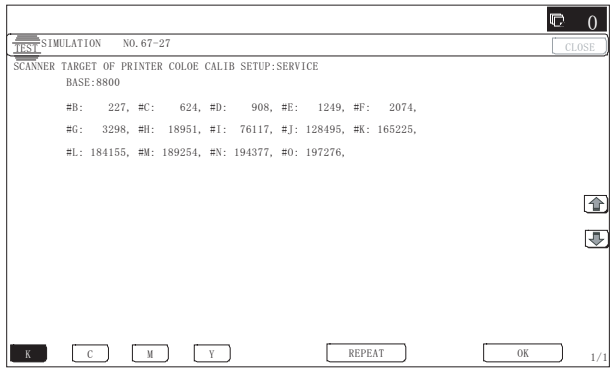
   This procedure must not be executed when the copy color balance (manual) was adjusted with SIM 67-25 to a unique color balance requested by the user and it was registered as the service color balance target with SIM 67-27.

5) Press [EXECUTE] key.



   The color patch image (adjustment pattern) is read.

6) Press [REPEAT] key, set the second color patch image (adjustment pattern), and execute the procedure 5) again.



   The color balance (gamma) target set level of each color (K, C, M and Y) can be checked with K/C/M/Y keys.

   Check that the set level is increased in the sequence of B - Q (MAX). If there is no variation or variation is reversed, it is judged as abnormal.

   In case of an abnormality, repair the problem and try again.

7) Press [OK] key.

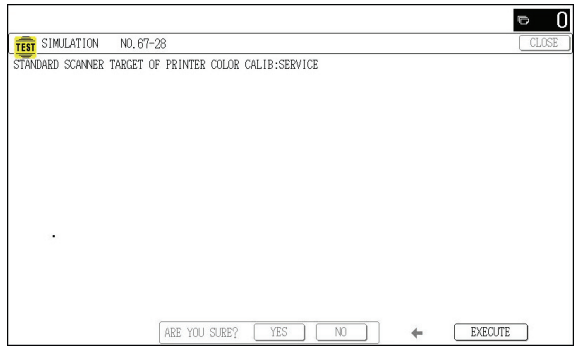
   The color balance (gamma) of the color patch image (adjustment pattern) used in the procedure 5) is set as the service target.

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

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

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

1) Enter the SIM 67-28 mode.



2) Press [EXECUTE] key.

3) Press [YES] key.

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

15-C Printer density adjustment (low density part density adjustment) (Normally unnecessary to adjust) (MX-C402SC/C382SC)

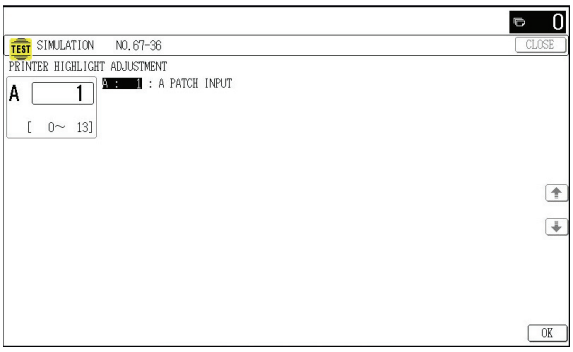
This procedure is to adjust image density of low density area in printer mode.

Adjust to reproduction (not reproduction) setting of the low density image.

This adjustment is required in the following cases.

* When reproduction of low density image is required. When reproduction of low density image is not required, conversely.
* U2 trouble has occurred.
* When the MFP PWB is replaced.
* When the EEPROM on the MFP PWB is replaced.
* When there is request from the user.

1) Enter the SIM 67-36 mode.



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. 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.

15-D Printer high density part density correction setting (high density part tone gap countermeasure) (Normally unnecessary to the setting change) (MX-C402SC/C382SC)

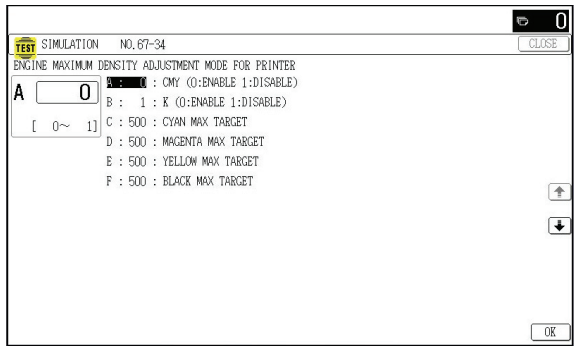
This procedure is to adjust image density of low density area in printer mode.

This setting 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 necessity to increase the density of the part of high density.
* The CCD unit has been replaced.
* U2 trouble has occurred.
* When the MFP PWB is replaced.
* When the EEPROM on the MFP PWB is replaced.

a. Adjustment procedure

1) Enter the SIM 67-34 mode.



2) Select the item A, B with the scroll key.

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

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

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

  The tone gap may occur in high density part.

(NOTE) If the setting values of item C, D, E and F are changed, density of the high density part is changed.

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

15-E Auto color balance adjustment by the user (Printer color balance auto adjustment ENABLE setting and adjustment) (MX-C402SC/C382SC)

a. General

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

This adjustment is to set Enable/Disable of the above user operation with SIM 26-54.

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

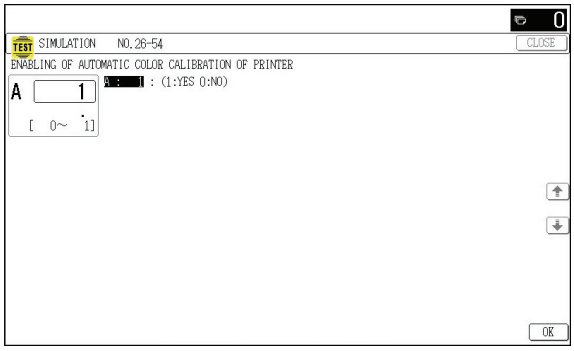
When set to ENABLE, give enough explanations on the operating procedures, notes, and operations to the user.

This adjustment is required in the following cases.

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

b. Setting procedure

1) Enter the SIM 26-54 mode.



2) Select ENABLE or DISABLE with 10-key.

When disabling, set to "0" (NO). When enabling, set to "1" (Yes).

3) Press [OK] key.

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

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

Remark: This adjustment is based on the service target color balance set with SIM 67-27 or SIM 67-28. If, therefore, the above settings are not properly performed, this adjustment cannot be made properly.

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

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

5) Set the color patch image (adjustment pattern) printed in procedure 4) on the document table.

Set the patch image to the center reference position so that the light density area is on the left side.

At that time, place 5 sheets of white paper on the above color patch image (adjustment pattern).

6) Press [EXECUTE] key, and the copy color balance adjustment is executed automatically. After completion of the adjustment, the display returns to the original operation screen.

15-F Copy/Printer color balance and density adjustment (Automatic adjustment) (MX-C402SC/C382SC)

This adjustment is needed in the following situations:

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

a. General

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

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

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

b. Note for execution of the copy color balance adjustment (Automatic adjustment for each dither)

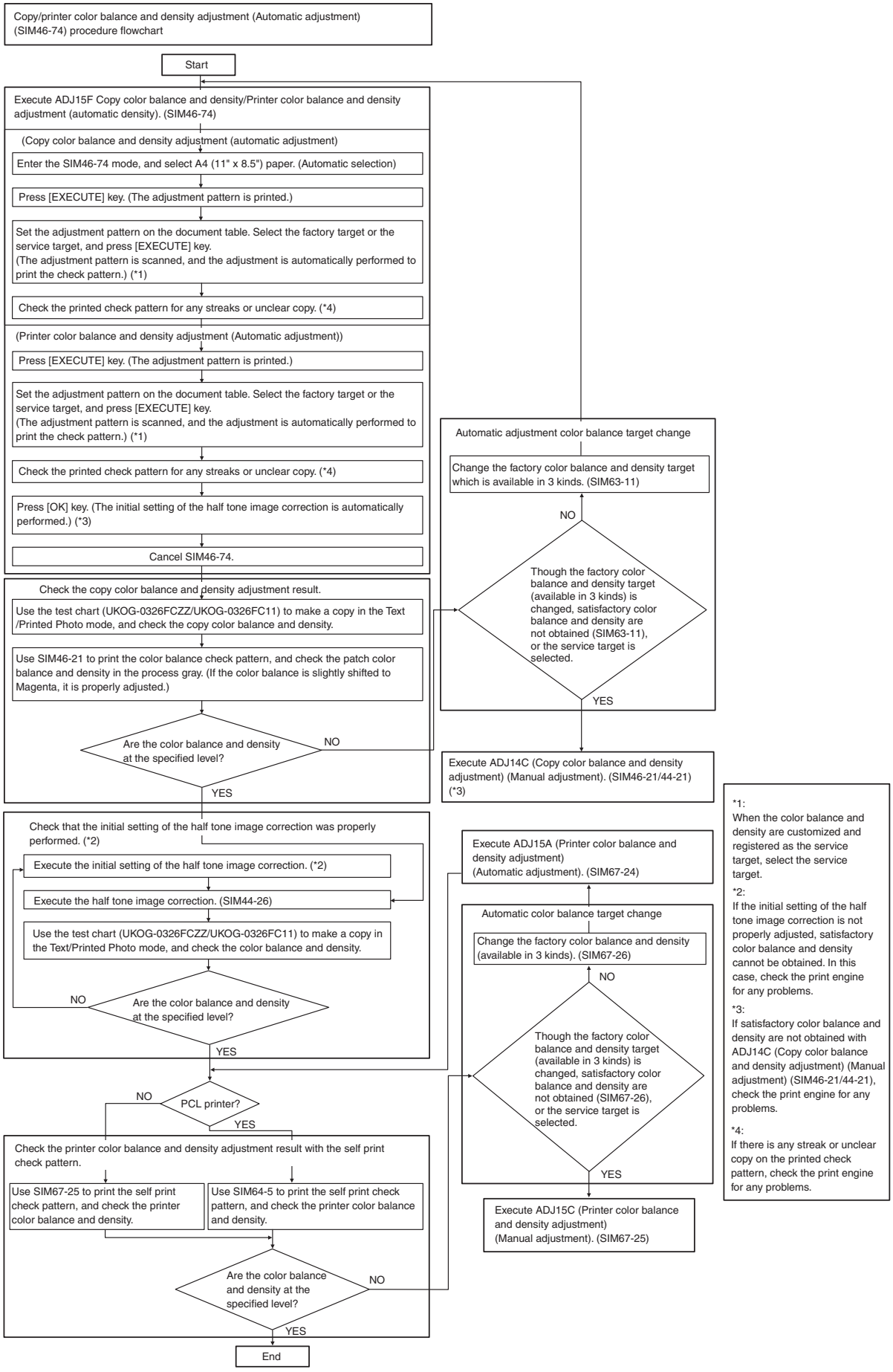
1) For the color balance adjustment, use the recommended color paper. (For the recommended paper, refer to [2].)

If the other kind of paper is used for the color balance adjustment, the proper image quality (color balance, density) may not be obtained.

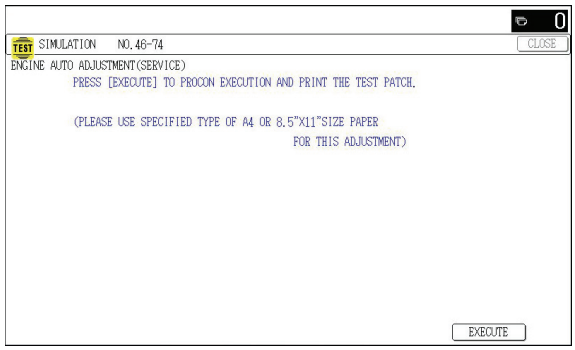
2) When setting the adjustment pattern on the document table in the automatic color balance adjustment procedures, place 5 sheets of white paper on the adjustment pattern in order to prevent back copying and adverse effects of paper wrinkles as far as possible. Also note that the adjustment pattern should be placed to the center reference.
3) The scan image off-center adjustment and the engine image off-center adjustment must have been properly adjusted.

b. Adjustment procedures

(Auto color balance adjustment by the serviceman)

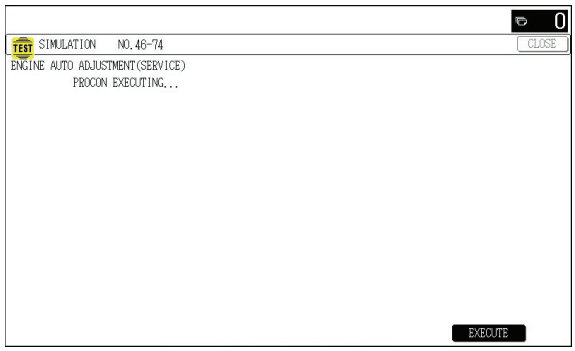


1) Enter the SIM46-74 mode.



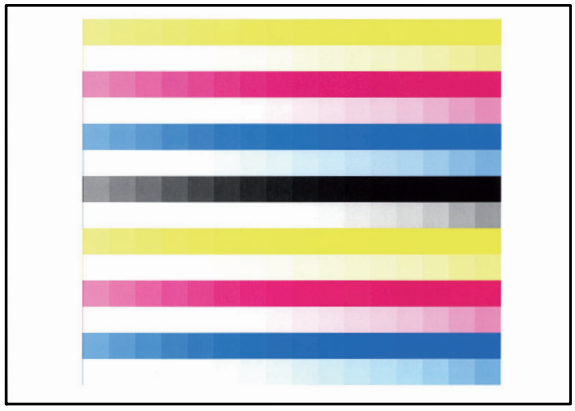
2) Press [EXECUTE] key.

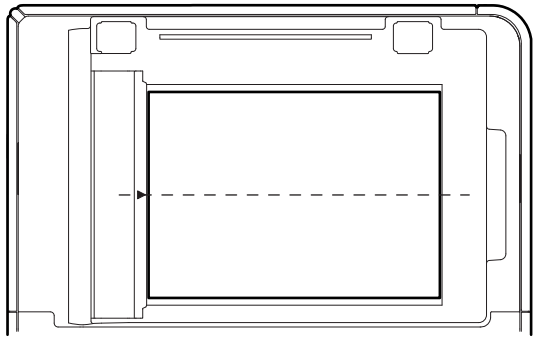
The high density process control is performed, and the copy color patch image (adjustment pattern) is printed out. (A4 or 11" x 8.5" paper is automatically selected.)



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

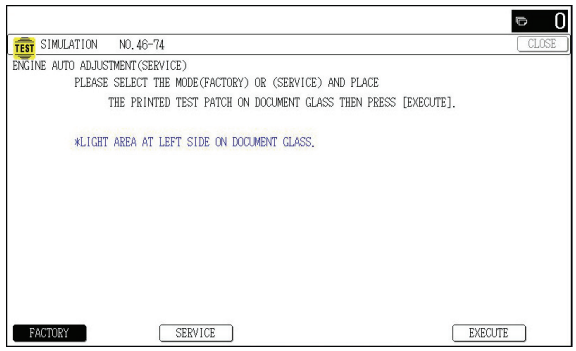
Set the printed color patch image (adjustment pattern) on the document table. Place the color patch image so that the fine lines are on the left side **in the center reference**. At that time, place 5 sheets of white paper on the printed color patch image (adjustment pattern).





4) Select [FACTORY] target on the operation panel, and press [EXECUTE] key.

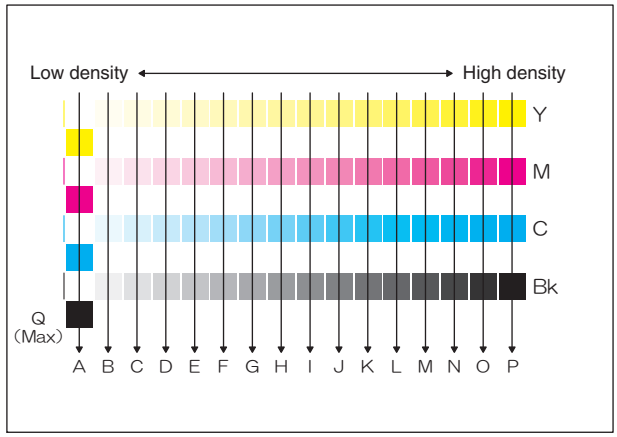
When the color balance is customized by the manual color balance adjustment (SIM 46-21) according to the user's request, and the color balance is registered with SIM63-7 as the service target, if the color balance is required to be adjusted, select the [SERVICE] target.



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

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

If there is any abnormality, adjust again.



Remark:
(Descriptions on the factory service key button in the color balance automatic adjustment menu)

There are two kinds of the gamma target for the color balance automatic adjustment: the factory target and the service target.

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

Factory target color balance: Standard color balance

(The color balance can be selected from the three kinds of fixed ones with SIM63-11.)

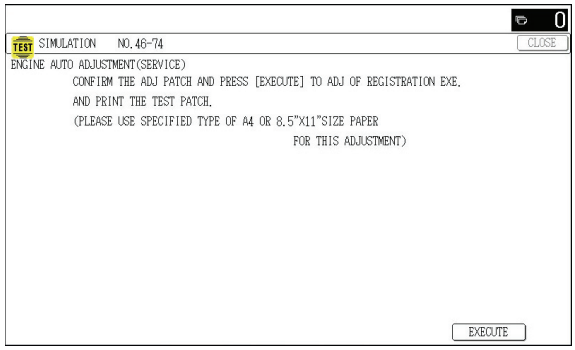
Service target color balance: The color balance can be customized according to the user's request. (Variable)

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

Both are set to the standard color balance when shipping from the factory. For the service target, a customized color balance gamma can be registered with SIM63-7.

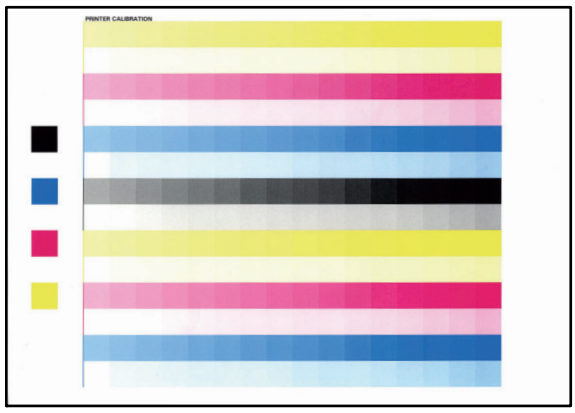
5) Press [EXECUTE] key.

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



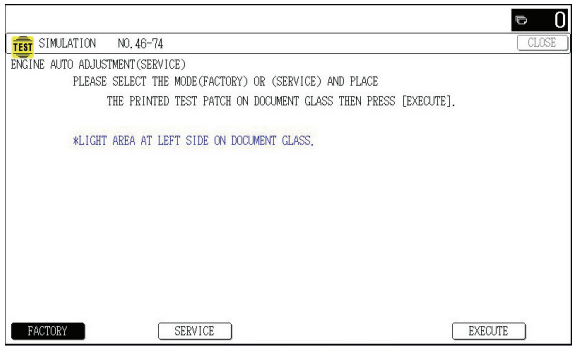
6) Set the color patch image (adjustment pattern) paper printed in procedure 5) on the document table.

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



7) Select [FACTORY] target on the operation panel, and press [EXECUTE] key.

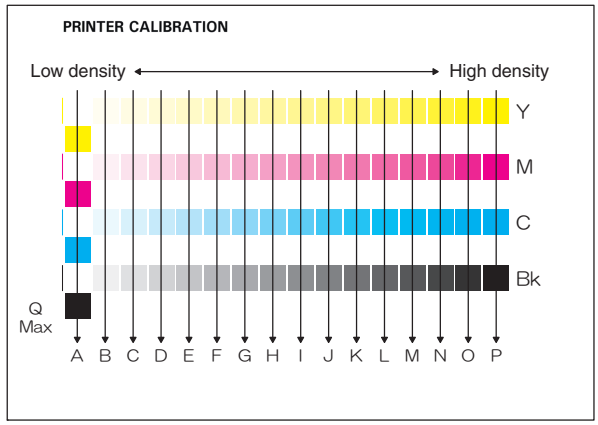
When the color balance is customized with the manual color balance adjustment (SIM 67-25) according to the user's request and the color balance is registered as the service target with SIM 67-27, if the color balance is adjusted to that color balance, select the service target.



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

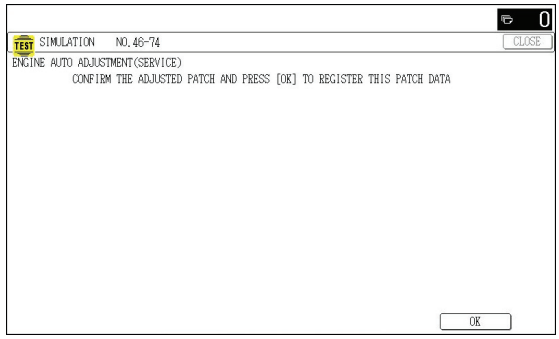
If there is any streak or unclear print on the printed check pattern, check the print engine for any problems.

If there is any abnormality, adjust again.

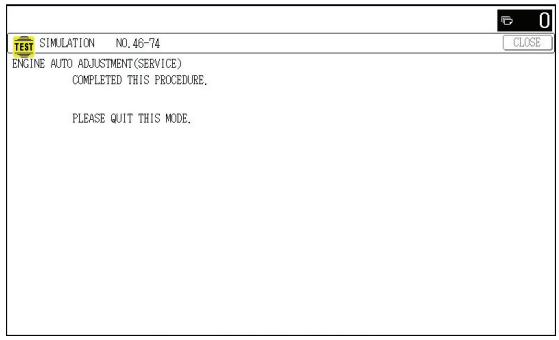


8) The initial setting menu of the halftone image correction is displayed. Press [OK] key.

The initial setting of the halftone image correction is performed.



9) When "COMPLETE THIS PROCEDURE" is displayed, the adjustment operation is completed. Cancel SIM46-74.



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

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

10) Check the copy color balance and density.

There are two methods to check the color balance and density.

(Method 1)

Use the servicing color test chart (UKOG-0326FCZZ/UKOG-0326FC11) in the Text/Printed Photo mode (Manual) to check the copy color balance and density. (Refer to the item of the copy color balance and density check.)

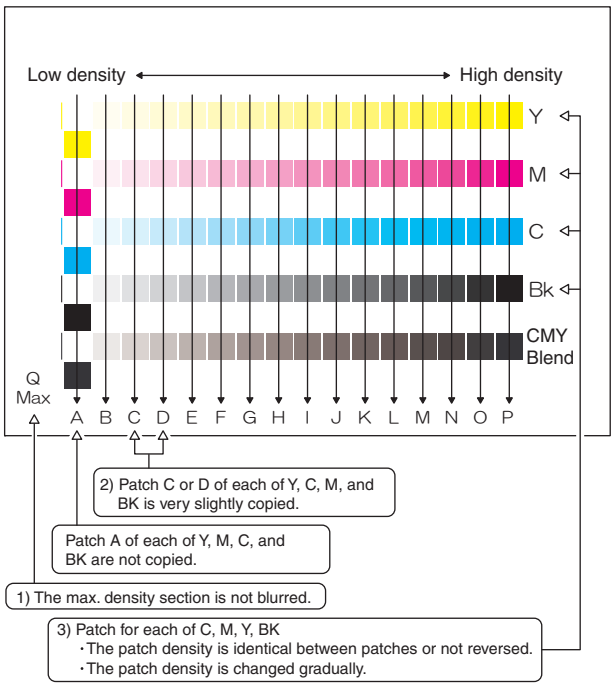
When satisfactory color balance and density are not obtained from the automatic adjustment by selecting the factory target in procedure 4), change the factory color balance target with SIM 63-11 and repeat the procedures from 1).

If a satisfactory result is not obtained with the above procedure, perform the manual color balance adjustment (ADJ 14C).

Also when the service target is selected in procedure 4) to execute the automatic adjustment and a satisfactory result is not obtained, perform the manual color balance adjustment (ADJ 14C).

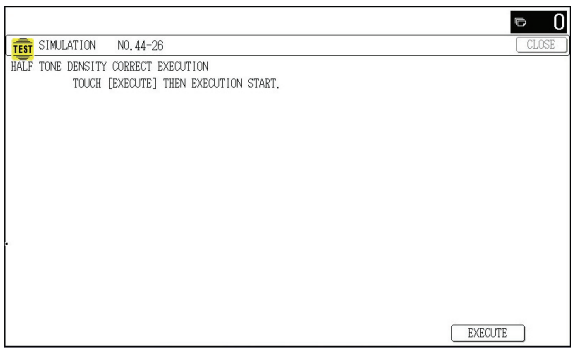
(Method 2)

By printing the color balance adjustment sheet with SIM 46-21 and comparing each process (CMY) black patch color balance with the black patch, the color balance adjustment can be checked more precisely.



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

11) Use SIM 44-26 to perform the halftone image correction. (Compulsory execution)
- Enter the SIM 44-26 mode and press [EXECUTE] key.
- [EXECUTE] key is highlighted and the operation is started.



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

12) Use the servicing color test chart (UKOG-0326FCZZ/UKOG-0326FC11) in the Text/Printed Photo mode (Manual) to check the copy color balance and density. (Refer to the item of the copy color balance and density check.)

If the copy color balance and density are not satisfactory, perform the following procedures.

13) Execute the initial setting of the halftone image correction. (SIM 44-21)

14) Execute the halftone image correction. (Forcible execution) (SIM44-26)

15) Use the servicing color test chart (UKOG-0326FCZZ/UKOG-0326FC11) in the Text/Printed Photo mode (Manual) to check the copy color balance/density. (Refer to the item of the copy color balance/density check.)

Though the procedures 13) - 15) are performed, the copy color balance and density are not in the specified range, there may be another cause.

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

If the automatic adjustment cannot obtain satisfactory results of the copy color balance and density, use SIM 46-21 (ADJ 14C) (Manual adjustment).

16) Check the printer color balance and density.

There are two methods to check the color balance and density.

(Method 1)

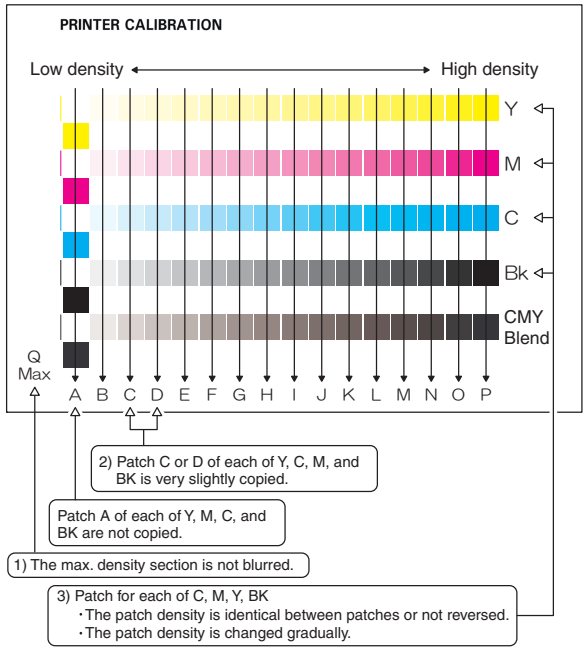
Use SIM 64-5 to print the print test pattern and check the print color balance and the density.

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

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

(Method 2)

Use SIM67-25 to print the color balance adjustment sheet and compare the black patch color balance of each process (CMY) with the black patch. This procedure allows checking the color balance adjustment result correctly.



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

If a satisfactory result on the print color balance and the density is not obtained with the automatic adjustment, execute the manual adjustment (SIM 67-25) (ADJ 15B).

15-G Printer color balance adjustment (Automatic adjustment for each dither) (Normally unnecessary to adjust) (MX-C402SC/C382SC)

a. General

This adjustment is used to adjust the color balance and the density in the monochrome mode, the heave paper mode, 1200dpi, 600dpi, and 1bit mode.

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

b. Note for execution of the color balance adjustment (Automatic adjustment for each dither)

1) For the color balance adjustment, use the recommended color paper. (For the recommended paper, refer to [2].)

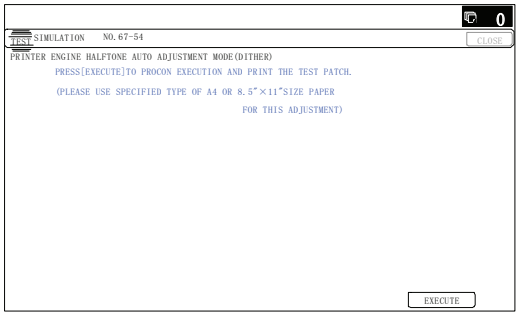
   If the other kind of paper is used for the color balance adjustment, the proper image quality (color balance, density) may not be obtained.

2) When setting the adjustment pattern on the document table in the automatic color balance adjustment procedures, place 5 sheets of white paper on the adjustment pattern in order to prevent back copying and adverse effects of paper wrinkles as far as possible. If there is any abnormality, adjust again.

3) The scan image off-center adjustment and the engine image off-center adjustment must have been properly adjusted.

c. Adjustment procedures

1) Enter the SIM67-54 mode.

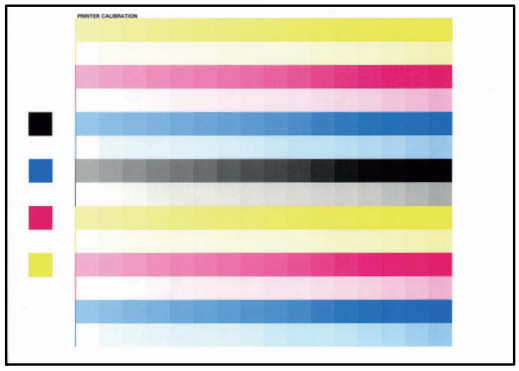


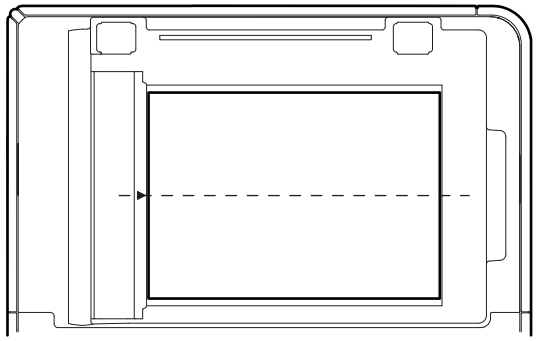
2) Press [EXECUTE] key. (A4 or 11" x 8.5" paper is automatically selected.)

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

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

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





4) Press [EXECUTE] key.

   The color balance adjustment is automatically performed.

   The adjustment pattern is printed out. Check it for any abnormality. If there is any abnormality, adjust again.

5) Press [OK] key.

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

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

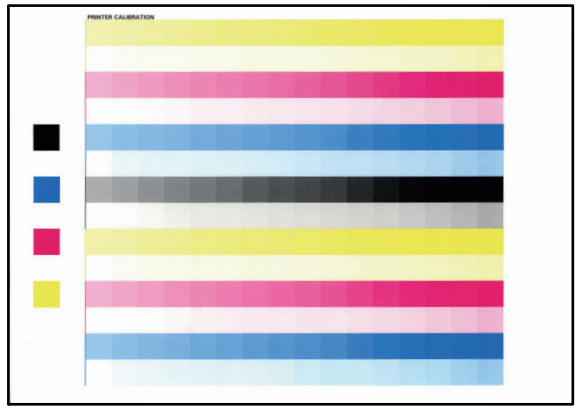
Select item (Mode)	Content
Heavy Paper	Adjustment item to improve the color balance in the heavy paper mode
1200dpi 1bit	Adjustment item to improve the color balance in 1200dpi mode (When 1200dpi mode is frequently used)
600dpi 1bit	Adjustment item to improve the color balance in 600dpi, 1bit mode.
B/W	Adjustment item to improve the density and gradation in the monochrome mode

7) Press [EXECUTE] key. (A4 or 11" x 8.5" paper is automatically selected.)

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

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

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



9) Press [EXECUTE] key.

   The color balance adjustment is automatically performed, and the machine goes to the state of procedure 6).

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

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

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

ADJ 15 Printer density and gradation adjustment (MX-B402SC/B382SC)

(1) Note before execution of the printer density and gradation adjustment

(Requisite condition before execution of the printer density and gradation adjustment)

Before execution of the printer density and gradation adjustment, the copy density and gradation adjustment must have been completed properly.

(This adjustment is required in the following cases.)

* Basically same as when the copy density and gradation adjustment is required.
* After the copy density and gradation adjustment.

(2) Printer density and gradation check

(Note)

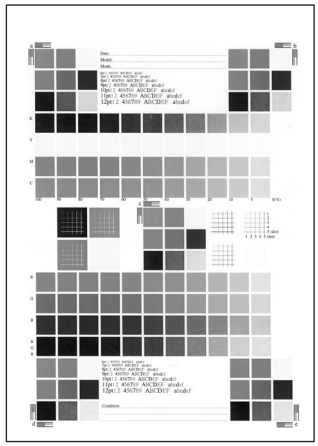
Before checking the copy density and gradation, be sure to execute the following procedures in advance.

* 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.

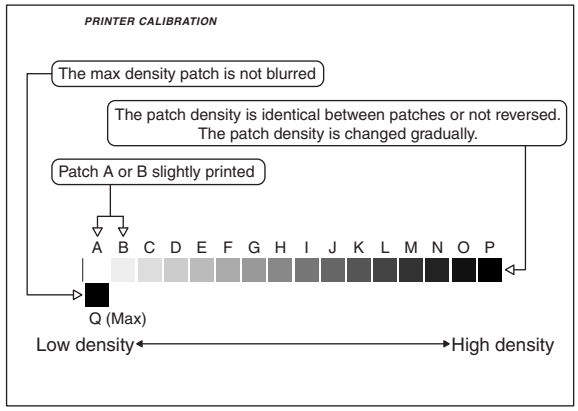
Set each set value to the default and press [EXECUTE] key. The print test pattern is printed.



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

(Method 2)

Use SIM67-25 to print the adjustment sheet to check that the adjustment is proper or not.



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

Patch A or B slightly printed.

15-A Printer density and gradation adjustment (Auto adjustment) (MX-B402SC/B382SC)

a. General

The printer density and gradation adjustment (auto adjustment) is used to adjust the printer density and gradation automatically by SIM67-24 or the user program.

(When this adjustment is executed, the printer density and gradation adjustments of all the print modes are revised.)

There are following two modes in the auto adjustment.

1) Auto printer density and gradation adjustment by the serviceman (SIM 67-24 is used.)
2) Auto printer density and gradation adjustment by the user (The user program mode is used.)

   The auto printer density and gradation adjustment by the user is provided to reduce the number of service calls.

   It is used by the user to reset the printer density and gradation to the normal levels when any trouble occurs in the printer density and gradation.

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

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

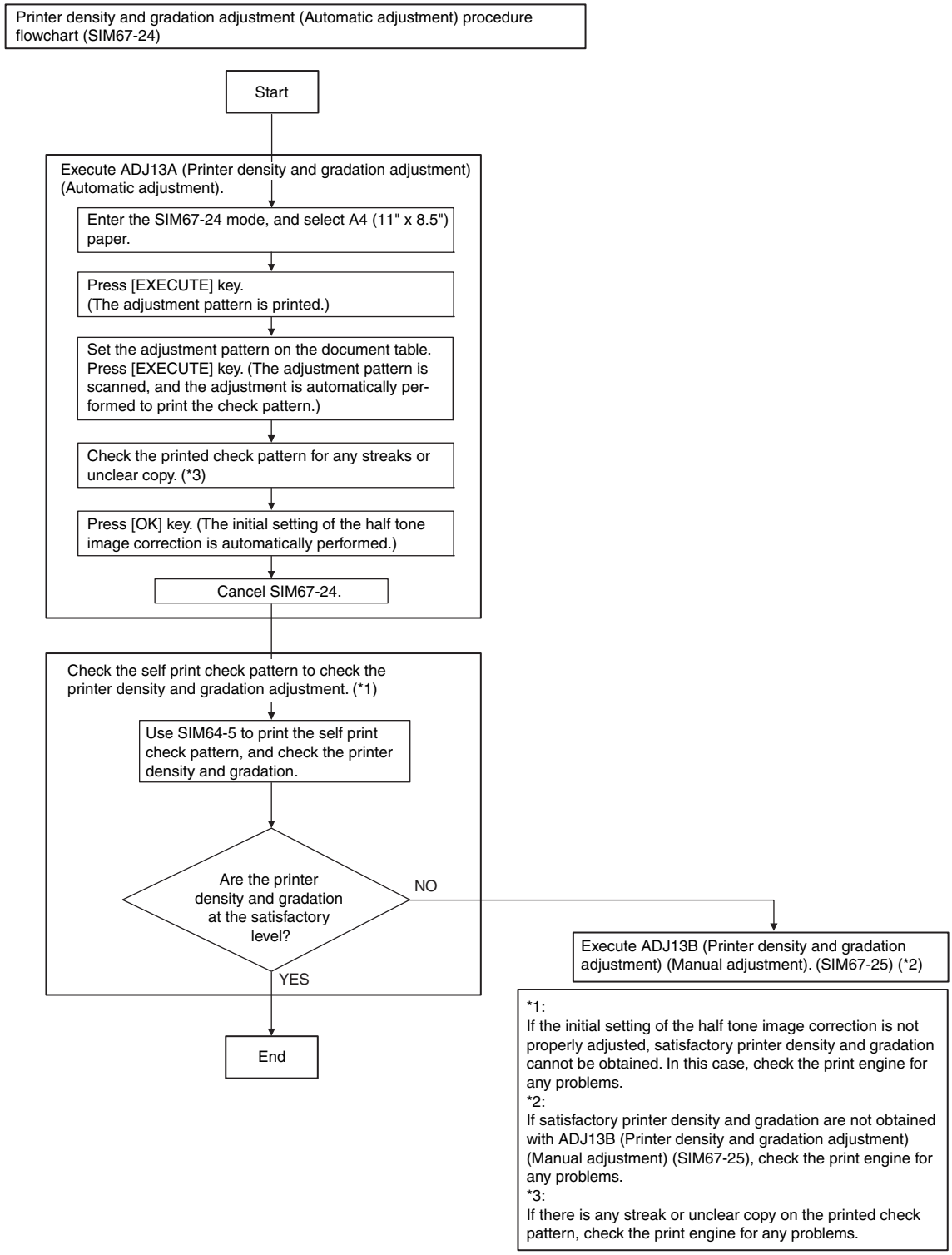
   To perform the adjustment, the above difference must be fully understood.

b. Note for execution of the printer density and gradation adjustment (Auto adjustment)

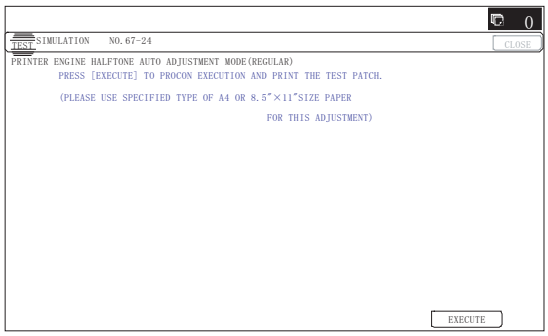
1) The copy density and gradation adjustment must have been completed properly.
2) When setting the adjustment pattern on the document table in the automatic density and gradation adjustment procedures, place 5 sheets of white paper on the adjustment pattern in order to prevent back copying and adverse effects of paper wrinkles as far as possible. Also note that the adjustment pattern should be placed to the center reference.
3) The scan image off-center adjustment and the engine image off-center adjustment must have been properly adjusted.

c. Adjustment procedure

(Auto printer density and gradation adjustment by the serviceman)



1) Enter the SIM 67-24 mode.

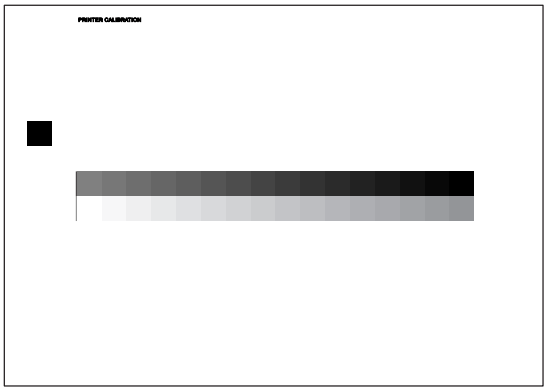


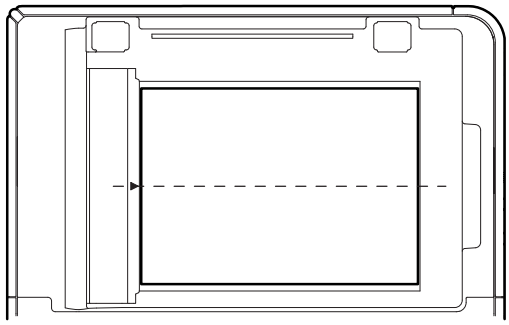
2) Press [EXECUTE] key. (A4 or 11" x 8.5" paper is automatically selected.)

The patch image (adjustment pattern) is printed out.

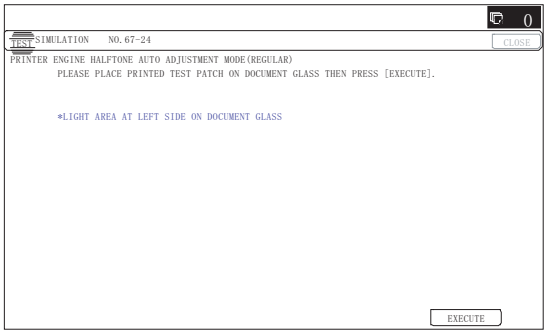
3) Set the patch image (adjustment pattern) paper printed in procedure 2) on the document table.

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



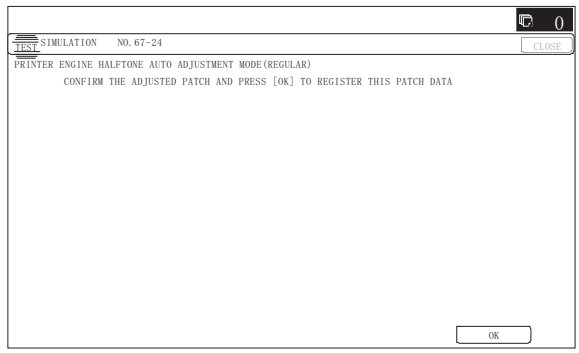


4) Press [EXECUTE] key.



The printer density and gradation adjustment is automatically executed and prints the check patch image. Wait until the operation panel shown in the procedure 5) is displayed.

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

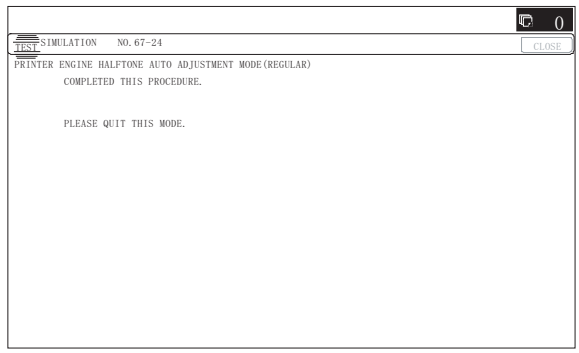


Remark:

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

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

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

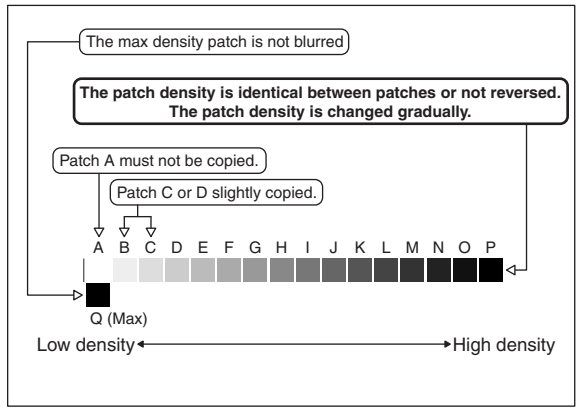


6) Check the printer density and gradation.

There are three methods to check the printer density and gradation.

(Method 1)

Check to insure that the printed check patch image is within the following specifications.



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

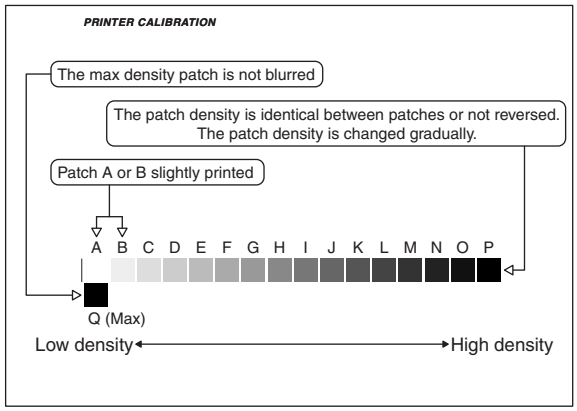
Patch C or D slightly copied.

Patch A must not be copied.

If there is any abnormality, adjust again.

(Method 2)

Use SIM67-25 to print the adjustment check sheet.



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

(Method 3)

Use SIM64-5 to print the print test pattern, and check the density and gradation.

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

If a satisfactory result is not obtained with the above procedure, perform the manual density and gradation adjustment (ADJ 13B).

15-B Printer density and gradation adjustment (Manual adjustment) (MX-B402SC/B382SC)

This adjustment is needed in the following situations:

* When the copy density and gradation adjustment is required. Basically same as when the copy density and gradation adjustment is required.
* After the copy density and gradation adjustment.

a. General

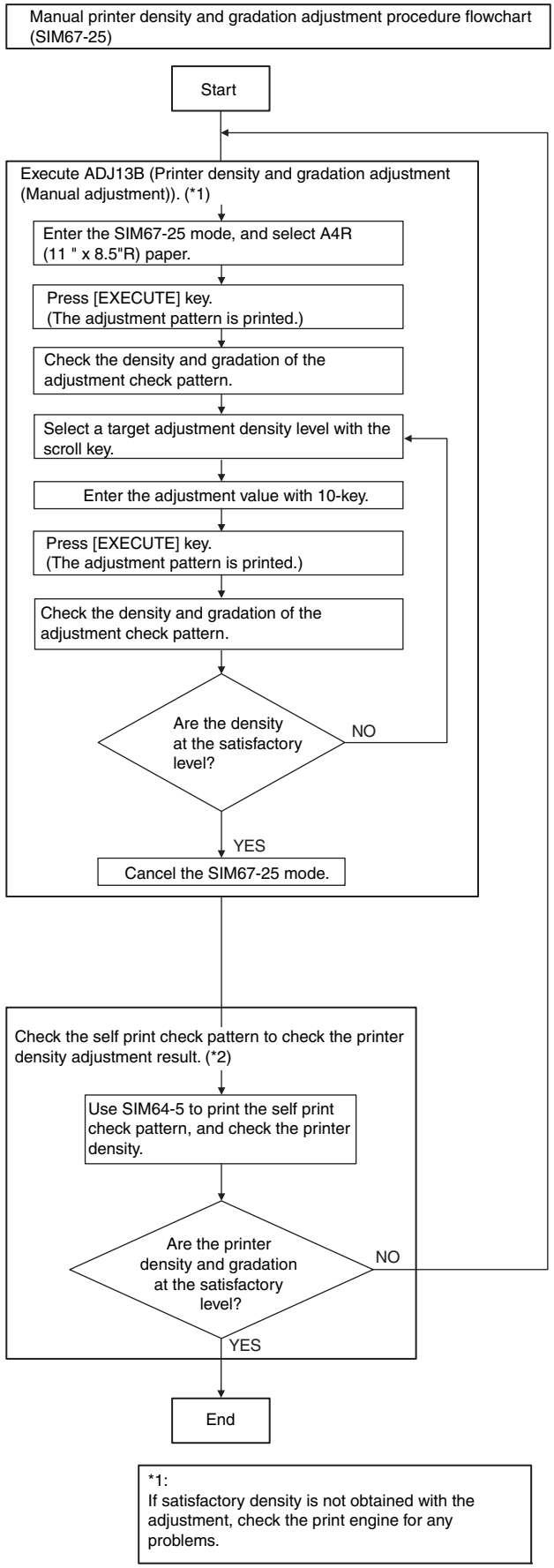
The printer density and gradation adjustment (manual adjustment) is executed when the above automatic adjustment cannot obtain the specified range, when a fine adjustment is required, or when a request for customization is made by the user.

If the adjustment state is improper, it is advisable to execute the automatic adjustment in advance then execute this adjustment for efficiency.

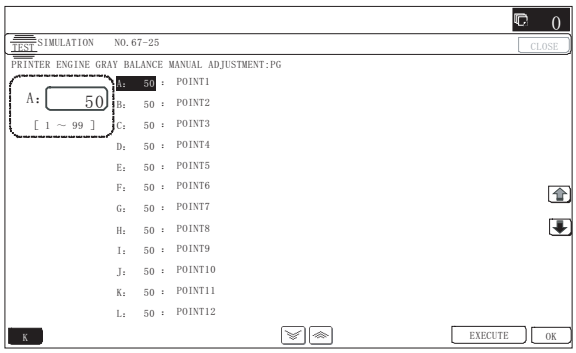
b. Note for the printer density and gradation adjustment (Manual adjustment)

1) After execution of the copy density and gradation adjustment.

c. Adjustment procedure



1) Enter the SIM 67-25 mode.

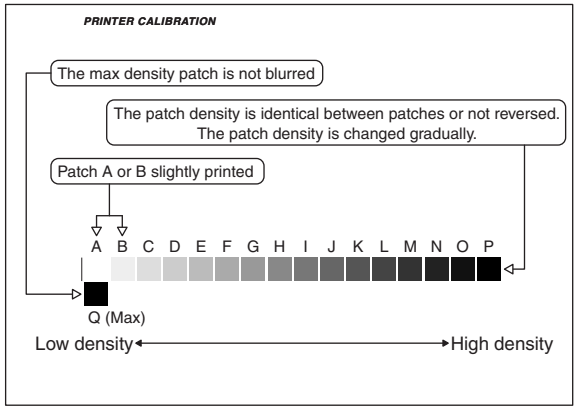


2) Press [EXECUTE] key. (A4 or 11" x 8.5" paper is automatically selected.)

   The adjustment pattern is printed.

3) Check that the following specification is satisfied or the density and gradation is satisfactory.

   If not, execute the following procedures.



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

   Patch A or B slightly printed.

   If, however, an adjustment is made by a request from the user, there is no need to follow the above standard.

4) Select the adjustment point to be adjusted with the scroll key.

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

   The adjustment value is set in the range of 0 - 255 (1 - 99). When SIM 67-24 is used to adjust the automatic density and gradation, all the set values of this simulation are set to 50.

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

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

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

   Then, adjust each patch density individually. This is an efficient way of adjustment.

6) Cancel SIM 67-25.

7) Use SIM 64-5 to print the print test pattern and check the density and gradation.

15-C Printer density and gradation adjustment (low density part density and gradation adjustment) (Normally unnecessary to adjust) (MX-B402SC/B382SC)

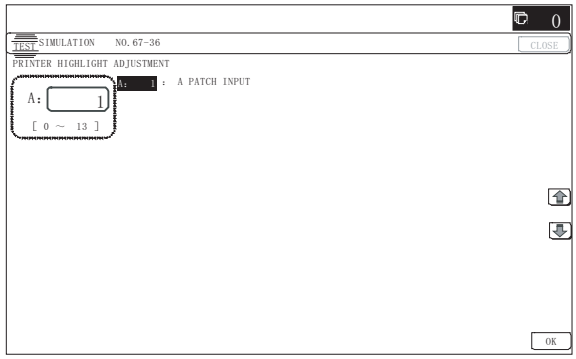
This procedure is to adjust image density of low density area in printer mode.

Adjust to reproduction (not reproduction) setting of the low density image.

This adjustment is required in the following cases.

* When reproduction of low density image is required. When reproduction of low density image is not required, conversely.
* U2 trouble has occurred.
* When the MFP PWB is replaced.
* When the EEPROM on the MFP PWB is replaced.
* When there is request from the user.

1) Enter the SIM 67-36 mode.



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. 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.

15-D Printer high density part density correction setting (High density part tone gap countermeasure) (Normally unnecessary to the setting change) (MX-B402SC/B382SC)

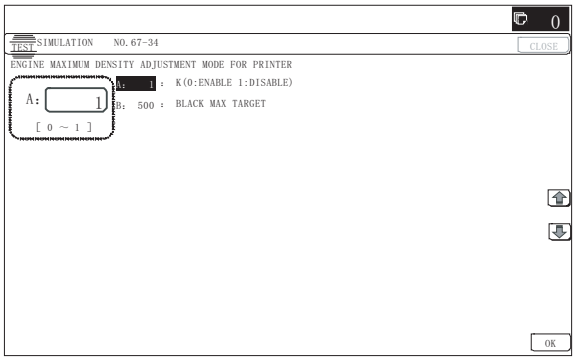
This procedure is to adjust image density of low density area in printer mode.

This setting 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 necessity to increase the density of the part of high density.
* The carriage unit has been replaced.
* U2 trouble has occurred.
* When the MFP PWB is replaced.
* When the EEPROM on the MFP PWB is replaced.

a. Adjustment procedure

1) Enter the SIM 67-34 mode.



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.

  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.

  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 density and gradation adjustment. (Automatic adjustment)

15-E Auto density and gradation adjustment by the user (Printer auto adjustment ENABLE setting and adjustment) (MX-B402SC/B382SC)

a. General

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

This adjustment is to set Enable/Disable of the above user operation with SIM 26-54.

CAUTION: This setting must be set to ENABLE only when the user's understanding on the automatic adjustment of the printer density and gradation and the user's operational ability are judged enough to execute the adjustment.

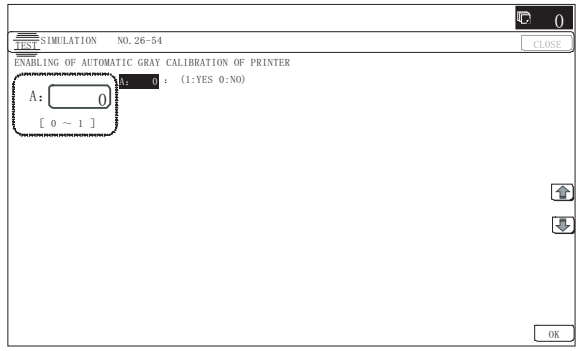
When set to ENABLE, give enough explanations on the operating procedures, notes, and operations to the user.

This adjustment is required in the following cases.

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

b. Setting procedure

1) Enter the SIM 26-54 mode.



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 density and gradation (automatic adjustment of printer density) is not displayed in the user program mode.

(Auto calibration by the user (Auto adjustment))

1) Enter the system setting mode.
2) Enter the printer setting mode.
3) Press the auto 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 to the center reference position so that the light density area is on the left side in the center reference.

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

15-F Copy/Printer density and gradation adjustment (Automatic adjustment) (MX-B402SC/B382SC)

This adjustment is needed in the following situations:

* When a consumable part (developer, OPC drum, transfer belt) is replaced.
* When the carriage 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 density and gradation adjustment (SIM46-24) and the automatic printer density and gradation adjustment (SIM67-24) continuously.

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

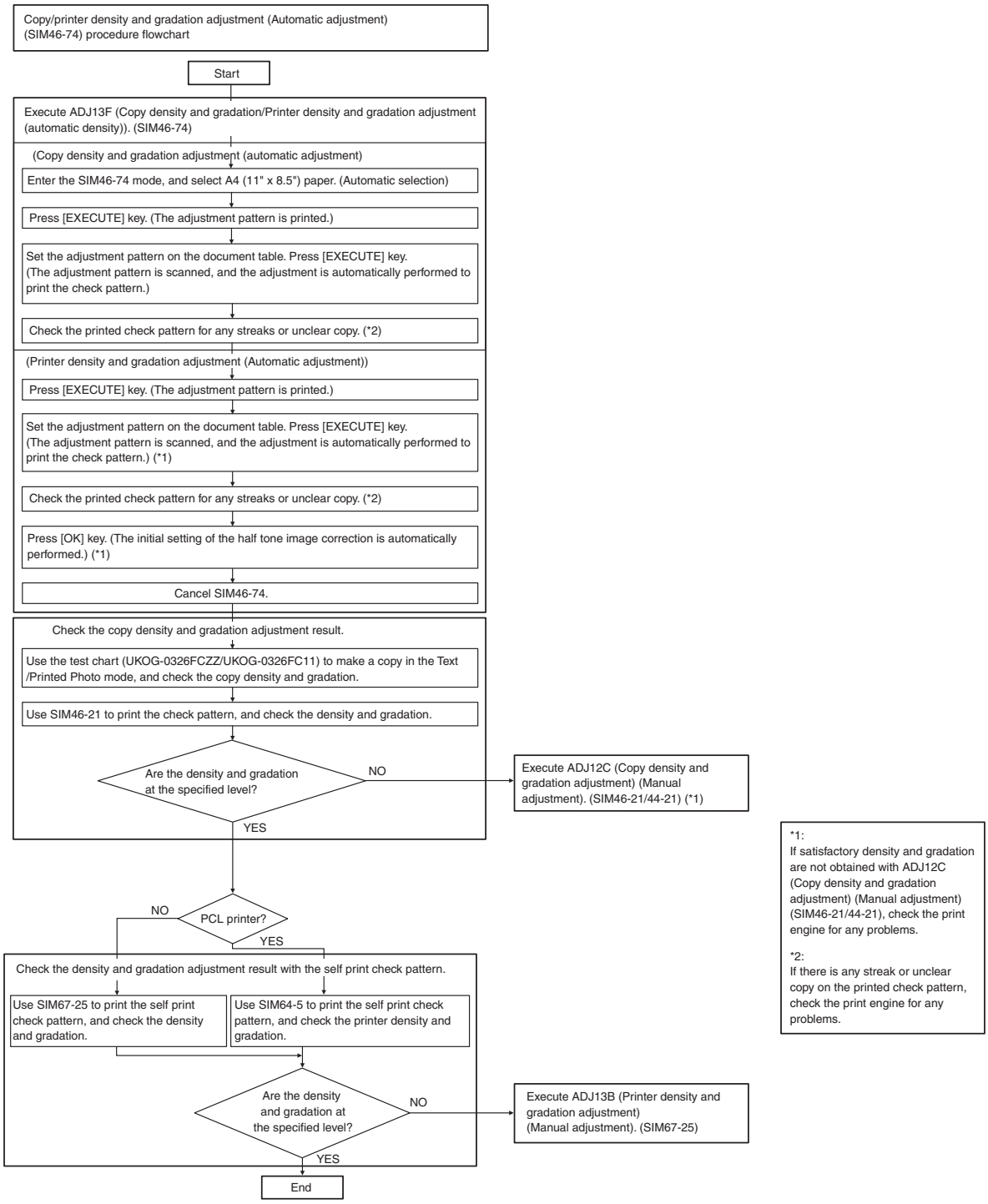
This mode is also advisable to effectively perform both of the automatic copy density and gradation adjustment (SIM46-24) and the automatic printer density and gradation adjustment (SIM67-24). It saves considerable time when compared with performing each of the auto copy/printer density and gradation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

b. Note for execution of the copy/printer density and gradation adjustment (Automatic adjustment for each dither)

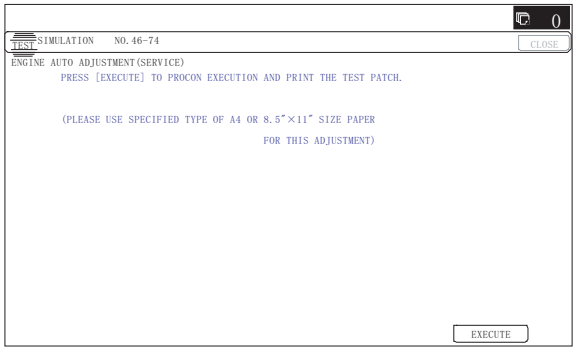
1) When setting the adjustment pattern on the document table in the automatic adjustment procedures, place 5 sheets of white paper on the adjustment pattern in order to prevent back copying and adverse effects of paper wrinkles as far as possible. Also note that the adjustment pattern should be placed to the center reference.
2) The scan image off-center adjustment and the engine image off-center adjustment must have been properly adjusted.

c. Adjustment procedures

(Auto density and gradation adjustment by the serviceman)

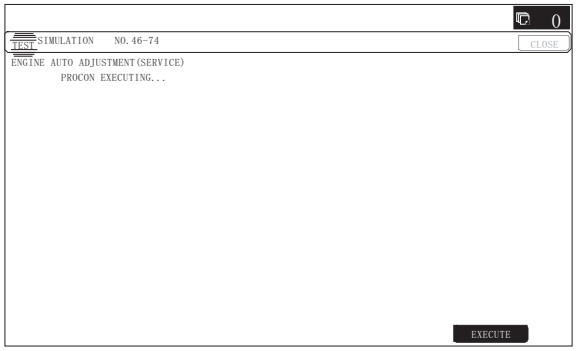


1) Enter the SIM46-74 mode.



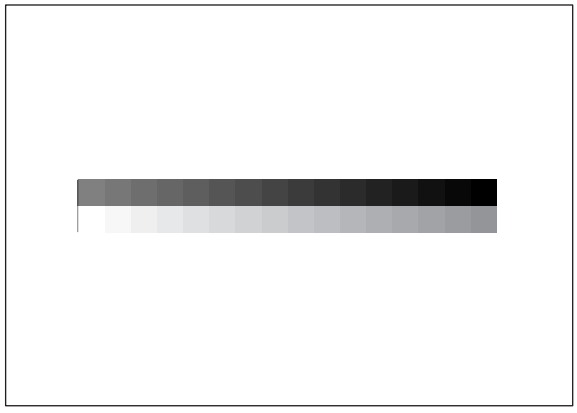
2) Press [EXECUTE] key.

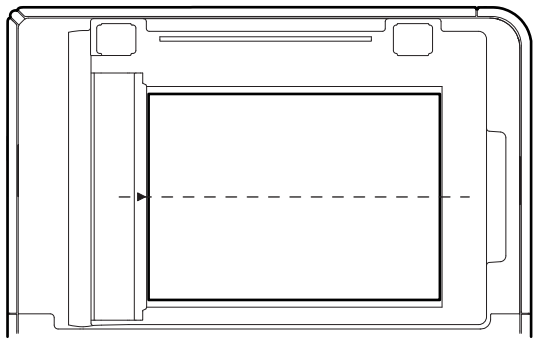
The high density process control is performed, and the copy patch image (adjustment pattern) is printed out. (A4 or 11" x 8.5" paper is automatically selected.)



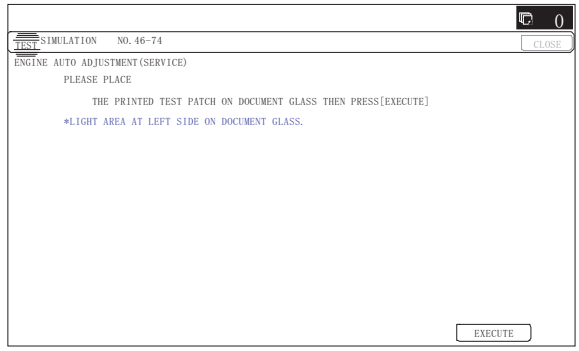
3) Set the patch image (adjustment pattern) paper printed in procedure 2) on the document table.

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





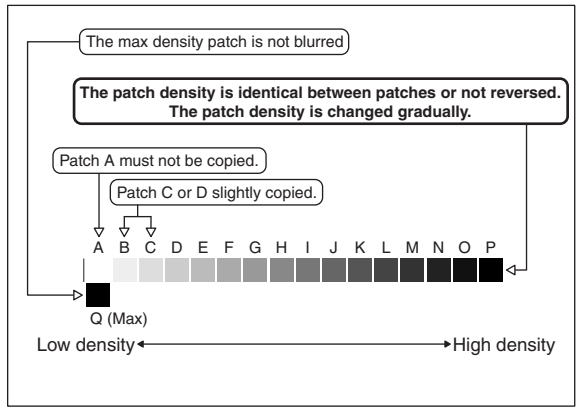
4) Press [EXECUTE] key.



The copy density and gradation adjustment is automatically executed and prints the check patch image.

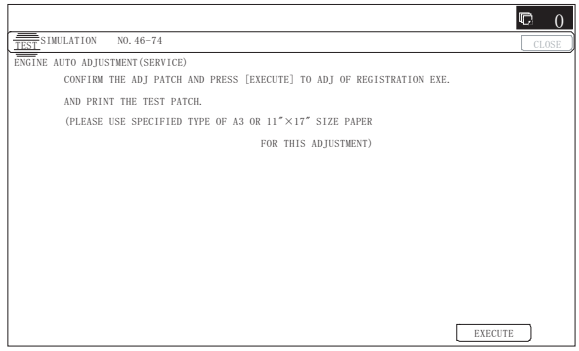
If there is any streak or unclear print on the printed check pattern, check the print engine for any problems.

If there is any abnormality, adjust again.



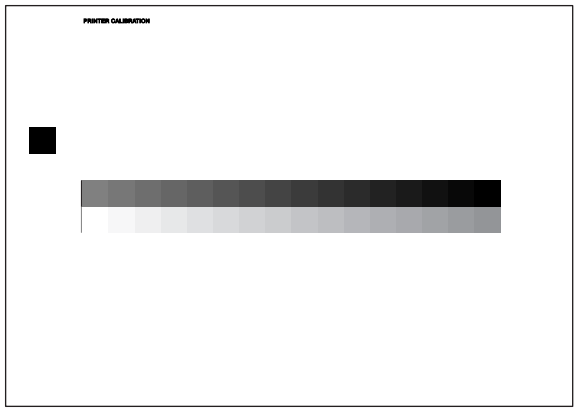
5) Press [EXECUTE] key.

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

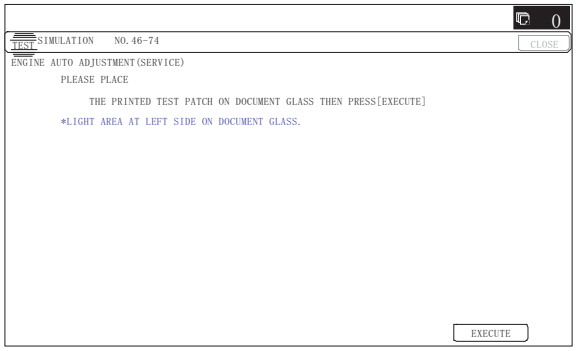


6) Set the patch image (adjustment pattern) paper printed in procedure 5) on the document table.

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



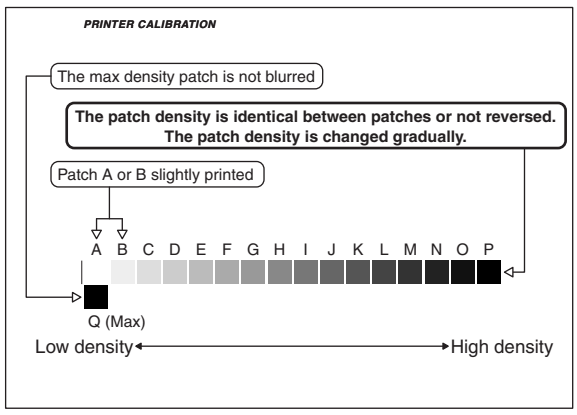
7) Press [EXECUTE] key.



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

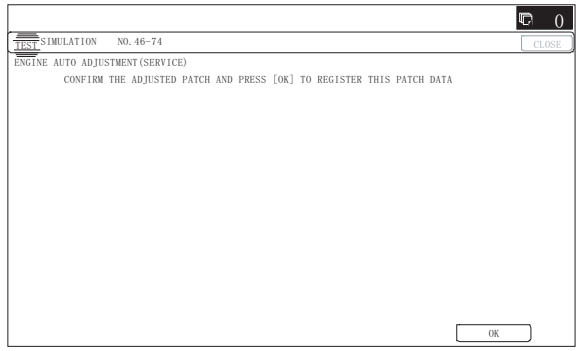
If there is any streak or unclear print on the printed check pattern, check the print engine for any problems.

If there is any abnormality, adjust again.

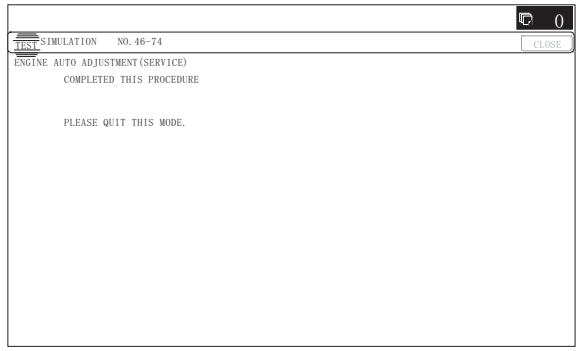


8) The initial setting menu of the half tone image correction is displayed. Press [OK] key.

The initial setting of the half tone image correction is performed.



9) When "COMPLETE THIS PROCEDURE" is displayed, the adjustment operation is completed. Cancel SIM46-74.



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

If, for example, only the copy density and gradation adjustment (auto adjustment) is performed and the simulation is canceled, the adjustment result is invalid.

10) Check the copy and printer density and gradation.

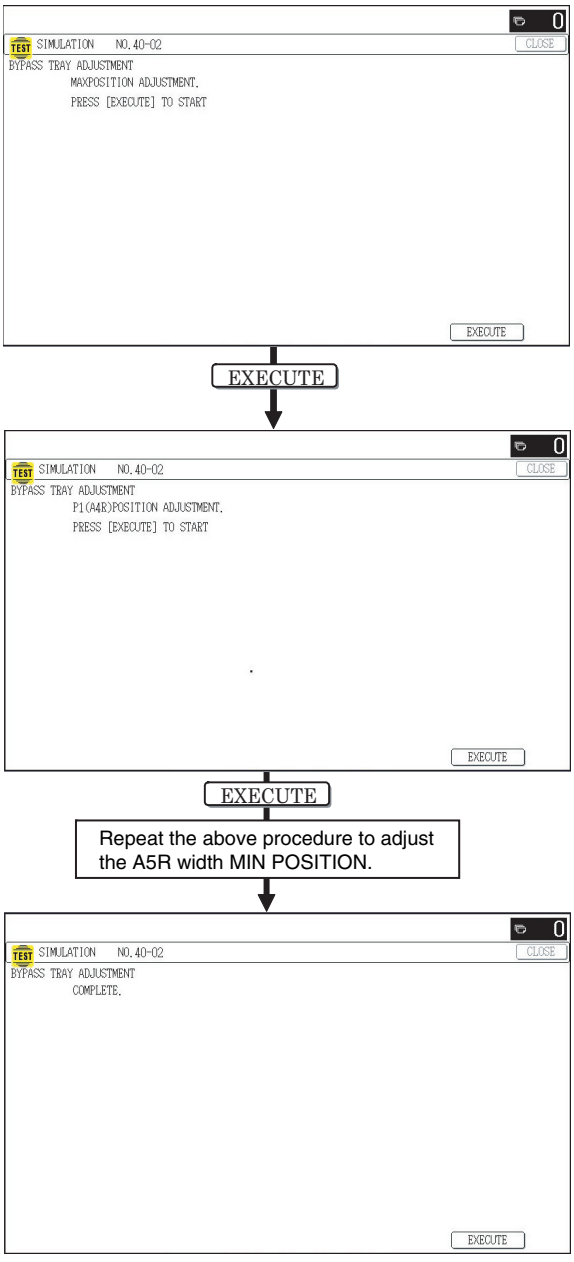
If a satisfactory result on the print density and gradation is not obtained with the automatic adjustment, execute the manual adjustment (SIM 67-25) (ADJ 13B).

ADJ 16 Manual paper feed tray paper size (width) sensor adjustment

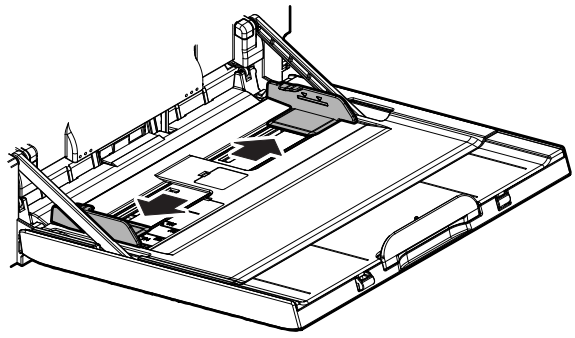
This adjustment is needed in the following situations:

* The manual paper feed tray section has been disassembled.
* The manual paper feed tray unit has been replaced.
* U2 trouble has occurred.
* The PCU PWB has been replaced.
* The EEPROM of the PCU PWB has been replaced.

1) Go through the modes specified in Simulation 40-2.



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 A4R size.

5) Press [EXECUTE] key.

   [EXECUTE] key is highlighted. Then it returns to the normal display.

   The A4R size width position detection level of the manual paper feed guide is recognized.

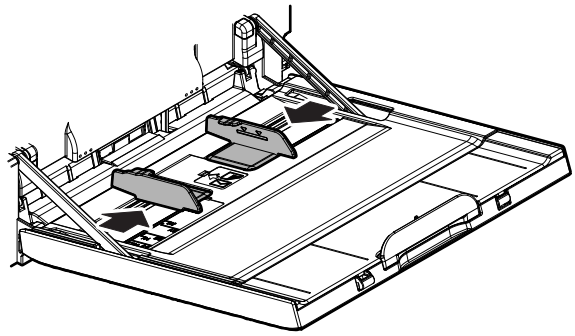
6) Set the manual paper feed guide to the width for the A5R size.

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 A5R size.

8) Open the manual paper feed guide to the minimum width position.



9) Press [EXECUTE] key.

   [EXECUTE] key is highlighted. Then it returns to the normal display.

   The minimum width position detection level of the manual paper feed guide is recognized.

   If the above operation is not completed normally, "ERROR" is displayed.

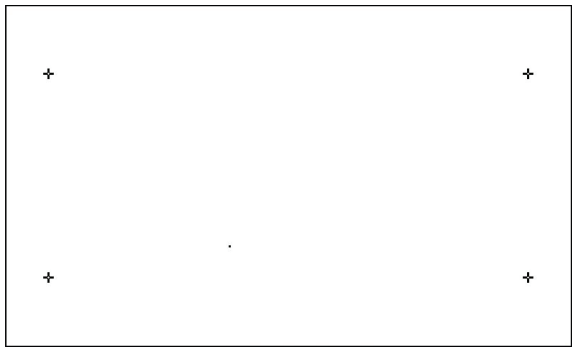
   When the operation is completed normally, the above data are saved to the memory and "COMPLETE" is displayed.

ADJ 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 loss, void area, image off-center, image magnification ratio auto adjustment with SIM50-28

The following adjustment items can be executed automatically with SIM50-28.

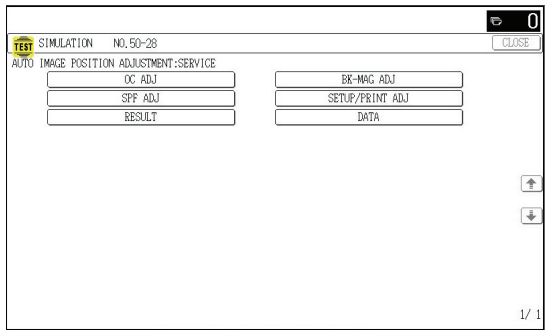
* ADJ 5 Print image magnification ratio adjustment (Main scanning direction) (Print engine section)
* ADJ 6 Image off-center adjustment (Print engine section)
* ADJ 8/9 Scan image magnification ratio adjustment
* ADJ 10 Scan image off-center adjustment
* ADJ 11 Print area (void area) adjustment (Print engine section)
* ADJ 12 Copy image position, image loss adjustment

(Menu in SIM50-28 mode)

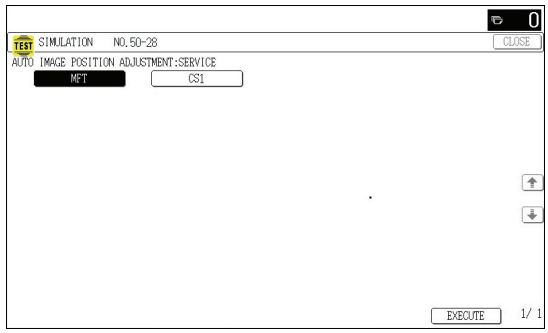
Display/Item	Content
OC ADJ	Image loss off-center sub scanning direction image magnification ratio adjustment (Document table mode)
BK-MAG ADJ	Main scanning direction image magnification ratio adjustment
SPF ADJ	Image loss off-center sub scanning direction image magnification ratio adjustment (DSPF mode)
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

1) Enter the SIM50-28 mode.



2) Select BK-MAG ADJ.
3) Select the paper feed tray with A4 (11" x 8.5") paper in it.

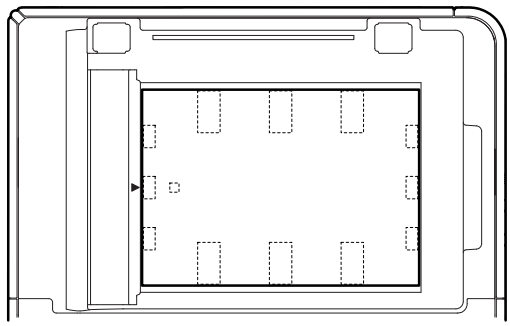


4) Press [EXECUTE] key.

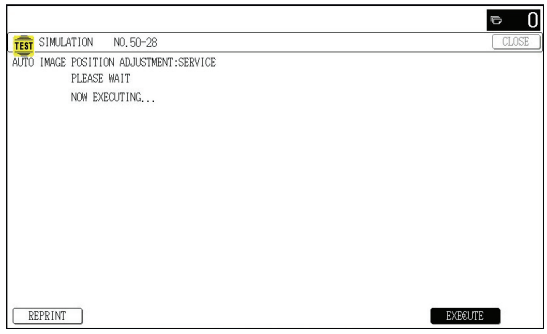
The adjustment pattern is printed out.

5) Set the adjustment pattern to the center reference position on the document table.

NOTE: Fit the adjustment pattern correctly with the document guide.



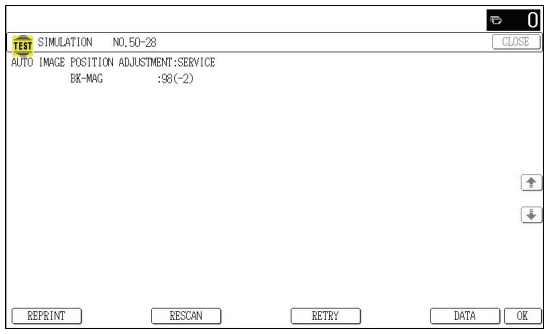
6) Press [EXECUTE] key.



The following item is automatically adjustment.

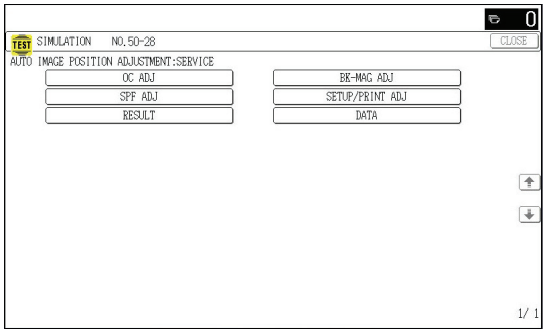
* Print image main scanning direction image magnification ratio

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

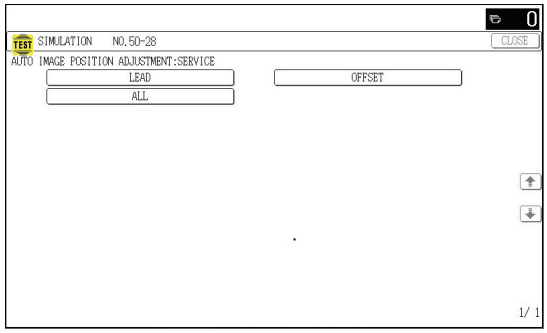


18-B Image off-center automatic adjustment (Document table mode)

1) Enter the SIM50-28 mode.

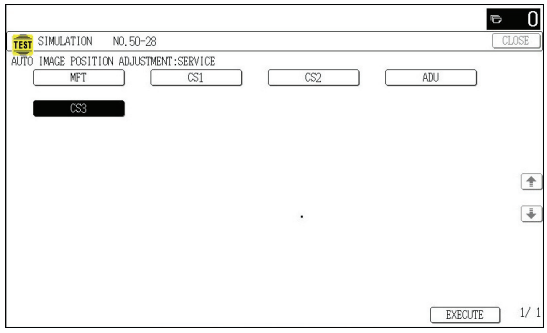


2) Select [SETUP/PRINT ADJ].
3) Select [OFFSET].



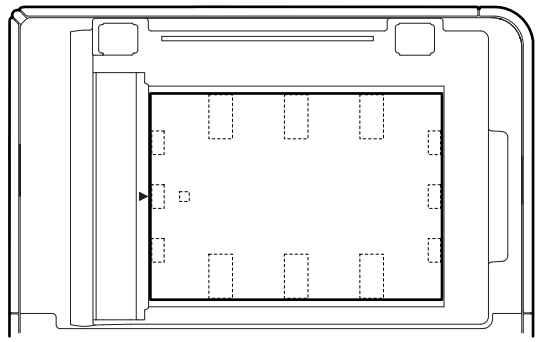
(Note)
When [ALL] is selected, the adjustments of the following two items are performed at a same time.
* [LEAD]: Print image lead edge image position adjustment
* [OFFSET]: Print image off-center adjustment

4) Select a paper feed tray to be adjusted.
Set A4 (11" x 8.5") paper in each paper feed tray in advance.

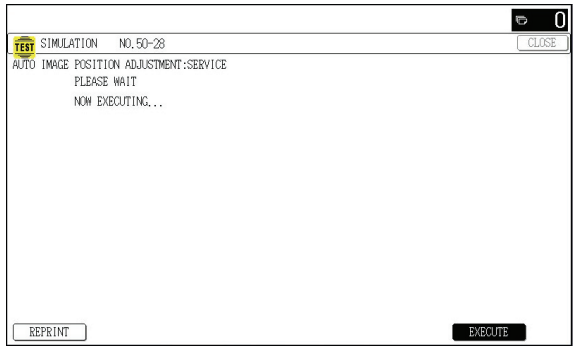


5) Press [EXECUTE] key.
The adjustment pattern is printed out. (Paper is fed from the selected paper feed tray, and the adjustment pattern of each paper feed tray is printed out.)
6) Set the adjustment pattern to the center reference position on the document table.

NOTE: Fit the adjustment pattern correctly with the document guide.



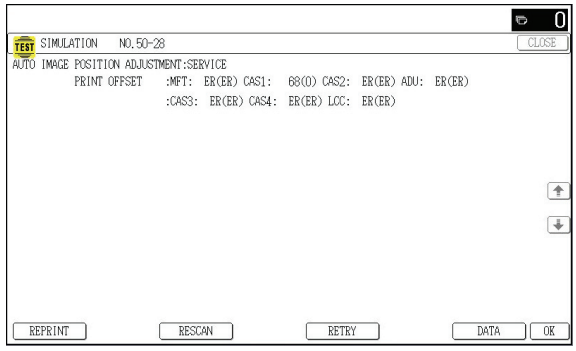
7) Press [EXECUTE] key.



The following item is automatically adjustment.
* Print image lead edge image position adjustment
* Print image off-center adjustment

Perform the procedures of 6) - 7) for the printed adjustment pattern of each paper feed tray.

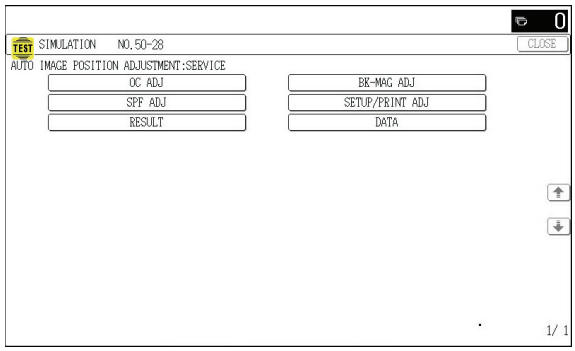
8) Press [OK] key.
The adjustment result becomes valid.



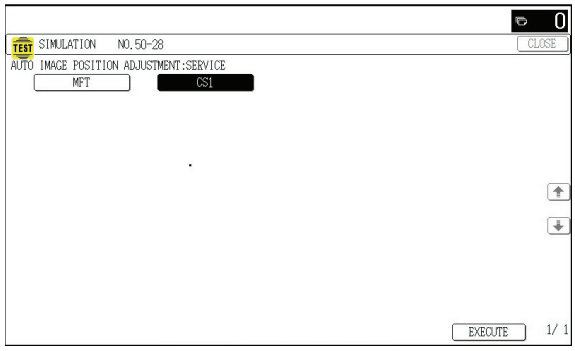
NOTE: When an error occurs in the automatic adjustment of SIM50-28, place white paper on the adjustment pattern and perform the adjustment.

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.

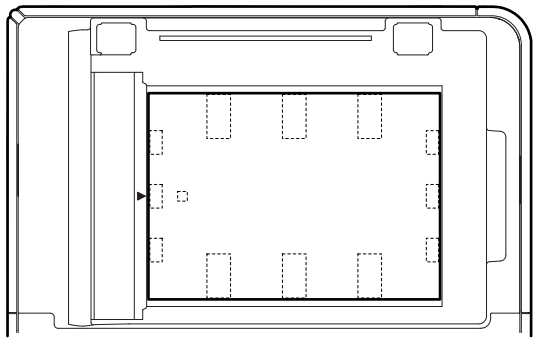


2) Select [OC ADJ].
3) Select a paper feed tray. Set A4 (11" x 8.5") paper.

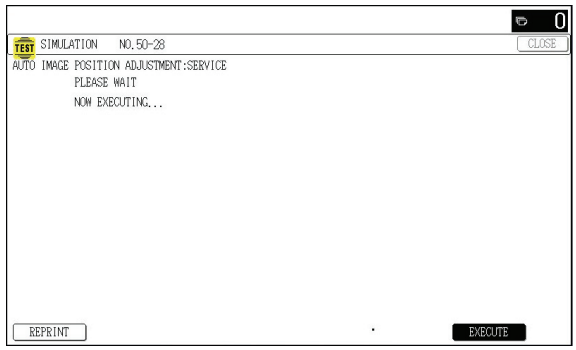


4) Press [EXECUTE] key.
   The adjustment pattern is printed out.
5) Set the adjustment pattern on the document table.

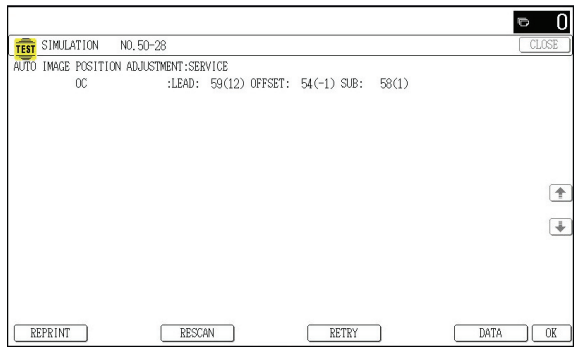
NOTE: Fit the adjustment pattern correctly with the document guide.



6) Press [EXECUTE] key.



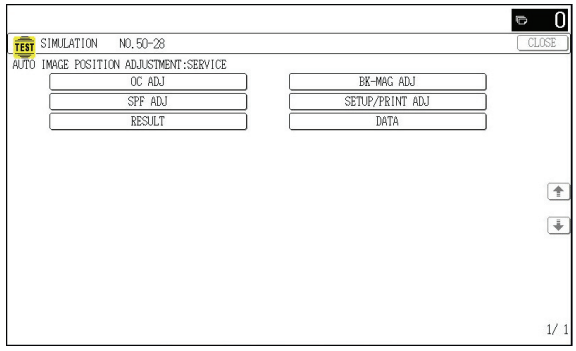
   The following item is automatically adjustment.
   * Copy lead edge image reference position adjustment, image off-center, sub scanning direction image magnification ratio automatic adjustment
7) Press [OK] key.
   The adjustment result becomes valid.



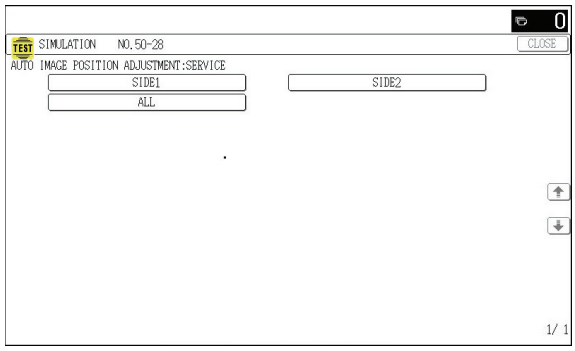
NOTE: When an error occurs in the automatic adjustment of SIM50-28, place white paper on the adjustment pattern and perform the adjustment.

18-D SPF mode 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) Press the button of the item to be adjusted. Select [ALL].



SIDE1: DSPF adjustment for the front side

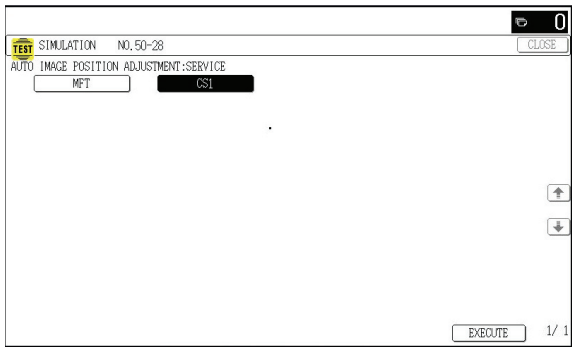
SIDE2: DSPF adjustment for the back side

ALL: DSPF adjustment for both the front and back sides

Select SIDE1 and SIDE2, and the following items can be performed separately.

The screen is shifted to the tray select screen for printing the DSPF adjustment pattern.

4) Select one of the trays that can be used to print DSPF adjustment patterns. (Multiple selection is not allowed.)

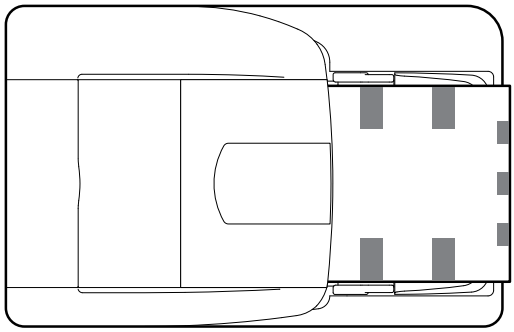


5) Press the [EXECUTE] button.

The machine starts self-print of DSPF adjustment patterns.

When self-print finishes, the next screen appears where you can start DSPF adjustments.

6) Set the adjustment pattern face up in 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.

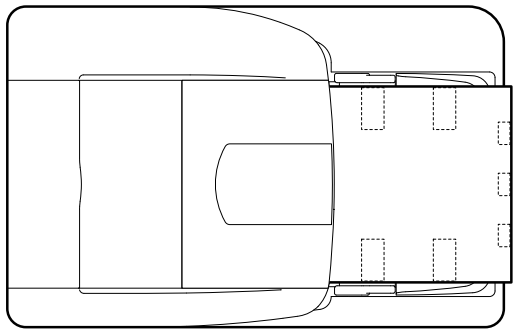
The machine starts reading DSPF adjustment patterns (for the front side).

* After completion of the adjustment, the screen is shifted to the DSPF adjustment pattern (back surface) scan start screen.

<Adjustment Item List>

- DSPF original leading edge adjustment (front side)
- DSPF original off-center adjustment (front side)
- DSPF original sub-scan magnification adjustment (front side)

8) Set the adjustment pattern face down in 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.

The machine starts loading DSPF adjustment patterns (for the back side).

* After completion of the adjustment, the screen is shifted to the adjustment result display screen.

<Adjustment Item List>

- DSPF original leading edge adjustment (back side)
- DSPF original off-center adjustment (back side)
- DSPF original sub-scan magnification adjustment (back side)

10) Press [OK] key.

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.

* 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.

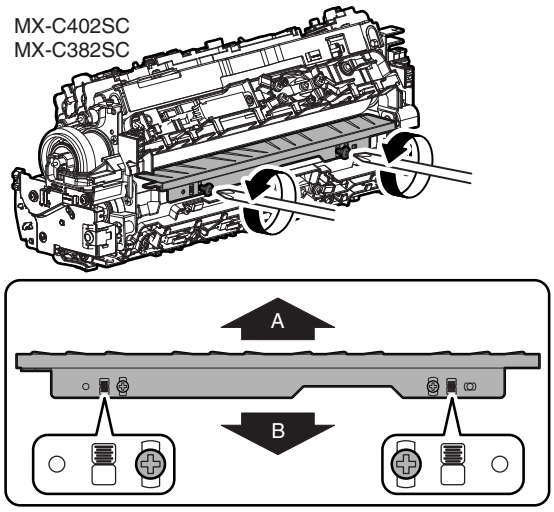
ADJ 19 Fusing paper guide position adjustment

Normally there is no need to perform this adjustment. In the following cases, perform this adjustment.

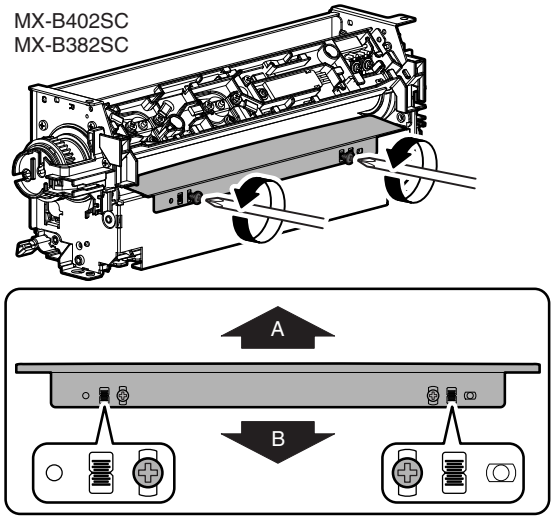
* When a paper jam occurs in the fusing section.
* When wrinkles are made on paper in the fusing section.
* When an image deflection or an image blur is generated in the paper rear edge section.

1) Loosen the fixing screw of the fusing paper guide so that the paper guide can be moved freely in the directions of A and B.
2) Use the fusing paper guide position scale as the reference to shift the paper guide in the arrow direction A or B.

MX-C402SC
MX-C382SC



MX-B402SC
MX-B382SC



The standard fixing position is the bottom of the marking scale. Change the position according to the situation.

* When wrinkles are generated on paper, change the position in the arrow direction B.
* When an image deflection or an image blur is generated in the paper rear edge section, change the position in the arrow direction A.

  Normally, the hole on the fusing paper guide standard fixing position is used to fix the fusing paper guide.

ADJ 20 Adjust the developing unit

20-A Adjust the developing doctor gap

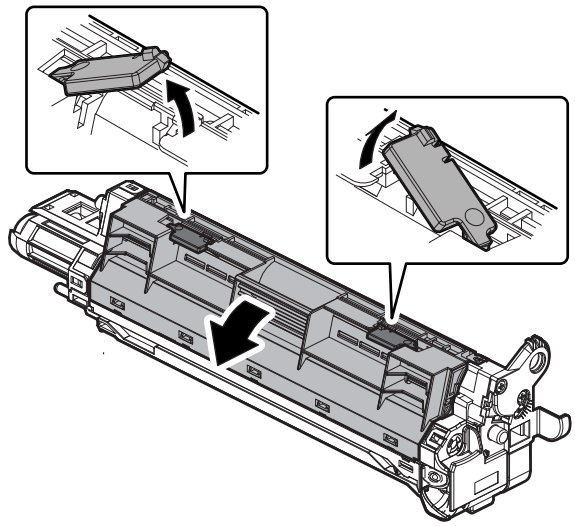
This adjustment is needed in the following situations:

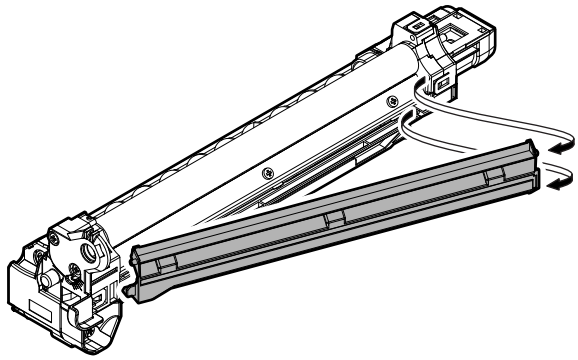
* The developing unit has been disassembled.
* When the print image density is low.
* When there is a blur on the print image.
* When there is unevenness in the print image density.
* The toner is excessively dispersed.

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.

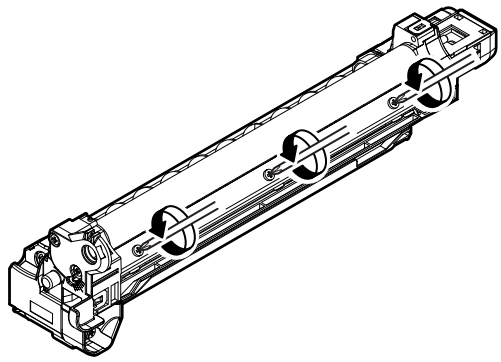
1) Remove the developing unit from the main unit, and remove the developing unit upper cover.





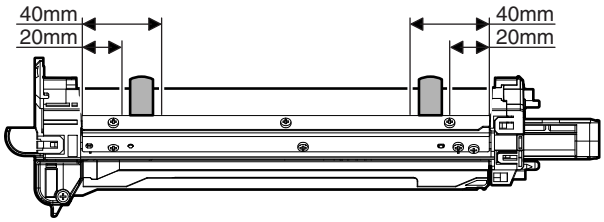
NOTE: All DV material must be removed before beginning step 2.

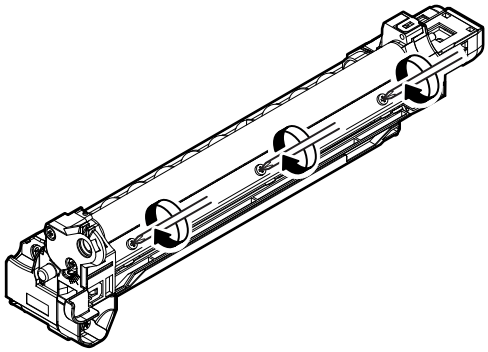
2) Loosen the developing doctor fixing screw.



3) Insert a thickness gauge of 0.65mm 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 0.65 ± 0.02mm.

* 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.

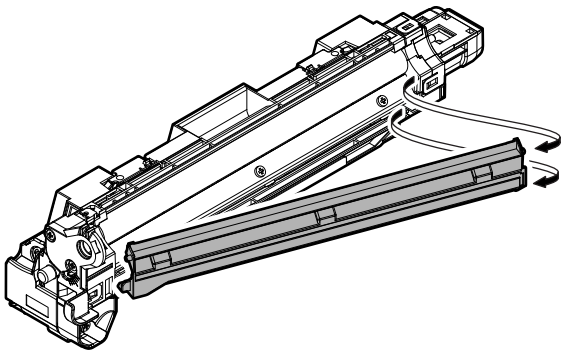
20-B Adjust the developing roller main pole position

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.

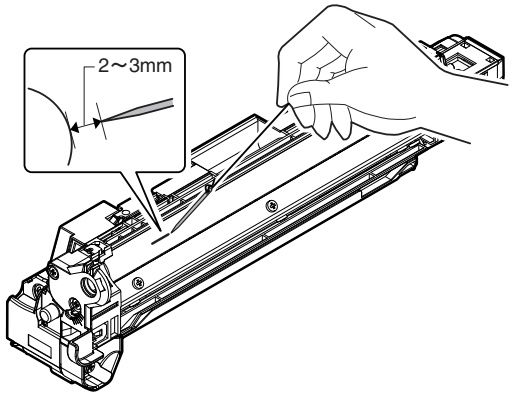
NOTE: Be careful not to put fingerprints, oil, grease, or foreign materials on the roller during the work.

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



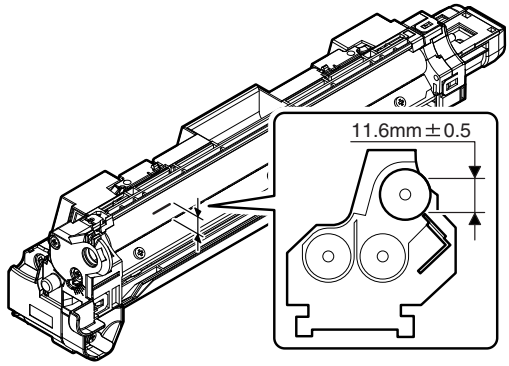
NOTE: All DV material must be removed before begining step 2.

2) Attach a piece of string to a sewing needle or pin.

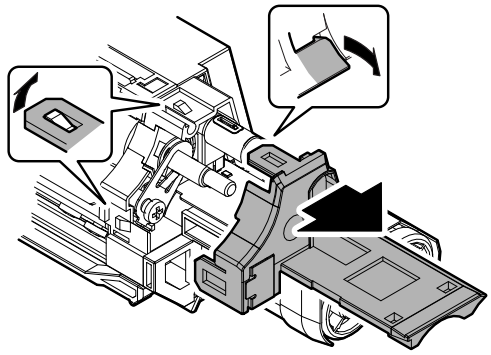


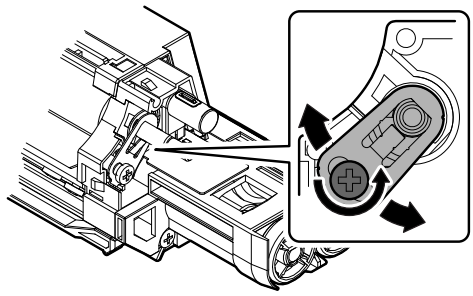
3) Measure the distance between the marking position and the doctor tip of the developing unit, and check that it is 11.6 ± 0.5mm.

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



4) Remove the developing unit DVR 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.

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

20-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) Insert the power plug into a power outlet. With the front cabinet open, turn ON the power switch of the machine and the power switch on the operation panel.
2) With the front cabinet open, enter SIM 25-2.

   WARNING: Do not install the toner cartridge before completing the Toner density reference control level setting (SIM 25-2).
3) Close the front cabinet.
4) After completion of the adjustment of the toner density control reference value, insert the toner cartridge.
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 3 minutes, and the average value of the toner density sensor detection level is set (saved) as the reference toner density control value.

   When the reference toner density control adjustment operation is completed, [EXECUTE] key returns to normal from highlight. This makes known about whether the adjustment operation is completed or not.
6) Press the CA key to exit the simulation.

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

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

   If [EE-EU] or [EE-EL] 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 67, or sensor control voltage level over 197
EE-EU	EU abnormality	Sensor output level over 154, or sensor control voltage level less than 49
EE-EC	EU abnormality	Sensor output level less than 95, or sensor control voltage level over 105

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

Only execute SIM 25-2 when replacing the Developer.

SIM 25-2 should only be run immediately after installing new DV material.

Toner Concentration Reference Control Level Setting will be incorrect if SIM 25-2 is performed at any other time.

[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 faster for improving the serviceability of the machine.

1) Various adjustments
2) Setting of the specifications and functions
3) Canceling troubles
4) Operation check
5) Counters check, setting, clear
6) Machine operating conditions (operation hysteresis), data check, clear.
7) Various (adjustments, setting, operation, counters, etc.) data transport.

The operating procedures and displays depend on the design of the operation panel of the machine.

A. Basic operation

(1) Starting the simulation

* Entering the simulation mode

1) Copy mode key ON → Program key ON → Asterisk (*) key ON → CLEAR key ON → Asterisk (*) key ON → Ready for input of a main code of simulation
2) Entering a main code with the 10-key → START key ON.
   Or select a main code with the SIM key on the touch panel.
3) Entering a sub code with the 10-key → START key ON.
4) Select an item with the scroll key and the item key.
5) The machine enters the mode corresponding to the selected item. Press [START] key or [EXECUTE] key to start the simulation operation.

* Canceling the simulation mode to return to the normal mode

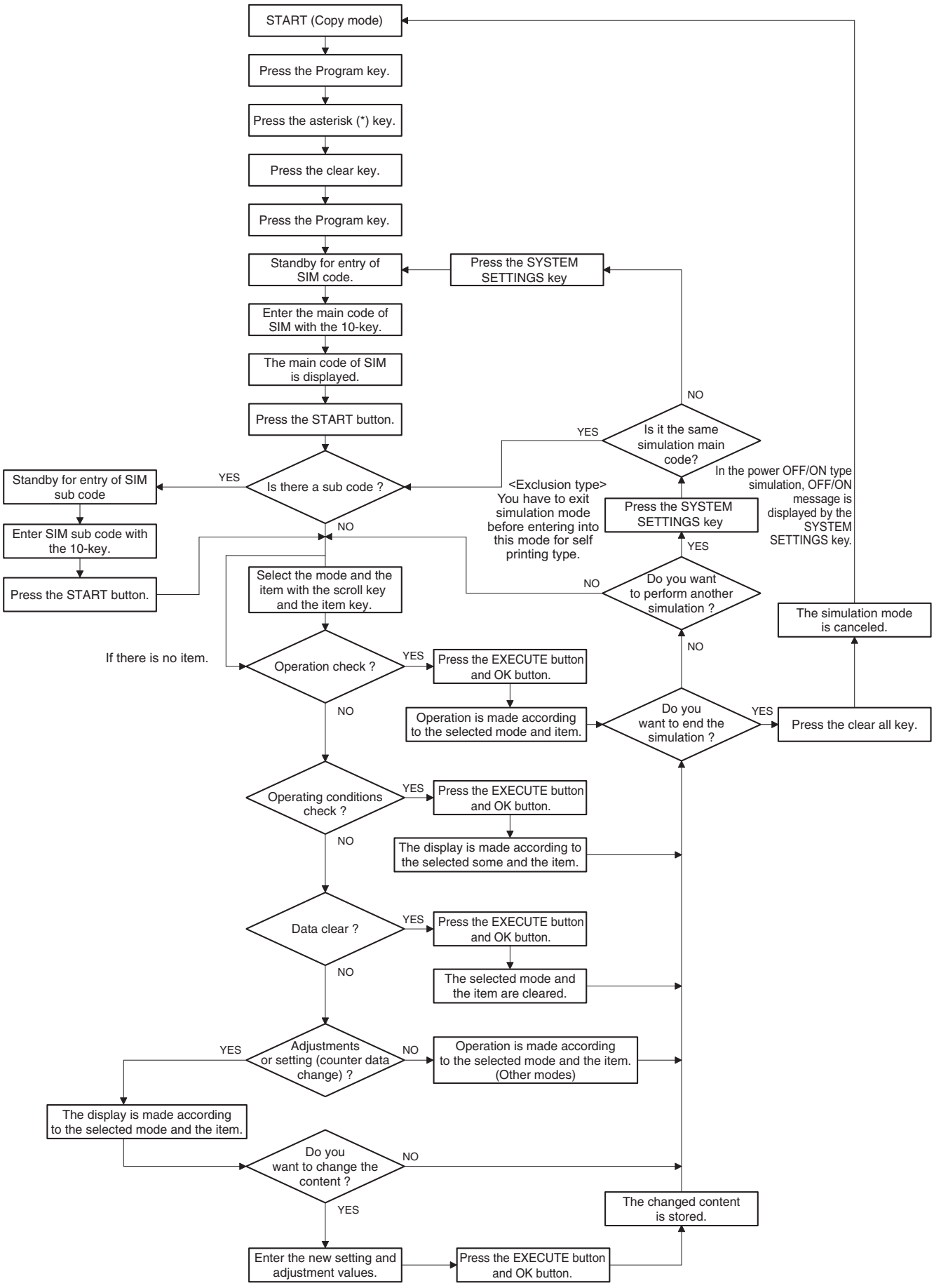
1) Press CA (Clear all) key.

(Note for the simulation mode)

Do not turn OFF the power switch on the operation panel when the machine is in the simulation mode. If the power switch should be turned OFF in the simulation mode, a malfunction may be resulted. In this case, turn OFF/ON the main power source.

(2) Operation flowchart

a. 8.5 Inch LCD model



2. List of simulation codes

A. Color model

Main	Sub	Functions	Section
1	1	Used to check the operation of the scanner (reading) unit and the control circuit.	Scanner (reading)
	2	Used to check the sensors in the scanner (reading) section and the related circuits.	Scanner (reading)
	5	Used to check the operation of the scanner (reading) unit and the control circuit.	Scanner (reading)
2	1	Used to check the operations of the auto document feed unit and the control circuit.	DSPF
	2	Used to check the operations of the sensors and the detectors in the document feed unit section and the control circuits.	DSPF
	3	Used to check the operations of the loads in the auto document feed unit and the control circuit.	DSPF
3	2	Used to check the operations of the sensors and the detectors in the finisher and the control circuit.	Finisher
	3	Used to check the operation of the load in the finisher and the control circuit.	Finisher
	10	Used to adjust the finisher.	Finisher
4	2	Used to check the operations of the sensors and detectors in the paper feed tray, and the control circuit of those.	Paper feed tray (Option)
	3	Used to check the operations of the loads in the paper feed tray, and the control circuit of those.	Paper feed tray
	5	Used to check the operations of the paper feed tray unit paper transport clutch (DTRC).	Paper feed tray unit
5	1	Used to check the operation of the display, LCD in the operation panel, and control circuit.	Operation panel
	2	Used to check the operation of the heater lamp and the control circuit.	Fusing
	3	Used to check the operation of the scanner lamp and the control circuit.	Scanner (reading)
	4	Used to check the operation of the discharge lamp and the control circuit.	Process
6	1	Used to check the operations of the load in the paper transport system (clutches and solenoids) and the control circuits.	Paper transport/Paper exit section
	2	Used to check the operations of each fan motor and its control circuit.	Others
	3	Used to check the operations of the primary transfer unit and the control circuit.	Process (Transfer)
	6	Used to check the operation of the fusing separation. (Only color model)	Fusing
	51	Used to forcibly cut down the initial fuse of the developer unit and the fusing unit.	Developing, fusing unit
7	1	Used to set the operating conditions of aging.	Others
	6	Used to set the operating intermittent aging cycle.	
	8	Used to display the warm-up time.	
	9	Color setting in the color copy test mode (Used to check the copy operation and the image quality for each color). (Only color model)	
	12	The document reading number of sheets setting (for aging operation)	DSPF
8	1	Used to check and adjust the operations of the developing voltage in each print mode and the control circuit. * When the middle speed is adjusted, the low speed are also adjusted simultaneously.	Process (Developing)
	2	Used to check and adjust the operation of the main charger grid voltage in each printer mode and the control circuit. * When the middle speed is adjusted, the low speed are also adjusted simultaneously.	Process (Charging)
	6	Used to check and adjust the operation of the transfer voltage and the control circuit.	Process (Transport)
9	2	Used to check the operations of the sensors and detectors in the paper reverse section (duplex section) and its control circuit.	Duplex
	3	Used to check the operations of the load in the switchback section (duplex section) and its control circuit.	Duplex
10	1	Used to check the operations of the toner supply mechanism (toner motor) and the related circuit.	Process (Developing)
13	-	Used to cancel the self-diag "U1" trouble.	
14	-	Used to cancel the self-diag H3, H4, H5 troubles.	
16	-	Used to cancel the self-diag "U2" trouble.	MFP PWB / PCU PWB / SCU PWB
17	-	Used to cancel the self-diag "PF" trouble.	
21	1	Used to set the maintenance cycle.	
22	1	Used to check the print count value in each section and each operation mode. (Used to check the maintenance timing.)	
	2	Used to check the total numbers of mis-feed and troubles. (When the number of total jam is considerably great, it is judged as necessary for repair.)	
	3	Used to check mis-feed positions and the mis-feed count of each position. * Presumption of the faulty point by this data is possible.	
	4	Used to check the trouble (self diag) history.	
	5	Used to check the ROM version of each unit (section).	Firmware
	6	Used to output various adjustment/setting data (simulations, FAX soft switch counter), the firmware version, the counter list, the process control data, and SIM50-24 data.	
	8	Used to check the number of operations (counter value) of the finisher, the DSPF, and the scan (reading) unit.	
	9	Used to check the number of use (print quantity) of each paper feed section.	Paper feed, ADU
	10	Used to check the system configuration (option, internal hardware).	
	11	Used to check the use frequency (send/receive) of FAX. (Only when FAX is installed)	FAX
	12	Used to check the DSPF mis-feed positions and the number of mis-feed at each position. (When the number of mis-feed is considerably great, it can be judged as necessary for repair.)	DSPF
	13	Used to check the operating time of the process section (OPC drum, DV unit, toner cartridge).	Process
	19	Used to check the values of the counters related to the scan - image send.	
	90	Used to output the various set data lists.	

Main	Sub	Functions	Section
23	2	Used to output the trouble history list of paper jam and mis-feed. (If the number of troubles of mis-feed is considerably great, the judgment is made that repair is required.)	
	80	Used to check the operation of paper feed and paper transport in the paper feed section and the paper transport section. Used to output the list of the operation status of the sensor and the detectors in the paper feed section and the paper transport section.	Paper feed, Paper transport
24	1	Used to clear the jam counter, and the trouble counter. (After completion of maintenance, clear the counters.)	
	2	Used to clear the number of use (the number of prints) of each paper feed section.	
	3	Used to clear the finisher, DSPF, and the scan (reading) unit counter.	
	4	Used to clear the maintenance counter, the printer counters of the transport unit and the fusing unit. (After completion of maintenance, clear the counters.)	
	5	Used to clear the developer counter. (After replacement of developer, clear the counter.)	
	6	Used to clear the copy counter.	
	7	Used to clear the OPC drum counter. (After replacement of the OPC drum, clear the counter.)	
	9	Used clear the printer mode print counter and the self print mode print counter.	
	10	Used to clear the FAX counter. (Only when FAX is installed)	
	15	Used to clear the counters related to the scan mode and the image send.	
	30	Used to initialize the administrator password.	
	31	Used to initialize the service mode password.	
25	1	Used to check the operations of the developing section.	Process (Developing section)
	2	Used to make the initial setting of toner density when replacing developer. (Automatic adjustment)	Image process (Photo-conductor/Developing/ Transfer/Cleaning)
26	2	Used to set the paper weight type.	Paper feed
	3	Used to set the specifications of the auditor. (Setting must be made according to the auditor use conditions.)	Auditor
	6	Used to set the specifications (paper, fixed magnification ratio, etc.) of the destination.	
	10	Used to set the trial mode of the network scanner.	
	18	Used to set Disable/Enable of the toner save mode operation. (For the Japan and the UK versions.)	
	30	Used to set the operation mode corresponding to the CE mark (Europe safety standards). (For slow start to drive the fusing heater lamp)	
	32	Used to set display or non-display of the system setting menu.	
	35	Used to set the display mode of SIM 22-4 trouble history when a same trouble occurred repeatedly. There are two display modes: display as one trouble and display as several series of troubles.	
	38	Used to set Continue/Stop of print when the maintenance life is reached.	
	41	Used to set Enable/Disable of the magnification ratio automatic select function (AMS) in the center binding mode.	
	49	Used to set the print speed of postcards mode.	
	50	Used to set functions.	
	52	Used to set whether non-printed paper (insertion paper, cover paper) is counted up or not.	
	53	User auto color calibration (color balance adjustment) Inhibit/Allow setting (copy mode). (Color model)	
	54	User auto color calibration (color balance adjustment) Inhibit/Allow setting (printer mode). (Color model)	
	55	Used to set Enable/Disable of the automatic color calibration (automatic color balance adjustment) when replacing a consumable part. (Only color model)	
	65	Used to set the staple process restriction.	
	69	Used to set the operating conditions for toner near end.	
	73	Used to adjust the image loss (shade delete amount) in the name card copy mode.	
	74	Used to set the OSA trial mode.	
	78	Used to set the password of the remote operation panel.	
27	1	Used to set non-detection of communication error (U7-00) with RIC. (FSS function)	
	2	Used to set the sender's registration number and the HOST server telephone number. (FSS function)	
	4	Used to set the initial call and toner order auto send. (FSS function)	
	5	Used to set the machine tag No. (This function allows the host computer to check the machine tag No.) (FSS function)	Communication (RIC/MODEM)
	6	Used to set of the manual service call. (FSS function)	
	7	Used to set of the enable, alert call out. (FSS function)	
	9	Used to set the paper transport time recording YES/NO threshold value and shading gain adjustment retry number. (FSS function)	
	10	Used to clear the trouble prediction history information. (FSS function)	
	11	Used to check the serial communication retry number and the scanner gain adjustment retry number history. (FSS function)	
	12	Used to check the high-density, half-tone process control and the automatic registration adjustment error history. (FSS Function)	
	13	Used to check the history of paper transport time between sensors. (FSS function)	
	14	Used to set the FSS function connection test mode.	
30	1	Used to check the operations of the sensors and the detectors in other than the paper feed section and the control circuits.	
	2	Used to check the operations of the sensors and the detectors in the paper feed section and the control circuits.	
33	2	Used to delete the ID (IDM) information of Felica card.	
40	2	Manual paper feed tray paper width sensor adjustment.	Paper feed
	7	Used to set the adjustment value of the manual paper feed tray paper width sensor.	Paper feed

Main	Sub	Functions	Section
43	1	Used to set the fusing reference temperature of each operation mode.	
	4	Used to set the fusing temperature 2 in each mode. (Continued from SIM 43-1.)	
	20	Used to set the environmental correction under low temperature and low humidity (L/L) for the fusing temperature setting (SIM 43-1) in each paper mode.	
	21	Used to set the environment correction under high temperature and high humidity (H/H) for the fusing temperature setting (SIM 43-1) in each paper mode.	
	22	Used to set the environment correction under low temperature and low humidity (L/L) for the fusing temperature setting (SIM 43-4) in each paper mode.	
	23	Used to set the environment correction under high temperature and high humidity (H/H) for the fusing temperature setting (SIM 43-4) in each paper mode.	
	24	Used to set the correction of the temperature adjustment value of SIM 43-1 and 43-4.	
44	1	Used to set each correction operation function in the image forming (process) section.	Image process (Photo-conductor/Developing/ Transfer/Cleaning)
	2	Used to adjust the sensitivity of the image density sensor (registration sensor).	Process
	4	Used to set the conditions of the high density process control operation.	Process
	6	Used to execute the high density process control forcibly.	Process
	9	Used to display the result data of the high density process control operation.	Image process (Photo-conductor/Developing/ Transfer/Cleaning)
	12	Used to display the operation data of the high density process control and the image density sensor (registration sensor).	Image process (Photo-conductor/Developing)
	13	Used to perform the color image sensor (image registration sensor F) calibration. (Only color model)	
	14	Used to display the output level of the temperature and humidity sensor.	Process (OPC drum, development)/Fusing/LSU
	16	Used to display the toner density control data.	Developing system
	21	Used to set the half tone process control target.	Process
	22	Used to display the toner patch density level in the half tone process control operation.	Process
	24	Used to display the correction target and the correction level in the half tone process control operation.	Process
	25	Used to set the calculating conditions of the correction value for the half tone process control.	Process
	26	Used to execute the half tone process control compulsorily.	Process
	27	Used to clear the correction data of the half tone process control.	Process
	28	Used to set the process control execution conditions.	Process
	29	Used to set the operating conditions of the process control during a job.	Process
	31	Used to adjust the OPC drum phase. (Manual adjustment) (Only color model)	Process
	37	Used to set the development bias correction level in the continuous printing operation.	
	43	Used to display the identification information of the developing unit.	Developing system
	61	Used to set the calibration data of the color image sensor (image registration sensor F). (Only color model)	
46	1	Used to adjust the copy density in the copy mode. (Only color model)	
	2	Used to adjust the copy density in the copy mode.	
	4	Used to adjust the density in the image send mode.	
	5	Used to adjust the density in the image send mode.	
	8	Used to adjust the image send mode color balance RGB.	
	9	Used to adjust the scan image density.	
	10	Used to adjust the copy color balance and the gamma (for each color copy mode). (Only color model)	
	16	Used to adjust the monochrome copy density and the gamma (for each monochrome copy mode).	
	19	Used to set the operating conditions for the density scanning (exposure) of monochrome auto copy mode documents.	
	21	Copy color balance adjustment (Manual adjustment) (Color model)	
	23	Used to set the density correction of copy high density section (High density tone gap supported).	
	24	Copy color balance adjustment (Auto adjustment) (Color model)	
	25	Used to adjust the copy color balance. (Single color copy mode) (Only color model)	
	26	Used to reset the single color mode color balance set value to the default. (Only color model)	
	27	Used to adjust the gamma/density of copy images, texts, and line image edges. (Only color model)	
	30	Used to adjust the resolution in the sub scanning direction in the copy mode. (Only color model)	
	32	Used to adjust the document background density reproducibility in the monochrome auto copy mode.	
	36	Used to adjust the colors in the 2-color copy mode. (Only color model)	
	37	Used to adjust the color document reproducibility in the monochrome copy mode.	
	38	Used to adjust the black component amount in the color copy mode. (Only color model)	
	39	Used to adjust the sharpness of FAX send images.	
	40	Used to adjust the FAX send image density. (Collective adjustment of all the modes)	
	41	Used to adjust the FAX send image density. (Normal)	
	42	Used to adjust the FAX send image density. (Fine)	
	42	Used to adjust the FAX send image density. (Fine)	
	44	Used to adjust the FAX send image density. (Ultra fine)	
	45	Used to adjust the FAX send image density. (600dpi).	
	47	Used to set the compression rate of copy and scan images (JPEG).	
	51	Used to adjust the gamma for the copy mode heavy paper mode and the image process mode. (Manual adjustment)	

Main	Sub	Functions	Section
46	52	Used to reset the copy color balance adjustment (adjustment for each dither) to the default value. (The set values of SIM46-51 and SIM46-54 are set to the default values.) (Only color model)	
	54	Used to reset the copy color balance adjustment (auto adjustment for each dither). (Only color model)	
	55	Used to adjust the range of colors reproduced in drop-out colors.	
	60	Used to adjust the sharpness in the color auto copy mode.	
	61	Used to adjust the area separation recognition level.	
	62	Used to set the operating conditions of the ACS, the area separation, the background image process, and the auto exposure mode.	
	63	Used to adjust the density in the copy low density section.	
	74	Copy color balance adjustment (Auto adjustment)/Printer color balance adjustment (Auto adjustment) (Color model)	
48	1	Used to adjust the scan image magnification ratio (in the main scanning direction and the sub scanning direction).	
	5	Used to correction the scan image magnification ratio (in the sub scanning direction).	Scanner section
	6	Used to adjust the rotation speed of each motor.	
49	1	Used to perform the firmware update.	
	3	Used to update the operation manual in the HDD.	
50	1	Copy image position, image loss adjustment	
	2	Used to adjust the copy image position and the image loss. (This simulation is a simplified version of SIM 50-1).	
	5	Used to adjust the print lead edge image position. (PRINTER MODE)	
	6	Used to adjust the copy image position and the image loss. (DSPF mode)	DSPF
	7	Used to adjust the copy image position and the image loss (DSPF mode). (This simulation is a simplified version of SIM 50-6.)	DSPF
	10	Used to adjust the black print image magnification ratio and the off-center position. (The adjustment is made separately for each paper feed section.)	
	12	Used to perform the scan image off-center position adjustment. (The adjustment is made separately for each scan mode.)	
	20	Image registration adjustment (Manual adjustment)	
	22	Used to adjust the image registration. (Main scan direction, sub scan direction) (Auto adjustment)/OPC drum phase adjustment (Auto adjustment) (Only color model)	
	24	Used to display the detail data of SIM 44-2, 50-20 and 22.	
	27	Used to perform the image loss adjustment of scanned images in the FAX or image send mode.	
	28	Used to automatically adjust the image loss, void area, image off-center, and image magnification ratio.	
51	1	Used to adjust the ON/OFF timing of the secondary transport voltage. (Only color model)	
	2	Used to adjust the contact pressure (deflection amount) on paper by the main unit and the DSPF registration roller. (This adjustment is performed when there is a considerable variation in the print image position on the paper or when paper jams frequently occur.)	
53	8	Used to adjust the document lead edge reference and the DSPF mode document scan position.	
55	1	Used to set the specifications of the engine control operations. (SOFT SW)	
	2	Used to set the specifications of the scanner control operation. (SOFT SW)	
	3	Used to set the specifications of the controller operation. (SOFT SW)	
56	1	Used to transport data between HDD - MFP PWB SRAM/EEPROM. (Used to repair the PWB.)	
	2	Used to backup the data in the EEPROM. SRAM, and HDD (including user authentication data and address data) to the USB memory. (Corresponding to the device cloning and the storage backup.)	
	3	Used to backup the document filling data to the USB memory.	
	4	Used to backup the JOB log data to the USB memory.	
60	1	Used to check the operations (read/write) of the MFP PWB memory.	
	2	Used to set the MFP PWB on-board SDRAM.	
61	1	Used to check the LSU polygon motor rotation and laser detection.	LSU
	3	Used to set the laser power	
	4	Used to print the print image skew adjustment pattern. (LSU unit)	
62	1	Used to execute the hard disk format (except operation manual area).	
	2	Used to check read/write of the hard disk (partial).	
	3	Used to check read/write of the hard disk (all areas).	
	6	Used to perform the self diagnostics of the hard disk.	
	7	Used to print the hard disk self diagnostics error log.	
	8	Used to format the hard disk. (Excluding the system area and the operation manual area)	
	10	Used to delete the job log data.	
	11	Used to delete the document filing data.	
	12	Used to set Enable/Disable of auto format in a hard disk trouble.	
	13	Used to format the hard disk. (only the operation manual area)	

Main	Sub	Functions	Section
63	1	Used to display the shading correction result.	Scanner
	2	Used to perform shading.	
	3	Used to perform scanner (CCD) color balance and gamma auto adjustment.	Scanner
	4	Used to display the SIT chart patch density.	
	5	Used to perform the scanner (CCD) color balance and gamma default setting.	
	6	Used to display the scan level and the density level of the copy color balance adjustment patch. (Only color model)	
	7	Used to register the service target of the copy mode auto color balance adjustment. (Only color model)	
	8	Used to set the default of the service target of the copy mode auto color balance adjustment. (Only color model)	
	11	Used to set the target color balance of the copy mode auto color balance adjustment. (Only color model)	
64	1	Test print. (Self print) (Color mode) (Only color model)	
	2	Test print. (Self print) (Monochrome mode)	
	4	Printer test print. (Self print) (256 gradations)	
	5	Printer test print. (Self print) (PCL)	
	6	Printer test print. (Self print) (PS)	
	7	Used to print the adjustment pattern of the test print. (Self print). (The adjustment pattern of SIM46-21 is printed.)	
65	1	Used to adjust the touch panel (LCD display section) detection coordinates.	Operation panel section
	2	Used to display the touch panel (LCD display section) detection coordinates.	
	5	Used to check the operation panel key input.	
66	1	Used to display the FAX-related soft SW (2 - 99) on the LCD to allow changing the soft SW while checking with the LCD.	FAX
	2	Used to enter a country code and set the default value for the country code.	FAX
	3	Used to execute the read/write check of EEPROM on the MODEM controller, SDRAM, SRAM on the MFP controller, and flash ROM, and to display the results.	FAX
	4	Used to send the selected signals to the line and the main unit speaker. (Send level: max.)	FAX
	5	Used to send the selected signal to the line and the main unit speaker. (Send level: Soft SW setting) (For the kinds of send signals, refer to PART1 and PART2 of SIM66-04.)	FAX
	6	Used to print the confidential registration check table (BOX NO., BOX name, passcode. (If there is no confidential registration, no print is made.)	FAX
	7	Used to output all image data saved in the image memory. (Confidential data are also outputted.)	FAX
	8	Used to send the selected sound messages to the line and the speaker. (Send level: Max.)	FAX
	9	Used to send the selected sound message to the line and the speaker. (Send level: max.) * For details of sound messages, refer to the sound message table of SIM66-08.	FAX
	10	Used to clear all image data saved in the FAX image memory. (The confidential data are also cleared.)	FAX
	11	Used to send the selected signal at 300bps to the line and the speaker. (Send level: Max.)	FAX
	12	Used to send the selected signal at 300bps to the line and the speaker. (Send level: Soft SW setting) * For the kings of send signals at 300bps, refer to SIM66-11, 300bps send signal table.	FAX
	13	Used to register dial numbers for SIM66-14/15/16, Dial test. (Up to 20 digits can be registered.)	FAX
	14	Used to execute the dial pulse (10PPS) send test and to adjust the make time.	FAX
	15	Used to execute the dial pulse (20PPS) send test and to adjust the make time.	FAX
	16	Used to execute the DTFM signal send test and to adjust the send level.	FAX
	17	Used to send the DTMF signal to the line and the speaker. (Send level: Max.)	FAX
	18	Used to send the DTMF signal to the line and the speaker. (Send level: Soft SW setting)	FAX
	21	Used to print the selected items (various registration information, communication management information, file management information, system error, protocol monitor).	FAX
	22	Used to set the handset sound volume. (This simulation can be executed even though the handset setting is set to NO. When, however, the handset is not installed, the sound volume cannot be checked.) (Japan model only)	FAX
	24	Used to clear the FAST save data.	FAX
	25	Used to register the FAX number for MODEM dial-in.	FAX
	26	Used to register external telephone numbers for MODEM dial-in.	FAX
	29	Used to initialize the telephone book data (the one-touch registration table, the FTP/Desktop expansion table, the group expansion table, the program registration table, the interface memory box table, the meta data, Inbound Routing, and the Document Admin table).	FAX
	30	Used to display the TEL/LIU status change, The display is highlighted by status change.	FAX
	31	Used to set ON/OFF the port for output to TEL/LIU.	FAX
	32	Used to check the fixed data received from the line and to display the result.	FAX
	33	Used to execute detection of various signals with the line connected and to display the detection result. When a signal is detected, the display is highlighted.	FAX
	34	Used to execute the send test and display the time required for sending image data in the test. Used to execute send test and display. (Unit: ms)	FAX
	36	Used to check send and receive data from the MODEM controller to the MFP controller or the data line or the command line individually.	FAX
	39	Used to check and change the destination setting saved in EEPROM of the FAX BOX.	FAX
	42	Used to rewrite the program to power control installed in the FAX BOX.	
	43	Used to write the adjustment value into the power control installed in the FAX BOX.	FAX
	60	Used to provide the user the auto select function of a low-cost line by dialing with addition of the prefix to the dial number when calling	FAX
	61	Used to display the FAX-related soft SW (100 - 170) on the LCD to allow changing the soft SW while checking with the LCD.	FAX

Main	Sub	Functions	Section
67	17	Used to reset the printer controller.	Printer
	24	Printer color balance adjustment (Auto adjustment) (Color model)	Printer
	25	Printer color balance adjustment (Manual adjustment) (Color model)	Printer
	26	Used to set the target color balance of the printer mode auto color balance adjustment. (Only color model)	Printer
	27	Used to set the service target of the printer mode auto color balance adjustment. (Only color model)	Printer
	28	Used to set the default of the service target of the printer mode auto color balance adjustment. (Only color model)	Printer
	31	Used to clear the printer calibration value.	Printer
	33	Used to change the gamma of the printer screen. (for PCL/PS)	Printer
	34	Used to set the density correction in the printer high density section. (Support for the high density section tone gap)	Printer
	36	Used to adjust the density in the low density section.	Printer
	52	Used to reset the printer color balance adjustment (adjustment for each dither) to the default value. (The set values of SIM67-54 and SIM67-33 are set to the default values.) (Only color model)	
	54	Printer color balance adjustment (Automatic adjustment for each dither) (Only color model)	
	70	MFP PWB SRAM data clear	MFP PWB

B. Mono color model

Main	Sub	Functions	Section
1	1	Used to check the operation of the scanner (reading) unit and the control circuit.	Scanner (reading)
	2	Used to check the sensors in the scanner (reading) section and the related circuits.	Scanner (reading)
	5	Used to check the operation of the scanner (reading) unit and the control circuit.	Scanner (reading)
2	1	Used to check the operations of the auto document feed unit and the control circuit.	DSPF
	2	Used to check the operations of the sensors and the detectors in the document feed unit section and the control circuits.	DSPF
	3	Used to check the operations of the loads in the auto document feed unit and the control circuit.	DSPF
3	2	Used to check the operations of the sensors and the detectors in the finisher and the control circuit.	Finisher
	3	Used to check the operation of the load in the finisher and the control circuit.	Finisher
	10	Used to adjust the finisher.	Finisher
4	2	Used to check the operations of the sensors and detectors in the paper feed tray, and the control circuit of those.	Paper feed tray (Option)
	3	Used to check the operations of the loads in the paper feed tray, and the control circuit of those.	Paper feed tray
	5	Used to check the operations of the paper feed tray unit paper transport clutch (DTRC).	Paper feed tray unit
5	1	Used to check the operation of the display, LCD in the operation panel, and control circuit.	Operation panel
	2	Used to check the operation of the heater lamp and the control circuit.	Fusing
	3	Used to check the operation of the scanner lamp and the control circuit.	Scanner (reading)
	4	Used to check the operation of the discharge lamp and the control circuit.	Process
6	1	Used to check the operations of the load in the paper transport system (clutches and solenoids) and the control circuits.	Paper transport/Paper exit section
	2	Used to check the operations of each fan motor and its control circuit.	Others
	3	Used to check the operations of the primary transfer unit and the control circuit.	Process (Transfer)
	51	Used to forcibly cut down the initial fuse of the developer unit and the fusing unit.	Developing, fusing unit
7	1	Used to set the operating conditions of aging.	Others
	6	Used to set the operating intermittent aging cycle.	
	8	Used to display the warm-up time.	
	12	The document reading number of sheets setting (for aging operation)	DSPF
8	1	Used to check and adjust the operations of the developing voltage in each print mode and the control circuit. * When the middle speed is adjusted, the low speed are also adjusted simultaneously.	Process (Developing)
	2	Used to check and adjust the operation of the main charger grid voltage in each printer mode and the control circuit. * When the middle speed is adjusted, the low speed are also adjusted simultaneously.	Process (Charging)
	6	Used to check and adjust the operation of the transfer voltage and the control circuit.	Process (Transport)
9	2	Used to check the operations of the sensors and detectors in the paper reverse section (duplex section) and its control circuit.	Duplex
	3	Used to check the operations of the load in the switchback section (duplex section) and its control circuit.	Duplex
10	1	Used to check the operations of the toner supply mechanism (toner motor) and the related circuit.	Process (Developing)
13	-	Used to cancel the self-diag "U1" trouble.	
14	-	Used to cancel the self-diag H3, H4, H5 troubles.	
16	-	Used to cancel the self-diag "U2" trouble.	MFP PWB / PCU PWB / SCU PWB
17	-	Used to cancel the self-diag "PF" trouble.	
21	1	Used to set the maintenance cycle.	

Main	Sub	Functions	Section
22	1	Used to check the print count value in each section and each operation mode. (Used to check the maintenance timing.)	
	2	Used to check the total numbers of mis-feed and troubles. (When the number of total jam is considerably great, it is judged as necessary for repair.)	
	3	Used to check mis-feed positions and the mis-feed count of each position. * Presumption of the faulty point by this data is possible.	
	4	Used to check the trouble (self-diag) history.	
	5	Used to check the ROM version of each unit (section).	Firmware
	6	Used to output various adjustment/setting data (simulations, FAX soft switch counter), the firmware version, the counter list, the process control data, and SIM50-24 data.	
	8	Used to check the number of operations (counter value) of the finisher, the DSPF, and the scan (reading) unit.	
	9	Used to check the number of use (print quantity) of each paper feed section.	Paper feed, ADU
	10	Used to check the system configuration (option, internal hardware).	
	11	Used to check the use frequency (send/receive) of FAX. (Only when FAX is installed)	FAX
	12	Used to check the DSPF mis-feed positions and the number of mis-feed at each position. (When the number of mis-feed is considerably great, it can be judged as necessary for repair.)	DSPF
	13	Used to check the operating time of the process section (OPC drum, DV unit, toner cartridge).	Process
	19	Used to check the values of the counters related to the scan - image send.	
	90	Used to output the various set data lists.	
23	2	Used to output the trouble history list of paper jam and mis-feed. (If the number of troubles of mis-feed is considerably great, the judgment is made that repair is required.)	
	80	Used to check the operation of paper feed and paper transport in the paper feed section and the paper transport section. Used to output the list of the operation status of the sensor and the detectors in the paper feed section and the paper transport section.	Paper feed, Paper transport
24	1	Used to clear the jam counter, and the trouble counter. (After completion of maintenance, clear the counters.)	
	2	Used to clear the number of use (the number of prints) of each paper feed section.	
	3	Used to clear the finisher, DSPF, and the scan (reading) unit counter.	
	4	Used to clear the maintenance counter, the printer counters of the transport unit and the fusing unit. (After completion of maintenance, clear the counters.)	
	5	Used to clear the developer counter. (After replacement of developer, clear the counter.)	
	6	Used to clear the copy counter.	
	7	Used to clear the OPC drum counter. (After replacement of the OPC drum, clear the counter.)	
	9	Used clear the printer mode print counter and the self print mode print counter.	
	10	Used to clear the FAX counter. (Only when FAX is installed)	
	15	Used to clear the counters related to the scan mode and the image send.	
	30	Used to initialize the administrator password.	
	31	Used to initialize the service mode password.	
25	1	Used to check the operations of the developing section.	Process (Developing section)
	2	Used to make the initial setting of toner density when replacing developer. (Automatic adjustment)	Image process (Photo-conductor/ Developing/Transfer/Cleaning)
26	2	Used to set the paper weight type.	Paper feed
	3	Used to set the specifications of the auditor. (Setting must be made according to the auditor use conditions.)	Auditor
	6	Used to set the specifications (paper, fixed magnification ratio, etc.) of the destination.	
	10	Used to set the trial mode of the network scanner.	
	18	Used to set Disable/Enable of the toner save mode operation. (For the Japan and the UK versions.)	
	30	Used to set the operation mode corresponding to the CE mark (Europe safety standards). (For slow start to drive the fusing heater lamp)	
	32	Used to set display or non-display of the system setting menu.	
	35	Used to set the display mode of SIM 22-4 trouble history when a same trouble occurred repeatedly. There are two display modes: display as one trouble and display as several series of troubles.	
	38	Used to set Continue/Stop of print when the maintenance life is reached.	
	41	Used to set Enable/Disable of the magnification ratio automatic select function (AMS) in the center binding mode.	
	49	Used to set the print speed of postcards mode.	
	50	Used to set functions.	
	52	Used to set whether non-printed paper (insertion paper, cover paper) is counted up or not.	
	53	User auto calibration (density and gradation adjustment) Inhibit/Allow setting (copy mode). (Mono color model)	
	54	User auto calibration (density and gradation adjustment) Inhibit/Allow setting (printer mode). (Mono color model)	
	65	Used to set the staple process restriction.	
	69	Used to set the operating conditions for toner near end.	
	73	Used to adjust the image loss (shade delete amount) in the name card copy mode.	
	74	Used to set the OSA trial mode.	
	78	Used to set the password of the remote operation panel.	

Main	Sub	Functions	Section
27	1	Used to set non-detection of communication error (U7-00) with RIC. (FSS function)	
	2	Used to set the sender's registration number and the HOST server telephone number. (FSS function)	
	4	Used to set the initial call and toner order auto send. (FSS function)	
	5	Used to set the machine tag No. (This function allows the host computer to check the machine tag No.) (FSS function)	Communication (RIC/MODEM)
	6	Used to set of the manual service call. (FSS function)	
	7	Used to set of the enable, alert call out. (FSS function)	
	9	Used to set the paper transport time recording YES/NO threshold value and shading gain adjustment retry number. (FSS function)	
	10	Used to clear the trouble prediction history information. (FSS function)	
	11	Used to check the serial communication retry number and the scanner gain adjustment retry number history. (FSS function)	
	12	Used to check the high-density, half-tone process control and the automatic registration adjustment error history. (FSS Function)	
	13	Used to check the history of paper transport time between sensors. (FSS function)	
	14	Used to set the FSS function connection test mode.	
30	1	Used to check the operations of the sensors and the detectors in other than the paper feed section and the control circuits.	
	2	Used to check the operations of the sensors and the detectors in the paper feed section and the control circuits.	
33	2	Used to delete the ID (IDM) information of Felica card.	
40	2	Manual paper feed tray paper width sensor adjustment.	Paper feed
	7	Used to set the adjustment value of the manual paper feed tray paper width sensor.	Paper feed
43	1	Used to set the fusing reference temperature of each operation mode.	
	4	Used to set the fusing temperature 2 in each mode. (Continued from SIM 43-1.)	
	20	Used to set the environmental correction under low temperature and low humidity (L/L) for the fusing temperature setting (SIM 43-1) in each paper mode.	
	21	Used to set the environment correction under high temperature and high humidity (H/H) for the fusing temperature setting (SIM 43-1) in each paper mode.	
	22	Used to set the environment correction under low temperature and low humidity (L/L) for the fusing temperature setting (SIM 43-4) in each paper mode.	
	23	Used to set the environment correction under high temperature and high humidity (H/H) for the fusing temperature setting (SIM 43-4) in each paper mode.	
	24	Used to set the correction of the temperature adjustment value of SIM 43-1 and 43-4.	
44	1	Used to set each correction operation function in the image forming (process) section.	Image process (Photo-conductor/ Developing/Transfer/Cleaning)
	2	Used to adjust the sensitivity of the image density sensor (registration sensor).	Process
	4	Used to set the conditions of the high density process control operation.	Process
	6	Used to execute the high density process control forcibly.	Process
	9	Used to display the result data of the high density process control operation.	Image process (Photo-conductor/ Developing/Transfer/Cleaning)
	12	Used to display the operation data of the high density process control and the image density sensor (registration sensor).	Image process (Photo-conductor/ Developing)
	14	Used to display the output level of the temperature and humidity sensor.	Process (OPC drum, development)/Fusing/LSU
	16	Used to display the toner density control data.	Developing system
	21	Used to set the half tone process control target.	Process
	22	Used to display the toner patch density level in the half tone process control operation.	Process
	24	Used to display the correction target and the correction level in the half tone process control operation.	Process
	25	Used to set the calculating conditions of the correction value for the half tone process control.	Process
	26	Used to execute the half tone process control compulsorily.	Process
	27	Used to clear the correction data of the half tone process control.	Process
	28	Used to set the process control execution conditions.	Process
	29	Used to set the operating conditions of the process control during a job.	Process
	37	Used to set the development bias correction level in the continuous printing operation.	
	43	Used to display the identification information of the developing unit.	Developing system
46	2	Used to adjust the copy density in the copy mode.	
	4	Used to adjust the density in the image send mode.	
	5	Used to adjust the density in the image send mode.	
	8	Used to adjust the image send mode color balance RGB.	
	9	Used to adjust the scan image density.	
	16	Used to adjust the copy density and the gamma (for each copy mode).	
	19	Used to set the operating conditions for the density scanning (exposure) of auto copy mode documents.	
	21	Copy density and gradation adjustment (Manual adjustment) (Mono color model)	
	23	Used to set the density correction of copy high density section (High density tone gap supported).	
	24	Copy density and gradation adjustment (Auto adjustment) (Mono color model)	
	32	Used to adjust the document background density reproducibility in the monochrome auto copy mode.	
	37	Used to adjust the color document reproducibility in the monochrome copy mode.	
	39	Used to adjust the sharpness of FAX send images.	
	40	Used to adjust the FAX send image density. (Collective adjustment of all the modes)	
	41	Used to adjust the FAX send image density. (Normal)	

Main	Sub	Functions	Section
46	42	Used to adjust the FAX send image density. (Fine)	
	43	Used to adjust the FAX send image density. (Super Fine)	
	44	Used to adjust the FAX send image density. (Ultra fine)	
	45	Used to adjust the FAX send image density. (600dpi).	
	47	Used to set the compression rate of copy and scan images (JPEG).	
	51	Used to adjust the gamma for the copy mode heavy paper mode and the image process mode. (Manual adjustment)	
	55	Used to adjust the range of colors reproduced in drop-out colors.	
	60	Used to adjust the sharpness in the auto copy mode.	
	61	Used to adjust the area separation recognition level.	
	62	Used to set the operating conditions of the ACS, the area separation, the background image process, and the auto exposure mode.	
	63	Used to adjust the density in the low density section in the image send mode. (Different for each mode)	
	74	Copy color balance adjustment (Auto adjustment)/Printer color balance adjustment (Auto adjustment) (Mono color model)	
48	1	Used to adjust the scan image magnification ratio (in the main scanning direction and the sub scanning direction).	
	5	Used to correction the scan image magnification ratio (in the sub scanning direction).	Scanner section
	6	Used to adjust the rotation speed of each motor.	
49	1	Used to perform the firmware update.	
	3	Used to update the operation manual in the HDD.	
50	1	Copy image position, image loss adjustment	
	2	Used to adjust the copy image position and the image loss. (This simulation is a simplified version of SIM 50-1).	
	5	Used to adjust the print lead edge image position. (PRINTER MODE)	
	6	Used to adjust the copy image position and the image loss. (DSPF mode)	DSPF
	7	Used to adjust the copy image position and the image loss (DSPF mode). (This simulation is a simplified version of SIM 50-6.)	DSPF
	10	Used to adjust the print image magnification ratio and the off-center position. (The adjustment is made separately for each paper feed section.)	
	12	Used to perform the scan image off-center position adjustment. (The adjustment is made separately for each scan mode.)	
	27	Used to perform the image loss adjustment of scanned images in the FAX or image send mode.	
	28	Used to automatically adjust the image loss, void area, image off-center, and image magnification ratio.	
51	2	Used to adjust the contact pressure (deflection amount) on paper by the main unit and the DSPF registration roller. (This adjustment is performed when there is a considerable variation in the print image position on the paper or when paper jams frequently occur.)	
53	8	Used to adjust the document lead edge reference and the DSPF mode document scan position.	
55	1	Used to set the specifications of the engine control operations. (SOFT SW)	
	2	Used to set the specifications of the scanner control operation. (SOFT SW)	
	3	Used to set the specifications of the controller operation. (SOFT SW)	
56	1	Used to transport data between HDD - MFP PWB SRAM/EEPROM. (Used to repair the PWB.)	
	2	Used to backup the data in the EEPROM. SRAM, and HDD (including user authentication data and address data) to the USB memory. (Corresponding to the device cloning and the storage backup.)	
	3	Used to backup the document filing data to the USB memory.	
	4	Used to backup the JOB log data to the USB memory.	
60	1	Used to check the operations (read/write) of the MFP PWB memory.	
	2	Used to set the MFP PWB on-board SDRAM.	
61	1	Used to check the LSU polygon motor rotation and laser detection.	LSU
	3	Used to set the laser power	
	4	Used to print the print image skew adjustment pattern. (LSU unit)	
62	1	Used to execute the hard disk format (except operation manual area).	
	2	Used to check read/write of the hard disk (partial).	
	3	Used to check read/write of the hard disk (all areas).	
	6	Used to perform the self diagnostics of the hard disk.	
	7	Used to print the hard disk self diagnostics error log.	
	8	Used to format the hard disk. (Excluding the system area and the operation manual area)	
	10	Used to delete the job log data.	
	11	Used to delete the document filing data.	
	12	Used to set Enable/Disable of auto format in a hard disk trouble.	
	13	Used to format the hard disk. (only the operation manual area)	
63	1	Used to display the shading correction result.	Scanner
	2	Used to perform shading.	
	3	Used to perform scanner (CCD) color balance and gamma auto adjustment.	Scanner
	4	Used to display the SIT chart patch density.	
	5	Used to perform the scanner (CCD) color balance and gamma default setting.	
64	2	Test print. (Self print)	
	4	Printer test print. (Self print) (256 gradations) (PCL)	
	5	Printer test print. (Self print) (PCL)	
	6	Printer test print. (Self print) (PS)	
	7	Used to print the adjustment pattern of the test print. (Self print). (The adjustment pattern of SIM46-21 is printed.)	

Main	Sub	Functions	Section
65	1	Used to adjust the touch panel (LCD display section) detection coordinates.	Operation panel section
	2	Used to display the touch panel (LCD display section) detection coordinates.	
	5	Used to check the operation panel key input.	
66	1	Used to display the FAX-related soft SW (2 - 99) on the LCD to allow changing the soft SW while checking with the LCD.	FAX
	2	Used to enter a country code and set the default value for the country code.	FAX
	3	Used to execute the read/write check of EEPROM on the MODEM controller, SDRAM, SRAM on the MFP controller, and flash ROM, and to display the results.	FAX
	4	Used to send the selected signals to the line and the main unit speaker. (Send level: max.)	FAX
	5	Used to send the selected signal to the line and the main unit speaker. (Send level: Soft SW setting) (For the kinds of send signals, refer to PART1 and PART2 of SIM66-04.)	FAX
	6	Used to print the confidential registration check table (BOX NO., BOX name, passcode. (If there is no confidential registration, no print is made.)	FAX
	7	Used to output all image data saved in the image memory. (Confidential data are also outputted.)	FAX
	8	Used to send the selected sound messages to the line and the speaker. (Send level: Max.)	FAX
	9	Used to send the selected sound message to the line and the speaker. (Send level: max.) * For details of sound messages, refer to the sound message table of SIM66-08.	FAX
	10	Used to clear all image data saved in the FAX image memory. (The confidential data are also cleared.)	FAX
	11	Used to send the selected signal at 300bps to the line and the speaker. (Send level: Max.)	FAX
	12	Used to send the selected signal at 300bps to the line and the speaker. (Send level: Soft SW setting) * For the kings of send signals at 300bps, refer to SIM66-11, 300bps send signal table.	FAX
	13	Used to register dial numbers for SIM66-14/15/16, Dial test. (Up to 20 digits can be registered.)	FAX
	14	Used to execute the dial pulse (10PPS) send test and to adjust the make time.	FAX
	15	Used to execute the dial pulse (20PPS) send test and to adjust the make time.	FAX
	16	Used to execute the DTFM signal send test and to adjust the send level.	FAX
	17	Used to send the DTMF signal to the line and the speaker. (Send level: Max.)	FAX
	18	Used to send the DTMF signal to the line and the speaker. (Send level: Soft SW setting)	FAX
	21	Used to print the selected items (various registration information, communication management information, file management information, system error, protocol monitor).	FAX
	22	Used to set the handset sound volume. (This simulation can be executed even though the handset setting is set to NO. When, however, the handset is not installed, the sound volume cannot be checked.) (Japan model only)	FAX
	24	Used to clear the FAST save data.	FAX
	25	Used to register the FAX number for MODEM dial-in.	FAX
	26	Used to register external telephone numbers for MODEM dial-in.	FAX
	29	Used to initialize the telephone book data (the one-touch registration table, the FTP/Desktop expansion table, the group expansion table, the program registration table, the interface memory box table, the meta data, Inbound Routing, and the Document Admin table).	FAX
	30	Used to display the TEL/LIU status change, The display is highlighted by status change.	FAX
	31	Used to set ON/OFF the port for output to TEL/LIU.	FAX
	32	Used to check the fixed data received from the line and to display the result.	FAX
	33	Used to execute detection of various signals with the line connected and to display the detection result. When a signal is detected, the display is highlighted.	FAX
	34	Used to execute the send test and display the time required for sending image data in the test. Used to execute send test and display. (Unit: ms)	FAX
	36	Used to check send and receive data from the MODEM controller to the MFP controller or the data line or the command line individually.	FAX
	39	Used to check and change the destination setting saved in EEPROM of the FAX BOX.	FAX
	42	Used to rewrite the program to power control installed in the FAX BOX.	
	43	Used to write the adjustment value into the power control installed in the FAX BOX.	FAX
	60	Used to provide the user the auto select function of a low-cost line by dialing with addition of the prefix to the dial number when calling	FAX
	61	Used to display the FAX-related soft SW (100 - 170) on the LCD to allow changing the soft SW while checking with the LCD.	FAX
67	17	Used to reset the printer controller.	Printer
	24	Printer density and gradation adjustment (Auto adjustment) (Mono color model)	Printer
	25	Printer density and gradation adjustment (Manual adjustment) (Mono color model)	Printer
	30	(Not used)	
	31	Used to clear the printer calibration value.	Printer
	33	Used to change the gamma of the printer screen. (for PCL/PS)	Printer
	34	Used to set the density correction in the printer high density section. (Support for the high density section tone gap)	Printer
	36	Used to adjust the density in the low density section.	Printer
	70	MFP PWB SRAM data clear	MFP PWB

3. Details of simulation

1

1-1

Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the scanner (reading) unit and the control circuit.
Section	Scanner (reading)

Operation/Procedure

1) Select the operation speed.
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 (300.0mm/s)	300DPI (300.0mm/s)
	400DPI	400DPI (225.0mm/s)	
	600DPI	600DPI (150.0mm/s)	

1-2

Purpose	Operation test/check
Function (Purpose)	Used to check the sensors in the scanner (reading) section and the related circuits.
Section	Scanner (reading)

Operation/Procedure

The operating status of the sensor is displayed.

When "MHPS" is highlighted, the scanner unit is in the home position.

1-5

Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the scanner (reading) unit and the control circuit.
Section	Scanner (reading)

Operation/Procedure

1) Select the operation speed.
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 (300.0mm/s)	300DPI (300.0mm/s)
	400DPI	400DPI (225.0mm/s)	
	600DPI	600DPI (150.0mm/s)	

2

2-1

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the auto document feed unit and the control circuit.
Section	DSPF

Operation/Procedure

1) Select the operation mode and the speed.
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.

Item/Display		Operation mode	Default value
(SINGLE)	300DPI	300DPI (300.0mm/s)	300DPI (300.0mm/s)
	400DPI	400DPI (225.0mm/s)	
	600DPI	600DPI (150.0mm/s)	
(DOUBLE)	300DPI	300DPI (300.0mm/s)	300DPI (300.0mm/s)
	400DPI	400DPI (225.0mm/s)	
	600DPI	600DPI (150.0mm/s)	

2-2

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the sensors and the detectors in the document feed unit section and the control circuits.
Section	DSPF

Operation/Procedure

The operating conditions of the sensors and detectors are displayed.

The code names of the sensors and the detectors which are active are highlighted.

SSET	SPF installation detection
SOCD	SPF open/close detector
SCOV	SPF cover open/close detector
SPFCOV	SPF paper feeding cover open/close detector
SPED	SPF document empty detector
STUD	SPF paper feed tray upper limit sensor
SPPD1	SPF paper pass sensor 1
SPPD2	SPF paper pass sensor 2
SPOD1	SPF paper exit sensor 1
SPOD2	SPF paper exit sensor 2
SWD	SPF document width sensor

2-3

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the loads in the auto document feed unit and the control circuit.
Section	DSPF

Operation/Procedure

1) Select a target item of the operation check.
2) Press [EXECUTE] key.
   The selected load performs the operation.
   When [EXECUTE] key is pressed, the operation is terminated.

SLUM	SPF pickup roller motor
SPUM	SPF paper feeding motor
SPFM	SPF transport motor
SPUC	SPF paper feeding clutch
SPPSC	SPF PS clutch
SPGSD	SPF gate solenoid (Left exit)
SPGSU	SPF gate solenoid (Upper exit)
SPFFAN	SPF fan motor

3

3-2

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the sensors and the detectors in the finisher and the control circuit.
Section	Finisher

Operation/Procedure

The operating conditions of the sensors and detectors are displayed.

The code names of the sensors and the detectors which are active are highlighted.

FPPD1	Finisher paper pass detector
FPLD	Finisher paper level detector
FDTULS	Finisher delivery tray upper limit sensor
FDTLLS	Finisher delivery tray lower limit sensor
FDRPS	Finisher delivery roller position sensor
FPRD-F	Finisher paper rear edge detector F
FPRD-C	Finisher paper rear edge detector C
FPRD-R	Finisher paper rear edge detector R
FAPHPS-F	Finisher paper alignment plate home position sensor F
FAPHPS-R	Finisher paper alignment plate home position sensor R
FSTPD	Finisher staple tray paper detector
FSHPS	Finisher staple home position sensor
FSED	Finisher staple empty detector
FSLD	Finisher staple lead detector
FSSW	Finisher safety switch

3-3

Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the load in the finisher and the control circuit.
Section	Finisher

Operation/Procedure

1) Select the item to be operation checked.
2) Press [EXECUTE] key.
   The selected load performs the operation.
   When [EXECUTE] key is pressed, the operation is terminated.

FPGS	Finisher paper gate solenoid
FPDM	Finisher paper delivery motor
FPS	Finisher paddle solenoid
FARLS	Finisher alignment roller lift solenoid
FPTM	Finisher paper transport motor
FDRLM	Finisher delivery roller lift motor
FPAM-F	Finisher paper alignment motor F
FPAM-R	Finisher paper alignment motor R
FSM	Finisher staple motor
FTLM	Finisher tray lift motor
FSCF	Finisher stapler cooling fan
FBCF	Finisher control board cooling fan

3-10

Purpose	Adjustment
Function (Purpose)	Used to adjust the finisher.
Section	Finisher

Operation/Procedure

1) Select an adjustment target item with [↑] [↓] key.
2) Enter the set value with 10-key.
3) Press [OK] key. (The set value is saved.)

Item/Display		Content	Setting range	Default value
A	FPAM ADJUST	Paper alignment width adjustment *1	40 - 60	50
B	FDRLM ADJUST	Paper delivery roller descending position adjustment	40 - 60	50

Item A: When the adjustment value is increased by 1, the alignment plate F/R width is narrowed by 0.419mm in alignment operation.
When the adjustment value is decreased by 1, the alignment plate F/R width is widened by 0.419mm in alignment operation.
The alignment plate F and the alignment plate R cannot be adjusted separately. The shift amount on the F side and that on the R side are alternatively corrected every time the adjustment value is increased by 1. (Correction with 51 for the F side, and 52 for the R side. ... 59 for the F aide, and 60 for the R side. Similar when the set value is decreased.)

Item B: When the adjustment value is increased by 1, the shift amount of the paper delivery roller is changed by 0.11mm toward the pressure increasing side (*1).
When the adjustment value is decreased by 1, the shift amount of the paper delivery roller is changed by 0.11mm toward the pressure decreasing side (*1).

*1: The pressure increasing side means the direction to increase the paper delivery roller pressure onto paper, and the pressure decrease side means the direction to decrease the paper delivery roller pressure onto paper.

4

4-2

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the sensors and detectors in the paper feed tray, and the control circuit of those.
Section	Paper feed tray (Option)

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.

D1PPD	Paper feed tray 2 paper transport detector
D1ULD	Paper feed tray 2 upper limit detector
D1PED	Paper feed tray 2 paper empty detector
D1PQD	Paper feed tray 2 paper remaining quantity detector
D1PRED1	Paper feed tray 2 paper rear edge detector 1
D1PRED2	Paper feed tray 2 paper rear edge detector 2
D1PRED3	Paper feed tray 2 paper rear edge detector 3
D1COCS	Paper feed tray 2 cover open/close sensor
D2MDC	Paper feed tray 3 installation detection connector
D2PPD	Paper feed tray 3 paper transport detector
D2ULD	Paper feed tray 3 upper limit detector
D2PED	Paper feed tray 3 paper empty detector
D2PQD	Paper feed tray 3 paper remaining quantity detector
D2PRED1	Paper feed tray 3 paper rear edge detector 1
D2PRED2	Paper feed tray 3 paper rear edge detector 2
D2PRED3	Paper feed tray 3 paper rear edge detector 3
D2COCS	Paper feed tray 3 cover open/close sensor
D3MDC	Paper feed tray 4 installation detection connector
D3PPD	Paper feed tray 4 paper transport detector
D3ULD	Paper feed tray 4 upper limit detector
D3PED	Paper feed tray 4 paper empty detector
D3PQD	Paper feed tray 4 paper remaining quantity detector
D3PRED1	Paper feed tray 4 paper rear edge detector 1
D3PRED2	Paper feed tray 4 paper rear edge detector 2
D3PRED3	Paper feed tray 4 paper rear edge detector 3
D3COCS	Paper feed tray 4 cover open/close sensor

4-3

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the loads in the paper feed tray, and the control circuit of those.
Section	Paper feed tray

Operation/Procedure

1) Select the load item that is required to operation check.
2) Press [EXECUTE] key.
   The selected load performs the operation.
   When [EXECUTE] key is pressed, the operation is terminated.

DPFM	Transport motor
D1LM	Paper feed tray 1 lift-up motor
D1PFC	Paper feed tray 1 paper feed clutch
D1PTC	Paper feed tray 1 paper transport clutch
D2LM	Paper feed tray 2 lift-up motor
D2PFC	Paper feed tray 2 paper feed clutch
D2PTC	Paper feed tray 2 paper transport clutch
D3LM	Paper feed tray 3 lift-up motor
D3PFC	Paper feed tray 3 paper feed clutch
D3PTC	Paper feed tray 3 paper transport clutch

4-5

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the paper feed tray unit paper transport clutch (DTRC).
Section	Paper feed tray unit

Operation/Procedure

[Check the ON operation]

Select the button of the code name for checking the ON operation.

Checking is started. When the operation is normal, the button on the display is highlighted. When it is abnormal, the button is not highlighted.

[Check the OFF operation]

Press the highlighted button which is ON.

When the operation is normal, the highlighted button on the display returns to the normal display. When it is abnormal, the highlighted display is maintained.

5

5-1

Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the display, LCD in the operation panel, and control circuit.
Section	Operation panel

Operation/Procedure

The LCD is changed as shown below.

The contrast changes every 2sec from the current level to MAX → MIN → the current level. During this period, each LED is lighted.

The LCD display contrast change and the LED lighting status are checked.

5-2

Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the heater lamp and the control circuit.
Section	Fusing

Operation/Procedure

1) Select the item to be operation checked.
2) Press [EXECUTE] key.
   The selected heater lamp operates ON/OFF.
   When [EXECUTE] key is pressed, the operation is terminated.

- **Color model**

HL_UM	Heater lamp upper (main)
HL_LM	Heater lamp lower (sub)
HL_E	Heater lamp (external)

- **Mono color model**

HL_UA	Heater lamp upper (all)
HL_UM	Heater lamp upper (main)

5-3

Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the scanner lamp and the control circuit.
Section	Scanner (reading)

Operation/Procedure

1) Select the item to be operation checked.
2) Press [EXECUTE] key.
   The scanner lamp lights up for 10 sec.
   When [EXECUTE] key is pressed, the operation is terminated.

5-4

Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the discharge lamp and the control circuit.
Section	Process

Operation/Procedure

1) Select a target of the operation check.
   When [ALL] key is pressed, all the items are selected.
2) Press [EXECUTE] key.
   The selected discharge lamp is lighted for 30 sec.
   When [EXECUTE] key is pressed, the operation is terminated.

DL_K	Discharge lamp K
DL_C	Discharge lamp C
DL_M	Discharge lamp M
DL_Y	Discharge lamp Y

6

6-1

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the load in the paper transport system (clutches and solenoids) and the control circuits.
Section	Paper transport/Paper exit section

Operation/Procedure

1) Select the item to be operation checked.
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.

- **Color model**

Section	Item/Display	Content
Transport/ process	RRM	Registration motor
	POMF *	Paper exit motor (normal rotation)
	POMR *	Paper exit motor (reverse rotation)
	FUM	Fusing drive motor
	CPFM	Paper feed motor
	CPFC	Tray vertical transport clutch
	HLPCS	Fusing pressure release/pressing solenoid
Paper feed	CLUM1	Paper feed tray 1 lift-up motor
	CPUC1	Paper feed tray 1 paper feed clutch
	MPFS	Manual paper feed solenoid

- **Mono color model**

Section	Item/Display	Content
Transport/ process	RRM	Registration motor
	POMF *	Paper exit motor (normal rotation)
	POMR *	Paper exit motor (reverse rotation)
	FUM	Fusing drive motor
	CPFM	Paper feed motor
	CPFC	Tray vertical transport clutch

Paper feed	CLUM1	Paper feed tray 1 lift-up motor
	CPUC1	Paper feed tray 1 paper feed clutch
	MPFS	Manual paper feed solenoid

* If two or more are selected at a time, it makes "Normal rotation."

6-2

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of each fan motor and its control circuit.
Section	Others

Operation/Procedure

1) Select the item to be operation checked.
2) Press [EXECUTE] key.
   The selected load performs the operation.
   When [EXECUTE] key is pressed, the operation is terminated.
   Press [ALL] key to select all the fans collectively.

Load operation check method:
The load operation is checked by the operation sound. However, there are some loads which cannot be checked with the operation sound.

Item/Display	Content
POFM	Paper exit cooling fan motor
PSFM	Power PWB cooling fan motor
LSUFM	LSU cooling fan motor
PROFM1	Process fan motor 1
PROFM2	Process fan motor 2
FUFM	Fusing cooling fan motor
HDDFM	HDD cooling fan motor

6-3

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the primary transfer unit and the control circuit.
Section	Process (Transfer)

Operation/Procedure

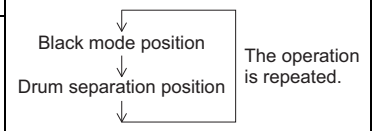
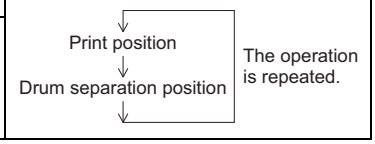
1) Select the operation mode.
2) Press [EXECUTE] key, and the transfer unit repeats operations in the mode selected in procedure 1.

During this operation, the transfer unit status (the operation mode position) is displayed.

- **Color model**

Mode select key	Display	Transfer mode	Operation	
TC1	BLACK	Black mode position	The switching operations are repeated as follows: Black mode position → Color mode position → Black mode position → Drum separation position	Primary transfer (Normal rotation of the mode select gear)
	COLOR	Color mode position		
	FREE	Drum separation position		
TC1_R	BLACK	Black mode position	The switching operations are repeated as follows: Black mode position → Drum separation position → Color mode position	Primary transfer (Reverse rotation of the mode select gear)
	FREE	Drum separation position		
	COLOR	Color mode position		
TC2	PRINT	Print position	The switching operations are repeated as follows: Print position → Drum separation position	Secondary transfer (Driven by the fusing motor)
	FREE	Drum separation position		

• **Mono color model**

Key	Display	Content	Remark
TC1	BLACK	Black mode position	
	FREE	Drum separation position	
TC2	PRINT	Print position	
	FREE	Drum separation position	

6-6

Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the fusing separation. (Only color model)
Section	Fusing

Operation/Procedure

1) Press [EXCUTE] key, and fusing pressure applying and fusing pressure release are repeated.

During this period, the status of the fusing roller pressure is displayed.

PRINT	Fusing pressure applying	Fusing pressure applying → Fusing pressure release → (Fusing pressure applying) The operation is repeated.
FREE	Fusing pressure release	

6-51

Purpose	Setting
Function (Purpose)	Used to forcibly cut down the initial fuse of the developer unit and the fusing unit.
Section	Developing, fusing unit

Operation/Procedure

1) Select a target unit.
2) Press [EXECUTE] key.
   The initial detection fuse is blown-off.

• **Color model**

Item/Display		Content
Initial detection	DVCRU_K	Developing K initial detection fuse blow-off operation
	DVCRU_C	Developing C initial detection fuse blow-off operation
	DVCRU_M	Developing M initial detection fuse blow-off operation
	DVCRU_Y	Developing Y initial detection fuse blow-off operation
	FUCRU	Fusing initial detection fuse blow-off operation

• **Mono color model**

Item/Display		Content
Initial detection	DVCRU_K	Developing K initial detection fuse blow-off operation
	FUCRU	Fusing initial detection fuse blow-off operation

7

7-1

Purpose	Setting
Function (Purpose)	Used to set the operating conditions of aging.
Section	Others

Operation/Procedure

1) Select the target to be set.
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)	Used to set the operating intermittent aging cycle.
Section	

Operation/Procedure

1) Enter the intermittent aging operation cycle (unit: sec) with 10-key.
2) Press [OK] key.
   The time entered in procedure 1) is set.
   * The interval time that can be set is 1 to 900 (sec).

The aging operation condition set by this mode is maintained hereafter unless the power is turned off or the setting is changed.

7-8

Purpose	Operation display
Function (Purpose)	Used to display the warm-up time.
Section	

Operation/Procedure

Press [EXECUTE] key.

Counting of the warm-up time is started and the time required for warm-up is displayed

* Interruption of counting by pressing [EXECUTE] key is inhibited.

7-9

Purpose	Operation test/check
Function (Purpose)	Color setting in the color copy test mode (Used to check the copy operation and the image quality for each color). (Only color model)
Section	

Operation/Procedure

1) Select the copy color with the touch panel key.
   (Two or more colors can be selected.)
   The key of the selected color is highlighted.

2) Press [EXECUTE] key.

Copying is performed with the selected color.

When [CLOSE] key is pressed, the display goes into the copy operation menu in the simulation mode.

K	Setup/cancel of black
C	Setup/cancel of cyan
M	Setup/cancel of magenta
Y	Setup/cancel of yellow

7-12

Purpose	Operation test/check
Function (Purpose)	The document reading number of sheets setting (for aging operation)
Section	DSPF

Operation/Procedure

1) Set document reading quantity with 10-key. (Setting range:0 - 255)
2) Press [OK] key. The set value is saved.

The aging operation condition set by this mode is maintained hereafter unless the power is turned off or the setting is changed.

8

8-1

Purpose	Operation test/check/adjustment
Function (Purpose)	Used to check and adjust the operations of the developing voltage in each print mode and the control circuit. * When the middle speed is adjusted, the low speed are also adjusted simultaneously.
Section	Process (Developing)

Operation/Procedure

1) Select the process speed.
2) Select a target item to be adjusted with [↑] [↓] buttons.
3) Enter the setting value with 10-key. (The value specified on the label of the high voltage PWB must be entered.)
   * When the △ ▽ key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
4) Press [OK] key.

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

   When [EXECUTE] key is pressed, the output is terminated.

• **Color model**

Mode	Item/Display		Content	Setting range
MIDDLE	A	MIDDLE SPEED DVB_K	K developing bias set value at middle speed	0-600
	B	MIDDLE SPEED DVB_C	C developing bias set value at middle speed	0-600
	C	MIDDLE SPEED DVB_M	M developing bias set value at middle speed	0-600
	D	MIDDLE SPEED DVB_Y	Y developing bias set value at middle speed	0-600
LOW	A	LOW SPEED DVB_K	K developing bias set value at low speed	0-600
	B	LOW SPEED DVB_C	C developing bias set value at low speed	0-600
	C	LOW SPEED DVB_M	M developing bias set value at low speed	0-600
	D	LOW SPEED DVB_Y	Y developing bias set value at low speed	0-600

• **Mono color model**

Mode	Item/Display		Content	Setting range
MIDDLE	A	MIDDLE SPEED DVB_K	K developing bias set value at middle speed	0-600
LOW	A	LOW SPEED DVB_K	K developing bias set value at low speed	0-600

8-2

Purpose	Operation test/check/adjustment
Function (Purpose)	Used to check and adjust the operation of the main charger grid voltage in each printer mode and the control circuit. * When the middle speed is adjusted, the low speed are also adjusted simultaneously.
Section	Process (Charging)

Operation/Procedure

1) Select the process speed.
2) Select a target item to be adjusted with [↑] [↓] keys.
3) Enter the adjustment value with 10-key. (The value specified on the label of the high voltage PWB must be entered.)
   * When the △ ▽ key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
4) Press [OK] key.

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

   When [EXECUTE] key is pressed, the output is terminated.

• **Color model**

Mode	Item/Display		Content	Setting range
MIDDLE	A	MIDDLE SPEED GB_K	K charging/grid bias set value at middle speed	150 - 850
	B	MIDDLE SPEED GB_C	C charging/grid bias set value at middle speed	150 - 850
	C	MIDDLE SPEED GB_M	M charging/grid bias set value at middle speed	150 - 850
	D	MIDDLE SPEED GB_Y	Y charging/grid bias set value at middle speed	150 - 850
LOW	A	LOW SPEED GB_K	K charging/grid bias set value at low speed	150 - 850
	B	LOW SPEED GB_C	C charging/grid bias set value at low speed	150 - 850
	C	LOW SPEED GB_M	M charging/grid bias set value at low speed	150 - 850
	D	LOW SPEED GB_Y	Y charging/grid bias set value at low speed	150 - 850

• **Mono color model**

Mode	Item/Display		Content	Setting range
MIDDLE	A	MIDDLE SPEED GB_K	K charging/grid bias set value at middle speed	150 - 850
LOW	A	LOW SPEED GB_K	K charging/grid bias set value at low speed	150 - 850

8-6

Purpose	Operation test/check/adjustment
Function (Purpose)	Used to check and adjust the operation of the transfer voltage and the control circuit.
Section	Process (Transport)

Operation/Procedure

1) Select a target item to be adjusted with [↑] [↓] buttons.
2) Enter the set value with 10-key.
   Enter the default value specified on the following list.
3) Press [OK] key.
   When [OK] key is pressed, the voltage inputted in procedure 3 is outputted for 30sec and the set value is saved.
   When [EXECUTE] key is pressed, the output is terminated.

• **Color model**

Item/Display		Content				Adjustment range	Default value	Actual output setting range	Default value of actual output value
A	TC1 LOW SPEED CL K	Primary transfer bias adjustment value	Color mode	K	Low speed mode	51 - 255	95	2 - 30μA	8μA
B	TC1 MIDDLE SPEED CL K				Middle speed mode	51 - 255	131	2 - 30μA	13μA
C	TC1 LOW SPEED CL C			C	Low speed mode	51 - 255	95	2 - 30μA	8μA
D	TC1 MIDDLE SPEED CL C				Middle speed mode	51 - 255	131	2 - 30μA	13μA
E	TC1 LOW SPEED CL M			M	Low speed mode	51 - 255	95	2 - 30μA	8μA
F	TC1 MIDDLE SPEED CL M				Middle speed mode	51 - 255	131	2 - 30μA	13μA
G	TC1 LOW SPEED CL Y			Y	Low speed mode	51 - 255	95	2 - 30μA	8μA
H	TC1 MIDDLE SPEED CL Y				Middle speed mode	51 - 255	131	2 - 30μA	13μA
I	TC1 LOW SPEED BW K		Black/White mode	K	Low speed mode	51 - 255	95	2 - 30μA	8μA
J	TC1 MIDDLE SPEED BW K				Middle speed mode	51 - 255	131	2 - 30μA	13μA
K	TC2 PLAIN CL SPX	Secondary transfer bias adjustment value	Color mode	Standard paper mode	Front surface mode	51 - 255	111	–2 - –80μA	–25μA
L	TC2 PLAIN CL DPX				Back surface mode	51 - 255	124	–2 - –80μA	–30μA
M	TC2 PLAIN BW SPX		Black/White mode		Front surface mode	51 - 255	111	–2 - –80μA	–25μA
N	TC2 PLAIN BW DPX				Back surface mode	51 - 255	111	–2 - –80μA	–25μA
O	TC2 HEAVY CL SPX		Color mode	Heavy paper mode	Front surface mode	51 - 255	93	–2 - –80μA	–10μA
P	TC2 HEAVY CL DPX				Back surface mode	51 - 255	93	–2 - –80μA	–10μA
Q	TC2 HEAVY BW SPX		Black/White mode		Front surface mode	51 - 255	93	–2 - –80μA	–10μA
R	TC2 HEAVY BW DPX				Back surface mode	51 - 255	93	–2 - –80μA	–10μA
S	TC2 OHP CL		OHP		Color mode	51 - 255	85	–2 - –80μA	–8μA
T	TC2 OHP BW				Black/White mode	51 - 255	85	–2 - –80μA	–8μA
U	TC2 ENVELOPE CL		Envelope		Color mode	51 - 255	124	–2 - –80μA	–30μA
V	TC2 ENVELOPE BW				Black/White mode	51 - 255	124	–2 - –80μA	–30μA
W	TC2 THIN CL		Thin paper		Color mode	51 - 255	111	–2 - –80μA	–25μA
X	TC2 THIN BW				Black/White mode	51 - 255	111	–2 - –80μA	–25μA
Y	TC2 GLOSSY CL		Gloss paper		Color mode	51 - 255	72	–2 - –80μA	–10μA
Z	TC2 GLOSSY BW				Black/White mode	51 - 255	72	–2 - –80μA	–10μA
AA	TC2 CLEANING		Cleaning mode			51 - 255	67	–2 - -80μA	–8μA
AB	TC2 CLEAN LOW SPD	Secondary transfer cleaning bias adjustment value	Low speed print mode			0 - 255	16	–100V - 1500V	0V
AC	TC2 CLEAN MIDDLE SPD		Middle speed print mode			0 - 255	16	–100V - 1500V	0V
AD	TC2 CLEAN CLEANING		Cleaning mode			0 - 255	143	–100V - 1500V	800V

Item/Display		Content			Adjustment range	Default value	Actual output setting range	Default value of actual output value
AE	PTC LOW SPEED CL	PTC current output adjustment value	Color mode	Low speed mode	0 - 255	133	0μA - –700μA	–300μA
AF	PTC MIDDLE SPEED CL			Middle speed mode	0 - 255	133	0μA - –700μA	–300μA
AG	PTC LOW SPEED BW		Black/White mode	Low speed mode	0 - 255	133	0μA - –700μA	–300μA
AH	PTC MIDDLE SPEED BW			Middle speed mode	0 - 255	133	0μA - –700μA	–300μA
AI	CASE VOLT LOW CL	PTC case voltage adjustment value	Color mode	Low speed mode	0 - 255	0	0V - –1000V	0V
AJ	CASE VOLT MID CL			Middle speed mode	0 - 255	0	0V - –1000V	0V
AK	CASE VOLT LOW BW		Black/White mode	Low speed mode	0 - 255	0	0V - –1000V	0V
AL	CASE VOLT MID BW			Middle speed mode	0 - 255	0	0V - –1000V	0V
AM	PEEL VOLT LOW CL	Separation discharge adjustment value	Color mode	Low speed mode	51 - 255	200	–50 - –3000V	–2200V
AN	PEEL VOLT MIDDLE CL			Middle speed mode	51 - 255	200	–50 - –3000V	–2200V
AO	PEEL VOLT LOW BW		Black/White mode	Low speed mode	51 - 255	200	–50 - –3000V	–2200V
AP	PEEL VOLT MIDDLE BW			Middle speed mode	51 - 255	200	–50 - –3000V	–2200V

- **Mono color model**

Item/Display		Content			Adjustment range	Default value	Actual output setting range	Default value of actual output value
A	TC1 LOW SPEED BW K	Primary transfer bias reference value	Low speed mode		51 - 255	95	2 - 30μA	8μA
B	TC1 MIDDLE SPEED BW K		Middle speed mode		51 - 255	131	2 - 30μA	13μA
C	TC2 PLAIN BW SPX	Secondary transfer bias reference value	Standard paper mode	Front surface mode	51 - 255	111	–2 - –80μA	–25μA
D	TC2 PLAIN BW DPX			Back surface mode	51 - 255	111	–2 - –80μA	–25μA
E	TC2 HEAVY BW SPX		Heavy paper mode	Front surface mode	51 - 255	93	–2 - –80μA	–10μA
F	TC2 HEAVY BW DPX			Back surface mode	51 - 255	93	–2 - –80μA	–10μA
G	TC2 OHP BW		OHP		51 - 255	125	–2 - –80μA	–8μA
H	TC2 ENVELOPE BW		Envelope		51 - 255	124	–2 - –80μA	–30μA
I	TC2 THIN BW		Thin paper		51 - 255	111	–2 - –80μA	–25μA
J	TC2 GLOSSY BW		Gloss paper		51 - 255	72	–2 - –80μA	–10μA
K	TC2 CLEANING		Cleaning mode		51 - 255	67	–2 - -80μA	–8μA
L	TC2 CLEAN LOW SPD	Secondary transfer cleaning bias reference value	Low speed print mode		0 - 255	16	–100V - 1500V	0V
M	TC2 CLEAN MIDDLE SPD		Middle speed print mode		0 - 255	16	–100V - 1500V	0V
N	TC2 CLEAN CLEANING		Cleaning mode		0 - 255	143	–100V - 1500V	800V
O	PTC LOW SPEED BW	PTC current output reference value	Low speed mode		0 - 255	133	0μA - –700μA	–300μA
P	PTC MIDDLE SPEED BW		Middle speed mode		0 - 255	133	0μA - –700μA	–300μA
Q	CASE VOLT LOW BW	PTC case voltage reference value	Low speed mode		0 - 255	0	0V - –1000V	0V
R	CASE VOLT MID BW		Middle speed mode		0 - 255	0	0V - –1000V	0V
S	PEEL VOLT LOW BW	Separation discharge reference value	Low speed mode		51 - 255	200	–50 - –3000V	–2200V
T	PEEL VOLT MIDDLE BW		Middle speed mode		51 - 255	150	–50 - –3000V	–2200V

9

9-2

Purpose: Operation test/check

Function (Purpose): Used to check the operations of the sensors and detectors in the paper reverse section (duplex section) and its control circuit.

Section: Duplex

Operation/Procedure

The operating conditions of the sensors and detectors are displayed.

The code names of the sensors and the detectors which are active are highlighted.

APPD1	ADU transport detection 1
APPD2	ADU transport detection 2

9-3

Purpose: Operation test/check

Function (Purpose): Used to check the operations of the load in the switchback section (duplex section) and its control circuit.

Section: Duplex

Operation/Procedure

1) Select the item to be operation checked with the touch panel key.
2) Press [EXECUTE] key.
   The selected load performs the operation.
   When [EXECUTE] key is pressed, the operation is terminated.

ADUC1	Switchback (ADU) paper transport clutch 1

10

10-1

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the toner supply mechanism (toner motor) and the related circuit.
Section	Process (Developing)

Operation/Procedure

1) Select a target of the operation check.
   When [ALL] key is pressed, all the items are selected.
2) Press [EXECUTE] key.
   The selected load operation is performed for 10 sec.
   When [EXECUTE] key is pressed, the operation is terminated.

NOTE: This simulation must be executed without installing the toner cartridges.
If this simulation is executed with the toner cartridges installed, toner will be forcibly supplied to the developing unit, resulting in over toner.
If this simulation is erroneously executed with the toner cartridges installed, over toner state may be deleted by making a few black background copy in the single color copy mode of the target color.

- **Color model**

TNM_K	Toner motor K
TNM_C	Toner motor C
TNM_M	Toner motor M
TNM_Y	Toner motor Y

- **Mono color model**

TNM_K	Toner motor K

13

13--

Purpose	Cancel (Trouble etc.)
Function (Purpose)	Used to cancel the self-diag "U1" trouble.
Section	

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key to execute cancellation of the trouble.

14

14--

Purpose	Clear/Cancel (Trouble etc.)
Function (Purpose)	Used to cancel the self-diag H3, H4, H5 troubles.
Section	

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key to execute cancellation of the trouble.

16

16--

Purpose	Clear/Cancel (Trouble etc.)
Function (Purpose)	Used to cancel the self-diag "U2" trouble.
Section	MFP PWB / PCU PWB / SCU PWB

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key to execute cancellation of the trouble.

17

17--

Purpose	Clear/Cancel (Trouble etc.)
Function (Purpose)	Used to cancel the self-diag "PF" trouble.
Section	

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key to execute cancellation of the trouble.

21

21-1

Purpose	Setting
Function (Purpose)	Used to set the maintenance cycle.
Section	

Operation/Procedure

* Do not change the default setting value of the maintenance counter on SIM21-1. The replacement timing of the fusing cleaning roller, the filter and PS paper dust removal cleaner may not clarify.

1) Select a target item of setting with [↑] [↓] key on the touch panel.
2) Enter the set value with 10-key.
3) Press [OK] key. (The set value is saved.)

- **Color model**

Item/Display		Content	Setting range	Default value
A	MAINTENANCE COUNTER (TOTAL)	Maintenance counter (Total)	0 : Default 1 - 300: 1K - 300K 999 : Free	60K
B	MAINTENANCE COUNTER (COLOR)	Maintenance counter (Color)	0 : Default 1 - 300: 1K - 300K 999 : Free	30K

- **Mono color model**

Item/Display		Content	Setting range	Default value
A	MAINTENANCE COUNTER (TOTAL)	Maintenance counter (Total)	0 : Default 1 - 300: 1K - 300K 999 : Free	60K

22

22-1

Purpose Adjustment/Setting/Operation data output/Check

Function (Purpose) Used to check the print count value in each section and each operation mode.
(Used to check the maintenance timing.)

Section

Operation/Procedure

Change the display page with [↑] [↓] key on the touch panel.

- **Color model**

Item	Display (Counter)	Content	NOTE
Total output quantity	TOTAL OUT (BW)	Total output quantity of black and white	All prints including jams
	TOTAL OUT (COL)	Total output quantity of color	All prints including jams
Total use quantity	TOTAL (BW)	Total use quantity of black and white	Effective paper (including self print, excluding jams)
	TOTAL (COL)	Total use quantity of full color	Effective paper (including self print, excluding jams)
	TOTAL (2COL)	Total use quantity of 2-color	Effective paper (including self print, excluding jams)
	TOTAL (3COL)	Total use quantity of 3-color	Effective paper (including self print, excluding jams)
	TOTAL (SGL_COL)	Total use quantity of single color	Effective paper (including self print, excluding jams)
Copy	COPY (BW)	Black and white copy counter	Billing target (excluding self print)
	COPY (COL)	Full color copy counter	Billing target (excluding self print)
	COPY (2COL)	2-color copy counter	Billing target (excluding self print)
Copy	COPY (SGL_COL)	Single color copy counter	Billing target (excluding self print)
Print	PRINT (BW)	Black and white print counter	Billing target (excluding self print)
	PRINT (COL)	Full color print counter	Billing target (excluding self print)
	PRINT (2COL)	2-color print counter	Billing target (excluding self print)
	PRINT (3COL)	3-color print counter	Billing target (excluding self print)
	PRINT (SGL_COL)	Single color print counter	Billing target (excluding self print)
Other	OTHER (BW)	Black and white other counter	Self print quantity
	OTHER (COL)	Color other counter	Self print quantity
Maintenance counter	MAINTENANCE ALL	Maintenance counter (Total)	
	MAINTENANCE COL	Maintenance counter (Color)	
Transfer unit	TC1 UNIT	Primary transfer unit print counter	
	TC1 UNIT RANGE	Primary transfer unit accumulated traveling distance (cm)	
	TC1 UNIT DAY	Use day of primary transfer unit (Day)	
	TC2 UNIT	Secondary transfer unit print counter	
	TC2 UNIT RANGE	Secondary transfer unit accumulated traveling distance (cm)	
	TC2 UNIT DAY	Use day of secondary transfer unit (Day)	
Fusing unit	FUSER UNIT(U)	Fusing unit print counter (Heat roller upper)	
	FUSER UNIT (L&E)	Fusing unit print counter (Heat roller lower and external)	
	FUSER AC DY (U)	Use day of fusing unit (Heat roller upper)	
	FUSER AC DY (L&E)	Use day of fusing unit (Heat roller lower and external)	
Drum life meter	DRUM LIFE (K)	Accumulated number of drum rotations (K)	0 - 100 (%) (Unit: ±1%)
	DRUM LIFE (C)	Accumulated number of drum rotations (C)	0 - 100 (%) (Unit: ±1%)
	DRUM LIFE (M)	Accumulated number of drum rotations (M)	0 - 100 (%) (Unit: ±1%)
	DRUM LIFE (Y)	Accumulated number of drum rotations (Y)	0 - 100 (%) (Unit: ±1%)
Developer life meter	DEVE LIFE (K)	Accumulated number of developer rotations (K)	0 - 100 (%) (Unit: ±1%)
	DEVE LIFE (C)	Accumulated number of developer rotations (C)	0 - 100 (%) (Unit: ±1%)
	DEVE LIFE (M)	Accumulated number of developer rotations (M)	0 - 100 (%) (Unit: ±1%)
	DEVE LIFE (Y)	Accumulated number of developer rotations (Y)	0 - 100 (%) (Unit: ±1%)

Item	Display (Counter)	Content	NOTE
Document filing (8.5 Inch LCD model)	DOC FIL(BW)	Black and white document filing print counter	Billing target (excluding self print)
	DOC FIL(COL)	Color document filing print counter	Billing target (excluding self print)
	DOC FIL (2COL)	2-color document filing print counter	Billing target (excluding self print)
	DOC FIL (SGL COL)	Single color document filing print counter	Billing target (excluding self print)
Toner number counter	TONER NUMBER (K)	Toner number counter (K)	0 - 255
	TONER NUMBER (C)	Toner number counter (C)	0 - 255
	TONER NUMBER (M)	Toner number counter (M)	0 - 255
	TONER NUMBER (Y)	Toner number counter (Y)	0 - 255
Toner near end number counter	TONER NN END (K)	Toner near end number counter (K)	0 - 255
	TONER NN END (C)	Toner near end number counter (C)	0 - 255
	TONER NN END (M)	Toner near end number counter (M)	0 - 255
	TONER NN END (Y)	Toner near end number counter (Y)	0 - 255
Remaining toner quantity	TONER RESIDUAL (K)	Remaining toner quantity (K)	0 - 25%
			25 - 50%
			50 - 75%
			75 - 100%
	TONER RESIDUAL (C)	Remaining toner quantity (C)	0 - 25%
			25 - 50%
			50 - 75%
			75 - 100%
	TONER RESIDUAL (M)	Remaining toner quantity (M)	0 - 25%
			25 - 50%
			50 - 75%
			75 - 100%
	TONER RESIDUAL (Y)	Remaining toner quantity (Y)	0 - 25%
			25 - 50%
			50 - 75%
			75 - 100%

- **Mono color model**

Item	Display (Counter)	Content	NOTE
Total output quantity	TOTAL OUT (BW)	Total output quantity	All prints including jams
Total use quantity	TOTAL (BW)	Total use quantity of black and white	Effective paper (including self print, excluding jams)
	TOTAL (COL)	Total use quantity of color	
Copy	COPY (BW)	Copy counter	Billing target (excluding self print)
Print	PRINT (BW)	Print counter	Billing target (excluding self print)
Document filing	DOC FIL (BW)	Document filing print counter	Billing target (excluding self print)
Other	OTHER (BW)	Other counter	Self print quantity
Maintenance counter	MAINTENANCE ALL	Maintenance counter (Total)	
Transfer unit	TC1 UNIT	Primary transfer unit print counter	
	TC1 UNIT RANGE	Primary transfer unit accumulated traveling distance (cm)	
	TC1 UNIT DAY	Use day of primary transfer unit (Day)	0 - 740
	TC2 UNIT	Secondary transfer unit print counter	
	TC2 UNIT RANGE	Secondary transfer unit accumulated traveling distance (cm)	
	TC2 UNIT DAY	Use day of secondary transfer unit (Day)	0 - 740
Fusing unit	FUSER UNIT (U)	Fusing unit print counter (Heat roller upper)	
	FUSER ACUM DAY (U)	Use day of fusing unit (Heat roller upper)	0 - 740
Drum life meter	DRUM LIFE (K)	Accumulated number of drum rotations	0 - 100 (%) (Unit: ±1%)
Developer life meter	DEVE LIFE (K)	Accumulated number of developer rotations	0 - 100 (%) (Unit: ±1%)

22-2

Purpose Adjustment/Setting/Operation data check

Function (Purpose) Used to check the total numbers of mis-feed and troubles. (When the number of total jam is considerably great, it is judged as necessary for repair.)

Section

Operation/Procedure

The paper jam, trouble counter value is displayed.

Display/Item	Content
MACHINE JAM	Machine JAM counter
RSPF/DSPF JAM	SPF JAM counter
TROUBLE	Trouble counter

22-3

Purpose Adjustment/Setting/Operation data check

Function (Purpose) Used to check mis-feed positions and the mis-feed count of each position.
* Presumption of the faulty point by this data is possible.

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.)

JAM code	Content
TRAY1	Machine cassette 1 paper feed JAM (CPFD1 not-reached JAM)
CPFD1_S1	CPFD1 remaining JAM (Machine cassette)
CPFD1_N2	CPFD1 not-reached JAM (Paper feed tray upper stage)
CPFD1_N3	CPFD1 not-reached JAM (Paper feed tray middle stage)
CPFD1_N4	CPFD1 not-reached JAM (Paper feed tray lower stage)

JAM code	Content
CPFD1_S2	CPFD1 remaining JAM (Paper feed tray upper stage)
CPFD1_S3	CPFD1 remaining JAM (Paper feed tray middle stage)
CPFD1_S4	CPFD1 remaining JAM (Paper feed tray lower stage)
TRAY2	Cassette 2 (Paper feed tray upper stage) paper feed JAM
DPFD1_S2	DPFD1 remaining JAM (Paper feed tray upper stage)
DPFD1_N3	DPFD1 not-reached JAM (Paper feed tray middle stage)
PPD1_N1	PPD1 not-reached JAM (Machine cassette)
PPD1_N2	PPD1 not-reached JAM (Paper feed tray upper stage)
PPD1_N3	PPD1 not-reached JAM (Paper feed tray middle stage)
PPD1_N4	PPD1 not-reached JAM (Paper feed tray lower stage)
PPD1_NM	PPD1 not-reached JAM (Manual feed tray)
PPD1_NA	PPD1 not-reached JAM (ADU again)
PPD1_S1	PPD1 remaining JAM (Machine cassette)
PPD1_S2	PPD1 remaining JAM (Paper feed tray upper stage)
PPD1_S3	PPD1 remaining JAM (Paper feed tray middle stage)
PPD1_S4	PPD1 remaining JAM (Paper feed tray lower stage)
PPD1_SM	PPD1 remaining JAM (Manual feed tray)
PPD1_SA	PPD1 remaining JAM (ADU again)
PPD2_N1	PPD2 not-reached JAM (Machine cassette)
PPD2_N2	PPD2 not-reached JAM (Paper feed tray upper stage)
PPD2_N3	PPD2 not-reached JAM (Paper feed tray middle stage)
PPD2_N4	PPD2 not-reached JAM (Paper feed tray lower stage)
PPD2_NM	PPD2 not-reached JAM (Manual feed tray)
PPD2_NA	PPD2 not-reached JAM (ADU again)
PPD2_S1	PPD2 remaining JAM (Machine cassette)
PPD2_S2	PPD2 remaining JAM (Paper feed tray upper stage)
PPD2_S3	PPD2 remaining JAM (Paper feed tray middle stage)
PPD2_S4	PPD2 remaining JAM (Paper feed tray lower stage)
PPD2_SM	PPD2 remaining JAM (Manual feed tray)
PPD2_SA	PPD2 remaining JAM (ADU again)
PPD2_PRI	PPD2 JAM (Image preparation wait timeout)
PPD2_DRUM	PPD2 JAM (Drum lock detection)
POD1_N	POD1 not-reached JAM
POD1_S	POD1 remaining JAM
POD1_FUS	POD1 JAM (Detection of twining to fusing)
POD2_N	POD2 not-reached JAM
POD2_S	POD2 remaining JAM
APPD1_N	APPD1 not-reached JAM
APPD1_S	APPD1 remaining JAM
APPD2_N	APPD2 not-reached JAM
APPD2_S	APPD2 remaining JAM
TRAY3	Cassette 3 (Paper feed tray middle stage) paper feed JAM
DPFD2_S3	DPFD2 remaining JAM (Paper feed tray middle stage)
DPFD1_N4	DPFD1 not-reached JAM (Paper feed tray lower stage)
DPFD1_S3	DPFD1 remaining JAM (Paper feed tray middle stage)
DPFD1_S4	DPFD1 remaining JAM (Paper feed tray lower stage)
TRAY4	Cassette 4 (Paper feed tray lower stage) paper feed JAM
DPFD2_N4	DPFD2 not-reached JAM (Paper feed tray lower stage)
DPFD2_S4	DPFD2 remaining JAM (Paper feed tray lower stage)
MFT	Manual feed tray paper feed JAM (PPD1 not-reached)
DPFD3_S4	DPFD3 remaining JAM (Paper feed tray lower stage)
LCC	Side LCC paper feed JAM (LPFD1 not-reached)
LPFD_SL	LPFD remaining JAM (Side LCC)
SIZE_ILG	Size illegal JAM
MTR_ILG	Motor driver trouble JAM
FPPD1_N	Finisher inlet port not-reached JAM
FPPD1_S	Finisher inlet port remaining JAM
FSTPLJ	Staple JAM
FIN_TIME	Finisher paper fast delivery JAM
FSTPD_N	Finisher paper exit not-reached JAM
FSTPD_S	Finisher paper exit remaining JAM
FPRD_N	Finisher compiler not-reached JAM
FPRD_S	Finisher compiler remaining JAM
CPFD1_DESK	CPFD1 JAM (Paper feed tray communication abnormality detection)
PPD2_FIN	PPD2 JAM (Finisher communication abnormality detection)
SPPD1_N	SPPD1 not-reached JAM (DSPF)
SPPD1_S	SPPD1 remaining JAM (DSPF)
SPPD2_N	SPPD2 not-reached JAM (DSPF)
SPPD2_S	SPPD2 remaining JAM (DSPF)
SPOD1_N	SPOD1 not-reached JAM (DSPF)
SPOD1_S	SPOD1 remaining JAM (DSPF)
SPOD2_N	SPOD2 not-reached JAM (DSPF)
SPOD2_S	SPOD2 remaining JAM (DSPF)
SPSD_SCN	Control error JAM (DSPF)
P_SHORT	JAM caused by a short-size document (DSPF)
SDFS_S	Double feed detection JAM / Double feed JAM (DSPF)
ICU_REQ	Control error JAM

22-4

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to check the trouble (self-diag) history.
Section	

Operation/Procedure

The trouble history is displayed from the latest one up to 30 items. (The old ones are deleted sequentially.)

* For the list of the trouble codes: Refer to "[6] SELF DIAG AND TROUBLE CODE".

22-5

Purpose	Others
Function (Purpose)	Used to check the ROM version of each unit (section).
Section	Firmware

Operation/Procedure

The ROM version of the installed unit in each section is displayed. When there is any trouble in the software, use this simulation to check the ROM version, and upgrade the version if necessary.

- **Color model**

S/N	Serial No.
ICU (MAIN)	ICU (Main section)
ICU (BOOT)	ICU (Boot section)
LANGUAGE	Language support data version
GRAPHIC	Graphic data for LCD
IMG DATA ROM	ImageASIC Flash ROM data
COLOR PROFILE	Color profile
PCU	PCU
SCU	SCU
SPF	SPF
FAX1 (MAIN)	FAX 1-Line (Main section)
DESK	Desk unit
FINISHER	Finisher
NIC	NIC
POWER-CON	Power controller
E-MANUAL	Operation manual (HDD storage)
ESCP	ESCP font ROM
PDL	PDL font ROM

- **Mono color model**

S/N	Serial No.
ICU (MAIN)	ICU (Main section)
ICU (BOOT)	ICU (Boot section)
LANGUAGE	Language support data version
GRAPHIC	Graphic data for LCD
IMG DATA ROM	ImageASIC Flash ROM data
PCU	PCU
SCU	SCU
SPF	SPF
FAX1 (MAIN)	FAX 1-Line (Main section)
DESK	Desk unit
FINISHER	Finisher

NIC	NIC
POWER-CON	Power controller
E-MANUAL	Operation manual (HDD storage)
ESCP	ESCP font ROM
PDL	PDL font ROM

22-6

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to output various adjustment/setting data (simulations, FAX soft switch counter), the firmware version, the counter list, the process control data, and SIM50-24 data.
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.
2) Press [EXECUTE] key to start printing the list selected in step 1).

• **Color model**

Item/Display		Print list mode	Print content
A	DATA PATTERN	1	Firmware version, counter data, etc.
		2	SIM50-24 data
		3	Data related to the process control

• **Mono color model**

Item/Display		Print list mode	Print content
A	DATA PATTERN	1	Firmware version, counter data, etc.
		2	–
		3	Data related to the process control

NOTE: When the printing operation is interrupted during list data printing, cancel the simulation and check for any error.

22-8

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to check the number of operations (counter value) of the finisher, the DSPF, and the scan (reading) unit.
Section	

Operation/Procedure

The counter values of the finisher, the DSPF, and the scanner related counters are displayed.

SPF	Document feed quantity
SPF_HEAVY	Document feed quantity (Heavy paper)
SCAN	Number of times of scan
STAPLER	Staple counter
COVER	Cover open/close counter
HP_ON	Number of scanner HP detection
OC LAMP TIME	Total lighting time of the OC scanner lamp (* hour * minutes)
DSPF LAMP TIME	Total lighting time of the DSPF scanner lamp (* hour * minutes)

22-9

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to check the number of use (print quantity) of each paper feed section.
Section	Paper feed, ADU

Operation/Procedure

The counter values related to paper feed are displayed.

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)
ADU	ADU paper feed counter (Paper reverse section)

22-10

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to check the system configuration (option, internal hardware).
Section	

Operation/Procedure

The system configuration is displayed.

(The model names of the installed devices and options are displayed.)

• **Color model**

MACHINE	MX-C402SC MX-C382SC	Main unit
SPF	STANDARD	Reversing single pass feeder
DESK	MX-CSX1	500 sheet paper feed unit
	MX-CSX2	
FINISHER	MX-FN12	Inner finisher
FAX 1	MX-FXX3	Facsimile expansion kit
FAX MEMORY	MX-MMX1	FAX expansion memory (16MB)
PS	MX-PKX5/ STANDARD	PS expansion kit
XPS	MX-PUX1	XPS expansion kit
SECURITY	MX-FR28U	Data security kit (commercial version)
AIM	MX-AMX1/ STANDARD	Application integration module
SDRAM (SYS)	*****MB	SDRAM capacity
SDRAM (ICU)	*****MB	SDRAM capacity
HDD	*****MB	Hard disk capacity
NIC	STANDARD	NIC
BARCODE	AR-PF1	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

• **Mono color model**

MACHINE	MX-B402SC MX-B382SC	Main unit
SPF	STANDARD	Reversing single pass feeder
DESK	MX-CSX1	500 sheet paper feed unit A
FINISHER	MX-FN12	Inner finisher
FAX1	MX-FXX3	Facsimile expansion kit
XPS	MX-PUX1	XPS expansion kit
SECURITY	MX-FR27U	Data security kit (commercial version)
AIM	MX-AMX1/ STANDARD	Application integration module

SDRAM (SYS)	*****MB	SDRAM capacity
SDRAM (ICU)	*****MB	SDRAM capacity
HDD	*****MB	Hard disk capacity
NIC	STANDARD	NIC
BARCODE	AR-PF1	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

22-11

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

Operation/Procedure

The values of the FAX send counter and the FAX receive counter are displayed.

FAX OUTPUT	FAX print quantity counter
FAX SEND	FAX send counter
FAX RECEIVED	FAX receive counter
SEND IMAGES	FAX send quantity counter
SEND TIME	FAX send time
RECEIVED TIME	FAX receive time
ACR SEND	Number of carrier prefix adding communications

22-12

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to check the DSPF mis-feed positions and the number of mis-feed at each position. (When the number of mis-feed is considerably great, it can be judged as necessary for repair.)
Section	DSPF

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.)

22-13

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to check the operating time of the process section (OPC drum, DV unit, toner cartridge).
Section	Process

Operation/Procedure

The rotating time and the print quantity of the process section are displayed.

- **Color model**

DRUM CTRG K	Drum cartridge print counter (K)
DRUM CTRG C	Drum cartridge print counter (C)
DRUM CTRG M	Drum cartridge print counter (M)
DRUM CTRG Y	Drum cartridge print counter (Y)
DRUM RANGE K	Drum cartridge accumulated traveling distance (cm) (K)
DRUM RANGE C	Drum cartridge accumulated traveling distance (cm) (C)
DRUM RANGE M	Drum cartridge accumulated traveling distance (cm) (M)
DRUM RANGE Y	Drum cartridge accumulated traveling distance (cm) (Y)
DRUM TURN K	Drum cartridge accumulated rotation number (K)
DRUM TURN C	Drum cartridge accumulated rotation number (C)
DRUM TURN M	Drum cartridge accumulated rotation number (M)
DRUM TURN Y	Drum cartridge accumulated rotation number (Y)
DRUM DAY K	Number of day that used drum (Day) (K)
DRUM DAY C	Number of day that used drum (Day) (C)
DRUM DAY M	Number of day that used drum (Day) (M)
DRUM DAY Y	Number of day that used drum (Day) (Y)
DEVE CTRG K	Developer cartridge print counter (K)
DEVE CTRG C	Developer cartridge print counter (C)
DEVE CTRG M	Developer cartridge print counter (M)
DEVE CTRG Y	Developer cartridge print counter (Y)
DEVE RANGE K	Developer cartridge accumulated traveling distance (cm) (K)
DEVE RANGE C	Developer cartridge accumulated traveling distance (cm) (C)
DEVE RANGE M	Developer cartridge accumulated traveling distance (cm) (M)
DEVE RANGE Y	Developer cartridge accumulated traveling distance (cm) (Y)
DEVE TURN K	Developer cartridge accumulated rotation number (K)
DEVE TURN C	Developer cartridge accumulated rotation number (C)
DEVE TURN M	Developer cartridge accumulated rotation number (M)
DEVE TURN Y	Developer cartridge accumulated rotation number (Y)
DEVE DAY K	Number of day that used Developer (Day) (K)
DEVE DAY C	Number of day that used Developer (Day) (C)
DEVE DAY M	Number of day that used Developer (Day) (M)
DEVE DAY Y	Number of day that used Developer (Day) (Y)
TONER MOTOR K	Toner motor print counter (K)
TONER MOTOR C	Toner motor print counter (C)
TONER MOTOR M	Toner motor print counter (M)
TONER MOTOR Y	Toner motor print counter (Y)
TONER TURN K	Toner motor accumulated rotation time (sec) (K)
TONER TURN C	Toner motor accumulated rotation time (sec) (C)
TONER TURN M	Toner motor accumulated rotation time (sec) (M)
TONER TURN Y	Toner motor accumulated rotation time (sec) (Y)

- **Mono color model**

DRUM CTRG K	Drum cartridge print counter
DRUM RANGE K	Drum cartridge accumulated traveling distance (cm)
DRUM TURN K	Drum cartridge accumulated rotation number
DRUM DAY K	Number of day that used drum (Day)
DEVE CTRG K	Developer cartridge print counter
DEVE RANGE K	Developer cartridge accumulated traveling distance (cm)
DEVE TURN K	Developer cartridge accumulated rotation number
DEVE DAY K	Number of day that used Developer (Day)
TONER MOTOR K	Toner motor print counter
TONER TURN K	Toner motor accumulated rotation time (sec)

22-19

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to check the values of the counters related to the scan - image send.
Section	

Operation/Procedure

Used to display the counter value related to the network scanner

Change the display with [↑] [↓] key.

• **Color model**

NET SCN ORG_B/W	Network scanner document read quantity counter (B/W scan job)
NET SCN ORG_CL	Network scanner document read quantity counter (Color scan job)
NET SCN ORG_2CL	Network scanner document read quantity counter (2-Color scan job)
NET SCN ORG_SGL	Network scanner document read quantity counter (Single-color scan job)
INTERNET FAX OUTPUT	Number of internet FAX output
INTERNET FAX SEND OUTPUT	Number of internet FAX sending page
INTERNET FAX RECEIVE	Number of internet FAX receive
INTERNET FAX SEND	Number of internet FAX send
MAIL COUNTER	Number of times of E-MAIL send
FTP COUNTER	Number of FTP send
SMB SEND	Number of SMB send
USB CNT	Number of times of USB storage
TRIAL MODE_B&C	Trial mode counter (B/W & COLOR scan job)
SCAN TO HDD_B/W	SCAN TO HDD record quantity (B/W)
SCAN TO HDD_CL	SCAN TO HDD record quantity (COLOR)
SCAN TO HDD_2CL	SCAN TO HDD record quantity (2-COLOR)
SCAN TO HDD_SGL	SCAN TO HDD record quantity (SINGLE color)

• **Mono color model**

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)

22-90

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to output the various set data lists.
Section	

Operation/Procedure

1) Change the display with [↑] [↓] key.
2) Select the print target with the keys on the touch panel.
3) Press [EXECUTE] key to start print of the list.

• **Color model**

All setting list	ALL CUSTOM SETTING LIST (*)
Printer test page	PCL SYMBOL SET LIST
	PCL INTERNAL FONT LIST
	PCL EXTENDED FONT LIST
	PS FONT LIST
	PS KANJI FONT LIST
	PS EXTENDED FONT LIST
	NIC PAGE
Address registration list (*)	INDIVIDUAL LIST
	GROUP LIST
	PROGRAM LIST
	MEMORY BOX LIST
	ALL SENDING ADDRESS LIST
Document filing list	DOCUMENT FILING FOLDER LIST
System setting list	ADMIN. SETTINGS LIST (COPY)
	ADMIN. SETTINGS LIST (PRINT)
	ADMIN. SETTINGS LIST (IMAGE SEND)
	ADMIN. SETTINGS LIST (DOC FILING)
	ADMIN. SETTINGS LIST (SECURITY)
	ADMIN. SETTINGS LIST (COMMON)
	ALL ADMINISTRATOR SETTINGS LIST
Receive rejection number table	ANTI JUNK FAX NUMBER LIST
Receive rejection/allow address domain table	ANTI JUNK MAIL/DOMAIN NAME LIST
To E-mail 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.

• **Mono color model**

All setting list	ALL CUSTOM SETTING LIST (*)
Printer test page	PCL SYMBOL SET LIST
	PCL INTERNAL FONT LIST
	PCL EXTENDED FONT LIST
	PS FONT LIST
	PS KANJI FONT LIST
	PS EXTENDED FONT LIST
	NIC PAGE
Address registration list (*)	INDIVIDUAL LIST
	GROUP LIST
	PROGRAM LIST
	MEMORY BOX LIST
	ALL SENDING ADDRESS LIST
Document filing list	DOCUMENT FILING FOLDER LIST (*)
System setting list	ADMIN. SETTINGS LIST (COPY)
	ADMIN. SETTINGS LIST (PRINT)
	ADMIN. SETTINGS LIST (IMAGE SEND)
	ADMIN. SETTINGS LIST (DOC FILING)
	ADMIN. SETTINGS LIST (SECURITY)
	ADMIN. SETTINGS LIST (COMMON)
	ALL ADMINISTRATOR SETTINGS LIST
Receive rejection number table	ANTI JUNK FAX NUMBER LIST
Receive rejection/allow address domain table	ANTI JUNK MAIL/DOMAIN NAME LIST
To E-mail 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	Adjustment/Setting/Operation data check
Function (Purpose)	Used to output the trouble history list of paper jam and mis-feed. (If the number of troubles of mis-feed is considerably great, the judgment is made that repair is required.)
Section	

Operation/Procedure

Press [EXECUTE] key to execute print.

The trouble history of paper jams and mis-feed is printed.

23-80

Purpose	Operation test/check
Function (Purpose)	Used to check the operation of paper feed and paper transport in the paper feed section and the paper transport section. Used to output the list of the operation status of the sensor and the detectors in the paper feed section and the paper transport section.
Section	Paper feed, Paper transport

Operation/Procedure

When [EXECUTE] key is pressed, the timing list of paper feed and paper transport is outputted.

Used to print the operations timing list of the sensors and detectors in the paper feed and transport section.

The timing list of paper feed and paper transport operations of the latest job (copy or print) on the final paper is printed.

Since the paper feed and paper transport routes differ depending on the used paper feed tray and the print operation mode, the sensor and the detectors and the operation timing also differ.

SECTION	Operation content (Trigger name - Detection operation or load operation name)
STANDARD	Reference value (ms)
CURRENT (*1)	Operation timing (ms) of the latest job on the final paper
PREVIOUS (*1)	Operation timing (ms) of the second latest job on the final paper
MAXIMUM (*1)	Max. operation timing (ms) of all the jobs
MINIMUM (*1)	Min. operation timing (ms) of all the jobs

*1: The value without unit on the left side of each item on the list has no relation to the operation timing. It is not used in the market.

24

24-1

Purpose	Data clear
Function (Purpose)	Used to clear the jam counter, and the trouble counter. (After completion of maintenance, clear the counters.)
Section	

Operation/Procedure

1) Select the item to be cleared.
2) Press [EXECUTE] key.
3) Press [YES] key.
   The target counter is cleared.

MACHINE	Machine JAM counter
SPF	DSPF JAM counter
TROUBLE	Trouble counter

24-2

Purpose	Data clear
Function (Purpose)	Used to clear the number of use (the number of prints) of each paper feed section.
Section	

Operation/Procedure

1) Select the item to be cleared.
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)
ADU	ADU paper path counter

24-3

Purpose	Data clear
Function (Purpose)	Used to clear the finisher, DSPF, and the scan (reading) unit counter.
Section	

Operation/Procedure

1) Select the item to be cleared.
2) Press [EXECUTE] key.
3) Press [YES] key.
   The target counter is cleared.

SPF	DSPF document feed counter
SPF_HEAVY	DSPF document feed counter (Heavy Paper)
SCAN	Scan counter
STAPLER	Staple 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

24-4

Purpose	Data clear
Function (Purpose)	Used to clear the maintenance counter, the printer counters of the transport unit and the fusing unit. (After completion of maintenance, clear the counters.)
Section	

Operation/Procedure

1) Select the item to be cleared.
2) Press [EXECUTE] key.
3) Press [YES] key.
   The target counter is cleared.

- **Color model**

MAINT ALL	Maintenance counter (Total)
MAINT COL	Maintenance counter (Color)
TC1 UNIT	Primary transport unit print counter
TC1 UNIT RN	Primary transport unit accumulated traveling distance (cm)
TC1 UNIT DY	Use day of primary transport unit (Day)
TC2 UNIT	Secondary transport unit print counter
TC2 UNIT RN	Secondary transport unit accumulated traveling distance (cm)
TC2 UNIT DY	Use day of secondary transport unit (Day)
FUS UN(U)	Fusing unit (heat roller upper) print counter
FUS UN(E)	Fusing unit (heat roller lower & external) print counter
FUS DY(U)	Use day of fusing unit (heat roller upper) (Day)
FUS DY(E)	Use day of fusing unit (heat roller lower & external) (Day)

• **Mono color model**

MAINTENANCE ALL	Maintenance counter (Total)
TC1 UNIT	Primary transport unit print counter
TC1 UNIT RANGE	Primary transport unit accumulated traveling distance (cm)
TC1 UNIT DAY	Use day of primary transport unit (Day)
TC2 UNIT	Secondary transport unit print counter
TC2 UNIT RANGE	Secondary transport unit accumulated traveling distance (cm)
TC2 UNIT DAY	Use day of secondary transport unit (Day)
FUSER UNIT(U)	Fusing unit (heat roller upper) print counter
FUSER DAY(U)	Use day of fusing unit (heat roller upper) (Day)

24-5

Purpose	Data clear
Function (Purpose)	Used to clear the developer counter. (After replacement of developer, clear the counter.)
Section	

Operation/Procedure

1) Select the item to be cleared.
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.

• **Color model**

K	Developer cartridge print counter (K)
	Developer cartridge accumulated traveling distance (cm) (K)
	Number of day that used developer (Day) K
C	Developer cartridge print counter (C)
	Developer cartridge accumulated traveling distance (cm) (C)
	Number of day that used developer (Day) C
M	Developer cartridge print counter (M)
	Developer cartridge accumulated traveling distance (cm) (M)
	Number of day that used developer (Day) M
Y	Developer cartridge print counter (Y)
	Developer cartridge accumulated traveling distance (cm) (Y)
	Number of day that used developer (Day) Y

• **Mono color model**

Developer cartridge print counter
Developer cartridge accumulated traveling distance (cm)
Number of day that used developer (Day)

24-6

Purpose	Data clear
Function (Purpose)	Used to clear the copy counter.
Section	

Operation/Procedure

1) Select the item to be cleared.
2) Press [EXECUTE] key.
3) Press [YES] key.
   The target counter is cleared.

• **Color model**

COPY BW	Copy counter (B/W)
COPY COL	Copy counter (COLOR)
SINGLE COLOR	Single color
2COLOR	2-color

• **Mono color model**

COPY BW	Copy counter

24-7

Purpose	Data clear
Function (Purpose)	Used to clear the OPC drum counter. (After replacement of the OPC drum, clear the counter.)
Section	

Operation/Procedure

1) Select the item to be cleared.
2) Press [EXECUTE] key.
3) Press [YES] key.
   The target counter is cleared.

• **Color model**

K	Drum cartridge print counter (K)
	Drum cartridge accumulated traveling distance (cm) (K)
	Number of day that used drum (Day) K
C	Drum cartridge print counter (C)
	Drum cartridge accumulated traveling distance (cm) (C)
	Number of day that used drum (Day) C
M	Drum cartridge print counter (M)
	Drum cartridge accumulated traveling distance (cm) (M)
	Number of day that used drum (Day) M
Y	Drum cartridge print counter (Y)
	Drum cartridge accumulated traveling distance (cm) (Y)
	Number of day that used drum (Day) Y

• **Mono color model**

Drum cartridge print counter
Drum cartridge accumulated traveling distance (cm)
Number of day that used drum (Day)

24-9

Purpose	Data clear
Function (Purpose)	Used clear the printer mode print counter and the self print mode print counter.
Section	

Operation/Procedure

1) Select the item to be cleared.
2) Press [EXECUTE] key.
3) Press [YES] key.
   The target counter is cleared.

• **Color model**

PRINT BW	Print counter (B/W)
PRINT COL	Print counter (COLOR)
PRINT (2COL)	Print counter (2-colors)
PRINT (3COL)	Print counter (3-colors)
PRINT (SGL_COL)	Print counter (Single color)
OTHER BW	Other counter (B/W)
OTHER COL	Other counter (COLOR)

• **Mono color model**

PRINT BW	Print counter
OTHER BW	Other counter

24-10

Purpose	Data clear
Function (Purpose)	Used to clear the FAX counter. (Only when FAX is installed)
Section	

Operation/Procedure

1) Select the item to be cleared.
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
ACR SEND	Number of carrier prefix adding communications

24-15

Purpose	Data clear
Function (Purpose)	Used to clear the counters related to the scan mode and the image send.
Section	

Operation/Procedure

1) Select the item to be cleared.
2) Press [EXECUTE] key.
3) Press [YES] key.
   The target counter is cleared.

- **Color model**

NET SCN ORG_B/W	Network scanner document read quantity counter (B/W scan job)
NET SCN ORG_CL	Network scanner document read quantity counter (COLOR scan job)
NET SCN ORG_2CL	Network scanner document read quantity counter (2-color scan job)
NET SCN ORG_SGL	Network scanner document read quantity counter (single color scan job)
INTERNET FAX OUTPUT	Number of internet FAX output
INTERNET FAX SEND OUTPUT	Number of internet FAX sending page
INTERNET FAX RECEIVE	Number of internet FAX receive
INTERNET FAX SEND	Number of internet FAX send
MAIL COUNTER	Number of times of E-MAIL send
FTP COUNTER	Number of FTP send
SMB SEND	Number of SMB send
USB CNT	Number of times of USB storage
TRIAL MODE_B&C	Trial mode counter (B/W & COLOR scan job)
SCAN TO HDD_B/W	SCAN TO HDD record quantity (B/W)
SCAN TO HDD_CL	SCAN TO HDD record quantity (COLOR)
SCAN TO HDD_2CL	SCAN TO HDD record quantity (2-COLOR)
SCAN TO HDD_SGL	SCAN TO HDD record quantity (SINGLE color)

- **Mono color model**

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)

24-30

Purpose	Data clear
Function (Purpose)	Used to initialize the administrator password.
Section	

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key.
   The administrator password is initialized.

If the administrator password of system setting and Web page is forgotten, execute this simulation to set the password to "admin" (default).

24-31

Purpose	Data clear
Function (Purpose)	Used to initialize the service mode password.
Section	

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key.
   The service mode password is initialized.

If the password of Web page is forgotten, execute this simulation to set the password to "service" (default).

25

25-1

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the developing section.
Section	Process (Developing section)

Operation/Procedure

1) Select the process speed.
2) Press [EXECUTE] key.
   The developing motor and the OPC drum motor rotate for 3 minutes and the output level of the toner density sensor is displayed.

- **Color model**

TCD_K	Toner density sensor K
TCD_C	Toner density sensor C
TCD_M	Toner density sensor M
TCD_Y	Toner density sensor Y
TCV_K	Toner density sensor control voltage level K
TCV_C	Toner density sensor control voltage level C
TCV_M	Toner density sensor control voltage level M
TCV_Y	Toner density sensor control voltage level Y

LOW	Process speed: Low speed
MIDDLE	Process speed: Middle speed

• **Mono color model**

TCD_K	Toner density sensor K
TCV_K	Toner density sensor control voltage level K

LOW	Process speed: Low speed
MIDDLE	Process speed: Middle speed

25-2

Purpose	Setting
Function (Purpose)	Used to make the initial setting of toner density when replacing developer. (Automatic adjustment)
Section	Image process (Photo-conductor/ Developing/Transfer/Cleaning)

Operation/Procedure

1) Select a color to be adjusted.
2) Press [EXECUTE] key.

The developing motor rotates for 3 minutes, and the toner density sensor makes sampling of the toner density. The detected level is displayed.

After stopping the developing motor, the average value of the toner density sampling results is set as the reference toner density control level.

NOTE: When the above operation is interrupted on the way, the reference toner concentration level is not set. Also when error code of EE-EC, EE-EL or EE-EU is displayed, the reference toner density level is not set normally.

Do not execute this simulation except when new developer is supplied. If it is executed in other cases, under toner or overtone may occur, causing a trouble.

• **Color model**

Display during operation

TCD_K	Toner density sensor control level K
TCD_C	Toner density sensor control level C
TCD_M	Toner density sensor control level M
TCD_Y	Toner density sensor control level Y
TCV_K	Toner density sensor control voltage level K
TCV_C	Toner density sensor control voltage level C
TCV_M	Toner density sensor control voltage level M
TCV_Y	Toner density sensor control voltage level Y

Display after completion of the adjustment

Mode	Display	Range
Toner density control adjustment value in the low speed process mode	AT DEVE ADJ_L_K	1 - 255
	AT DEVE ADJ_L_C	1 - 255
	AT DEVE ADJ_L_M	1 - 255
	AT DEVE ADJ_L_Y	1 - 255
Toner density control adjustment value in the medium speed process mode	AT DEVE ADJ_M_K	1 - 255
	AT DEVE ADJ_M_C	1 - 255
	AT DEVE ADJ_M_M	1 - 255
	AT DEVE ADJ_M_Y	1 - 255
Toner density sensor control voltage level in the low speed process mode	AT DEVE VO_L_K	1 - 255
	AT DEVE VO_L_C	1 - 255
	AT DEVE VO_L_M	1 - 255
	AT DEVE VO_L_Y	1 - 255
Toner density sensor control voltage level in the medium speed process mode	AT DEVE VO_M_K	1 - 255
	AT DEVE VO_M_C	1 - 255
	AT DEVE VO_M_M	1 - 255
	AT DEVE VO_M_Y	1 - 255

Display and condition in case of an error

Error display	Error name	Error details
EE-EL	EL error	The sensor output level is lower than 77, or the control voltage level is higher than 207.
EE-EU	EU error	The sensor output level is higher then 177, or the control voltage level is lower than 52.
EE-EC	EC error	The sensor output level is out of 128±10.

• **Mono color model**

Display during operation

TCD_K	Toner density sensor K
TCV_K	Toner density sensor control voltage level K

Display after completion of the adjustment

Mode	Display	Range
Toner density control adjustment value in the low speed process mode	AT DEVE ADJ_L_K	1 - 255
Toner density control adjustment value in the medium speed process mode	AT DEVE ADJ_M_K	1 - 255
Toner density sensor control voltage level in the low speed process mode	AT DEVE VO_L_K	1 - 255
Toner density sensor control voltage level in the medium speed process mode	AT DEVE VO_M_K	1 - 255

Display and condition in case of an error

Error display	Error name	Error details
EE-EL	EL error	The sensor output level is lower than 77, or the control voltage level is higher than 207.
EE-EU	EU error	The sensor output level is higher then 177, or the control voltage level is lower than 52.
EE-EC	EC error	The sensor output level is out of 128±10.

26

26-2

Purpose	Setting
Function (Purpose)	Used to set the paper weight type.
Section	Paper feed

Operation/Procedure

Select a paper type to be changed.

G/LBS SET	0	GRAM
	1	LBS

This setting is linked with SIM26-6. When the set value (destination) of SIM26-6 is changed, this setting is also changed accordingly.

To set a desirable type without linking with the destination, use this simulation.

Destinations	Set value
	G/LBS SET
U.S.A.	LBS
CANADA	LBS
INCH	LBS
JAPAN	GRAM
AB_B	GRAM
EUROPE	GRAM
U.K.	GRAM
AUS.	GRAM
AB_A	GRAM
CHINA	GRAM

26-3

Purpose	Setting
Function (Purpose)	Used to set the specifications of the auditor. (Setting must be made according to the auditor use conditions.)
Section	Auditor

Operation/Procedure

Select a setting target and a setting condition.

Item/Display		Content	Default value
BUILT-IN AUDITOR	P10	Built-in auditor mode (standard mode) operation.	P10
	EC1	EC1 mode operation	
OUTSIDE AUDITOR	NONE	No external connection vendor is used.	NONE
	P VENDOR1	Coin vendor mode (Only the copy mode can be controlled.)	
	P VENDOR2	Vendor mode communicating with the parallel I/F (for DocuLyzer) (Japan only)	
	P OTHER	NOT USED	
	VENDOR-EX*	Vendor I/F specifications for EQUITRAC (Multi job cuing Disable mode)	
	VND_EX_MT*	Vendor I/F specifications for EQUITRAC (Multi job cuing Enable mode)	
	S_VENDOR	Serial vendor mode	
DOC ADJ	ON	Support for auditor in document filing print	OFF
	OFF	No support for 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 (★)	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.	

(*) Displayed only when EQUITRAC is used.

(★) Details of the vendor mode

	Completion of the specified quantity. (Money remaining)	Insufficient money during copy job		Completion of the specified quantity. (No money remaining)
		BW/Color (no money remaining)	Color (Money remaining)	
	Condition 1	**Condition 2**	**Condition 3**	**Condition 4**
MODE1	Operation 1	Operation 2	Operation 2	Operation 1
MODE2	Operation 1	Operation 1	Operation 2	Operation 1
MODE3	Operation 1	Operation 3	Operation 2	Operation 3

Operation 1:
Standby during setting time of auto clear. Default is 60 seconds, which can be changed in the system setting.

Operation 2:
Auto clear is not made.

Operation 3:
The display is shifted to the initial screen.

26-6

Purpose	Setting
Function (Purpose)	Used to set the specifications (paper, fixed magnification ratio, etc.) of the destination.
Section	

Operation/Procedure

1) Select an item to be set.
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

26-10

Purpose	Setting
Function (Purpose)	Used to set the trial mode of the network scanner.
Section	

Operation/Procedure

1) Enter the set value with 10-key.
2) Press [OK] key.
   The set value in step 1) is saved.

TRIAL MODE (0 : YES 1 : NO)	0	Trial mode setting
	1	Trial mode cancel (Default)

26-18

Purpose	Setting
Function (Purpose)	Used to set Disable/Enable of the toner save mode operation. (For the Japan and the UK versions.)
Section	

Operation/Procedure

1) Select an item to be set with [↑] [↓] keys.
2) Enter the set value with 10-key.
3) Press [OK] key.
   The set value in step 2) is saved.

Item	Display	Content		Default value
A	COPY	0	Copy toner save mode is inhibited.	0
		1	Copy toner save mode is allowed	
B	PRINTER	0	Printer toner save mode is inhibited.	0
		1	Printer toner save mode is allowed.	

26-30

Purpose	Setting
Function (Purpose)	Used to set the operation mode corresponding to the CE mark (Europe safety standards). (For slow start to drive the fusing heater lamp)
Section	

Operation/Procedure

1) Enter the set value with 10-key.

0	Control allowed
1	Control inhibited

2) Press [OK] key.
   The set value in step 1) is saved.
   * Even in Enable state, the control may not be executed due to the power frequency, etc.

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)	Used to set display or non-display of the system setting menu.
Section	

Operation/Procedure

1) Select an item to be set with [↑] [↓] keys.
2) Enter the set value with 10-key.
3) Press [OK] key.
   The set value in step 2) is saved.
   Display or non-display of the following menu of the system setting menu is set.
   Set to ON for use of CRU, and set to OFF for use of SRU.
   When it is set to ON, the following menu is displayed on the system setting menu screen to allow the operation of the menu.

Item	Display	Content	Setting range	Default value
A	FAX ADJ SET	FAX setting screen (dial tone detection, speed setting) display (Select this setting when the user himself performs FAX dial tone detection or speed setting.)	0 (ON)	1 (OFF)
		FAX setting screen (dial tone detection, speed setting) non-display	1 (OFF)	
B	CLEANING PRINT SET	Fusing cleaning print pattern print screen display (Select this setting when the user himself prints the print pattern for cleaning the fusing roller. V characters are printed on all the surface to remove foreign material and residual toner from the fusing roller.)	0 (ON)	1 (OFF)
		Fusing cleaning print pattern print screen non-display	1 (OFF)	
C	IMG SELF PRINT SET	Picture quality check self print screen display (Select this setting when the user himself checks the engine print picture quality. Two kinds of print patterns of SIM64-4 are printed.)	0 (ON)	1 (OFF)
		Picture quality check self print execution screen non-display	1 (OFF)	
D	LIST PRINT SET	Machine data list (various setting data) print screen display	0 (ON)	1 (OFF)
		Machine data list (various setting data) print screen non-display	1 (OFF)	
E	UPDATE SET	Firmware update execution screen display (Select this setting when the user himself updates the firmware. When this menu is executed, the guidance is displayed to guide the user to execute update.)	0 (ON)	1 (OFF)
		Firmware update execution screen non-display	1 (OFF)	
F	ERR MSG SET	Error message screen display (When set to ON, "Call for service" is displayed in case of an error.)	0 (ON)	1 (OFF)
		Error message screen display (When set to OFF, "Please refer to operation manual" is displayed in case of an error.)	1 (OFF)	

When set to 0, it is displayed on the system setting screen. When set to 1, it is not displayed on the system setting screen.

26-35

Purpose	Setting
Function (Purpose)	Used to set the display mode of SIM 22-4 trouble history when a same trouble occurred repeatedly. There are two display modes: display as one trouble and display as several series of troubles.
Section	

Operation/Procedure

1) Enter the set value with 10-key.

0	Only once display.
1	Any time display.

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

26-38

Purpose	Setting
Function (Purpose)	Used to set Continue/Stop of print when the maintenance life is reached.
Section	

Operation/Procedure

1) Enter the set value with 10-key.
2) Press [OK] key.
   The set value in step 1) is saved.

Item	Display		Content	Default value
A	M LIFE OVER (0: CONTINUE 1: STOP)	0	Print Enable/Disable setting when the maintenance timing is over (Print Continue)	0
		1	Print Enable/Disable setting when the maintenance timing is over (Print Stop)	
B	TC1 LIFE OVER (0: CONTINUE 1: STOP)	0	Print Enable when the primary transfer unit life is over. (Print Continue)	0
		1	Print Disable when the primary transfer unit life is over. (Print Stop)	
C	TC2 LIFE OVER (0: CONTINUE 1: STOP)	0	Print Enable when the secondary transfer unit life is over. (Print Continue)	0
		1	Print Disable when the secondary transfer unit life is over. (Print Stop)	
D	FUS LIFE OVER (0: CONTINUE 1: STOP)	0	Print Enable when the fusing unit life is over. (Print Continue)	0
		1	Print Disable when the fusing unit life is over. (Print Stop)	
E	DR LIFE OVER (0: CONTINUE 1: STOP)	0	Print Enable when the drum unit life is over. (Print Continue)	0
		1	Print Disable when the drum unit life is over. (Print Stop)	
F	DV LIFE OVER (0: CONTINUE 1: STOP)	0	Print Enable when the DV unit life is over. (Print Continue)	0
		1	Print Disable when the DV unit life is over. (Print Stop)	

26-41

Purpose	Setting
Function (Purpose)	Used to set Enable/Disable of the magnification ratio automatic select function (AMS) in the center binding mode.
Section	

Operation/Procedure

1) Enter the set value with 10-key.

0	AMS Disable
1	AMS Enable

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

<Default value of each destination>

U.S.A	0 (Disable)	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)	Used to set the print speed of postcards mode.
Section	

Operation/Procedure

Select the copy speed mode. (Default: LOW)

Display/Item		Content	Default value
POSTCARD	LOW	Low seed of postcard printing	LOW
	HIGH	High speed of postcard printing	

26-50

Purpose	Setting
Function (Purpose)	Used to set functions.
Section	

Operation/Procedure

1) Select a target item of setting with [↑] [↓] key.
2) Enter the set value with 10-key.
3) Press [OK] key. (The set value is saved.)

- **Color model**

Item/Display			Content	Default value
A	BW REVERSE	0	BW reverse copy Disable	Refer to *1
		1	BW reverse copy Enable	
B	COLOR MODE	2-color/Single color copy mode Enable/Disable setting		Refer to *1/*2
C	FINISHER FUNCTION	0	Finisher special paper The number of paper exit is limited.	0 Refer to *3
		1	Finisher special paper The number of paper exit is not limited.	
D	COLOR MODE (PRINTER)	0	All colors and monochrome counters are displayed.	Refer to *1
		1	All are displayed except for the 3-color print counter.	
		2	Monochrome and full color print counters are displayed.	
E	FEED TRAY COLOR	0	Paper feed tray color display ON during paper feed	0
		1	Paper feed tray color display OFF during paper feed	

(*1) Default values for each destination of item A/B/D

Destination	Item A	Item B	Item D
U S A	1	0	2
CANADA	1	0	2
INCH	1	0	2
JAPAN	1	7	2
AB_B	1	0	2
EUROPE	1	0	2
U K	0	0	2
AUS	1	0	2
AB_A	1	0	2
CHINA	1	0	2

(*2) Item B: COLOR MODE set value (OFF: Displayed/ON: Not displayed)

Set value	Mode		2-Color/Single Counter
	Single	2-color	
0	OFF	OFF	OFF
1	OFF	ON	OFF
2	ON	OFF	OFF
3	ON	ON	OFF

Set value	Mode		2-Color/Single Counter
	Single	2-color	
4	OFF	OFF	ON
5	OFF	ON	ON
6	ON	OFF	ON
7	ON	ON	ON

(*3)

When set to 0:

Postcard 100 sheets
Envelope 20 sheets

When set to 1:

Stops when the paper exit tray lower sensor detects the lower limit of the paper exit tray (paper full).

- **Mono color model**

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
		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	

(*1) Default values

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

26-52

Purpose Setting

Function (Purpose) Used to set whether non-printed paper (insertion paper, cover paper) is counted up or not.

Section

Operation/Procedure

1) Enter the set value with 10-key.

0	Count up
1	No count up

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

Item/Display		Set value	Content
A	(0: YES 1: NO)	0	White sheet count-up setting (Count)
		1	White sheet count-up setting (Not Count)

This setting is linked with SIM26-6. When the set value (destination) of SIM26-6 is changed, this setting is also changed accordingly.

To set a desirable operation without linking with the destination, use this simulation.

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) User auto color calibration (color balance adjustment) Inhibit/Allow setting (copy mode). (Color model)

Section

Operation/Procedure

1) Enter the set value with 10-key.

0	Inhibit
1	Allow (Default)

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

26-53

Purpose Setting

Function (Purpose) User auto calibration (density and gradation adjustment) Inhibit/Allow setting (copy mode). (Mono color model)

Section

Operation/Procedure

1) Enter the set value with 10-key.

0	Inhibit (Default)
1	Allow

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

26-54

Purpose Setting

Function (Purpose) User auto color calibration (color balance adjustment) Inhibit/Allow setting (printer mode). (Color model)

Section

Operation/Procedure

1) Enter the set value with 10-key.

0	Inhibit
1	Allow (Default)

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

26-54

Purpose	Setting
Function (Purpose)	User auto calibration (density and gradation adjustment) Inhibit/Allow setting (printer mode). (Mono color model)
Section	

Operation/Procedure

1) Enter the set value with 10-key.

0	Inhibit (Default)
1	Allow

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

26-55

Purpose	Setting
Function (Purpose)	Used to set Enable/Disable of the automatic color calibration (automatic color balance adjustment) when replacing a consumable part. (Only color model)
Section	

Operation/Procedure

1) Select the replacement condition of a target consumable part to which the auto color calibration (color balance adjustment) is applied.
2) Press [EXECUTE] key.

Display	Content	Set value	Default value
DV	Enable/Disable setting when replacing developer	Normal (Disable: 1: NO)	Disable
DR	Enable/Disable setting when replacing the OPC drum		Disable
TC1	Enable/Disable setting when replacing the primary transfer unit	Reverse (Enable: 0: YES)	Disable
TC2	Enable/Disable setting when replacing the secondary transfer unit		Disable
FUSER	Enable/Disable setting when replacing the fusing unit		Disable

When it is set to Enable, the guidance for execution of the auto color calibration (auto color balance adjustment) is displayed after replacing the target consumable part.

Follow the guidance and perform the auto color calibration (auto color balance adjustment).

26-65

Purpose	Setting
Function (Purpose)	Used to set the staple process restriction.
Section	

Operation/Procedure

Select a setting item and a setting condition.

Item	Set value	Content	Default value
LIMIT COPIES	ON	Number of sets of stapling: Limited	ON
	OFF	Number of sets of stapling: Not Limited	
LIMIT SHT (L)	15 or 30	Number of sheets of stapling: Max. 15	30

[Target paper size]

8.5 x 14, 8.5 x 13.5, 8.5 x 13.4, 8.5 x 13

The staple capacity other than the above is fixed to 30 sheets.

26-69

Purpose	Setting
Function (Purpose)	Used to set the operating conditions for toner near end.
Section	

Operation/Procedure

1) Select an item to be set with [↑] [↓] keys.
2) Enter the set value with 10-key.
3) Press [OK] key.
The set value in step 2 is saved.

- **Color model**

Item/Display		Content		Default value
A	TONER PREPARATION (0: YES 1: NO)	0	The toner preparation message is displayed.	
		1	The toner preparation message is not displayed.	
B	TONER NEAR END (0: YES 1: NO)	0	The toner near end message is displayed.	
		1	The toner near end message is not displayed.	
C	TONER END	1	Operation Enable in TONER END	2 (Japan) 3 (Except Japan)
		2	Operation STOP in TONER END	
		3	Operation STOP in TONER END	
D	TONER END COUNT	Setting of the number of copy/print/FAX outputs Enable after TONER NEAR END.		1
E	TONER E-MAIL ALART	0	Condition for Low status send of E-mail alert When the toner preparation message is displayed (in near near toner end)	0
		1	Condition for Low status send of E-mail alert When near toner end	
F	DV NEAR END DISP (0: YES 1: NO)	0	The developer near end message is displayed.	1
		1	The developer near end message is not displayed.	
G	DR NEAR END DISP (0: YES 1: NO)	0	The drum near end message is displayed.	1
		1	The drum near end message is not displayed.	
H	TC1 NEAR END DISP (0: YES 1: NO)	0	The primary transfer near end message is displayed.	1
		1	The primary transfer near end message is not displayed.	
I	TC2 NEAR END DISP (0: YES 1: NO)	0	The secondary transfer near end message is displayed.	1
		1	The secondary transfer near end message is not displayed.	
J	FUS NEAR END DISP (0: YES 1: NO)	0	The fusing near end message is displayed.	1
		1	The fusing near end message is not displayed.	

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

Destination	Set value	
	Toner preparation message	Toner near end message
U.S.A	0 (Displayed)	0 (Displayed)
CANADA	0 (Displayed)	0 (Displayed)
INCH	0 (Displayed)	0 (Displayed)
JAPAN	0 (Displayed)	1 (Not Displayed)
AB_B	0 (Displayed)	0 (Displayed)
EUROPE	0 (Displayed)	0 (Displayed)
U.K.	0 (Displayed)	0 (Displayed)
AUS.	0 (Displayed)	0 (Displayed)
AB_A	0 (Displayed)	0 (Displayed)

Destination	Set value	
	Toner preparation message	Toner near end message
CHINA	0 (Displayed)	0 (Displayed)

(Contents of set items)

A: Enable/Disable setting of the toner preparation message display when the toner remaining quantity reaches 25%.

B: Enable/Disable setting of the toner preparation message display when the toner near end status is reached.

C: Enable/Disable setting of the machine operation when the toner end status is reached.
For except Japan, performs operation of set value "3" regardless of the setting value.

D: Setting of the allowable quantity of copy/print/FAX after displaying the message when item B is set to "0" (the message is displayed at toner near end). (Range: 0 - 200 sheets)

The number of output print allowed in item D is based on the assumption that the sheets are of A4 size with print ratio of 5%. (The number of outputs allowed differs depending on the paper size and the print ratio.)

Set values of Item D and the number of output print allowed

1: Print Disable after toner near end

2: 20 sheets print Enable after toner near end

3: 40 sheets print Enable after toner near end

4: 80 sheets print Enable after toner near end

5: 160 sheets print Enable after toner near end

F. Enable/Disable setting of the near end message display when the developing unit reaches near end.

G. Enable/Disable setting of the near end message display when the OPC drum unit reaches near end.

H. Enable/Disable setting of the near end message display when the primary transfer unit reaches near end.

I. Enable/Disable setting of the near end message display when the secondary transfer unit reaches near end.

J. Enable/Disable setting of the near end message display when the fusing unit reaches near end.

(Items F, G, H, I, J: When the life center reaches 90% of the specified life, it is judged as 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.

- **Mono color model**

Item/Display		Content		Default value
A	TONER PREPARATION (0: YES 1: NO)	0	The toner preparation message is displayed.	Refer to the table, <List of Default values and set values for each destination>
		1	The toner preparation message is not displayed.	
B	TONER NEAR END (0: YES 1: NO)	0	The toner near end message is displayed.	
		1	The toner near end message is not displayed.	
C	TONER END	1	Operation Enable in TONER END	2
		2	Operation STOP in TONER END	
		3	Operation STOP in TONER END	
D	TONER END COUNT	Setting of the number of copy/print/FAX outputs Enable after TONER NEAR END.		1
E	TONER E-MAIL ALART	0	Condition for Low status send of E-mail alert When the toner preparation message is displayed (in near near toner end)	1
		1	Condition for Low status send of E-mail alert When near toner end	
F	DV NEAR END DISP (0: YES 1: NO)	0	The developer near end message is displayed.	1
		1	The developer near end message is not displayed.	
G	DR NEAR END DISP (0: YES 1: NO)	0	The drum near end message is displayed.	1
		1	The drum near end message is not displayed.	
H	TC1 NEAR END DISP (0: YES 1: NO)	0	The primary transfer near end message is displayed.	1
		1	The primary transfer near end message is not displayed.	
I	TC2 NEAR END DISP (0: YES 1: NO)	0	The secondary transfer near end message is displayed.	1
		1	The secondary transfer near end message is not displayed.	
J	FUS NEAR END DISP (0: YES 1: NO)	0	The fusing near end message is displayed.	1
		1	The fusing near end message is not displayed.	

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

Destination	Set value	
	Toner preparation message	Toner near end message
U.S.A	0 (Displayed)	0 (Displayed)
CANADA	0 (Displayed)	0 (Displayed)
INCH	0 (Displayed)	0 (Displayed)
JAPAN	0 (Displayed)	1 (Not Displayed)
AB_B	0 (Displayed)	0 (Displayed)
EUROPE	0 (Displayed)	0 (Displayed)
U.K.	0 (Displayed)	0 (Displayed)
AUS.	0 (Displayed)	0 (Displayed)
AB_A	0 (Displayed)	0 (Displayed)
CHINA	0 (Displayed)	0 (Displayed)

(Contents of set items)

A: Enable/Disable setting of the toner preparation message display when the toner remaining quantity reaches 25%.

B: Enable/Disable setting of the toner preparation message display when the toner near end status is reached.

C: Enable/Disable setting of the machine operation when the toner end status is reached.
For except Japan, performs operation of set value "3" regardless of the setting value.

D: Setting of the allowable quantity of copy/print/FAX after displaying the message when item B is set to "0" (the message is displayed at toner near end). (Range: 0 - 200 sheets)

The number of output print allowed in item D is based on the assumption that the sheets are of A4 size with print ratio of 5%. (The number of outputs allowed differs depending on the paper size and the print ratio.)

Set values of Item D and the number of output print allowed

1: Print Disable after toner near end

2: 20 sheets print Enable after toner near end

3: 40 sheets print Enable after toner near end

4: 80 sheets print Enable after toner near end

5: 160 sheets print Enable after toner near end

F. Enable/Disable setting of the near end message display when the developing unit reaches near end.

G. Enable/Disable setting of the near end message display when the OPC drum unit reaches near end.

H. Enable/Disable setting of the near end message display when the primary transfer unit reaches near end.

I. Enable/Disable setting of the near end message display when the secondary transfer unit reaches near end.

J. Enable/Disable setting of the near end message display when the fusing unit reaches near end.

(Items F, G, H, I, J: When the life center reaches 90% of the specified life, it is judged as 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 density and gradation adjustment may be resulted depending on the using conditions. When item D is set to "1", printing is disabled after toner near end. In this case, toner end display is made in the toner near end status, and copy/print/FAX outputs are disabled.

26-73

Purpose	Setting
Function (Purpose)	Used to adjust the image loss (shade delete amount) in the name card copy mode.
Section	

Operation/Procedure

1) Select an item to be set with [↑] [↓] keys.
2) Enter the set value with 10-key.
3) Press [OK] key.
   When the adjustment value is increased, the image loss (shade delete quantity) is increased.

Item/Display		Content	Setting range	Default value
A	DELETING SHADOW ADJ (M)	Rear frame side image loss quantity (shade delete quantity) adjustment	0 - 50	0 (Adjustment amount: 0.1mm/step)
B	DELETING SHADOW ADJ (S)	Lead edge image loss quantity (shade delete quantity) adjustment	0 - 50	0 (Adjustment amount: 0.1mm/step)

26-74

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

Operation/Procedure

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

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

The functions other than OPEN USB can be used.
Use limit: 18,000 sheets JOB

26-78

Purpose	Setting
Function (Purpose)	Used to set the password of the remote operation panel.
Section	

Operation/Procedure

1) Enter a password with 10 key. (5 - 8 digits)
   The entered password is displayed on the column of "NEW".
   In order to correct the entered password, press the [clear] key to delete the entered value one digit by one digit.
2) Press [SET] key.

27

27-1

Purpose	Setting
Function (Purpose)	Used to set non-detection of communication error (U7-00) with RIC. (FSS function)
Section	

Operation/Procedure

1) Enter the set value with 10-key.

0	Not detection
1	Detection

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

27-2

Purpose	Setting
Function (Purpose)	Used to set the sender's registration number and the HOST server telephone number. (FSS function)
Section	

Operation/Procedure

1) Select an item to be set. [USER FAX NO] [SERVA TEL NO]
2) Enter the set value with 10-key.
3) Press [SET] key.
   The set value in step 2) is saved.

USER FAX_NO.	Sender registration number (Max. 16 digits)
SERVA TEL_NO.	Host server telephone number (Max. 16 digits) • If the connection process is not completed normally when registering the FSS, calling to the HOST may be continuously made every time when the power is turned ON (from OFF) or rebooted. In this case, enter "********" to inhibit calling to the HOST.

27-4

Purpose	Setting
Function (Purpose)	Used to set the initial call and toner order auto send. (FSS function)
Section	

Operation/Procedure

1) Select an item to be set with [↑] [↓] keys.
2) Enter the set value with 10-key.
3) Press [OK] key.
   The set value in step 2) is saved.

• **Color model**

Item/Display			Content		Setting range		Default value	Remarks
A	FSS MODE	NEB1	Set the FSS MODE	Exclusive for send in NE-B mode	0 - 3	0	1	
		NEB2		Send/Receive in NE-B mode		1		
		NFB1		Exclusive for send in NE-F mode		2		
		NFB2		Send/Receive in NE-F mode		3		
B	RETRY_BUSY		Resend number setting when busy		0 - 15		2	* 0: No retry
C	TIMER (MINUTE) _BUSY		Resend timer setting (minute) when busy		1 - 15		3	
D	RETRY_ERROR		Resend number setting when error		0 - 15		1	* 0: No retry
E	TIMER (MINUTE) _ERROR		Resend timer setting (minute) when error		1 - 15		1	
F	TONER ORDER TIMING (K)	100% - 75%	Toner order auto send timing setting (K)	100% - 75%	0 - 5	5	3 (49%-25%)	
		74% - 50%		74% - 50%		4		
		49% - 25%		49% - 25%		3		
		LOWER 25		25% or less		2		
		NEAREND		NEAREND		1		
		EMPTY		EMPTY		0		
G	TONER ORDER TIMING (C)	100% - 75%	Toner order auto send timing setting (C)	100% - 75%	0 - 5	5	3 (49%-25%)	
		74% - 50%		74% - 50%		4		
		49% - 25%		49% - 25%		3		
		LOWER 25		25% or less		2		
		NEAREND		NEAREND		1		
		EMPTY		EMPTY		0		
H	TONER ORDER TIMING (M)	100% - 75%	Toner order auto send timing setting (M)	100% - 75%	0 - 5	5	3 (49%-25%)	
		74% - 50%		74% - 50%		4		
		49% - 25%		49% - 25%		3		
		LOWER 25		25% or less		2		
		NEAREND		NEAREND		1		
		EMPTY		EMPTY		0		
I	TONER ORDER TIMING (Y)	100% - 75%	Toner order auto send timing setting (Y)	100% - 75%	0 - 5	5	3 (49%-25%)	
		74% - 50%		74% - 50%		4		
		49% - 25%		49% - 25%		3		
		LOWER 25		25% or less		2		
		NEAREND		NEAREND		1		
		EMPTY		EMPTY		0		

• **Mono color model**

Item/Display			Content		Setting range		Default value	Remarks
A	FSS MODE	NEB1	Set the FSS MODE	Exclusive for send in NE-B mode	0 - 3	0	1	
		NEB2		Send/Receive in NE-B mode		1		
		NFB1		Exclusive for send in NE-F mode		2		
		NFB2		Send/Receive in NE-F mode		3		
B	RETRY_BUSY		Resend number setting when busy		0 - 15		2	* 0: No retry
C	TIMER (MINUTE) _BUSY		Resend timer setting (minute) when busy		1 - 15		3	
D	RETRY_ERROR		Resend number setting when error		0 - 15		1	* 0: No retry
E	TIMER (MINUTE) _ERROR		Resend timer setting (minute) when error		1 - 15		1	
F	TONER ORDER TIMING (K)	100% - 75%	Toner order auto send timing setting	100% - 75%	0 - 5	5	3 (49%-25%)	
		74% - 50%		74% - 50%		4		
		49% - 25%		49% - 25%		3		
		LOWER 25		25% or less		2		
		NEAREND		NEAREND		1		
		EMPTY		EMPTY		0		

27-5

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

Operation/Procedure

1) Enter the password (max. 8 digits) with 10-key.
   The entered password is displayed on the column of "NEW".
   In order to correct the entered password, press the [clear] key to delete the entered value one digit by one digit.
2) Press [SET] key.

27-6

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

Operation/Procedure

1) Enter the set value with 10-key.

0	Allow (Default)
1	Inhibit

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

27-7

Purpose	Setting
Function (Purpose)	Used to set of the enable, alert call out. (FSS function)
Section	

Operation/Procedure

1) Select an item to be set with [↑] [↓] keys.
2) Enter the set value with 10-key.
3) Press [OK] key.
   The set value in step 2) is saved.

A	FSS FUNCTION	0	FSS function enable
		1	FSS function disable (*1) (Default)
B	ALERT	0	Alert call enable (*2) (Default)
		1	Alert call disable

*1 The FSS function setting can be changed only from Disable to Enable. (Cannot be changed from Enable to Disable.)

*2 Alert send timing

No alert cause	Initial state / Trouble / Continuous JAM alert
Maintenance	When the maintenance timing is reached.
Service call	When pressing Service call.
Toner send request	When the toner order automatic send setting is reached.
Toner collection request	Revision of the toner installation date (only for a new product)
Alert resend	

27-9

Purpose	Setting
Function (Purpose)	Used to set the paper transport time recording YES/NO threshold value and shading gain adjustment retry number. (FSS function)
Section	

Operation/Procedure

1) Select an item to be set with [↑] [↓] 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) (50: Default)
C	GAIN ADJUSTMENT RETRY	1 - 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)

* Item A, B: 0%, standard passing time between sheets of paper; 100%, time for judgment as a jam between sheets of paper.
* Item C: Setting of 20 is invalid.

27-10

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

Operation/Procedure

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

- **Color model**

Serial communication retry number history
High density process control error history
Half tone process control error history
Automatic registration adjustment error history
Scanner gain adjustment retry history
DSPF gain adjustment retry history
Paper transport time between sensors

- **Mono color model**

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
Paper transport time between sensors

27-11

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

Operation/Procedure

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

Display Item			Content
Item name	Occurrence date (Display)	Retry number	
LSU1	99/99/99 9:99:99	8 digits	Serial communication retry number history
LSU2	99/99/99 9:99:99	8 digits	
DESK1	99/99/99 9:99:99	8 digits	
DESK2	99/99/99 9:99:99	8 digits	
FINISHER1	99/99/99 9:99:99	8 digits	
FINISHER2	99/99/99 9:99:99	8 digits	
DSPF1	99/99/99 9:99:99	8 digits	
DSPF2	99/99/99 9:99:99	8 digits	
SCAN GAIN ADJ1	99/99/99 9:99:99	8 digits	Scanner gain adjustment retry history
SCAN GAIN ADJ2	99/99/99 9:99:99	8 digits	
SCAN GAIN ADJ3	99/99/99 9:99:99	8 digits	
SCAN GAIN ADJ4	99/99/99 9:99:99	8 digits	
SCAN GAIN ADJ5	99/99/99 9:99:99	8 digits	
DSPF GAIN ADJ1	99/99/99 9:99:99	8 digits	DSPF gain adjustment retry history
DSPF GAIN ADJ2	99/99/99 9:99:99	8 digits	
DSPF GAIN ADJ3	99/99/99 9:99:99	8 digits	
DSPF GAIN ADJ4	99/99/99 9:99:99	8 digits	
DSPF GAIN ADJ5	99/99/99 9:99:99	8 digits	

27-12

Purpose	Others
Function (Purpose)	Used to check the high-density, half-tone process control and the automatic registration adjustment error history. (FSS Function)
Section	

Operation/Procedure

The high density, the half tone, and the automatic registration adjustment error history are displayed.

- **Color model**

HV_ERR1	High density error history 1
HV_ERR2	High density error history 2
HV_ERR3	High density error history 3
HV_ERR4	High density error history 4
HV_ERR5	High density error history 5
H_TONE ERR1	Half tone error history 1
H_TONE ERR2	Half tone error history 2
H_TONE ERR3	Half tone error history 3
H_TONE ERR4	Half tone error history 4
H_TONE ERR5	Half tone error history 5
AUTO REG ADJ1	Automatic registration adjustment error history 1
AUTO REG ADJ2	Automatic registration adjustment error history 2
AUTO REG ADJ3	Automatic registration adjustment error history 3
AUTO REG ADJ4	Automatic registration adjustment error history 4
AUTO REG ADJ5	Automatic registration adjustment error history 5

- **Mono color model**

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	Others
Function (Purpose)	Used to check the history of paper transport time between sensors. (FSS function)
Section	

Operation/Procedure

Change the display with [↑] [↓] key.

	Item/Display	Content	Occurrence date	Code between sensors	Passing time	Reference passing time
Main unit	FEED TIME1	History of paper transport time between sensors 1	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME2	History of paper transport time between sensors 2	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME3	History of paper transport time between sensors 3	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME4	History of paper transport time between sensors 4	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME5	History of paper transport time between sensors 5	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME6	History of paper transport time between sensors 6	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME7	History of paper transport time between sensors 7	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME8	History of paper transport time between sensors 8	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME9	History of paper transport time between sensors 9	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME10	History of paper transport time between sensors 10	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)

	Item/Display	Content	Occurrence date	Code between sensors	Passing time	Reference passing time
DSPF	FEED TIME1(SPF)	History of paper transport time between SPF sensors 1	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME2(SPF)	History of paper transport time between SPF sensors 2	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME3(SPF)	History of paper transport time between SPF sensors 3	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME4(SPF)	History of paper transport time between SPF sensors 4	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME5(SPF)	History of paper transport time between SPF sensors 5	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME6(SPF)	History of paper transport time between SPF sensors 6	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME7(SPF)	History of paper transport time between SPF sensors 7	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME8(SPF)	History of paper transport time between SPF sensors 8	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME9(SPF)	History of paper transport time between SPF sensors 9	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME10(SPF)	History of paper transport time between SPF sensors 10	99/99/99 99:99:99	5 digits	5 digits (ms)	5 digits (ms)

27-14

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

Operation/Procedure

1) Enter the set value with 10-key.

0	Disable (Default)
1	Enable

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

30

30-1

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the sensors and the detectors in other than the paper feed section and the control circuits.
Section	

Operation/Procedure

The operating conditions of the sensors and detectors are displayed.

The sensors and the detectors which are turned ON are highlighted.

- **Color model**

PPD1	Registration pre-detection
PPD2	Registration detection
POD1	Detects the paper exit from fusing.
POD2	Main unit paper exit detection
TFD2	Paper exit tray full detection
DSW_R	Right door open/close detection
DSW_F	Front cover open/close detection
DHPD_K	OPC drum phase detection (K)
DHPD_CL	OPC drum phase detection (Color)
1TNFD	Waste toner full detection
HLPCD	Fusing roller pressure release detection
1TUD_CL	Primary transfer belt separation detection (Color)
1TUD_K	Primary transfer belt separation detection (K)
DRSET	Drum detection
DRCRU_K	Drum K initial detection
DRCRU_C	Drum C initial detection
DRCRU_M	Drum M initial detection
DRCRU_Y	Drum Y initial detection
DVCRU_K	Developer K initial detection
DVCRU_C	Developer C initial detection
DVCRU_M	Developer M initial detection
DVCRU_Y	Developer Y initial detection
FUCRU	Fusing initial detection
2TCCRU	Secondary transfer initial detection

- **Mono color model**

PPD1	Registration pre-detection
PPD2	Registration detection
POD1	Detects the paper exit from fusing.
POD2	Main unit paper exit detection
TFD2	Paper exit tray full detection
DSW_R	Right door open/close detection
DSW_F	Front cover open/close detection
1TNFD	Waste toner full detection
FUSET	Fusing installation detection
1TUD_CL	Primary transfer belt separation detection
1TUD_K	Primary transfer unit initial detection
DRSET	Drum detection
DRCRU_K	Drum K initial detection
DVCRU_K	Developer K initial detection
FUCRU	Fusing initial detection
2TCCRU	Secondary transfer initial detection

30-2

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the sensors and the detectors in the paper feed section and the control circuits.
Section	

Operation/Procedure

The operating conditions of the sensors and detectors are displayed.

The sensors and the detectors which are turned ON are highlighted.

CPFD1	Paper feed tray 1 paper transport detection
CLUD1	Paper feed tray 1 upper limit detection
CPED1	Paper feed tray 1 paper empty detection
CSPD1	Paper feed tray 1 paper remaining quantity detection
CSS1	Paper feed tray 1 paper size detection 1
CSS2	Paper feed tray 1 paper size detection 2
CSS3	Paper feed tray 1 paper size detection 3
MPLD	Manual paper feed tray paper length detection
MPED	Manual paper feed tray paper empty detection

33

33-2

Purpose	Data clear
Function (Purpose)	Used to delete the ID (IDM) information of Felica card.
Section	

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key.
   The ID (IDM) information of Felica card in the HDD is deleted.

40

40-2

Purpose	Adjustment/Setup
Function (Purpose)	Manual paper feed tray paper width sensor adjustment.
Section	Paper feed

Operation/Procedure

1) Open the manual paper feed guide to the max. width (MAX).
2) Press [EXECUTE] key.
   The max. width (MAX) detection level is recognized.
3) Open the manual paper feed guide to P1 width (A4R).
4) Press [EXECUTE] key.
   The P1 width (A4R) detection level is recognized.
5) Open the manual paper feed guide to P2 width (A5R).
6) Press [EXECUTE] key.
   The P2 width (A5R) 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 paper feed guide maximum width position
P1 (A4R) POSITION	Manual paper feed guide P1 width position (A4R)
P2 (A5R) POSITION	Manual paper feed guide P2 width position (A5R)
MIN POSITION	Manual paper feed guide minimum width position

Display	Content
COMPLETE	Adjustment completed
ERROR	Adjustment error

40-7

Purpose	Adjustment/Setup
Function (Purpose)	Used to set the adjustment value of the manual paper feed tray paper width sensor.
Section	Paper feed

Operation/Procedure

1) Select a target item to be adjusted with [↑] [↓] buttons.
2) Enter the set value with 10-key.
3) Press [OK] key.
   The set value in step 2) is saved.

Item			Default value
A	MAX POSITION	Manual paper feed guide maximum width position	193
B	P1 POSITION	Manual paper feed guide P1 width position (A4R)	187
C	P2 POSITION	Manual paper feed guide P2 width position (A5R)	133
D	MIN POSITION	Manual paper feed guide minimum width position	84

43

43-1

Purpose	Setting
Function (Purpose)	Used to set the fusing reference temperature of each operation mode.
Section	

Operation/Procedure

1) Select an item to be set with [↑] [↓] keys.
2) Enter the set value with 10-key.
3) Press [OK] key.
   The set value in step 2) is saved.

NOTE: The set value is the reference value, and it may differ from the actual fusing temperature depending on the operating conditions.

• **Color model**

Item/Display		Content	Setting range	Group A		Group B		Group C	
				SW-A	SW-B	SW-A	SW-B	SW-A	SW-B
A	HL_UM READY	Ready standby TH_UM set value	70 - 230	175	190	185	190	185	190
B	HL_LM READY	Ready standby TH_LM set value	30 - 200	120	135	130	135	130	135
C	HL_E READY	Ready standby TH_E set value	70 - 230	175	190	185	190	185	190
D	HL_UM PLAIN PAPER BW	Black-White plain paper TH_UM set value	70 - 230	180	195	190	195	190	195
E	HL_LM PLAIN PAPER BW	Black-White plain paper TH_LM set value	30 - 200	125	140	135	140	135	140
F	HL_E PLAIN PAPER BW	Black-White plain paper TH_E set value	70 - 230	220					
G	HL_UM PLAIN PAPER CL	Color plain paper TH_UM set value	70 - 230	180	195	190	195	190	195
H	HL_LM PLAIN PAPER CL	Color plain paper TH_LM set value	30 - 200	130	145	140	145	140	145
I	HL_E PLAIN PAPER CL	Color plain paper TH_E set value	70 - 230	220					
J	WARMUP FUMON HL_E T	Fusing motor pre-rotation start TH_UM set value	30 - 200	150					
K	WARMUP FUMOFF	Fusing motor pre-rotation end TH_LM set value	0 - 255	30					
L	WARM UP END TIME	Warm-up complete time (warm-up time (sec))	30 - 255	83	110	83	110	83	110
M	HL_UM HEAVY PAPER	Heavy paper TH_UM set value	70 - 230	185					
N	HL_LM HEAVY PAPER	Heavy paper TH_LM set value	30 - 200	140					
O	HL_E HEAVY PAPER	Heavy paper TH_E set value	70 - 230	220					
P	HL_UM OHP PAPER	OHP-TH_UM set value	70 - 230	180					
Q	HL_LM OHP PAPER	OHP-TH_LM set value	30 - 200	140					
R	HL_E OHP PAPER	OHP-TH_E set value	70 - 230	220					
S	HL_UM ENV PAPER	Envelope TH_UM set value	70 - 230	200					
T	HL_LM ENV PAPER	Envelope TH_LM set value	30 - 200	140					
U	HL_E ENV PAPER	Envelope TH_E set value	70 - 230	220					
V	HL_UM GLOSS PAPER	Glossy paper TH_UM set value	70 - 230	185					
W	HL_LM GLOSS PAPER	Glossy paper TH_LM set value	30 - 200	140					
X	HL_E GLOSS PAPER	Glossy paper TH_E set value	70 - 230	220					
Y	HL_UM E-STAR	Preheating TH_UM set value	30 - 200	165					
Z	HL_E E-STAR	Preheating TH_E set value	30 - 200	165					
AA	HL_UM PRE-JOB	Resetting from preheating TH_UM set value (Job Ready temperature)	30 - 200	170					
AB	HL_LM E-STAR	Preheating TH_LM set value	30 - 200	115					
AC	HL_UM WARMUP_120L	Warm-up TH_UM set value (when the fusing temperature is 120°C or less)	70 - 230	175	190	185	190	185	190
AD	HL_LM WARMUP_120L	Warm-up TH_LM set value (when the fusing temperature is 120°C or less)	30 - 200	120	135	130	135	130	135
AE	HL_E WARMUP_120L	Warm-up TH_E set value (when the fusing temperature is 120°C or less)	70 - 230	225					
AF	LO_WARMUP_TIME	AC - AE applying time (Time (sec) for shifting from the control temperature in warm-up to the normal control temperature)	0 - 255	5					
AG	HL_UM WARMUP_120H	Warm-up TH_UM set value (when the fusing temperature is 120°C or above)	70 - 230	175	190	185	190	185	190
AH	HL_LM WARMUP_120H	Warm-up TH_LM set value (when the fusing temperature is 120°C or above)	30 - 200	120	135	130	135	130	135
AI	HL_E WARMUP_120H	Warm-up TH_E set value (when the fusing temperature is 120°C or above)	70 - 230	220	225	225	225	225	225
AJ	HI_WARMUP_TIME	AG - AI applying time (Timer from completion of Ready)	0 - 255	5					
AK	HI_WU_FM_ON_TMP	Fusing roller rotation start TH_E (when the fusing temperature in warm-up is alpha °C or above)	30 - 200	130					
AL	HI_WU_END_TIME	Warm-up complete time (sec) (when the fusing temperature in warm-up is alpha °C or above)	0 - 255	40					
AM	HI_WU_JOB_SET_TMP	Job Ready TH_UM temperature (when the fusing temperature in warm-up is alpha °C or above)	70 - 230	170	185	180	185	170	185
AN	HI_WARMUP_BORDER	Threshold value applied to Sim43-1-AM - AK	1 - 119	70					
AO	LO_WU_JOB_SET_TMP	Warm-up complete time (sec) (When the fusing temperature in warming up is alpha °C or below.)	70 - 230	175	195	185	195	180	195
AP	JOBEND_FUMON_TIME	Fusing roller rotation time (sec) after completion of a job	0 - 255	15					

<Code descriptions>

TH_UM	Fusing upper thermistor (center)	HL_UM	Heater lamp upper
TH_LM	Fusing lower thermistor	HL_LM	Heater lamp lower
TH_E	Fusing thermistor (external heat roller)	HL_E	Heater lamp (external heat roller)

Group	Destination			
Group A	Japan	China	AB_B	–
Group B	U.S.A.	Canada	Inch	–
Group C	Europe	U.K.	AUS	AB_A

Destination link item (When the destination setting is changed with SIM26-6, the set value is changed linking with the destination.)

SW-A Setting value when plain paper is selected in the system setting/device setting/fusing control setting.

SW-B Set value when heavy paper is selected in the system setting/device setting/fusing control setting.

The set value displayed in this simulation differs depending on plain paper or heavy paper which is selected in the system setting/ device setting/fusing control setting.

(Example) When plain paper is selected in the system setting/device setting/fusing control setting, the value of SW-A is displayed.

NOTE: When the destination is changed with SIM26-6 after changing this set value, the set values of the destination link items are reset to the default.

- **Mono color model**

Item/Display		Content	Setting range	Group A		Group B		Group C	
				SW-A	SW-B	SW-A	SW-B	SW-A	SW-B
A	HL_UM READY	Ready standby TH_UM set value	70 - 230	170	175	190		190	
B	HL_LM READY	Ready standby TH_LM set value	30 - 200	120	135	130	135	130	135
C	HL_US READY	Ready standby TH_US set value	70 - 230	170	175	190		190	
D	HL_UM PLAIN PAPER BW	Black-White plain paper TH_UM set value	70 - 230	170	175	190		190	
E	HL_LM PLAIN PAPER BW	Black-White plain paper TH_LM set value	30 - 200	125	140	135	140	135	140
F	HL_US PLAIN PAPER BW	Black-White plain paper TH_US set value	70 - 230	170	175	190		190	
G	WARMUP FUMON HL_UM T	Fusing motor pre-rotation start TH_UM set value	30 - 200	150					
H	WARMUP FUMOFF	Fusing motor pre-rotation end time	0 - 255	30					
I	WARM UP END TIME	Warm-up complete time (warm-up time (sec))	30 - 255	83	110	83	110	83	110
J	HL_UM HEAVY PAPER	Heavy paper TH_UM set value	70 - 230	165					
K	HL_LM HEAVY PAPER	Heavy paper TH_LM set value	30 - 200	140					
L	HL_US HEAVY PAPER	Heavy paper TH_US set value	70 - 230	165					
M	HL_UM OHP PAPER	OHP-TH_UM set value	70 - 230	150					
N	HL_LM OHP PAPER	OHP-TH_LM set value	30 - 200	140					
O	HL_US OHP PAPER	OHP-TH_US set value	70 - 230	150					
P	HL_UM ENV PAPER	Envelope TH_UM set value	70 - 230	200					
Q	HL_LM ENV PAPER	Envelope TH_LM set value	30 - 200	140					
R	HL_US ENV PAPER	Envelope TH_US set value	70 - 230	200					
S	HL_UM GLOSS PAPER	Glossy paper TH_UM set value	70 - 230	190					
T	HL_LM GLOSS PAPER	Glossy paper TH_LM set value	30 - 200	140					
U	HL_US GLOSS PAPER	Glossy paper TH_US set value	70 - 230	190					
V	HL_UM E-STAR	Preheating TH_UM set value	30 - 200	120					
W	HL_US E-STAR	Preheating TH_US set value	30 - 200	120					
X	HL_UM PRE-JOB	Resetting from preheating TH_UM set value (Job Ready temperature)	30 - 200	170					
Y	HL_LM E-STAR	Preheating TH_LM set value	30 - 200	115					
Z	HL_UM WARMUP_120L	Warm-up TH_UM set value (when the fusing temperature is 120°C or less)	70 - 230	170	175	190		190	
AA	HL_LM WARMUP_120L	Warm-up TH_LM set value (when the fusing temperature is 120°C or less)	30 - 200	120	135	130	135	130	135
AB	HL_US WARMUP_120L	Warm-up TH_US set value (when the fusing temperature is 120°C or less)	70 - 230	170	175	190		190	
AC	LO_WARMUP_TIME	Z - AB applying time (Timer from completion of Ready)	0 - 255	5					
AD	HL_UM WARMUP_120H	Warm-up TH_UM set value (when the fusing temperature is 120°C or above)	70 - 230	165	170	190		190	
AE	HL_LM WARMUP_120H	Warm-up TH_LM set value (when the fusing temperature is 120°C or above)	30 - 200	120	135	130	135	130	135
AF	HL_US WARMUP_120H	Warm-up TH_US set value (when the fusing temperature is 120°C or above)	70 - 230	165	170	190		190	
AG	HI_WARMUP_TIME	AD - AF applying time (Timer from completion of Ready)	0 - 255	5					
AH	HI_WU_FM_ON_TMP	Fusing roller rotation start TH_UM (when the fusing temperature in warm-up is alpha °C or above)	30 - 200	150					
AI	HI_WU_END_TIME	Warm-up complete time (sec) (when the fusing temperature in warm-up is alpha °C or above)	0 - 255	40					
AJ	HI_WU_JOB_SET_TMP	Job Ready TH_UM temperature (when the fusing temperature in warm-up is alpha °C or above)	70 - 230	170	175	190		190	
AK	HI_WARMUP_BORDER	Threshold value applied to Sim43-1-AH - AJ	1 - 119	70					
AL	LO_WU_JOB_SET_TMP	Warm-up complete time (sec) (When the fusing temperature in warming up is alpha °C or below.)	70 - 230	170	175	190		190	
AM	JOBEND_FUMON_TIME	Fusing roller rotation time (sec) after completion of a job	0 - 255	2					

<Code descriptions>

TH_UM	Fusing upper thermistor main	HL_UM	Heater lamp upper main
TH_LM	Fusing lower thermistor main	HL_LM	Heater lamp lower main
TH_US	Fusing upper thermistor sub	HL_US	Heater lamp upper sub

Group	Destination			
Group A	Japan	China	AB_B	–
Group B	U.S.A.	Canada	Inch	–
Group C	Europe	U.K.	AUS	AB_A

43-4

Purpose	Setting
Function (Purpose)	Used to set the fusing temperature 2 in each mode. (Continued from SIM 43-1.)
Section	

Operation/Procedure

1) Select an item to be set with [↑] [↓] keys.
2) Enter the set value with 10-key.
3) Press [OK] key.
   The set value in step 2) is saved.

NOTE: The set value is the reference value, and it may differ from the actual fusing temperature depending on the operating conditions.

- **Color model**

Item/Display		Content	Setting range	Default value					
				Group A		Group B		Group C	
				SW-A	SW-B	SW-A	SW-B	SW-A	SW-B
A	HL_UM PLAIN PAPER BW DUP	Black-White plain paper duplex TH_UM set value	70 - 230	175	190	185	190	185	190
B	HL_LM PLAIN PAPER BW DUP	Black-White plain paper duplex TH_LM set value	30 - 200	110	125	120	125	120	125
C	HL_E PLAIN PAPER BW DUP	Black-White plain paper duplex TH_E set value	70 - 230	220	220	220	220	220	220
D	PLAIN PAPER BW DUP APP CNT	Black-White plain paper duplex fusing temperature application start image screen number	0 - 60	0	0	0	0	0	0
E	HL_UM PLAIN PAPER CL DUP	Color plain paper duplex TH_UM set value	70 - 230	175	190	185	190	185	190
F	HL_LM PLAIN PAPER CL DUP	Color plain paper duplex TH_LM set value	30 - 200	110	125	120	125	120	125
G	HL_E PLAIN PAPER CL DUP	Color plain paper duplex TH_E set value	70 - 230	220					
H	PLAIN PAPER CL DUP APP CNT	Color plain paper duplex fusing temperature application start image screen number	0 - 60	0					
I	HL_UM HEAVY PAPER BW DUP	Black-White heavy paper duplex TH_UM set value	70 - 230	185					
J	HL_LM HEAVY PAPER BW DUP	Black-White heavy paper duplex TH_LM set value	30 - 200	120					
K	HL_E HEAVY PAPER BW DUP	Black-White heavy paper duplex TH_E set value	70 - 230	220					
L	HEAVY PAPER BW DUP APP CNT	Black-White heavy paper duplex fusing temperature application start image screen number	0 - 60	1					
M	HL_UM HEAVY PAPER CL DUP	Color heavy paper duplex TH_UM set value	70 - 230	185					
N	HL_LM HEAVY PAPER CL DUP	Color heavy paper duplex TH_LM set value	30 - 200	120					
O	HL_E HEAVY PAPER CL DUP	Color heavy paper duplex TH_E set value	70 - 230	220					
P	HEAVY PAPER CL DUP APP CNT	Color heavy paper duplex fusing temperature application start image screen number	0 - 60	1					

<Code descriptions>

TH_UM	Fusing upper thermistor (center)	HL_UM	Heater lamp upper
TH_LM	Fusing lower thermistor	HL_LM	Heater lamp lower
TH_E	Fusing thermistor (external heat roller)	HL_E	Heater lamp (external heat roller)

Group	Destination			
Group A	Japan	China	AB_B	–
Group B	U.S.A.	Canada	Inch	–
Group C	Europe	U.K.	AUS	AB_A

- **Mono color model**

Item/Display		Content	Setting range	Group A		Group B		Group C	
				SW-A	SW-B	SW-A	SW-B	SW-A	SW-B
A	HL_UM PLAIN PAPER BW DUP	Plain paper duplex TH_UM set value	70 - 230	170	175	190		190	
B	HL_LM PLAIN PAPER BW DUP	Plain paper duplex TH_LM set value	30 - 200	110	125	120	125	120	125
C	HL_US PLAIN PAPER BW DUP	Plain paper duplex TH_US set value	70 - 230	170	175	190		190	
D	PLAIN PAPER BW DUP APP CNT	Plain paper duplex fusing temperature application start image screen number	0 - 60	0					
E	HL_UM HEAVY PAPER BW DUP	Heavy paper duplex TH_UM set value	70 - 230	165					
F	HL_LM HEAVY PAPER BW DUP	Heavy paper duplex TH_LM set value	30 - 200	120					
G	HL_US HEAVY PAPER BW DUP	Heavy paper duplex TH_US set value	70 - 230	165					
H	HEAVY PAPER BW DUP APP CNT	Heavy paper duplex fusing temperature application start image screen number	0 - 60	1					

<Code descriptions>

TH_UM	Fusing upper thermistor main	HL_UM	Heater lamp upper main
TH_LM	Fusing lower thermistor main	HL_LM	Heater lamp lower main
TH_US	Fusing upper thermistor sub	HL_US	Heater lamp upper sub

Group	Destination			
Group A	Japan	China	AB_B	–
Group B	U.S.A.	Canada	Inch	–
Group C	Europe	U.K.	AUS	AB_A

43-20

Purpose	Adjustment/Setup
Function (Purpose)	Used to set the environmental correction under low temperature and low humidity (L/L) for the fusing temperature setting (SIM 43-1) in each paper mode.
Section	

Operation/Procedure

1) Select an item to be set with [↑] [↓] keys.
2) Enter the set value with 10-key.
3) Press [OK] key.
   The set value in step 2) is saved.

Correction value: -49 - +49, 1 Count = 1°C Change

Correction value	-49	-25	-5	0	5	25	49
Input value	1	25	45	50	55	75	99

• **Color model**

Item/Display		Content	Setting range	Group A	Group B	Group C
A	HL_UM READY LL	Ready standby TH_UM set value	1 - 99	55		
B	HL_LM READY LL	Ready standby TH_LM set value	1 - 99	55		
C	HL_E READY LL	Ready standby TH_E set value	1 - 99	55		
D	HL_UM PLAIN PAPER BW LL	Black-White plain paper TH_UM set value	1 - 99	55		
E	HL_LM PLAIN PAPER BW LL	Black-White plain paper TH_LM set value	1 - 99	55		
F	HL_E PLAIN PAPER BW LL	Black-White plain paper TH_E set value	1 - 99	55		
G	HL_UM PLAIN PAPER CL LL	Color plain paper TH_UM set value	1 - 99	55		
H	HL_LM PLAIN PAPER CL LL	Color plain paper TH_LM set value	1 - 99	55		
I	HL_E PLAIN PAPER CL LL	Color plain paper TH_E set value	1 - 99	55		
J	WARMUP FUMON HL_E T LL	Fusing motor pre-rotation start TH_UM set value	1 - 99	45		
K	WARMUP FUMOFF LL	Fusing motor pre-rotation end TH_LM set value	1 - 99	50		
L (*1)	WARMUP END TIME LL	Warm-up complete time (warm-up time (sec))	1 - 99	80		
M	HL_UM HEAVY PAPER LL	Heavy paper TH_UM set value	1 - 99	55		
N	HL_LM HEAVY PAPER LL	Heavy paper TH_LM set value	1 - 99	55		
O	HL_E HEAVY PAPER LL	Heavy paper TH_E set value	1 - 99	50		
P	HL_UM OHP PAPER LL	OHP-TH_UM set value	1 - 99	55		
Q	HL_LM OHP PAPER LL	OHP-TH_LM set value	1 - 99	55		
R	HL_E OHP PAPER LL	OHP-TH_E set value	1 - 99	50		
S	HL_UM ENV PAPER LL	Envelope TH_UM set value	1 - 99	55		
T	HL_LM ENV PAPER LL	Envelope TH_LM set value	1 - 99	55		
U	HL_E ENV PAPER LL	Envelope TH_E set value	1 - 99	50		
V	HL_UM GLOSS PAPER LL	Glossy paper TH_UM set value	1 - 99	55		
W	HL_LM GLOSS PAPER LL	Glossy paper TH_LM set value	1 - 99	55		
X	HL_E GLOSS PAPER LL	Glossy paper TH_E set value	1 - 99	50		
Y	HL_UM E-STAR LL	Preheating TH_UM set value	1 - 99	55		
Z	HL_E E-STAR LL	Preheating TH_E set value	1 - 99	55		
AA	HL_UM PRE-JOB LL	Resetting from preheating TH_UM set value (Job Ready temperature)	1 - 99	55		
AB	HL_LM E-STAR LL	Preheating TH_LM set value	1 - 99	55		
AC	HL_UM WARMUP_120L LL	Warm-up TH_UM set value (when the fusing temperature is 120°C or less)	1 - 99	55		
AD	HL_LM WARMUP_120L LL	Warm-up TH_LM set value (when the fusing temperature is 120°C or less)	1 - 99	55		
AE	HL_E WARMUP_120L LL	Warm-up TH_E set value (when the fusing temperature is 120°C or less)	1 - 99	50		
AF	LO_WARMUP_TIME LL	AC - AE applying time (Time (sec) for shifting from the control temperature in warm-up to the normal control temperature)	1 - 99	50		
AG	HL_UM WARMUP_120H LL	Warm-up TH_UM set value (when the fusing temperature is 120°C or above)	1 - 99	55		
AH	HL_LM WARMUP_120H LL	Warm-up TH_LM set value (when the fusing temperature is 120°C or above)	1 - 99	55		
AI	HL_E WARMUP_120H LL	Warm-up TH_E set value (when the fusing temperature is 120°C or above)	1 - 99	50		
AJ	HI_WARMUP_TIME LL	AG - AI applying time (Timer from completion of Ready)	1 - 99	50		
AK	HI_WU_FM_ON_TMP LL	Fusing roller rotation start TH_E (when the fusing temperature in warm-up is alpha °C or above)	1 - 99	45		

Item/Display		Content	Setting range	Group A	Group B	Group C
AL (*1)	HI_WU_END_TIME LL	Warm-up complete time (sec) (when the fusing temperature in warm-up is alpha °C or above)	1 - 99		50	
AM	HI_WU_JOB_SET_TMP LL	Job Ready TH_UM temperature (when the fusing temperature in warm-up is alpha °C or above)	1 - 99		55	
AN	HI_WARMUP_BORDER LL	Threshold value applied to Sim43-1-AM - AK	1 - 99		50	
AO (*1)	LO_WU_JOB_SET_TMP LL	Warm-up complete time (sec) (when the fusing temperature in warming up is alpha °C or below.)	1 - 99		55	
AP (*1)	JOBEND_FUMON_TIME LL	Fusing roller rotation time (sec) after completion of a job	1 - 99		50	

*1: 1 Count = 1sec Change

<Code descriptions>

TH_UM	Fusing upper thermistor (center)	HL_UM	Heater lamp upper
TH_LM	Fusing lower thermistor	HL_LM	Heater lamp lower
TH_E	Fusing thermistor (external heat roller)	HL_E	Heater lamp (external heat roller)

Group	Destination			
Group A	Japan	China	AB_B	–
Group B	U.S.A.	Canada	Inch	–
Group C	Europe	U.K.	AUS	AB_A

- **Mono color model**

Item/Display		Content	Setting range	Group A	Group B	Group C
A	HL_UM READY LL	Ready standby TH_UM set value	1 - 99		55	
B	HL_LM READY LL	Ready standby TH_LM set value	1 - 99		55	
C	HL_US READY LL	Ready standby TH_US set value	1 - 99		55	
D	HL_UM PLAIN PAPER BW LL	Plain paper TH_UM set value	1 - 99		55	
E	HL_LM PLAIN PAPER BW LL	Plain paper TH_LM set value	1 - 99		55	
F	HL_US PLAIN PAPER BW LL	Plain paper TH_US set value	1 - 99		55	
G	WARMUP FUMON HL_UM T LL	Fusing motor pre-rotation start TH_UM set value	1 - 99		45	
H	WARMUP FUMOFF LL	Fusing motor pre-rotation end time	1-99		50	
I (*1)	WARMUP END TIME LL	Warm-up complete time (warm-up time (sec))	1 - 99		80	
J	HL_UM HEAVY PAPER LL	Heavy paper TH_UM set value	1 - 99		55	
K	HL_LM HEAVY PAPER LL	Heavy paper TH_LM set value	1 - 99		55	
L	HL_US HEAVY PAPER LL	Heavy paper TH_US set value	1 - 99		50	
M	HL_UM OHP PAPER LL	OHP-TH_UM set value	1 - 99		55	
N	HL_LM OHP PAPER LL	OHP-TH_LM set value	1 - 99		55	
O	HL_US OHP PAPER LL	OHP-TH_US set value	1 - 99		50	
P	HL_UM ENV PAPER LL	Envelope TH_UM set value	1 - 99		55	
Q	HL_LM ENV PAPER LL	Envelope TH_LM set value	1 - 99		55	
R	HL_US ENV PAPER LL	Envelope TH_US set value	1 - 99		50	
S	HL_UM GLOSS PAPER LL	Glossy paper TH_UM set value	1 - 99		55	
T	HL_LM GLOSS PAPER LL	Glossy paper TH_LM set value	1 - 99		55	
U	HL_US GLOSS PAPER LL	Glossy paper TH_US set value	1 - 99		55	
V	HL_UM E-STAR LL	Preheating TH_UM set value	1 - 99		55	
W	HL_US E-STAR LL	Preheating TH_US set value	1 - 99		55	
X	HL_UM PRE-JOB LL	Resetting from preheating TH_UM set value (Job Ready temperature)	1 - 99		55	
Y	HL_LM E-STAR LL	Preheating TH_LM set value	1 - 99		55	
Z	HL_UM WARMUP_120L LL	Warm-up TH_UM set value (when the fusing temperature is 120°C or less)	1 - 99		55	
AA	HL_LM WARMUP_120L LL	Warm-up TH_LM set value (when the fusing temperature is 120°C or less)	1 - 99		55	
AB	HL_US WARMUP_120L LL	Warm-up TH_US set value (when the fusing temperature is 120°C or less)	1 - 99		50	
AC	LO_WARMUP_TIME LL	Z - AB applying time (Time (sec) for shifting from the control temperature in warm-up to the normal control temperature)	1 - 99		50	
AD	HL_UM WARMUP_120H LL	Warm-up TH_UM set value (when the fusing temperature is 120°C or above)	1 - 99		55	
AE	HL_LM WARMUP_120H LL	Warm-up TH_LM set value (when the fusing temperature is 120°C or above)	1 - 99		55	
AF	HL_US WARMUP_120H LL	Warm-up TH_US set value (when the fusing temperature is 120°C or above)	1 - 99		50	
AG	HI_WARMUP_TIME LL	AD - AF applying time (Timer from completion of Ready)	1 - 99		50	
AH	HI_WU_FM_ON_TMP LL	Fusing roller rotation start TH_UM (when the fusing temperature in warm-up is alpha °C or above)	1 - 99		45	
AI (*1)	HI_WU_END_TIME LL	Warm-up complete time (sec) (when the fusing temperature in warm-up is alpha °C or above)	1 - 99		50	
AJ	HI_WU_JOB_SET_TMP LL	Job Ready TH_UM temperature (when the fusing temperature in warm-up is alpha °C or above)	1 - 99		55	
AK	HI_WARMUP_BORDER LL	Threshold value applied to Sim43-1-AH - AJ	1 - 99		50	
AL	LO_WU_JOB_SET_TMP LL	TH_UM temperature to enable a job during warming up (when the fusing temperature in warming up is alpha °C or below.)	1 - 99		55	
AM (*1)	JOBEND_FUMON_TIME LL	Fusing roller rotation time (sec) after completion of a job	1 - 99		50	

<Code descriptions>

TH_UM	Fusing upper thermistor main	HL_UM	Heater lamp upper main
TH_LM	Fusing lower thermistor main	HL_LM	Heater lamp lower main
TH_US	Fusing upper thermistor sub	HL_US	Heater lamp upper sub

Group	Destination			
Group A	Japan	China	AB_B	–
Group B	U.S.A.	Canada	Inch	–
Group C	Europe	U.K.	AUS	AB_A

43-21

Purpose	Adjustment/Setup
Function (Purpose)	Used to set the environment correction under high temperature and high humidity (H/H) for the fusing temperature setting (SIM 43-1) in each paper mode.
Section	

Operation/Procedure

1) Select an item to be set with [↑] [↓] keys.
2) Enter the set value with 10-key.
3) Press [OK] key.
   The set value in step 2 is saved.

Correction value: -49 - +49, 1 Count = 1°C Change

Correction value	-49	-25	-5	0	5	25	49
Input value	1	25	45	50	55	75	99

• **Color model**

Item/Display		Content	Setting range	Group A	Group B	Group C
A	HL_UM READY HH	Ready standby TH_UM set value	1 - 99	50		
B	HL_LM READY HH	Ready standby TH_LM set value	1 - 99	50		
C	HL_E READY HH	Ready standby TH_E set value	1 - 99	50		
D	HL_UM PLAIN PAPER BW HH	Black-White plain paper TH_UM set value	1 - 99	50		
E	HL_LM PLAIN PAPER BW HH	Black-White plain paper TH_LM set value	1 - 99	50		
F	HL_E PLAIN PAPER BW HH	Black-White plain paper TH_E set value	1 - 99	50		
G	HL_UM PLAIN PAPER CL HH	Color plain paper TH_UM set value	1 - 99	50		
H	HL_LM PLAIN PAPER CL HH	Color plain paper TH_LM set value	1 - 99	50		
I	HL_E PLAIN PAPER CL HH	Color plain paper TH_E set value	1 - 99	50		
J	WARMUP FUMON HL_E T HH	Fusing motor pre-rotation start TH_UM set value	1 - 99	50		
K	WARMUP FUMOFF HH	Fusing motor pre-rotation end TH_LM set value	1 - 99	50		
L (*1)	WARMUP END TIME HH	Warm-up complete time (warm-up time (sec))	1 - 99	50		
M	HL_UM HEAVY PAPER HH	Heavy paper TH_UM set value	1 - 99	50		
N	HL_LM HEAVY PAPER HH	Heavy paper TH_LM set value	1 - 99	50		
O	HL_E HEAVY PAPER HH	Heavy paper TH_E set value	1 - 99	50		
P	HL_UM OHP PAPER HH	OHP-TH_UM set value	1 - 99	50		
Q	HL_LM OHP PAPER HH	OHP-TH_LM set value	1 - 99	50		
R	HL_E OHP PAPER HH	OHP-TH_E set value	1 - 99	50		
S	HL_UM ENV PAPER HH	Envelope TH_UM set value	1 - 99	50		
T	HL_LM ENV PAPER HH	Envelope TH_LM set value	1 - 99	50		
U	HL_E ENV PAPER HH	Envelope TH_E set value	1 - 99	50		
V	HL_UM GLOSS PAPER HH	Glossy paper TH_UM set value	1 - 99	50		
W	HL_LM GLOSS PAPER HH	Glossy paper TH_LM set value	1 - 99	50		
X	HL_E GLOSS PAPER HH	Glossy paper TH_E set value	1 - 99	50		
Y	HL_UM E-STAR HH	Preheating TH_UM set value	1 - 99	50		
Z	HL_E E-STAR HH	Preheating TH_E set value	1 - 99	50		
AA	HL_UM PRE-JOB HH	Resetting from preheating TH_UM set value (Job Ready temperature)	1 - 99	50		
AB	HL_LM E-STAR HH	Preheating TH_LM set value	1 - 99	50		
AC	HL_UM WARMUP_120L HH	Warm-up TH_UM set value (when the fusing temperature is 120°C or less)	1 - 99	50		
AD	HL_LM WARMUP_120L HH	Warm-up TH_LM set value (when the fusing temperature is 120°C or less)	1 - 99	50		
AE	HL_E WARMUP_120L HH	Warm-up TH_E set value (when the fusing temperature is 120°C or less)	1 - 99	50		
AF (*1)	LO_WARMUP_TIME HH	AC - AE applying time (Time (sec) for shifting from the control temperature in warm-up to the normal control temperature)	1 - 99	50		
AG	HL_UM WARMUP_120H HH	Warm-up TH_UM set value (when the fusing temperature is 120°C or above)	1 - 99	50		
AH	HL_LM WARMUP_120H HH	Warm-up TH_LM set value (when the fusing temperature is 120°C or above)	1 - 99	50		
AI	HL_E WARMUP_120H HH	Warm-up TH_E set value (when the fusing temperature is 120°C or above)	1 - 99	50		
AJ	HI_WARMUP_TIME HH	AG - AI applying time (Timer from completion of Ready)	1 - 99	50		
AK	HI_WU_FM_ON_TMP HH	Fusing roller rotation start TH_E (when the fusing temperature in warm-up is alpha °C or above)	1 - 99	50		
AL (*1)	HI_WU_END_TIME HH	Warm-up complete time (sec) (when the fusing temperature in warm-up is alpha °C or above)	1 - 99	50		

Item/Display		Content	Setting range	Group A	Group B	Group C
AM	HI_WU_JOB_SET_TMP HH	Job Ready TH_UM temperature (when the fusing temperature in warm-up is alpha °C or above)	1 - 99		50	
AN	HI_WARMUP_BORDER HH	Threshold value applied to Sim43-1-AM - AK	1 - 99		50	
AO (*1)	LO_WU_JOB_SET_TMP HH	Warm-up complete time (sec) (When the fusing temperature in warming up is alpha °C or below.)	1 - 99		50	
AP (*1)	JOBEND_FUMON_TIME HH	Fusing roller rotation time (sec) after completion of a job	1 - 99		50	

*1: 1 Count = 1sec Change

<Code descriptions>

TH_UM	Fusing upper thermistor (center)	HL_UM	Heater lamp upper
TH_LM	Fusing lower thermistor	HL_LM	Heater lamp lower
TH_E	Fusing thermistor (external heat roller)	HL_E	Heater lamp (external heat roller)

Group	Destination			
Group A	Japan	China	AB_B	–
Group B	U.S.A.	Canada	Inch	–
Group C	Europe	U.K.	AUS	AB_A

- **Mono color model**

Item/Display		Content	Setting range	Group A	Group B	Group C
A	HL_UM READY HH	Ready standby TH_UM set value	1 - 99		50	
B	HL_LM READY HH	Ready standby TH_LM set value	1 - 99		50	
C	HL_US READY HH	Ready standby TH_US set value	1 - 99		50	
D	HL_UM PLAIN PAPER BW HH	Plain paper TH_UM set value	1 - 99		50	
E	HL_LM PLAIN PAPER BW HH	Plain paper TH_LM set value	1 - 99		50	
F	HL_US PLAIN PAPER BW HH	Plain paper TH_US set value	1 - 99		50	
G	WARMUP FUMON HL_UM T HH	Fusing motor pre-rotation start TH_UM set value	1 - 99		50	
H	WARMUP FUMOFF HH	Fusing motor pre-rotation end TH_LM set value	1 - 99		50	
I (*1)	WARMUP END TIME HH	Warm-up complete time (warm-up time (sec))	1 - 99		50	
J	HL_UM HEAVY PAPER HH	Heavy paper TH_UM set value	1 - 99		50	
K	HL_LM HEAVY PAPER HH	Heavy paper TH_LM set value	1 - 99		50	
L	HL_US HEAVY PAPER HH	Heavy paper TH_US set value	1 - 99		50	
M	HL_UM OHP PAPER HH	OHP-TH_UM set value	1 - 99		50	
N	HL_LM OHP PAPER HH	OHP-TH_LM set value	1 - 99		50	
O	HL_US OHP PAPER HH	OHP-TH_US set value	1 - 99		50	
P	HL_UM ENV PAPER HH	Envelope TH_UM set value	1 - 99		50	
Q	HL_LM ENV PAPER HH	Envelope TH_LM set value	1 - 99		50	
R	HL_US ENV PAPER HH	Envelope TH_US set value	1 - 99		50	
S	HL_UM GLOSS PAPER HH	Glossy paper TH_UM set value	1 - 99		50	
T	HL_LM GLOSS PAPER HH	Glossy paper TH_LM set value	1 - 99		50	
U	HL_US GLOSS PAPER HH	Glossy paper TH_US set value	1 - 99		50	
V	HL_UM E-STAR HH	Preheating TH_UM set value	1 - 99		50	
W	HL_US E-STAR HH	Preheating TH_US set value	1 - 99		50	
X	HL_UM PRE-JOB HH	Resetting from preheating TH_UM set value (Job Ready temperature)	1 - 99		50	
Y	HL_LM E-STAR HH	Preheating TH_LM set value	1 - 99		50	
Z	HL_UM WARMUP_120L HH	Warm-up TH_UM set value (when the fusing temperature is 120°C or less)	1 - 99		50	
AA	HL_LM WARMUP_120L HH	Warm-up TH_LM set value (when the fusing temperature is 120°C or less)	1 - 99		50	
AB	HL_US WARMUP_120L HH	Warm-up TH_US set value (when the fusing temperature is 120°C or less)	1 - 99		50	
AC (*1)	LO_WARMUP_TIME HH	Z - AB applying time (Time (sec) for shifting from the control temperature in warm-up to the normal control temperature)	1 - 99		50	
AD	HL_UM WARMUP_120H HH	Warm-up TH_UM set value (when the fusing temperature is 120°C or above)	1 - 99		50	
AE	HL_LM WARMUP_120H HH	Warm-up TH_LM set value (when the fusing temperature is 120°C or above)	1 - 99		50	
AF	HL_US WARMUP_120H HH	Warm-up TH_US set value (when the fusing temperature is 120°C or above)	1 - 99		50	
AG	HI_WARMUP_TIME HH	AD - AF applying time (Timer from completion of Ready)	1 - 99		50	
AH	HI_WU_FM_ON_TMP HH	Fusing roller rotation start TH_UM (when the fusing temperature in warm-up is alpha °C or above)	1 - 99		50	
AI (*1)	HI_WU_END_TIME HH	Warm-up complete time (sec) (when the fusing temperature in warm-up is alpha °C or above)	1 - 99		50	
AJ	HI_WU_JOB_SET_TMP HH	Job Ready TH_UM temperature (when the fusing temperature in warm-up is alpha °C or above)	1 - 99		50	
AK	HI_WARMUP_BORDER HH	Threshold value applied to Sim43-1- AH-AJ	1 - 99		50	
AL	LO_WU_JOB_SET_TMP HH	Warm-up complete time (sec) (When the fusing temperature in warming up is alpha °C or below.)	1 - 99		50	
AM (*1)	JOBEND_FUMON_TIME HH	Fusing roller rotation time (sec) after completion of a job	1 - 99		50	

<Code descriptions>

TH_UM	Fusing upper thermistor main	HL_UM	Heater lamp upper main
TH_LM	Fusing lower thermistor main	HL_LM	Heater lamp lower main
TH_US	Fusing upper thermistor sub	HL_US	Heater lamp upper sub

Group	Destination			
Group A	Japan	China	AB_B	–
Group B	U.S.A.	Canada	Inch	–
Group C	Europe	U.K.	AUS	AB_A

43-22

Purpose	Adjustment/Setup
Function (Purpose)	Used to set the environment correction under low temperature and low humidity (L/L) for the fusing temperature setting (SIM 43-4) in each paper mode.
Section	

Operation/Procedure

1) Select an item to be set with [↑] [↓] keys.
2) Enter the set value with 10-key.
3) Press [OK] key.
   The set value in step 2 is saved.

Correction value: -49 - +49, 1 Count = 1°C Change

Correction value	-49	-25	-5	0	5	25	49
Input value	1	25	45	50	55	75	99

• **Color model**

Item/Display		Content	Setting range	Group A	Group B	Group C
A	HL_UM PLAIN PAPER BW DUP LL	Black-White plain paper duplex TH_UM set value	1 - 99	55		
B	HL_LM PLAIN PAPER BW DUP LL	Black-White plain paper duplex TH_LM set value	1 - 99	55		
C	HL_E PLAIN PAPER BW DUP LL	Black-White plain paper duplex TH_E set value	1 - 99	55		
D	PLAIN PAPER BW DUP APP CNT LL	Black-White plain paper duplex fusing temperature application start image screen number	1 - 99	50		
E	HL_UM PLAIN PAPER CL DUP LL	Color plain paper duplex TH_UM set value	1 - 99	55		
F	HL_LM PLAIN PAPER CL DUP LL	Color plain paper duplex TH_LM set value	1 - 99	55		
G	HL_E PLAIN PAPER CL DUP LL	Color plain paper duplex TH_E set value	1 - 99	55		
H	PLAIN PAPER CL DUP APP CNT LL	Color plain paper duplex fusing temperature application start image screen number	1 - 99	50		
I	HL_UM HEAVY PAPER BW DUP LL	Black-White heavy paper duplex TH_UM set value	1 - 99	55		
J	HL_LM HEAVY PAPER BW DUP LL	Black-White heavy paper duplex TH_LM set value	1 - 99	55		
K	HL_E HEAVY PAPER BW DUP LL	Black-White heavy paper duplex TH_E set value	1 - 99	55		
L	HEAVY PAPER BW DUP APP CNT LL	Black-White heavy paper duplex fusing temperature application start image screen number	1 - 99	50		
M	HL_UM HEAVY PAPER CL DUP LL	Color heavy paper duplex TH_UM set value	1 - 99	55		
N	HL_LM HEAVY PAPER CL DUP LL	Color heavy paper duplex TH_LM set value	1 - 99	55		
O	HL_E HEAVY PAPER CL DUP LL	Color heavy paper duplex TH_E set value	1 - 99	55		
P	HEAVY PAPER CL DUP APP CNT LL	Color heavy paper duplex fusing temperature application start image screen number	1 - 99	50		

<Code descriptions>

TH_UM	Fusing upper thermistor (center)	HL_UM	Heater lamp upper
TH_LM	Fusing lower thermistor	HL_LM	Heater lamp lower
TH_E	Fusing thermistor (external heat roller)	HL_E	Heater lamp (external heat roller)

Group	Destination			
Group A	Japan	China	AB_B	–
Group B	U.S.A.	Canada	Inch	–
Group C	Europe	U.K.	AUS	AB_A

• **Mono color model**

Item/Display		Content	Setting range	Group A	Group B	Group C
A	HL_UM PLAIN PAPER BW DUP LL	Plain paper duplex TH_UM set value	1 - 99	55		
B	HL_LM PLAIN PAPER BW DUP LL	Plain paper duplex TH_LM set value	1 - 99	55		
C	HL_US PLAIN PAPER BW DUP LL	Plain paper duplex TH_US set value	1 - 99	55		
D	PLAIN PAPER BW DUP APP CNT LL	Plain paper duplex fusing temperature application start image screen number	1 - 99	50		
E	HL_UM HEAVY PAPER BW DUP LL	Heavy paper duplex TH_UM set value	1 - 99	55		
F	HL_LM HEAVY PAPER BW DUP LL	Heavy paper duplex TH_LM set value	1 - 99	55		
G	HL_US HEAVY PAPER BW DUP LL	Heavy paper duplex TH_US set value	1 - 99	55		
H	HEAVY PAPER BW DUP APP CNT LL	Heavy paper duplex fusing temperature application start image screen number	1 - 99	50		

<Code descriptions>

TH_UM	Fusing upper thermistor main	HL_UM	Heater lamp upper main
TH_LM	Fusing lower thermistor main	HL_LM	Heater lamp lower main
TH_US	Fusing upper thermistor sub	HL_US	Heater lamp upper sub

Group	Destination			
Group A	Japan	China	AB_B	–
Group B	U.S.A.	Canada	Inch	–
Group C	Europe	U.K.	AUS	AB_A

43-23

Purpose	Adjustment/Setup
Function (Purpose)	Used to set the environment correction under high temperature and high humidity (H/H) for the fusing temperature setting (SIM 43-4) in each paper mode.
Section	

Operation/Procedure

1) Select an item to be set with [↑] [↓] keys.
2) Enter the set value with 10-key.
3) Press [OK] key.
   The set value in step 2) is saved.

Correction value: -49 - +49, 1 Count = 1°C Change

Correction value	-49	-25	-5	0	5	25	49
Input value	1	25	45	50	55	75	99

• **Color model**

Item/Display		Content	Setting range	Group A	Group B	Group C
A	HL_UM PLAIN PAPER BW DUP HH	Black-White plain paper duplex TH_UM set value	1 - 99	50		
B	HL_LM PLAIN PAPER BW DUP HH	Black-White plain paper duplex TH_LM set value	1 - 99	50		
C	HL_E PLAIN PAPER BW DUP HH	Black-White plain paper duplex TH_E set value	1 - 99	50		
D	PLAIN PAPER BW DUP APP CNT HH	Black-White plain paper duplex fusing temperature application start image screen number	1 - 99	50		
E	HL_UM PLAIN PAPER CL DUP HH	Color plain paper duplex TH_UM set value	1 - 99	50		
F	HL_LM PLAIN PAPER CL DUP HH	Color plain paper duplex TH_LM set value	1 - 99	50		
G	HL_E PLAIN PAPER CL DUP HH	Color plain paper duplex TH_E set value	1 - 99	50		
H	PLAIN PAPER CL DUP APP CNT HH	Color plain paper duplex fusing temperature application start image screen number	1 - 99	50		
I	HL_UM HEAVY PAPER BW DUP HH	Black-White heavy paper duplex TH_UM set value	1 - 99	50		
J	HL_LM HEAVY PAPER BW DUP HH	Black-White heavy paper duplex TH_LM set value	1 - 99	50		
K	HL_E HEAVY PAPER BW DUP HH	Black-White heavy paper duplex TH_E set value	1 - 99	50		
L	HEAVY PAPER BW DUP APP CNT HH	Black-White heavy paper duplex fusing temperature application start image screen number	1 - 99	50		
M	HL_UM HEAVY PAPER CL DUP HH	Color heavy paper duplex TH_UM set value	1 - 99	50		
N	HL_LM HEAVY PAPER CL DUP HH	Color heavy paper duplex TH_LM set value	1 - 99	50		
O	HL_E HEAVY PAPER CL DUP HH	Color heavy paper duplex TH_E set value	1 - 99	50		
P	HEAVY PAPER CL DUP APP CNT HH	Color heavy paper duplex fusing temperature application start image screen number	1 - 99	50		

<Code descriptions>

TH_UM	Fusing upper thermistor (center)	HL_UM	Heater lamp upper
TH_LM	Fusing lower thermistor	HL_LM	Heater lamp lower
TH_E	Fusing thermistor (external heat roller)	HL_E	Heater lamp (external heat roller)

Group	Destination			
Group A	Japan	China	AB_B	–
Group B	U.S.A.	Canada	Inch	–
Group C	Europe	U.K.	AUS	AB_A

• **Mono color model**

Item/Display		Content	Setting range	Group A	Group B	Group C
A	HL_UM PLAIN PAPER BW DUP HH	Black-White plain paper duplex TH_UM set value	1-99	50		
B	HL_LM PLAIN PAPER BW DUP HH	Black-White plain paper duplex TH_LM set value	1-99	50		
C	HL_US PLAIN PAPER BW DUP HH	Black-White plain paper duplex TH_US set value	1-99	50		
D	PLAIN PAPER BW DUP APP CNT HH	Black-White plain paper duplex fusing temperature application start image screen number	1-99	50		
E	HL_UM HEAVY PAPER BW DUP HH	Black-White heavy paper duplex TH_UM set value	1-99	50		
F	HL_LM HEAVY PAPER BW DUP HH	Black-White heavy paper duplex TH_LM set value	1-99	50		
G	HL_US HEAVY PAPER BW DUP HH	Black-White heavy paper duplex TH_US set value	1-99	50		
H	HEAVY PAPER BW DUP APP CNT HH	Black-White heavy paper duplex fusing temperature application start image screen number	1-99	50		

<Code descriptions>

TH_UM	Fusing upper thermistor main	HL_UM	Heater lamp upper main
TH_LM	Fusing lower thermistor main	HL_LM	Heater lamp lower main
TH_US	Fusing upper thermistor sub	HL_US	Heater lamp upper sub

Group	Destination			
Group A	Japan	China	AB_B	–
Group B	U.S.A.	Canada	Inch	–
Group C	Europe	U.K.	AUS	AB_A

43-24

Purpose Adjustment/Setup

Function (Purpose) Used to set the correction of the temperature adjustment value of SIM 43-1 and 43-4.

Section

Operation/Procedure

1) Select an item to be set with [↑] [↓] keys.
2) Enter the set value with 10-key.
3) Press [OK] key.
   The set value in step 2 is saved.

Correction value: -49 - +49, 1 Count = 1°C Change

Correction value	-49	-25	-5	0	5	25	49
Input value	1	25	45	50	55	75	99

• **Color model**

Item/Display		Content	Setting range	Group A		Group B		Group C	
				SW-A	SW-B	SW-A	SW-B	SW-A	SW-B
A	NN_120_FUS_DUP_HL_UM	Correction amount for SIM43-4-A, E at 120°C or less in N/N-Warm Up	1 - 99	50					
B	NN_120_FUS_DUP_HL_LM	Correction amount for SIM43-4-B, F at 120°C or less in N/N-Warm Up	1 - 99	50					
C	LL_120_FUS_DUP_HL_UM	Correction amount for SIM43-22-A, E at 120°C or less in L/L-Warm Up	1 - 99	50					
D	LL_120_FUS_DUP_HL_LM	Correction amount for SIM43-22-B, F at 120°C or less in L/L-Warm Up	1 - 99	50					
E	HH_120_FUS_DUP_HL_UM	Correction amount for SIM43-23-A, E at 120°C or less in H/H-Warm Up	1 - 99	50					
F	HH_120_FUS_DUP_HL_LM	Correction amount for SIM43-23-B, F at 120°C or less in H/H-Warm Up	1 - 99	50					
G	NN_120_FUS_DUP_CNT	Number of sheets of application of SIM43-24-A, B, M (Setting of the number of sheets at which application is started)	1 - 60	5					
H	LL_120_FUS_DUP_CNT	Number of sheets of application of SIM43-24-C, D, N (Setting of the number of sheets at which application is started)	1 - 60	10					
I	HH_120_FUS_DUP_CNT	Number of sheets of application of SIM43-24-E, F, O (Setting of the number of sheets at which application is started)	1 - 60	5					
J (*1)	COOL_DOWN_HEAVY	Cool-down time heavy paper (Time (sec) required to return to the plain paper fusing temperature)	1 - 60	15					

Item/Display		Content	Setting range	Group A		Group B		Group C	
				SW-A	SW-B	SW-A	SW-B	SW-A	SW-B
K (*1)	COOL_DOWN_OHP	Cool-down time OHP (Time (sec) required to return to the plain paper fusing temperature)	1 - 60	30					
L (*1)	COOL_DOWN_ENVELOPE	Cool-down time envelope (Time (sec) required to return to the plain paper fusing temperature)	1 - 60	40					
M	NN_120_FUS_DUP_HL_E	Correction amount for SIM43-4-C, G at 120°C or less in N/N-Warm Up	1 - 99	50					
N	LL_120_FUS_DUP_HL_E	Correction amount for SIM43-22-C, G at 120°C or less in L/L-Warm Up	1 - 99	50					
O	HH_120_FUS_DUP_HL_E	Correction amount for SIM43-23-C, G at 120°C or less in H/H-Warm Up	1 - 99	50					
P	HL_UM THIN PAPER BW	Thin paper BW-TH_UM	70 - 230	165					
Q	HL_LM THIN PAPER BW	Thin paper BW-TH_LM	30 - 200	120					
R	HL_E THIN PAPER BW	Thin paper BW-TH_E	70 - 230	195					
S	HL_UM THIN PAPER CL	Thin paper COL-TH_UM	70 - 230	165					
T	HL_LM THIN PAPER CL	Thin paper COL-TH_LM	30 - 200	120					
U	HL_E THIN PAPER CL	Thin paper COL-TH_E	70 - 230	195					
V	HL_UM THIN PAPER READY	Thin paper Ready-TH_UM	70 - 230	170					
W	HL_UM REC PAPER BW	Recycled paper BW-TH_UM	70 - 230	185					
X	HL_LM REC PAPER BW	Recycled paper BW-TH_LM	30 - 200	125					
Y	HL_E REC PAPER BW	Recycled paper BW-TH_E	70 - 230	220					
Z	HL_UM REC PAPER CL	Recycled paper COL-TH_UM	70 - 230	185					
AA	HL_LM REC PAPER CL	Recycled paper COL-TH_LM	30 - 200	130					
AB	HL_E REC PAPER CL	Recycled paper COL-TH_E	70 - 230	220					
AC	HL_UM REC PAPER READY	Recycled paper Ready-TH_UM	70 - 230	180					

*1: 1 Count = 1sec Change

<Code descriptions>

TH_UM	Fusing upper thermistor (center)	HL_UM	Heater lamp upper
TH_LM	Fusing lower thermistor	HL_LM	Heater lamp lower
TH_E	Fusing thermistor (external heat roller)	HL_E	Heater lamp (external heat roller)

Group	Destination			
Group A	Japan	China	AB_B	–
Group B	U.S.A.	Canada	Inch	–
Group C	Europe	U.K.	AUS	AB_A

- **Mono color model**

Item/Display		Content	Setting range	Group A	Group B	Group C
A	NN_120_FUS_DUP_HL_UM	Correction amount for SIM43-4-A, E at 120°C or less in N/N-Warm Up	1 - 99	50		
B	NN_120_FUS_DUP_HL_LM	Correction amount for SIM43-4-B, F at 120°C or less in N/N-Warm Up	1 - 99	50		
C	LL_120_FUS_DUP_HL_UM	Correction amount for SIM43-22-A, E at 120°C or less in L/L-Warm Up	1 - 99	50		
D	LL_120_FUS_DUP_HL_LM	Correction amount for SIM43-22-B, F at 120°C or less in L/L-Warm Up	1 - 99	50		
E	HH_120_FUS_DUP_HL_UM	Correction amount for SIM43-23-A, E at 120°C or less in H/H-Warm Up	1 - 99	50		
F	HH_120_FUS_DUP_HL_LM	Correction amount for SIM43-23-B, F at 120°C or less in H/H-Warm Up	1 - 99	50		
G	NN_120_FUS_DUP_CNT	Number of sheets of application of SIM43-24-A, B, M (Setting of the number of sheets at which application is started)	1 - 60	5		
H	LL_120_FUS_DUP_CNT	Number of sheets of application of SIM43-24-C, D, N (Setting of the number of sheets at which application is started)	1 - 60	10		
I	HH_120_FUS_DUP_CNT	Number of sheets of application of SIM43-24-E, F, O (Setting of the number of sheets at which application is started)	1 - 60	5		
J	COOL_DOWN_HEAVY	Cool-down time heavy paper (Time (sec) required to return to the plain paper fusing temperature)	1 - 60	15		
K	COOL_DOWN_OHP	Cool-down time OHP (Time (sec) required to return to the plain paper fusing temperature)	1 - 60	30		
L	COOL_DOWN_ENVELOPE	Cool-down time envelope (Time (sec) required to return to the plain paper fusing temperature)	1 - 60	40		
M	NN_120_FUS_DUP_HL_US	Correction amount for SIM43-4-C, G at 120°C or less in N/N-Warm Up	1 - 99	50		
N	LL_120_FUS_DUP_HL_US	Correction amount for SIM43-22-C, G at 120°C or less in L/L-Warm Up	1 - 99	50		
O	HH_120_FUS_DUP_HL_US	Correction amount for SIM43-23-C, G at 120°C or less in H/H-Warm Up	1 - 99	50		
P	HL_UM THIN PAPER BW	Thin paper BW-TH_UM	70 - 230	170		
Q	HL_LM THIN PAPER BW	Thin paper BW-TH_LM	30 - 200	120		
R	HL_US THIN PAPER BW	Thin paper BW-TH_US	70 - 230	170		
S	HL_UM THIN PAPER READY	Thin paper Ready-TH_UM	70 - 230	170		
T	HL_UM REC PAPER BW	Recycled paper BW-TH_UM	70 - 230	190		
U	HL_LM REC PAPER BW	Recycled paper BW-TH_LM	30 - 200	125		
V	HL_US REC PAPER BW	Recycled paper BW-TH_US	70 - 230	190		
W	HL_UM REC PAPER READY	Recycled paper Ready-TH_UM	70 - 230	190		

<Code descriptions>

TH_UM	Fusing upper thermistor main	HL_UM	Heater lamp upper main
TH_LM	Fusing lower thermistor main	HL_LM	Heater lamp lower main
TH_US	Fusing upper thermistor sub	HL_US	Heater lamp upper sub

Group	Destination			
Group A	Japan	China	AB_B	–
Group B	U.S.A.	Canada	Inch	–
Group C	Europe	U.K.	AUS	AB_A

44

44-1

Purpose Setting

Function (Purpose) Used to set each correction operation function in the image forming (process) section.

Section Image process (Photo-conductor/ Developing/Transfer/Cleaning)

Operation/Procedure

1) Select an item to be set (The selected item is highlighted.)
2) Press [EXECUTE] key. (The set value is saved.)

NOTE: Set the items to the default values unless a change is specially required.

Item/Display	Content	Setting range	Default value	NOTE
HV	Normal operation high density process control Enable/Disable setting	Normal (Disable : 1 : NO) Reverse (Enable : 0 : YES)	Enable	
HT	Normal operation half tone process control Enable/Disable setting		Enable	
TC	Transfer output correction Enable/Disable setting		Enable	
MD VG	Membrane decrease grid voltage correction Enable/Disable setting		Enable	
MD LD	Membrane laser power voltage correction Enable/Disable setting		Enable	
MD EV	Membrane decrease environment grid voltage correction Enable/Disable setting		Enable	
MD DL	Membrane decrease discharge light quantity correction Enable/Disable setting		Enable	
MD DL EV	Membrane decrease environment discharge light quantity correction Enable/Disable setting		Disable	
TN_HUM	Toner density humidity correction Enable/Disable setting		Enable	
TN_AREA	Toner density area correction Enable/Disable setting		Enable	
TN_LIFE	Toner density life correction Enable/Disable setting		Enable	
TN_COV	Toner density print ratio correction Enable/Disable setting		Enable	
TN_PROCON	Toner density process control correction Enable/Disable setting		Enable	
TN_ENV	Toner density environment correction Enable/Disable setting		Enable	
TN_DRIP	Toner density correction unconditional supply Enable/Disable setting		Enable	
TN_SPEND	Toner forcible consumption mode Enable/Disable setting		Disable	
PHT	1pixel half tone process control correction Enable/Disable setting		Disable	
AR_AUTO	Auto registration adjustment Enable/Disable setting		Enable	
AR_ERROR	Auto registration adjustment execution error check Enable/Disable setting		Enable	
DM_PHASE	Drum phase fitting Enable/Disable setting		Enable	
SENSITIVITY	Toner density correction Enable/Disable setting		Disable	
PRT_HT	Half tone process control printer correction feedback Enable/Disable setting		Enable	
PTC_ENV	PTC environment correction Enable/Disable setting		Enable	Enable: Correction ON
PTC_LIFE	PTC life correction Enable/Disable setting		Enable	Enable: Correction ON

44-2

Purpose Adjustment/Setup

Function (Purpose) Used to adjust the sensitivity of the image density sensor (registration sensor).

Section Process

Operation/Procedure

When [EXECUTE] key is pressed, the adjustment is executed automatically.

After completion of the adjustment, the adjustment result is displayed.

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

• **Color model**

Item/Display		Content	Setting range	Default value
A	PCS_CL LED ADJ	Color sensor light emitting quantity adjustment value	1 - 255	21
B	PCS_K LED ADJ	Black sensor light emitting quantity adjustment value	1 - 255	21
C	PCS_CL DARK	Dark voltage of color	0 - 255	0
D	PCS_K DARK	Dark voltage of black	0 - 255	0
E	PCS_K GRND	Belt substrate when the item B adjustment is completed.	0 - 255	0
F	PCS_K BELT MAX	Belt substrate input max. value	0 - 255	0
G	PCS_K BELT MIN	Belt substrate input min. value	0 - 255	0
H	PCS_K BELT DIF	Belt substrate input difference (Item E - Item F)	0 - 255	0
I	REG_F LED ADJ	Registration sensor light emitting quantity adjustment value F	1 - 255	56
J	REG_F DARK	Registration sensor dark voltage F	0 - 255	0
K	REG_F GRND	Belt substrate when the item I adjustment is completed.	0 - 255	0
L	REG_R LED ADJ	Registration sensor light emitting quantity adjustment value R	1 - 255	56
M	REG_R DARK	Registration sensor dark voltage R	0 - 255	0
N	REG_R GRND	Belt substrate when the item J adjustment is completed.	0 - 256	0
O	REG_F BELT MAX	Belt substrate input max. value (F side)	0 - 255	0
P	REG_F BELT MIN	Belt substrate input min. value (F side)	0 - 255	0
Q	REG_F BELT DIF	Belt substrate input difference (Item O - Item P)	0 - 255	0
R	REG_R BELT MAX	Belt substrate input max. value (R side)	0 - 255	0
S	REG_R BELT MIN	Belt substrate input min. value (R side)	0 - 255	0
T	REG_R BELT DIF	Belt substrate input difference (Item R - Item S)	0 - 255	0
U	REG_F PATCH (K)	Patch light receiving potential F(K)	0 - 255	0
V	REG_F PATCH (C)	Patch light receiving potential F(C)	0 - 255	0
W	REG_F PATCH (M)	Patch light receiving potential F(M)	0 - 255	0
X	REG_F PATCH (Y)	Patch light receiving potential F(Y)	0 - 255	0
Y	REG_R PATCH (K)	Patch light receiving potential R(K)	0 - 255	0
Z	REG_R PATCH (C)	Patch light receiving potential R(C)	0 - 255	0
AA	REG_R PATCH (M)	Patch light receiving potential R(M)	0 - 255	0
AB	REG_R PATCH (Y)	Patch light receiving potential R(Y)	0 - 255	0

Error name	Error content
Black sensor adjustment abnormality	PCS_K LED ADJ error The target is not reached by 3 times of retry.
Color sensor adjustment abnormality	PCS_CL LED ADJ error The target is not reached by 3 times of retry.
Substrate scan abnormality	PCS_K GRND error Effective difference between the upper and lower values of the belt substrate circuit, outside the range
Registration sensor F adjustment abnormality	REG_F LED ADJ error The target is not reached by 3 times of retry.
Registration sensor R adjustment abnormality	REG_R LED ADJ error The target is not reached by 3 times of retry.
Registration substrate F scan abnormality	REG_F GRND error Effective difference between the upper and lower values of the belt substrate circuit, outside the range
Registration substrate R scan abnormality	REG_R GRND error Effective difference between the upper and lower values of the belt substrate circuit, outside the range

• **Mono color model**

Display/Item		Content	Range	Default
A	PCS_K LED ADJ	Image density sensor light emitting quantity adjustment value	1 - 255	32
B	PCS_K DARK	Dark voltage	0 - 255	0
C	PCS_K GRND	Belt base detection level when completion of Item A adjustment	0 - 255	0
D	PCS_K BELT MAX	Maximum value of belt base detection level	0 - 255	0
E	PCS_K BELT MIN	Minimum value of belt base detection level	0 - 255	0
F	PCS_K BELT DIF	Belt base detection level difference (Item D - Item E)	0 - 255	0
G	REG_R LED ADJ	Image density sensor light emitting quantity adjustment value	1 - 255	32
H	REG_R DARK	Image density sensor dark voltage	0 - 255	0
I	REG_R GRND	Belt base detection level when completion of Item G adjustment	0 - 256	0
J	REG_R BELT MAX	Maximum value of belt base detection level	0 - 255	0
K	REG_R BELT MIN	Minimum value of belt base detection level	0 - 255	0
L	REG_R BELT DIF	Belt base detection level difference (Item J - Item K)	0 - 255	0
M	REG_R PATCH (K)	Patch detection level for check	0 - 255	0

Error name	Error content
Image density sensor adjustment abnormality	PCS_K LED ADJ error The target is not reached by 3 times of retry.
Substrate scan abnormality	PCS_K GRND error Effective difference between the upper and lower values of the belt substrate circuit, outside the range
Registration sensor R adjustment abnormality	REG_R LED ADJ error The target is not reached by 3 times of retry.
Registration substrate R scan abnormality	REG_R GRND error Effective difference between the upper and lower values of the belt substrate circuit, outside the range

44-4

Purpose	Setting
Function (Purpose)	Used to set the conditions of the high density process control operation.
Section	Process

Operation/Procedure

1) Select an item to be set with [↑] [↓] keys.
2) Enter the set value with 10-key.
3) Press [OK] key.

NOTE: Set the items to the default values unless a change is specially required.

- **Color model**

Item/Display		Content	Setting range	Default value
A	PCS_CL TARGET	Color sensor target set value	1 - 255	98
B	PCS_K TARGET	Black sensor target set value	1 - 255	208
C	LED_CL OUTPUT	Color sensor light emitting quantity set value	1 - 255	21
D	LED_K OUTPUT	Black sensor light emitting quantity set value	1 - 255	21
E	PCS ADJSTMENT LIMIT	Sensor adjustment target limit value	1 - 255	4
F	BELT GROUND DIF	Effective difference between the belt 1 circuit substrate upper and lower limit values	1 - 255	1
G	BIAS_CL STANDARD DIF	Bias (for color) reference calculation difference	0 - 255	60
H	BIAS_BK STANDARD DIF	Bias (for black) reference calculation difference	0 - 255	0
I	BIAS PATCH INTERVAL	Patch bias output interval	1 - 255	60
J	Y_PAT TARGET ID	Patch density standard value (yellow)	1 - 255	129
K	M_PAT TARGET ID	Patch density standard value (magenta)	1 - 255	140
L	C_PAT TARGET ID	Patch density standard value (cyan)	1 - 255	115
M	K_PAT TARGET ID	Patch density standard value (black)	1 - 255	4
N	HV BK_GROUND LIMIT	Patch position substrate light receiving effective range value	1 - 255	29

- **Mono color model**

Item/Display		Content	Setting range	Default value
A	PCS_K TARGET	Image density sensor target set value	1 - 255	208
B	LED_K OUTPUT	Image density sensor light emitting quantity set value	1 - 255	32
C	PCS ADJSTMENT LIMIT	Sensor adjustment target limit value	1 - 255	4
D	BELT GROUND DIF	Effective difference between the belt 1 circuit substrate upper and lower limit values	1 - 255	1
E	BIAS_BK STANDARD DIF	Bias I reference calculation difference	0 - 255	0
F	BIAS PATCH INTERVAL	Patch bias output interval	1 - 255	60
G	K_PAT TARGET ID	Patch density standard value I	1 - 255	4
H	HV BK_GROUND LIMIT	Patch position substrate light receiving effective range value	1 - 255	60

44-6

Purpose	Adjustment
Function (Purpose)	Used to execute the high density process control forcibly.
Section	Process

Operation/Procedure

Press [EXECUTE] key.

In case of a normal completion, the result is saved.

In case of an abnormal completion, "ERROR" is displayed.
(Refer to the table below.)

In case of an ERROR, the previous correction data are saved.

- **Color model**

Result display	Content description
COMPLETE	Normal complete
ERROR	Abnormal end
INTERRUPTION	Forcible interruption

Details of error display	Content description
CL_SEN_ADJ_ERR	Color sensor adjustment abnormality
BK_SEN_ADJ_ERR	Black sensor adjustment abnormality
K_HV_ERR	K high density process control abnormality
C_HV_ERR	C high density process control abnormality
M_HV_ERR	M high density process control abnormality
Y_HV _ERR	Y high density process control abnormality
TIMEOUT_ERR	Time out

- **Mono color model**

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 adjustment abnormality
K_HV_ERR	K high density process control abnormality
TIMEOUT_ERR	Time out

44-9

Purpose	Operation data display
Function (Purpose)	Used to display the result data of the high density process control operation.
Section	Image process (Photo-conductor/ Developing/Transfer/Cleaning)

Operation/Procedure

1) Select a target display mode.
2) Press [OK] key.

• **Color model**

Mode	Item/Display (*: Correction value)		Content	Display range	Default value
CPY/PRN (*2)	P (PROCON)	BLACK : GB ***/*** DV ***/***	High density process control GB/DV data (KCMY) (Actual output voltage level/base voltage level)	GB: 230 - 850 DV: 0 - 700	GB: 630 DV: 430
		CYAN : GB ***/*** DV ***/***			
		MAGENTA : GB ***/*** DV ***/***			
		YELLOW : GB ***/*** DV ***/***			
	N(M) (NORMAL (MIDDLE))	BLACK : GB ***/*** DV ***/***	High density normal (Medium speed display) GB/DV data (KCMY) (Actual output voltage level/base voltage level)	GB: 230 - 850 DV: 0 - 700	GB: 630 DV: 430
		CYAN : GB ***/*** DV ***/***			
		MAGENTA : GB ***/*** DV ***/***			
		YELLOW : GB ***/*** DV ***/***			
	N(L) (NORMAL (LOW))	BLACK : GB ***/*** DV ***/***	High density normal (Low speed display) GB/DV data (KCMY) (Actual output voltage level/base voltage level)	GB: 230 - 850 DV: 0 - 700	GB: 600 DV: 400
		CYAN : GB ***/*** DV ***/***			
		MAGENTA : GB ***/*** DV ***/***			
		YELLOW : GB ***/*** DV ***/***			
OTHER	TN/TC	TN HUD AREA	Toner control display humidity area	1 - 14	9
		TN HUD DATA	Toner control display humidity AD value	0 - 1023	0
		TC TMP AREA	Transfer display temperature area	1 - 9	4
		TC TMP DATA	Transfer display temperature AD value	0 - 1023	0
		TC HUD AREA	Transfer display humidity area	1 - 9	4
		TC HUD DATA	Transfer display humidity AD value	0 - 1023	0
		MD HUD AREA	Membrane decrease display humidity area	1 - 14	9
		MD HUD DATA	Membrane decrease display humidity AD value	0 - 1023	0
	DRUM	MD K STEP	Drum membrane decrease correction STEP display (KCMY)	0 - 4	0
		MD C STEP			
		MD M STEP			
		MD Y STEP			
		MD K DRUM COUNTER	Membrane decrease drum traveling distance area (KCMY)	0 - 20	0
		MD C DRUM COUNTER			
		MD M DRUM COUNTER			
		MD Y DRUM COUNTER			
	VG	MD K REVISE(VG) : L *** M ***	Drum membrane decrease grid voltage correction display (KCMY)	0 - 255	0
		MD C REVISE(VG) : L *** M ***			
		MD M REVISE(VG) : L *** M ***			
		MD Y REVISE(VG) : L *** M ***			
	LD	MD K REVISE(LD) : L *** M ***	Drum membrane decrease laser power voltage correction (KCMY)	0 - 255	0
		MD C REVISE(LD) : L *** M ***			
		MD M REVISE(LD) : L *** M ***			
		MD Y REVISE(LD) : L *** M ***			
	HV	MD K REVISE(HV) : L *** M ***	High density membrane decrease environment GB correction display (KCMY)	0 - 255	0
		MD C REVISE(HV) : L *** M ***			
		MD M REVISE(HV) : L *** M ***			
		MD Y REVISE(HV) : L *** M ***			
	CP	MD K REVISE(CP) : L *** M ***	Drum membrane decrease environment grid voltage correction display (KCMY)	0 - 255	0
		MD C REVISE(CP) : L *** M ***			
		MD M REVISE(CP) : L *** M ***			
		MD Y REVISE(CP) : L *** M ***			
	DL	MD K REVISE COL (DL): L *** M ***	Drum membrane decrease discharge light quantity correction (%)	0 - 100	50
		MD C REVISE COL (DL): L *** M ***			
		MD M REVISE COL (DL): L *** M ***			
		MD Y REVISE COL (DL): L *** M ***			
	DL EV	MD K REVISE COL (DL EV): L *** M ***	Drum membrane decrease environment discharge light quantity correction (%)	-100 - 100	0
		MD C REVISE COL (DL EV): L *** M ***			
		MD M REVISE COL (DL EV): L *** M ***			
		MD Y REVISE COL (DL EV): L *** M ***			
	CRUM	DESTINATION	Machine side management CRUM destination (Main unit data)	-	CRUM information (*1)
		MODEL TYPE	Machine model type	0 - 1	0
		CRUM DEST_K	CRUM destination (CRUM data)	-	CRUM information (*1)
		CRUM DEST_C			
		CRUM DEST_M			
		CRUM DEST_Y			
	CNT	PROCON COUNT HV	High density process control number of executions	0 - 99999999	0
		PROCON COUNT HT	Half tone process control number of executions	0 - 99999999	0

(*1) Differs depending on the destination.

(*2) Value on the left: Voltage level after correction Value on the right: Base voltage level

• **Mono color model**

Mode	Item/Display (*: Correction value)		Content	Display range	Default value
CPY/PRN (*2)	P (PROCON)	BLACK : GB ***/*** DV ***/***	High density process control GB/DV data (Actual output voltage level/base voltage level)	GB: 150 - 850 DV: 100 - 600	GB: 630 DV: 430
	N(M) (NORMAL (MIDDLE))	BLACK : GB ***/*** DV ***/***	High density normal (Medium speed display) GB/DV data (Actual output voltage level/base voltage level)	GB: 150 - 850 DV: 100 - 600	GB: 630 DV: 430
	N(L) (NORMAL (LOW))	BLACK : GB ***/*** DV ***/***	High density normal (Low speed display) GB/DV data (Actual output voltage level/base voltage level)	GB: 150 - 850 DV: 100 - 600	GB: 600 DV: 400
OTHER	TN/TC	TN HUD AREA	Toner control display humidity area	1 - 14	9
		TN HUD DATA	Toner control display humidity AD value	0 - 1023	0
		TC TMP AREA	Transfer display temperature area	1 - 9	4
		TC TMP DATA	Transfer display temperature AD value	0 - 1023	0
		TC HUD AREA	Transfer display humidity area	1 - 9	4
		TC HUD DATA	Transfer display humidity AD value	0 - 1023	0
		MD HUD AREA	Membrane decrease display humidity area	1 - 14	9
		MD HUD DATA	Membrane decrease display humidity AD value	0 - 1023	0
	DRUM	MD K STEP	Drum membrane decrease correction STEP display	0 - 4	0
		MD K DRUM COUNTER	Membrane decrease drum traveling distance area	0 - 20	0
	VG	MD K REVISE(VG) : L *** M ***	Drum membrane decrease grid voltage correction display	0 - 255	0
	LD	MD K REVISE(LD) : L *** M ***	Drum membrane decrease laser power voltage correction	0 - 255	0
	HV	MD K REVISE(HV) : L *** M ***	High density membrane decrease environment GB correction display	0 - 255	0
	CP	MD K REVISE(CP) : L *** M ***	Drum membrane decrease environment grid voltage correction display	0 - 255	0
	DL	MD K REVISE COL (DL): L *** M ***	Drum membrane decrease discharge light quantity correction (%)	0 - 100	50
	DL EV	MD K REVISE COL (DL EV): L *** M ***	Drum membrane decrease environment discharge light quantity correction (%)	-100 - 100	0
	CRUM	DESTINATION	Machine side management CRUM destination (Main unit data)	-	CRUM information (*1)
		MODEL TYPE	Machine model type	0 - 1	0
		CRUM DEST_K	CRUM destination (CRUM data)	-	CRUM information (*1)
	CNT	PROCON COUNT HV	High density process control number of executions	0 - 99999999	0
		PROCON COUNT HT	Half tone process control number of executions	0 - 99999999	0

(*1) Differs depending on the destination.

(*2) Value on the left: Voltage level after correction Value on the right: Base voltage level

44-12

Purpose	Operation data display
Function (Purpose)	Used to display the operation data of the high density process control and the image density sensor (registration sensor).
Section	Image process (Photo-conductor/ Developing)

Operation/Procedure

1) Select a display mode.
2) Press [OK] key.

• **Color model**

Mode	Item/Display	Content	Display range	Default value
TARGET (1 page)	CARB DATA	Calibration plate detection level	0 - 255	108
	SEAL ADJ DATA	Jig patch seal detection level when executing SIM 44-13	1 - 255	108

Mode	Item/Display	Content	Display range	Default value
TARGET (1 page)	ADK_SL (K)	Development characteristics gradient coefficient (High density process control operation)	-9.99 - 9.99	0
	ADK_INT(K)	Development characteristics intercept level (High density process control operation 0V)	-999.9 - 999.9	0
	TARGET (K)	High density process control target density level (K)	0.00 - 255.00	0
	TARGET (C/M/Y)	High density process control target density level (C/M/Y)	0.00 - 255.00	0

Mode	Item/Display	Content	Display range	Default value
PATCH 1-5 (Page 1-2)	n-1	High density process control nth time patch density level 1 (n=1-5)	0 - 255	0
	n-2	Patch data nth time patch 2 (n=1-5)	0 - 255	0
	n-3	Patch data nth time patch 3 (n=1-5)	0 - 255	0
	n-4	Patch data nth time patch 4 (n=1-5) • BK only	0 - 255	0
	n-5	Patch data nth time patch 5 (n=1-5) • BK only	0 - 255	0
PATCH 6-10 (Page 1-2)	n-1	Patch data nth time patch 1 (n=6-10)	0 - 255	0
	n-2	Patch data nth time patch 2 (n=6-10)	0 - 255	0
	n-3	Patch data nth time patch 3 (n=6-10)	0 - 255	0
	n-4	Patch data nth time patch 4 (n=6-10) • BK only	0 - 255	0
	n-5	Patch data nth time patch 5 (n=6-10) • BK only	0 - 255	0

• **Mono color model**

Mode	Item/Display	Content	Display range	Default value
TARGET (1 page)	ADK_SL (K)	Development characteristics gradient coefficient (High density process control operation)	-9.99 - 9.99	0.00
	ADK_INT(K)	Development characteristics intercept level (High density process control operation 0V)	-999.9 - 999.9	0.0
	TARGET (K)	High density process control target density level	0.00 - 255.00	0.00
PATCH 1-5 (Page 1-2)	n-1	High density process control nth time patch density level 1 (n=1-5)	0 - 255	0
	n-2	Patch data nth time patch 2 (n=1-5)	0 - 255	0
	n-3	Patch data nth time patch 3 (n=1-5)	0 - 255	0
	n-4	Patch data nth time patch 4 (n=1-5) • BK only	0 - 255	0
	n-5	Patch data nth time patch 5 (n=1-5) • BK only	0 - 255	0
PATCH 6-10 (Page 1-2)	n-1	Patch data nth time patch 1 (n=6-10)	0 - 255	0
	n-2	Patch data nth time patch 2 (n=6-10)	0 - 255	0
	n-3	Patch data nth time patch 3 (n=6-10)	0 - 255	0
	n-4	Patch data nth time patch 4 (n=6-10) • BK only	0 - 255	0
	n-5	Patch data nth time patch 5 (n=6-10) • BK only	0 - 255	0

44-13

Purpose Adjustment/Setup

Function (Purpose) Used to perform the color image sensor (image registration sensor F) calibration. (Only color model)

Section

Operation/Procedure

1) Press [EXECUTE] key.
   The shutter plate of the color image density sensor (image registration sensor F) is opened, and the message indicating that the primary transfer unit is removed is displayed.
2) Open the front cabinet of the machine and remove the waste toner box and the primary transfer unit.
3) Install the calibration jig (UKOG-0318FCZZ) of the color image density sensor (image registration sensor F) to the sensor housing section.
4) Set the waste toner box, and close the right cover unit (secondary transfer unit section) and the front cabinet of the machine.
5) Press [EXECUTE] key.

Calibration of the color image density sensor (image registration sensor F) is automatically performed. After completion of the operation, the adjustment result is displayed and [EXECUTE] key is returned to the normal display.

Item/Display		Content	Setting range	Default value
A	PCS_CL CARB OUT	Calibration plate sensor value	1 - 255	108
B	PCS_CL LED ADJ	Color sensor light emitting quantity adjustment value	1 - 255	21

Error display	Content
SEN ADJ ERR	Color sensor adjustment error
SHUTTER OPEN ERR	Separation operation error
ERROR	Forcible stop

44-14

Purpose Operation data display

Function (Purpose) Used to display the output level of the temperature and humidity sensor.

Section Process (OPC drum, development)/Fusing/LSU

Operation/Procedure

The output levels of the fusing temperature sensor, the machine temperature sensor, and the humidity sensor are displayed.

• **Color model**

Item/Display	Content	Display range
TH_UM	Fusing upper heat roller thermistor (center section) detection temperature (°C), differential input AD value	Temperature: 0 - 255°C (±1°C) AD value: 0 - 1023
TH_UM_AD1	Fusing upper heat roller thermistor compensation sensor (center section) detection temperature (°C), AD value	Temperature: 0.0 - 255.0°C (±0.2°C) AD value: 0 - 1023
TH_UM_AD2	Fusing upper heat roller thermistor detection sensor (center section) AD value	AD value: 0 - 1023
TH_LM	Fusing lower heat roller thermistor (side section) A/D value, temperature (°C)	Temperature: 0 - 255°C (±1°C) AD value: 0 - 1023
TH_EX1	Fusing external heat roller thermistor (center section) A/D value, temperature (°C)	Temperature: 0 - 255°C (±1°C) AD value: 0 - 1023

Item/Display	Content	Display range
TH_EX2	Fusing external heat roller thermistor (side section) A/D value, temperature (°C)	Temperature: 0 - 255°C (±1°C) AD value: 0 - 1023
TH_M	Temperature sensor A/D value, temperature (°C)	Temperature: -40.0°C - 60.0 (±1°C) AD value: 0 - 1023
HUD_M	Temperature sensor A/D value, humidity (%)	Humidity: 5.0 - 90.0% (±0.1%) AD value: 0 - 255
TH1_LSU	LSU thermistor 1 A/D value, temperature (°C)	Temperature: 5.0 - 60.0°C (±0.1°C) AD value: 0 - 255

- **Mono color model**

Item/Display	Content	Display range
TH_UM	Fusing upper heat roller thermistor (main) detection temperature (°C), differential input AD value	Temperature: 0 - 255°C (±1°C) AD value: 0 - 1023
TH_UM_AD1	Fusing upper heat roller thermistor compensation sensor (main) detection temperature (°C), AD value	Temperature: 0.0 - 255°C (±0.2°C) AD value: 0 - 1023
TH_UM_AD2	Fusing upper heat roller thermistor detection sensor (main) AD value	AD value: 0 - 1023
TH_UA	Fusing upper heat roller thermistor (all) A/D value, temperature (°C)	Temperature: 0 - 255°C (±1°C) AD value: 0 - 1023
TH_M	Temperature sensor A/D value, temperature (°C)	Temperature: -40.0 - 60.0°C (±1°C) AD value: 0 - 1023
HUD_M	Temperature sensor A/D value, humidity (%)	Temperature: 5.0 - 90.0°C (±0.1°C) AD value: 0 - 1023
TH1_LSU	LSU thermistor 1 A/D value, temperature (°C)	Temperature: 5.0 - 60.0°C (±0.1°C) AD value: 0 - 255

44-16

Purpose Operation data display

Function (Purpose) Used to display the toner density control data.

Section Developing system

Operation/Procedure

1) Select a target color.
   The toner density control data are displayed.
   Select the display category with [NEXT] key.

Item/ Display	Content	Setting range	Default value
TONER DEN_LT (M)	The current toner density sensor output value (final value) at the medium speed	1 - 255	129
TONER DEN_ST (M)	The current toner density reference value display (including all the correction values) at the medium speed		128
TONER DEN_LT (L)	The current toner density sensor output value (final value) at the low speed		129
TONER DEN_ST (L)	The current toner density reference value display (including all the correction values) at the low speed		128

Item/Display	Content		Setting range	Default value
AUTO DEVE (M)	Auto development adjustment value (At the medium speed)	Sensor output value after completion of SIM25-02 (at the medium speed)	1 - 255	128
ALL (M)	All the correction reference values (At the medium speed)	Correction reference value which calculated all the correction values for the auto development adjustment value (at the medium speed)		
AUTO DEVE (L)	Auto development adjustment value (At the low speed)	Sensor output value after completion of SIM25-02 (at the low speed)		
ALL (L)	All the correction reference values (At the low speed)	Correction reference value which calculated all the correction values for the auto development adjustment value (at the low speed)		
AREA	Area correction value	Correction value for the environment area	-127 - 127	0
HUD	Humidity correction value	Correction value for change in humidity		
PRINT RATE	Print ratio correction value	Correction value for document print ratio		
PROCON	Process control correction value	Correction value for high density process control result		
LIFE	Life correction value	Correction value for the developer life		
SENSITIVITY	Sensitivity correction value	Correction for the toner density sensitivity	1 - 999	500
AUTO DEVE VO (M)	Auto development adjustment control voltage (at the medium speed)	Sensor control voltage value after completion of SIM25-02 (at the medium speed)	1 - 255	128
ALL VO (M)	All the correction reference control voltages (at the medium speed)	Control voltage reference value which calculated all the correction values for the auto development adjustment value (at the medium speed)		
AUTO DEVE VO (L)	Auto development adjustment control voltage (at the low speed)	Sensor control voltage value after completion of SIM25-02 (at the low speed)		

Item/Display	Content		Setting range	Default value
ALL VO (L)	All the correction reference control voltages (at the low speed)	Control voltage reference value which calculated all the correction values for the auto development adjustment value (at the low speed)	1 - 255	128
AREA VO	Area correction control voltage	Control voltage correction value for the environment area	-127 - 127	0
HUD VO	Humidity correction control voltage	Control voltage correction value for change in humidity		
PRINT RATE VO	Print ratio correction control voltage	Control voltage correction value for the document print ratio		
PROCON VO	Process control correction control voltage	Control voltage correction value for the high density process control result		
LIFE VO	Life correction value control voltage	Control voltage correction value for the developer life		
SENSITIVITY VO	Sensitivity correction control voltage	Control voltage correction value for the toner density sensor	1 - 999	500
ENV VO	Environment correction control voltage	Control voltage correction value for the high humidity environment	-127 - 127	0

Item/Display	Content		Setting range	Default value
AUTO DEVE AREA	Area in the auto development adjustment	Humidity area display in the automatic developer adjustment	1 - 14	8
AREA	Current area	Current humidity area display		

44-21

Purpose Adjustment/Setup

Function (Purpose) Used to 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.

- **Color model**

Display	Content
COMPLETE	Normal complete
ERROR COLOR SENSOR ADJUSTMENT	Color image density sensor sensitivity adjustment error
ERROR BLACK SENSOR ADJUSTMENT	Black image density sensor sensitivity adjustment error
[YMCK]	High density process control error [YMCK]
OTHER	Other errors

- **Mono color model**

Display	Content
COMPLETE	Normal complete
ERROR BLACK SENSOR ADJUSTMENT	Image density sensor sensitivity adjustment error
[K]	High density process control error [K]
OTHER	Other errors

44-22

Purpose Operation data display

Function (Purpose) Used to display the toner patch density level in the half tone process control operation.

Section Process

Operation/Procedure

The toner patch density level made in the half tone process control operation is displayed.

Item/Display	Content
ID_n	Patch data display (n=1-16)
BASE1	Belt substrate data (START)
BASE5	Belt substrate data (LAST)

44-24

Purpose Operation data display

Function (Purpose) Used to 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.
2) Select a target adjustment color.

Category	Item/Display	Content
Coefficient	[EX-LOW]	Coefficient of the approximation formula of the minimum density
	[LOW]	Coefficient of the approximation formula of the low density
	[CONNECT]	Coefficient of the approximation formula of when connecting the low density and the medium density
	[MID]	Coefficient of the approximation formula of the medium density
	[HIGH]	Coefficient of the approximation formula of the high density
	[CONNECT POINT]	Each density section connection output ratio
Reference value	[SENSOR_TARGET]	Half tone process control reference value
Correction value	[S_VALUE]	Half tone process control correction value
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)	Used to set the calculating conditions of the correction value for the half tone process control.
Section	Process

Operation/Procedure

1) Select a target adjustment color.
2) Select a target adjustment density level with [↑] [↓] key.
3) Enter the set value with 10-key.
4) Press [OK] key.

NOTE: Set the items to the default values unless a change is specially required.

Item/Display		Content	Setting range	Default value	
				K	CMY
A	LOW FIELD LOWER LIMIT	Low density approximate expression data lower limit value	0 - 255	98	2
B	LOW FIELD UPPER LIMIT	Low density approximate expression data upper limit value	0 - 255	60	40
C	MID FIELD LOWER LIMIT	Medium density approximate expression data lower limit value	0 - 255	90	15
D	MID FIELD UPPER LIMIT	Medium density approximate expression data upper limit value	0 - 255	6	144
E	HIGHLIGHT POINT	Reference point of the highlight correction amount	1 - 8	7	7

44-26

Purpose	Adjustment/Setup
Function (Purpose)	Used to execute the half tone process control compulsorily.
Section	Process

Operation/Procedure

Press [EXECUTE] key.

The half tone process control is performed and the operation data are displayed.

- **Color model**

INTERRUPTION	Forcible interruption
COMPLETE	Normal complete
ERROR COLOR SENSOR ADJUSTMENT	Color sensor adjustment error
ERROR BLACK SENSOR ADJUSTMENT	Black sensor adjustment error
[YMCK]	High density process control [YMCK] error
OTHER	Other error

- **Mono color model**

INTERRUPTION	Forcible interruption
COMPLETE	Normal complete
ERROR BLACK SENSOR ADJUSTMENT	Image density sensor adjustment error
[K]	High density process control error
OTHER	Other error

44-27

Purpose	Data clear
Function (Purpose)	Used to 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	Adjustment/Setup
Function (Purpose)	Used to set the process control execution conditions.
Section	Process

Operation/Procedure

1) Select a target item of setting with [↑] [↓] key on the touch panel.
2) Enter the set value with 10-key.
3) Press [OK] key. (The set value is saved.)

NOTE: Set the items to the default values unless a change is specially required.

• **Color model**

Mode	Item/Display			Content		Setting range		Default value
Process control Enable/Disable setting	A	INITIAL	YES	When warm-up after clearing the counter of the OPC drum and the developer unit	Enable	0 - 1	0	0
			NO		Disable		1	
	B	SW ON		When supplying the power (when clearing shut-off.)	Color process control Enable	0 - 3	0	3
					Process control Disable		1	
					BK process control Enable		2	
					Pixel count judgment (Judgement is based on the setting value of item K, L.)		3	
	C	TIME		After passing the specified time from leaving READY continuously (Time can be changed by INTERVAL TIME)	Color process control Enable	0 - 3	0	3
					Process control Disable		1	
					BK process control Enable		2	
					Pixel count judgment (Judgement is based on the setting value of item K, L.)		3	
	D	HUM_LIMIT		HUM judgment is made when turning ON the power and after passing TIME.	Color process control Enable	0 - 2	0	0
					Process control Disable		1	
					BK process control Enable		2	
	E	HUM		The temperature and humidity in side the machine are monitored only during a job for every 2hours (set by item N). When the changes in the temperature and the humidity are greater than the specified level (the set value of item O) in comparison with the previous process control.	Color process control Enable	0 - 2	0	0
					Process control Disable		1	
					BK process control Enable		2	
	F	REV1	YES	The accumulated traveling distance of BK or M position OPC unit reaches the specified level after turning the power.	Enable	0 - 1	0	0
			NO		Inhibit		1	
	G	REV2_BK	YES	The accumulated traveling distance of BK position OPC drum unit reaches the specified level from execution of the previous density correction.	Enable	0 - 1	0	0
			NO		Inhibit		1	
	H	REV2_CL	YES	The accumulated traveling distance of M position OPC drum unit reaches the specified level from execution of the previous density correction.	Enable	0 - 1	0	0
			NO		Inhibit		1	
	I	REFRESH MODE(*1)	YES	Select of YES/NO of the manual process control key with key operation	Key operation display	0 - 1	0	1
			NO		Key operation NO display		1	
Process control conditions setting	J	DAY		When the next warm-up if there is no color job after a color job after passing the specified days from execution of the previous color process control	Disable of the specified days judgment	0 - 999	0	1
					1 - 999 days passing		1 - 999	
	K	PIX_RATIO_BK		Magnification ratio setting (%) of the BK toner count specified value entry of 100 corresponds to 1k of A4 5% print.		1 - 999		10
	L	PIX_RATIO_CL		Magnification ratio setting (%) of the color (CMY) toner count specified value entry of 100 corresponds to 1k of A4 5% print.		1 - 999		10
	M	INTERVAL TIME		Passing time setting of "TIME" (h: hour)		1-255 (1-255: 1-255h passed)		12
	N	HUM HOUR		Interval setting of the temperature and humidity monitoring time of "HUM" (h: hour)		1 - 24		2
	O	HUM_DIF		Area difference specified value when compared with the execution of the previous process control of "HUM"		1 - 9		2

Mode	Item/Display			Content		Setting range		Default value
Process control conditions setting	P	BK_RATIO		Magnification ratio setting (%) of the specified value of the BK position OPC drum traveling distance of "REV2_BK"		1-999 (Entry of 20 corresponds to 100,000mm.)		15
	Q	M_RATIO		Magnification ratio setting (%) of the M position OPC drum traveling distance of "REV2_CL"		1-999 (Entry of 20 corresponds to 100,000mm.)		15
	R	COLOR BORDER		Magnification ratio setting (%) of the M position OPC drum traveling distance when executing the BK process control	BK process control is executed without judgment of ratio of the M OPC drum traveling distance. (Addition)	0 - 999	0	20
					1 - 999(%)		1 - 999	
	S	BK ONLY		Disable/Enable setting and setting of the number of repetition of the BK process control when monochrome print is continued.	Enable 5 time	0 - 6	0	5
					Disable 1-5 times		1 - 5	
					Inhibit		6	
	T	HT_DIF		Bias change difference value used for judgment of HT process control		1 - 255		40
Registration adjustment setting	U	RG_ON_SYNC	CL	Select of synchronous/asynchronous of the power ON process control		0 - 2	0	2
			ALL				1	
			CL/BK				2	
	V	RG_TEMP_TIMER		Execution timing setting after turning ON the power		0 - 240 (MINUTE)		0
	W	RG_PERM_TIMER		Span setting from execution Disable to Enable		0 - 15 (HOUR)		1
	X	RG_HOUR_TIMER		Span setting of timer execution		0-15 (Above) + (HOUR)		5
Secondary transfer cleaning setting	Y	2TRAN_CLEAN_TIME1		Secondary transfer cleaning process time judgment threshold value 1		1 - 999		200
	Z	2TRAN_CLEAN_TIME2		Secondary transfer cleaning process time judgment threshold value 2		1 - 999		300
	AA	2TRAN_CLEAN_TIME3		Secondary transfer cleaning process time judgment threshold value 3		1 - 999		500

- **Mono color model**

Mode	Item/Display			Content		Setting range		Default value
Process control Enable/Disable setting	A	INITIAL	YES	When warm-up after clearing the counter of the OPC drum and the developer unit	Enable	0 - 1	0	0
			NO		Disable		1	
	B	SW ON		When supplying the power (when clearing shut-off.)	Process control Disable	1 - 3	1	3
					BK process control Enable		2	
					Pixel count judgment (Judgment is based on the setting value of item K, L.)		3	
	C	TIME		After passing the specified time from leaving READY continuously (Time can be changed by INTERVAL TIME)	Process control Disable	1 - 3	1	3
					BK process control Enable		2	
					Pixel count judgment (Judgment is based on the setting value of item K, L.)		3	
	D	HUM_LIMIT		HUM judgment is made when turning ON the power and after passing TIME.	Process control Disable	1 - 2	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 N). When the changes in the temperature and the humidity are greater than the specified level (the set value of item O) in comparison with the previous process control.	Process control Disable	1 - 2	1	2
					BK process control Enable		2	
	F	REV1	YES	The accumulated traveling distance of BK or M position OPC unit reaches the specified level after turning the power.	Enable	0 - 1	0	0
			NO		Inhibit		1	
	G	REV2_BK	YES	The accumulated traveling distance of BK position OPC drum unit reaches the specified level from execution of the previous density correction.	Enable	0 - 1	0	0
			NO		Inhibit		1	
	H	REFRESH MODE(*1)	YES	Select of YES/NO of the manual process control key with key operation	Key operation display	0 - 1	0	1
			NO		Key operation NO display		1	
	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	Disable of the specified days judgment	0 - 999	0	1
					1 - 999 days passing		1 - 999	

Mode	Item/Display		Content	Setting range	Default value
Process control conditions setting	J	PIX_RATIO_BK	Magnification ratio setting (%) of the BK toner count specified value entry of 100 corresponds to 1k of A4 5% print.	1 - 999	10
	K	INTERVAL TIME	Passing time setting of "TIME" (h: hour)	1-255 (1-255: 1-255h passed)	12
	L	HUM HOUR	Interval setting of the temperature and humidity monitoring time of "HUM" (h: hour)	1 - 24	2
	M	HUM_DIF	Area difference specified value when compared with the execution of the previous process control of "HUM"	1 - 9	2
	N	BK_RATIO	Magnification ratio setting (%) of the specified value of the BK position OPC drum traveling distance of "REV2_BK"	1-999 (Entry of 20 corresponds to 100,000mm.)	15
	O	HT_DIF	Bias change difference value used for judgment of HT process control	1 - 255	40
Secondary transfer cleaning setting	P	2TRAN_CLEAN_TIME1	Secondary transfer cleaning process time judgment threshold value 1	1 - 999	200
	Q	2TRAN_CLEAN_TIME2	Secondary transfer cleaning process time judgment threshold value 2	1 - 999	300
	R	2TRAN_CLEAN_TIME3	Secondary transfer cleaning process time judgment threshold value 3	1 - 999	500

*1: When REFRESH MODE setting is enabled (0), the menu of the user process control execution button is displayed on the user system setting menu.

When the color balance or the density change is not within the allowable range, the user can perform the process control manually and forcibly. However, toner is consumed grater than as usual. This point must be explained to the user clearly.

44-29

Purpose Setting

Function (Purpose) Used to set the operating conditions of the process control during a job.

Section Process

Operation/Procedure

1) Select a target item of setting with [↑] [↓] key on the touch panel.
2) Enter the set value with 10-key.
3) Press [OK] key.

Item/Display		Content	Setting range			Default value
A	COPY	During copy job	0 - 4	0	No execution	4
B	PRINTER	During print job		1	HV only	4
C	FAX	During FAX print job		2	HV → PHT	4
D	SELF PRINT	During self print		3	HV → HT	4
				4	HV → PHT → HT	

HV: High density process control

HT: Half tone process control

PHT: Not operate

44-31

Purpose Adjustment/Setup

Function (Purpose) Used to adjust the OPC drum phase. (Manual adjustment) (Only color model)

Section Process

Operation/Procedure

NOTE: For the OPC drum phase adjustment, do not use this simulation, but use SIM50-22 (auto adjustment).

1) Select item A with [↑] [↓] key.
2) Enter the value corresponding to the adjustment pattern with 10 key.
3) Press [EXCUTE] key. (The adjustment pattern is printed out.)
4) Select an adjustment pattern whose deflection is within two scale lines on the adjustment pattern of C,M, Y colors.
5) Select item B with [↑] [↓] key.
6) Enter the adjustment pattern sheet number selected in procedure 4).
7) Press [EXECUTE] key.
8) The adjusted adjustment pattern is printed.

Item/Display			Content			Setting range		Default value
A	PRINT MODE	45deg	Print mode	45 degrees	Deflection check pattern print for every 45 degrees (8-sheet print) (1)0° (2)45° (3)90°(4)135° (5)180° (6)225° (7)270° (8)315° * The number in () is printed on the output pattern.	1	1 - 3	3 (SET VALUE)
		90deg		90 degrees	Deflection check pattern print for every 90 degrees (4-sheet print) (1)0° (2)90° (3)180° (4)270° * The number in () is printed on the output pattern.	2		
		SET VALUE		SET VALUE	Deflection check pattern print at the set value (1-sheet print)	3		
B	COLOR		Phase adjustment value BK→CL		Angle step 0° (1) → 45° (2) → 90° (3) → 135° (4) → 180° (5) → 225° (6) → 270° (7) → 315° (8)	1 - 8		1

Item/Display			Content		Setting range		Default value
C	PAPER	MFT	Tray selection	Manual paper feed	1	1 - 5	2 (CS1)
		CS1		Tray 1	2		
		CS2		Tray 2	3		
		CS3		Tray 3	4		
		CS4		Tray 4	5		

44-37

Purpose Adjustment/Setup

Function (Purpose) Used to set the development bias correction level in the continuous printing operation.

Section

Operation/Procedure

1) Select a set target color.
2) Select a target item with [↑] [↓] buttons.
3) Enter the set value with 10-key.
4) Press [OK] key.

NOTE: When the print density is varied in the continuous printing operation, this simulation is used.

- **Color model**

			Item/Display		Default value		
			Black	CMY	Black	CMY	Variable range
Current DV Bias voltage	Low speed mode Heavy paper mode	less than 300[v]	A	A	0	0	0-5 (*1)
		300[v] or more, less than 450[v]	B	B	0	0	
		450[v] or more	C	C	0	0	
	Middle speed mode	less than 300[v]	D	D	0	0	
		300[v] or more, less than 450[v]	E	E	0	0	
		450[v] or more	F	F	0	0	
	High speed mode Monochrome mode	less than 300[v]	G	-	0	-	
		300[v] or more, less than 450[v]	H	-	0	-	
		450[v] or more	I	-	0	-	
Time (T) from termination of continuous outputs to start of the next output operation	Low speed mode Heavy paper mode	Less than 10 [sec] & after process control JOB	J	G	4	4	1-12
		10 [sec] or more, less than 60 [sec]	K	H	3	3	
		60 [sec] or more, less than 240 [sec]	L	I	1	1	
		240 [sec] or more	M	J	1	1	
	Middle speed mode	Less than 10 [sec] & after process control JOB	N	K	4	4	
		10 [sec] or more, less than 60 [sec]	O	L	3	3	
		60 [sec] or more, less than 240 [sec]	P	M	1	1	
		240 [sec] or more	Q	N	1	1	
	High speed mode (Not used)	Less than 10 [sec] & after process control JOB	R	-	4	-	
		10 [sec] or more, less than 60 [sec]	S	-	3	-	
		60 [sec] or more, less than 240 [sec]	T	-	1	-	
		240 [sec] or more	U	-	1	-	

<Use example>

(*1)

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

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

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

- **Mono color model**

		Item/ Display	Default value	Variable range
Current DV Bias voltage	less than 300[v]	A	0	0-5 (*1)
	300[v] or more, less than 450[v]	B	0	
	450[v] or more	C	0	

		Item/ Display	Default value	Variable range
Time (T) from termination of continuous outputs to start of the next output operation	Less than 10 [sec] & after process control JOB	D	4	1-12 (*2)
	10 [sec] or more, less than 60 [sec]	E	3	
	60 [sec] or more, less than 240 [sec]	F	1	
	240 [sec] or more	G	1	

<Use example>

(*1) The default of A/B/C is "0" and this function is set to OFF. When 10 sheets are copied in the multi copy mode and if the 10th sheet is lighter than the 1st sheet, set to the range of 1 - 5. The greater the value is, the darker the density of the 10th sheet is.

(*2) The correction amount is adjusted by the length of the leaving time. When (*1) is 1 - 5, the greater the value of (*2), the greater the density when starting printing is.

44-43

Purpose	Data display
Function (Purpose)	Used to display the identification information of the developing unit.
Section	Developing system

Operation/Procedure

The identification number and the identification signal level of the developing unit are displayed.

- **Color model**

Item/Display		Content	Display range
A	DVCH KIND K	K color development unit identification number	1 - 9
B	DVCH KIND C	C color development unit identification number	1 - 9
C	DVCH KIND M	M color development unit identification number	1 - 9
D	DVCH KIND Y	Y color development unit identification number	1 - 9
E	DVCH_AD_K	K color developing unit identification number AD value	0 - 255
F	DVCH_AD_C	C color developing unit identification number AD value	0 - 255
G	DVCH_AD_M	M color developing unit identification number AD value	0 - 255
H	DVCH_AD_Y	Y color developing unit identification number AD value	0 - 255

- **Mono color model**

Item/Display		Content	Display range
A	DVCH KIND K	K color development unit identification number	1 - 9 (*1)
B	DV_TYP_SEL_K	K color development unit type value	0 - 1 (*2)
C	DVCH_AD_K	K color developing unit identification number AD value	0 - 255

(*1) The type of the developing unit is identified by the ID number. For ID and the types of developing units, refer to "List of developing units" shown below.

(*2) 0 = High (OPEN) / 1 = Low (GND)

List of developing units

ID No.	Types of developing units
1	MX-B402/MX-B382/MX-B402SC/MX-B382SC
2	
3	
4	
5	
6	
7	
8	
9	No developing unit

44-61

Purpose	Adjustment/Setup
Function (Purpose)	Used to set the calibration data of the color image sensor (image registration sensor F). (Only color model)
Section	

Operation/Procedure

1) Select an item to be set.
2) Enter the set value with 10-key.
   The set value is indicated on the label attached to the registration sensor unit.
3) Press [OK] key.

Item/Display		Content	Setting range	Default value
A	PCS_CL CARB OUT	Calibration plate sensor value	1 - 255	108
B	PCS_CL LED ADJ	Color sensor light emitting quantity adjustment value	1 - 255	21

NOTE: This simulation is executed when the registration sensor unit is replaced. When only the color image density sensor is replaced, use SIM44-13 to perform calibration.
When the set value is changed with this simulation, the newly changed set value of this simulation is written over the calibration value set with SIM44-13.

46

46-1

Purpose	Adjustment (Color copy mode)
Function (Purpose)	Used to adjust the copy density in the copy mode. (Only color model)
Section	

Operation/Procedure

1) Select an adjustment target item with [↑] [↓] 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	AUTO	Auto	LOW	1 - 99	50
			HIGH	1 - 99	50
B	TEXT	Text	LOW	1 - 99	50
			HIGH	1 - 99	50
C	TEXT/PRINTED PHOTO	Text/Printed Photo	LOW	1 - 99	50
			HIGH	1 - 99	50
D	TEXT/PHOTO	Text/Photograph	LOW	1 - 99	50
			HIGH	1 - 99	50
E	PRINTED PHOTO	Printed Photo	LOW	1 - 99	50
			HIGH	1 - 99	50
F	PHOTOGRAPH	Photograph	LOW	1 - 99	50
			HIGH	1 - 99	50
G	MAP	Map	LOW	1 - 99	50
			HIGH	1 - 99	50
H	LIGHT	Light document	LOW	1 - 99	50
			HIGH	1 - 99	50
I	TEXT(COPY TO COPY)	Text (Copy document)	LOW	1 - 99	50
			HIGH	1 - 99	50
J	TEXT/PRINTED PHOTO (COPY TO COPY)	Text/Printed Photo (Copy document)	LOW	1 - 99	50
			HIGH	1 - 99	50
K	PRINTED PHOTO (COPY TO COPY)	Printed Photo (Copy document)	LOW	1 - 99	50
			HIGH	1 - 99	50
L	TEXT (COLOR TONE ENHANCEMENT)	Text (Color tone enhancement)	LOW	1 - 99	50
			HIGH	1 - 99	50

Item/Display		Content		Setting range	Default value
M	TEXT/PRINTED PHOTO (COLOR TONE ENHANCEMENT)	Text/Printed Photo (Color tone enhancement)	LOW	1 - 99	50
			HIGH	1 - 99	50
N	TEXT/PHOTO (COLOR TONE ENHANCEMENT)	Text/Photograph (Color tone enhancement)	LOW	1 - 99	50
			HIGH	1 - 99	50
O	PRINTED PHOTO (COLOR TONE ENHANCEMENT)	Printed Photo (Color tone enhancement)	LOW	1 - 99	50
			HIGH	1 - 99	50
P	PHOTOGRAPH (COLOR TONE ENHANCEMENT)	Photograph (Color tone enhancement)	LOW	1 - 99	50
			HIGH	1 - 99	50
Q	MAP (COLOR TONE ENHANCEMENT)	Map (Color tone enhancement)	LOW	1 - 99	50
			HIGH	1 - 99	50
R	SINGLE COLOR	Single color	LOW	1 - 99	50
			HIGH	1 - 99	50
S	SINGLE COLOR (COPY TO COPY)	Single color (Copy document)	LOW	1 - 99	50
			HIGH	1 - 99	50
T	TWO COLOR	2-color (red/ black) copy	LOW	1 - 99	50
			HIGH	1 - 99	50
U	TWO COLOR (COPY TO COPY)	2-color (red/ black) copy (copy document)	LOW	1 - 99	50
			HIGH	1 - 99	50

46-2

Purpose Adjustment (Monochrome copy mode)

Function (Purpose) Used to adjust the copy density in the copy mode.

Section

Operation/Procedure

1) Select an adjustment target item with [↑] [↓] 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	50
D	TEXT/PRINTED PHOTO	Text/Printed Photo	LOW	1 - 99	50
			HIGH	1 - 99	50
E	TEXT/PHOTO	Text/ Photograph	LOW	1 - 99	50
			HIGH	1 - 99	50
F	PRINTED PHOTO	Printed Photo	LOW	1 - 99	50
			HIGH	1 - 99	50
G	PHOTOGRAPH	Photograph	LOW	1 - 99	50
			HIGH	1 - 99	50
H	MAP	Map	LOW	1 - 99	50
			HIGH	1 - 99	50
I	TEXT (COPY TO COPY)	Text (Copy document)	LOW	1 - 99	50
			HIGH	1 - 99	50
J	TEXT/PRINTED PHOTO (COPY TO COPY)	Text/Printed Photo (Copy document)	LOW	1 - 99	50
			HIGH	1 - 99	50
K	PRINTED PHOTO (COPY TO COPY)	Printed Photo (Copy document)	LOW	1 - 99	50
			HIGH	1 - 99	50
L	LIGHT	Light document	LOW	1 - 99	50
			HIGH	1 - 99	50

46-4

Purpose Adjustment (Color scanner mode)

Function (Purpose) Used to adjust the density in the image send mode.

Section

Operation/Procedure

1) Select an adjustment target item with [↑] [↓] 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.

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

46-5

Purpose Adjustment (Monochrome scanner mode)

Function (Purpose) Used to adjust the density in the image send mode.

Section

Operation/Procedure

1) Select an adjustment target item with [↑] [↓] 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.

Item/Display		Content	Setting range	Default value
A	AUTO TEXT	Automatic/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

46-8

Purpose Adjustment (Color scanner mode)

Function (Purpose) Used to adjust the image send mode color balance RGB.

Section

Operation/Procedure

1) Select an adjustment target.
2) Select an adjustment target item with [↑] [↓] 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) Used to adjust the scan image density.

Section

Operation/Procedure

1) Select an adjustment target mode with [OC] and [DSPF] keys.
2) Select an adjustment target item with [↑] [↓] key.
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.

Item/Display			Content	Setting range	Default value
A	OC	COPY SIDEB : LOW	DSPF copy mode exposure adjustment SIDEB (Low density)	1 - 99	53
B		SCAN SIDEB : LOW	DSPF scanner mode exposure adjustment SIDEB (Low density)	1 - 99	53
C		FAX SIDEB : LOW	DSPF FAX mode exposure adjustment SIDEB (Low density)	1 - 99	53
D		COPY SIDEB : HIGH	DSPF copy mode exposure adjustment SIDEB (High density)	1 - 99	51
E		SCAN SIDEB : HIGH	DSPF scanner mode exposure adjustment SIDEB (Low density)	1 - 99	51
F		FAX SIDEB : HIGH	DSPF FAX mode exposure adjustment SIDEB (High density)	1 - 99	51
A	DSPF	COPY SIDEA : LOW	DSPF copy mode exposure adjustment SIDEA (Low density)	1 - 99	50
B		SCAN SIDEA : LOW	DSPF scanner mode exposure adjustment SIDEA (Low density)	1 - 99	50
C		FAX SIDEA : LOW	DSPF FAX mode exposure adjustment SIDEA (Low density)	1 - 99	50
D	DSPF	COPY SIDEA : HIGH	DSPF copy mode exposure adjustment SIDEA (High density)	1 - 99	45
E		SCAN SIDEA : HIGH	DSPF scanner mode exposure adjustment SIDEA (High density)	1 - 99	45
F		FAX SIDEA : HIGH	DSPF FAX mode exposure adjustment SIDEA (High density)	1 - 99	45
G		BALANCE SIDEA : R	DSPF color balance R SIDEA	1 - 99	52
H		BALANCE SIDEA : G	DSPF color balance G SIDEA	1 - 99	50
I		BALANCE SIDEA : B	DSPF color balance B SIDEA	1 - 99	50

46-10

Purpose Adjustment

Function (Purpose) Used to adjust the copy color balance and the gamma (for each color copy mode). (Only color model)

Section

Operation/Procedure

1) Select an adjustment target mode.
2) Select an adjustment target color.
3) Select an adjustment target item with [↑] [↓] key.
4) 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.
5) Press [OK] key. (The set value is saved.)

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

TEXT	Text
TEXT/PRT PHOTO	Text/Printed Photo
PRINTED PHOTO	Printed Photo
PHOTO + TEXT/PHOTO	Photograph + Text/Printed Photo
MAP	Map
LIGHT	Light document
COPY ORG	Copy document

Item/Display		Density level (Point)	Setting range	Default value
A	POINT1	Point 1	245 - 755	500
B	POINT2	Point 2	245 - 755	500
C	POINT3	Point 3	245 - 755	500
D	POINT4	Point 4	245 - 755	500
E	POINT5	Point 5	245 - 755	500
F	POINT6	Point 6	245 - 755	500
G	POINT7	Point 7	245 - 755	500
H	POINT8	Point 8	245 - 755	500
I	POINT9	Point 9	245 - 755	500
J	POINT10	Point 10	245 - 755	500
K	POINT11	Point 11	245 - 755	500
L	POINT12	Point 12	245 - 755	500
M	POINT13	Point 13	245 - 755	500
N	POINT14	Point 14	245 - 755	500
O	POINT15	Point 15	245 - 755	500
P	POINT16	Point 16	245 - 755	500
Q	POINT17	Point 17	245 - 755	500

46-16

Purpose	Adjustment
Function (Purpose)	Used to adjust the monochrome copy density and the gamma (for each monochrome copy mode).
Section	

Operation/Procedure

1) Select an adjustment target item with [↑] [↓] 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.

Item/Display		Density level (Point)	Setting range	Default value
A	POINT1	Point 1	373 - 627	500
B	POINT2	Point 2	373 - 627	500
C	POINT3	Point 3	373 - 627	500
D	POINT4	Point 4	373 - 627	500
E	POINT5	Point 5	373 - 627	500
F	POINT6	Point 6	373 - 627	500
G	POINT7	Point 7	373 - 627	500
H	POINT8	Point 8	373 - 627	500
I	POINT9	Point 9	373 - 627	500
J	POINT10	Point 10	373 - 627	500
K	POINT11	Point 11	373 - 627	500
L	POINT12	Point 12	373 - 627	500
M	POINT13	Point 13	373 - 627	500
N	POINT14	Point 14	373 - 627	500
O	POINT15	Point 15	373 - 627	500
P	POINT16	Point 16	373 - 627	500
Q	POINT17	Point 17	373 - 627	500

46-19

Purpose	Setting
Function (Purpose)	Used to set the operating conditions for the density scanning (exposure) of monochrome auto copy mode documents.
Section	

Operation/Procedure

Select an item to be set.

When an item is selected, it is highlighted and the setting change is saved.

Item/Display	Content	Set value	Default value
AE_MODE	Auto exposure mode	MODE1, MODE2	MODE1 (MX-C402SC/C382SC) MODE2 (MX-B402SC/B382SC)
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/PART	PART

NOTE:

MODE 1	High gamma (high contrast images)
MODE 2	Normal gamma
STOP	The image density in 3 - 7mm area at the lead edge is scanned, and the output image density is determined according to the scanned density. (The output image density is even for all the surface.)
REALTIME	The densities of the document width are scanned sequentially, and the output image density is determined according to the density in each area of document. (The output image density may not be even for all the surface.)
PRESCAN	The densities of the all surface of document are scanned sequentially, and the output image density is determined according to the average of the scanned densities. (The output image density is even for all the surface.)
AE WIDTH FULL	The document density scan area in the monochrome auto mode is 3 - 7mm at the document lead edge x the document width. This is not related to the PRESCAN mode.
AE WIDTH PART	The document density scan area in the monochrome auto mode is 3 - 7mm at the document lead edge x 100mm width. This is not related to the PRESCAN mode.

46-21

Purpose	Adjustment
Function (Purpose)	Copy color balance adjustment (Manual adjustment) (Color model)
Section	

Operation/Procedure

1) Select an adjustment target color.
2) Use [↑] [↓] keys to select a density level to be adjusted.
3) Enter the set value with 10-key.
   * When the △ ▽ key is pressed, the setting value of each item can be changed with 1up (1down) collectively.
4) Press [OK] key. (The set value is saved.)

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

When [EXECUTE] key is pressed, the check pattern in printed in the color balance and density corresponding to the adjustment value.

Item/Display		Density level (Point)	Setting range	Default value
A	POINT1	Point 1	245 - 755	500
B	POINT2	Point 2	245 - 755	500
C	POINT3	Point 3	245 - 755	500
D	POINT4	Point 4	245 - 755	500
E	POINT5	Point 5	245 - 755	500
F	POINT6	Point 6	245 - 755	500
G	POINT7	Point 7	245 - 755	500
H	POINT8	Point 8	245 - 755	500
I	POINT9	Point 9	245 - 755	500
J	POINT10	Point 10	245 - 755	500
K	POINT11	Point 11	245 - 755	500
L	POINT12	Point 12	245 - 755	500
M	POINT13	Point 13	245 - 755	500
N	POINT14	Point 14	245 - 755	500
O	POINT15	Point 15	245 - 755	500
P	POINT16	Point 16	245 - 755	500
Q	POINT17	Point 17	245 - 755	500

46-21

Purpose	Adjustment
Function (Purpose)	Copy density and gradation adjustment (Manual adjustment) (Mono color model)
Section	

Operation/Procedure

1) Use [↑] [↓] keys to select a density level to be adjusted.
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 and gradation corresponding to the adjustment value.

Item/Display		Density level (Point)	Setting range	Default value
A	POINT1	Point 1	245 - 755	500
B	POINT2	Point 2	245 - 755	500
C	POINT3	Point 3	245 - 755	500
D	POINT4	Point 4	245 - 755	500
E	POINT5	Point 5	245 - 755	500
F	POINT6	Point 6	245 - 755	500
G	POINT7	Point 7	245 - 755	500
H	POINT8	Point 8	245 - 755	500
I	POINT9	Point 9	245 - 755	500
J	POINT10	Point 10	245 - 755	500
K	POINT11	Point 11	245 - 755	500
L	POINT12	Point 12	245 - 755	500
M	POINT13	Point 13	245 - 755	500
N	POINT14	Point 14	245 - 755	500
O	POINT15	Point 15	245 - 755	500
P	POINT16	Point 16	245 - 755	500
Q	POINT17	Point 17	245 - 755	500

46-23

Purpose	Adjustment/Setup
Function (Purpose)	Used to set the density correction of copy high density section (High density tone gap supported).
Section	

Operation/Procedure

1) Enter the set value with 10-key.

0	Enable
1	Inhibit

2) Press [OK] key. (The set value is saved.)

- **Color model**

Item/Display		Content		Setting range	Default value
A	CMY (0 : ENABLE 1 : DISABLE)	0	CMY engine highest density correction mode : Enable	0 - 1	0
		1	CMY engine highest density correction mode : Disable		
B	K (0 : ENABLE 1 : DISABLE)	0	K engine highest density correction mode : Enable	0 - 1	1
		1	K engine highest density correction mode : Disable		
C	CYAN MAX TARGET	Scanner target value for CYAN maximum density correction		0 - 999	629
D	MAGENTA MAX TARGET	Scanner target value for MAGENTA maximum density correction		0 - 999	532
E	YELLOW MAX TARGET	Scanner target value for YELLOW maximum density correction		0 - 999	500
F	BLACK MAX TARGET	Scanner target value for BLACK maximum density correction		0 - 999	500

* When tone gap is generated in the high density area, set items A and B to "0.

  The density of high density part decreases. However, the tone gap is better.
* To increase the density in the high density area further, set items A and B to "1.

  The tone gap may occur in high density part.

NOTE: Do not change the values of items C, D, E, and F. If these values are changed, the density in the high density area is changed.

- **Mono color model**

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

* 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.

NOTE: Do not change the value of item B. If the value is changed, the density in the high density area is changed.

46-24

Purpose	Adjustment
Function (Purpose)	Copy color balance adjustment (Auto adjustment) (Color model)
Section	

Operation/Procedure

1) Press [EXECUTE] key.

   The color patch image (adjustment pattern) is printed out.
2) Plate the printed adjustment pattern on the document table, select [FACTORY] or [SERVICE] mode.
3) Press [EXECUTE] key.

   The copy color balance automatic adjustment is performed, then the adjustment result pattern is printed.
4) Press [OK] key.

   The half tone correction target registration is processed.

46-24

Purpose	Adjustment
Function (Purpose)	Copy density and gradation adjustment (Auto adjustment) (Mono color model)
Section	

Operation/Procedure

1) Press [EXECUTE] key.
   The patch image (adjustment pattern) is printed out.
2) Plate the printed adjustment pattern on the document table.
3) Press [EXECUTE] key.
   The copy density and gradation adjustment is performed, then the adjustment result pattern is printed.
4) Press [OK] key.
   The half tone correction target registration is processed.

46-25

Purpose	Adjustment
Function (Purpose)	Used to adjust the copy color balance. (Single color copy mode) (Only color model)
Section	

Operation/Procedure

1) Select an adjustment target color.
2) Select an adjustment target item with [↑] [↓] key on the touch panel.
3) Enter the set value with 10-key.
4) Press [OK] key. (The set value is saved.)

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

Item/Display		Setting range	Default value		
			C	M	Y
A	RED	0 - 255	0	255	200
B	GREEN	0 - 255	255	0	255
C	BLUE	0 - 255	255	200	0
D	CYAN	0 - 255	255	0	0
E	MAGENTA	0 - 255	0	255	0
F	YELLOW	0 - 255	0	0	255

46-26

Purpose	Adjustment
Function (Purpose)	Used to reset the single color mode color balance set value to the default. (Only color model)
Section	

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key.
   The color balance value of the single color mode is reset to the default value.

46-27

Purpose	Adjustment/Setup
Function (Purpose)	Used to adjust the gamma/density of copy images, texts, and line image edges. (Only color model)
Section	

Operation/Procedure

1) Select a target item of setting with [↑] [↓] key.
2) Enter the set value with 10-key.
3) Press [OK] key. (The set value is saved.)

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

When the adjustment values of items A, C, and E are changed, the gamma of text and line edge image density section is changed.

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

When the adjustment values of items B, D, and F are increased, the image density of text and line edge section is decreased, and vice versa.

46-30

Purpose	Adjustment/Setup
Function (Purpose)	Used to adjust the resolution in the sub scanning direction in the copy mode. (Only color model)
Section	

Operation/Procedure

1) Refer to the following table, and enter the set value corresponding to the resolution mode with 10 key.
2) Press [OK] key. (The set value is saved.)

Item/Display		Content		Setting range		Default value
A	SCAN RESOLUTION SW	Scan resolution selection (COPY: COLOR)	Mode1	0 - 1	0	0
			Mode2		1	

Mode	Scan mode	Resolution in the sub scanning direction (DPI)		
		25-99% [Magnification ratio]	100-200% [Magnification ratio]	201-400% [Magnification ratio]
Mode1	OC	600	600	1200
	DSPF	600	600	1200
Mode2	OC	300	600	1200
	DSPF	300	600	1200

46-32

Purpose	Adjustment/Setup
Function (Purpose)	Used to adjust the document background density reproducibility in the monochrome auto copy mode.
Section	

Operation/Procedure

1) Select a target item of setting with [↑] [↓] 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.

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 SIDE1)	1 - 250	196
C	COPY : DSPF (SIDE2)	Copy mode (for DSPF SIDE2)	1 - 250	196
D	SCAN : OC	Scanner mode (for OC)	1 - 250	196
E	SCAN : DSPF (SIDE1)	Scanner mode (for DSPF SIDE1)	1 - 250	196
F	SCAN : DSPF (SIDE2)	Scanner mode (for DSPF SIDE2)	1 - 250	196
G	FAX : OC	FAX mode (for OC)	1 - 250	196
H	FAX : DSPF (SIDE1)	FAX mode (for DSPF SIDE1)	1 - 250	196
I	FAX : DSPF (SIDE2)	FAX mode (for DSPF SIDE2)	1 - 250	196

46-36

Purpose	Adjustment/Setup
Function (Purpose)	Used to adjust the colors in the 2-color copy mode. (Only color model)
Section	

Operation/Procedure

1) Select a target adjustment item with [↑] [↓] key.
2) Enter the set value with 10-key.
3) Press [OK] key. (The set value is saved.)

By changing the density level of each color, the color adjustment in the 2-color copy mode can be performed.

Item/Display		Content	Setting range	Default value		
				C	M	Y
A	RED	R output color	0 - 255	0	255	200
B	GREEN	G output color	0 - 255	255	0	255
C	BLUE	B output color	0 - 255	255	200	0
D	CYAN	C output color	0 - 255	255	0	0
E	MAGENTA	M output color	0 - 255	0	255	0
F	YELLOW	Y output color	0 - 255	0	0	255

46-37

Purpose	Adjustment/Setup
Function (Purpose)	Used to adjust the color document reproducibility in the monochrome copy mode.
Section	

Operation/Procedure

1) Select a target item with [↑] [↓] keys.
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	116
B	G-Ratio	Gray making setting (G)	0 - 1000	843

When [DEFAULT] key is pressed, it is set to the default value.

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.

46-38

Purpose	Adjustment/Setup
Function (Purpose)	Used to adjust the black component amount in the color copy mode. (Only color model)
Section	

Operation/Procedure

1) Select the AUTO MODE or the MANUAL MODE with the mode key.
2) Select the mode to be adjusted with [↑] [↓] key.
3) Select the black component amount.

This adjusts black ingredient amount in the color copy mode. (except character and line image)

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

Item/Display (Copy mode)		Select button	Content	Default value
MANUAL	TEXT PRT	(-) LUT2	Text print (Manual)	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	TEXT	(-) LUT2	Text (Manual)	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	PRINTED PHT	(-) LUT2	Printed photo (Manual)	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	PHOTO	(-) LUT2	Photographic paper (Manual)	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	TEXT PHOTO	(-) LUT2	Text/ Photograph (Manual)	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	MAP	(-) LUT2	Map (Manual)	(+) LUT1
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		

Item/Display (Copy mode)		Select button	Content	Default value
MANUAL	CP ORG/ TEXT PR	(-) LUT2	Copy document/ Text printed (Manual)	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	COPY ORG/ TXT	(-) LUT2	Copy document/ Text (Manual)	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	COPY ORG/ PHT	(-) LUT2	Copy document/ Printed photo (Manual)	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	LIGHT ORG	(-) LUT2	Light document (Manual)	(+) LUT1
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
AUTO	AUTO0	(-) LUT2	Auto mode judgment 0	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	AUTO1	(-) LUT2	Auto mode judgment 1	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	AUTO2	(-) LUT2	Auto mode judgment 2	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	AUTO3	(-) LUT2	Auto mode judgment 3	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	AUTO4	(-) LUT2	Auto mode judgment 4	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	AUTO5	(-) LUT2	Auto mode judgment 5	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		
	AUTO6	(-) LUT2	Auto mode judgment 6	NORMAL
		(-) LUT1		
		NOMAL		
		(+) LUT1		
		(+) LUT2		

46-39

Purpose Adjustment/Setup

Function (Purpose) Used to adjust the sharpness of FAX send images.

Section

Operation/Procedure

1) Select a target item with [↑] [↓] keys.
2) Enter the set value with 10-key.
3) Press [OK] key. (The set value is saved.)

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

Item/Display		Content	Setting range	Default value
A	200 x 100 [DPI] OFF	200 x 100 [DPI] 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/Setup

Function (Purpose) Used to adjust the FAX send image density. (Collective adjustment of all the modes)

Section

Operation/Procedure

1) Set the original on the original table.
2) Enter the set value with 10-key.
3) Press [OK] key.
   When [EXECUTE] key is pressed, the adjustment value is set and the scanned document image is outputted.

Item/Display		Content	Setting range	Default value
A	EXPOSURE LEVEL(ALL)	Used to adjust the FAX send image density. (Collective adjustment of all the modes)	1 - 99	50

46-41

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

Operation/Procedure

1) Set the original on the original table.
2) Enter the set value with 10-key.
3) Press [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/Setup
Function (Purpose)	Used to adjust the FAX send image density. (Fine)
Section	

Operation/Procedure

1) Set the original on the original table.
2) Enter the set value with 10-key.
3) Press [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

Item/Display			Content		Setting range		Default value
M	EXECUTE MODE	AUTO	Print mode	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/Setup
Function (Purpose)	Used to 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 [OK] key.
   When [EXECUTE] key is pressed, the adjustment value is set and the scanned document image is outputted.

Item/Display		Content	Setting range	Default value
A	AUTO	Super Fine/Auto	1 - 99	50
B	EXPOSURE1	Super Fine/Exposure 1	1 - 99	50
C	EXPOSURE2	Super Fine/Exposure 2	1 - 99	50
D	EXPOSURE3	Super Fine/Exposure 3	1 - 99	50
E	EXPOSURE4	Super Fine/Exposure 4	1 - 99	50
F	EXPOSURE5	Super Fine/Exposure 5	1 - 99	50
G	AUTO H_TONE	Super Fine /Auto/Half tone	1 - 99	50
H	EXPOSURE1 H_TONE	Super Fine/Exposure 1 /Half tone	1 - 99	50
I	EXPOSURE2 H_TONE	Super Fine/Exposure 2 /Half tone	1 - 99	50
J	EXPOSURE3 H_TONE	Super Fine/Exposure 3 /Half tone	1 - 99	50
K	EXPOSURE4 H_TONE	Super Fine/Exposure 4 /Half tone	1 - 99	50
L	EXPOSURE5 H_TONE	Super Fine/Exposure 5 /Half tone	1 - 99	50

Item/Display			Content		Setting range		Default value
M	EXECUTE MODE	AUTO	Print mode	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_TONE		Super Fine /Auto /Half tone		7	
		EXP1 H_TONE		Super Fine /Exposure 1 /Half tone		8	
		EXP2 H_TONE		Super Fine /Exposure 2 /Half tone		9	
		EXP3 H_TONE		Super Fine /Exposure 3 /Half tone		10	
		EXP4 H_TONE		Super Fine /Exposure 4 /Half tone		11	
		EXP5 H_TONE		Super Fine /Exposure 5 /Half tone		12	

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/Setup

Function (Purpose) Used to adjust the FAX send image density. (Ultra fine)

Section

Operation/Procedure

1) Set the original on the original table.
2) Enter the set value with 10-key.
3) Press [OK] key.
   When [EXECUTE] key is pressed, the adjustment value is set and the scanned document image is outputted.

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

To check the adjustment density level of items A - L, set the document and set the setting value of item M according to items A - L, and press [EXECUTE] key.

46-45

Purpose Adjustment/Setup

Function (Purpose) Used to adjust the FAX send image density. (600dpi).

Section

Operation/Procedure

1) Set the original on the original table.
2) Enter the set value with 10-key.
3) Press [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	Print mode	600dpi/Auto	1 - 12	1	1 (AUTO)
		EXP1		600dpi/ Exposure 1		2	
		EXP2		600dpi/ Exposure 2		3	
		EXP3		600dpi/ Exposure 3		4	
		EXP4		600dpi/ Exposure 4		5	
		EXP5		600dpi/ Exposure 5		6	
		AUTO H_TONE		600dpi/Auto/ Half tone		7	
		EXP1 H_TONE		600dpi/ Exposure 1 /Half tone		8	
		EXP2 H_TONE		600dpi/ Exposure 2 /Half tone		9	
		EXP3 H_TONE		600dpi/ Exposure 3 /Half tone		10	
		EXP4 H_TONE		600dpi/ Exposure 4 /Half tone		11	
		EXP5 H_TONE		600dpi/ Exposure 5 /Half tone		12	

To check the adjustment density level of items A - L, set the document and set the setting value of item M according to items A - L, and press [EXECUTE] key.

46-47

Purpose Adjustment/Setup

Function (Purpose) Used to set the compression rate of copy and scan images (JPEG).

Section

Operation/Procedure

1) Select a target item with [↑] [↓] keys.
2) Enter the set value with 10-key.
3) Press [OK] key.
   The set value is saved.

Operation mode	Item/Display			Content	Setting range	Default value
COPY (COLOR) (COPY (COLOR mode))	A	COPY (C)	LOW	Low compression (Color)	0	0 (LOW)
			MIDDLE	Medium compression (Color)	1	
			HIGH	High compression (Color)	2	
			LOWER	Super low compression (Color)	3	

Operation mode	Item/Display			Content	Setting range	Default value
COPY (GRAY) (COPY (Monochrome half-tone mode))	B	COPY (G)	LOW	Low compression (Gray)	0	0 (LOW)
			MIDDLE	Medium compression (Gray)	1	
			HIGH	High compression (Gray)	2	
			LOWER	Super low compression (Gray)	3	
PUSH SCAN (COLOR) (Scanner (Color mode))	C	SCAN (C) (*1)	MIDDLE 1	Medium compression mode 1 Low compression	0	0 (MIDDLE1)
			MIDDLE 2	Medium compression mode 2 Medium compression	1	
			MIDDLE 3	Medium compression mode 3 High compression	2	
PUSH SCAN (GRAY) (Scanner (Monochrome half-tone mode))	D	SCAN (G) (*1)	MIDDLE 1	Medium compression mode 1 Low compression	0	0 (MIDDLE1)
			MIDDLE 2	Medium compression mode 2 Medium compression	1	
			MIDDLE 3	Medium compression mode 3 High compression	2	

*1: Setting of compression rate for images when the image compression rate is set to "Medium" in the user mode.

NOTE: When the compression rate is increased, the HDD capacity in the document filing mode is decreased. On the other hand, however, the image quality of some documents may be remarkably reduced.

46-51

Purpose	Adjustment/Setup
Function (Purpose)	Used to 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.
   Select the gamma adjustment of PAPER (heavy paper mode) or DITHER (image process mode).
   Select [PAPER/DITHER] and press [OK] key. Every time when [OK] key is pressed, the kind of DITHER is switched.
2) Select an adjustment target color.
3) Select a target adjustment density level with [↑] [↓] key.
4) Enter the set value with 10-key.
5) Press [OK] key.
   When [EXECUTE] key is pressed, the adjustment pattern is printed.

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.

- **Color model**

Item/Display	Content	Color
HEAVY	Copier heavy paper gamma	KCMY
DITH1	Black edge	K
DITH2	Color edge	KCMY
DITH3	Color error diffusion	KCMY
DITH4	Monochrome error diffusion	K

- **Mono color model**

Item/Display	Content
HEAVY	Copier heavy paper gamma
DITH4	Monochrome error diffusion

Item/Display		Density level (Point)	Setting range	Default value
A	POINT1	Point 1	245 - 755	500
B	POINT2	Point 2	245 - 755	500
C	POINT3	Point 3	245 - 755	500
D	POINT4	Point 4	245 - 755	500
E	POINT5	Point 5	245 - 755	500
F	POINT6	Point 6	245 - 755	500
G	POINT7	Point 7	245 - 755	500
H	POINT8	Point 8	245 - 755	500
I	POINT9	Point 9	245 - 755	500
J	POINT10	Point 10	245 - 755	500
K	POINT11	Point 11	245 - 755	500
L	POINT12	Point 12	245 - 755	500
M	POINT13	Point 13	245 - 755	500
N	POINT14	Point 14	245 - 755	500
O	POINT15	Point 15	245 - 755	500
P	POINT16	Point 16	245 - 755	500
Q	POINT17	Point 17	245 - 755	500

NOTE: The adjustment values can be reset to the default values with SIM46-52.

46-52

Purpose	Adjustment/Setup
Function (Purpose)	Used to reset the copy color balance adjustment (adjustment for each dither) to the default value. (The set values of SIM46-51 and SIM46-54 are set to the default values.) (Only color model)
Section	

Operation/Procedure

1) Select an item to be reset to the default (for each dither).
   To reset the adjustment values of all the items, select [ALL].

Select item (Mode/Image)	Content
Heavy Paper	Adjustment item to improve the color balance in the heavy paper mode
Black Edge	Adjustment item (K) to improve the reproduction of lines, text density, and thickness
Color Edge	Adjustment item (Color) to improve the reproduction of lines, text density, and thickness
B/W	Adjustment item to improve the density and gradation in the monochrome mode
Color Edge	Adjustment item to improve the color balance in the text mode and the map mode
ALL	Select all the items.

2) Press [EXECUTE] key.
3) Press [YES] key.
   The adjustment values of SIM46-51 and SIM46-54 are reset to the default values.

46-54

Purpose	Adjustment
Function (Purpose)	Used to reset the copy color balance adjustment (auto adjustment for each dither). (Only color model)
Section	

Operation/Procedure

The color balance, the density, and the gradation are adjusted for the monochrome mode, the heavy paper mode, the text, and the line image edges.

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

1) Press [EXECUTE] key. (A4 or 11" x 8.5" paper is automatically selected.) The color patch image (adjustment pattern) is printed.
2) Set the color patch image (adjustment pattern) printed in the procedure 1) on the document table so that the thin lines on the printed color patch image (adjustment pattern) are on the left side. Place 5 sheets of white paper on the printed color patch image (adjustment pattern).
3) Press [EXECUTE] key.
   The color balance adjustment is automatically performed.
   The adjustment pattern is printed out. Check it for any abnormality.
4) Press [OK] key.
   The list of the adjustment items (for each dither) is displayed.
5) Select an adjustment item (for each dither).

Select item (Mode/Image)	Content
Heavy Paper	Adjustment item to improve the color balance in the heavy paper mode
Black Edge	Adjustment item (K) to improve the reproduction of lines, text density, and thickness
Color Edge	Adjustment item (Color) to improve the reproduction of lines, text density, and thickness
B/W	Adjustment item to improve the density and gradation in the monochrome mode
Color Edge	Adjustment item to improve the color balance in the text mode and the map mode

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

7) Set the color patch image (adjustment pattern) printed in the procedure 6) on the document table so that the thin lines on the printed color patch image (adjustment pattern) are on the left side. Place 5 sheets of white paper on the printed color patch image (adjustment pattern).
8) Press [EXECUTE] key.

   The color balance adjustment is automatically performed.

   The adjustment pattern is printed out. Check it for any abnormality.
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 copy, and check the copy image quality.

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

46-55

Purpose Adjustment

Function (Purpose) Used to adjust the range of colors reproduced in drop-out colors.

Section

Operation/Procedure

1) Enter the adjustment value using the 10-key.
2) Press [OK] key. (The set value is saved.)

Item/Display		Content	Setting range	Default value
A	CHROMA	Adjust the saturation of the drop out color.	0 - 6	3

The greater the number is, the narrower the range is.

	SIM Value: 0 (MIN) The reproduction range is extended.	SIM Value: 3 (Default)	SIM Value: 6 (MAX) The reproduction range is narrowed.
Effect	Black texts become clear.		The area of fresh color becomes hard to be reproduced.
	The area of color images becomes easy to be reproduced.		Black texts are fainted or lacked.

46-60

Purpose Adjustment/Setup

Function (Purpose) Used to adjust the sharpness in the color auto copy mode.

Section

Operation/Procedure

1) Select a target item with [↑] [↓] keys.
2) Input numeric value corresponding to sharpness level (filter process mode).
3) Press [OK] key.

Used to adjust the sharpness and the smoothness of the dark area in the color auto copy mode.

- **Color model**

Item/Display			Content		Setting range	Default value	Remarks
A	SCREEN FILTER LEVEL	H	Sharpness (filter) adjustment of dot pattern image in auto copy mode	Strong emphasis	1	3 (Auto)	Applied to the auto copy mode only.
		L		Soft emphasis	2		
		AUTO		Auto	3		
B	AUTOMODE FILTER LEVEL	SOFT	Sharpness (filter) adjustment for the auto copy mode	SOFT	1	2 (CENTER)	Applied to the auto copy mode only.
		CENTER		CENTER	2		
		HIGH		HIGH	3		
C	COLOR COPY : CMY	OFF	Soft filter applying setting to C, M, Y image in color copy mode	OFF	0	1 (ON)	When it is set to ON, the soft filter is applied and the smoothness in the dark image area is improved. (Roughness is reduced.)
		ON		ON	1		
D	COLOR COPY : K	OFF	Soft filter applying setting to K image in color copy mode	OFF	0	1 (ON)	
		ON		ON	1		
E	SINGLE COLOR : CMY	OFF	Soft filter applying setting to C, M, Y image in single color copy mode	OFF	0	1 (ON)	
		ON		ON	1		
F	2 COLOR COPY : CMY	OFF	Setting of YES/NO of applying the soft filter to C/M/Y images of the 2-color copy mode	OFF	0	1 (ON)	
		ON		ON	1		
G	2 COLOR COPY : K	OFF	Setting of YES/NO of applying the soft filter to K images of the 2-color copy mode	OFF	0	1 (ON)	
		ON		ON	1		
H	B/W COPY	OFF	Soft filter applying setting in monochrome copy mode	OFF	0	1 (ON)	
		ON		ON	1		
I	COLOR PUSH : RGB	OFF	Soft filter applying setting to image in push scan color mode	OFF	0	1 (ON)	
		ON		ON	1		
J	B/W PUSH	OFF	Soft filter applying setting to image in push scan monochrome mode	OFF	0	1 (ON)	
		ON		ON	1		

• **Mono color model**

Item/Display			Content		Setting range	Default value	Remarks
A	SCREEN FILTER LEVEL	H	Sharpness (filter) adjustment of dot pattern image in auto copy mode	Strong emphasis	1	3 (Auto)	Applied to the auto copy mode only.
		L		Soft emphasis	2		
		AUTO		Auto	3		
B	AUTOMODE FILTER LEVEL	SOFT	Sharpness (filter) adjustment for the auto copy mode	SOFT	1	2 (CENTER)	Applied to the auto copy mode only.
		CENTER		CENTER	2		
		HIGH		HIGH	3		
C	B/W COPY	OFF	Soft filter applying setting in monochrome copy mode	OFF	0	1 (ON)	When it is set to ON, the soft filter is applied and the smoothness in the dark image area is improved. (Roughness is reduced.)
		ON		ON	1		
D	COLOR PUSH : RGB	OFF	Soft filter applying setting to image in push scan color mode	OFF	0	1 (ON)	
		ON		ON	1		
E	B/W PUSH	OFF	Soft filter applying setting to image in push scan monochrome mode	OFF	0	1 (ON)	
		ON		ON	1		

46-61

Purpose Adjustment/Setup

Function (Purpose) Used to adjust the area separation recognition level.

Section

Operation/Procedure

1) Select a target adjustment item with [↑] [↓] key.
2) Enter the adjustment value using the 10-key.
3) Press [OK] key.

NOTE: This must be set to the default unless any change is specially required.

When the adjustment value is set to a value greatly different from the default value, image quality trouble may occur for some documents.

• **Color model**

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: ADJUST [BK TXT 1]	Detection level adjustment: Black text 1	1 - 5	3
E	SEGMENT: ADJUST [CL TXT 1]	Detection level adjustment: Color text 1	1 - 5	3
F	SEGMENT: ADJUST [BK TXT 2, CL TXT 2]	Detection level adjustment: Black text 2, Color text 2	1 - 5	3
G	SEGMENT: ADJUST [BK/CL]	Detection level adjustment: Chroma/Achroma judgment	1 - 5	3
H	SEGMENT: ADJUST [TXT ON BG]	Detection level adjustment: Text on background	1 - 5	3
I	SEGMENT: ADJUST [SCR]	Detection level adjustment: Dot	1 - 5	3

• **Mono color model**

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: ADJUST [BK TXT 1]	Detection level adjustment: Black text 1	1 - 5	3
E	SEGMENT: ADJUST [CL TXT 1]	Detection level adjustment: Color text 1	1 - 5	3
F	SEGMENT: ADJUST [BK TXT 2, CL TXT 2]	Detection level adjustment: Black text 2, Color text 2	1 - 5	3
G	SEGMENT: ADJUST [BK/CL]	Detection level adjustment: Chroma/Achroma judgment	1 - 5	3
H	SEGMENT: ADJUST [TXT ON BG]	Detection level adjustment: Text on background	1 - 5	3
I	SEGMENT: ADJUST [SCR]	Detection level adjustment: Dot	1 - 5	3

46-62

Purpose Adjustment/Setup

Function (Purpose) Used to set the operating conditions of the ACS, the area separation, the background image process, and the auto exposure mode.

Section

Operation/Procedure

1) Select a target adjustment item with [↑] [↓] key.
2) Enter the adjustment value using the 10-key.
3) Press [OK] key.

NOTE: This must be set to the default unless any change is specially required.

When the adjustment value is set to a value greatly different from the default value, image quality trouble may occur for some documents.

Item/Display			Item/Display		Setting range		Default value
A	SW_ACS		ACS judgment reference area adjustment		0 - 1		1
B	TEXT_IMAGE		Text/Image judgment priority level select		0 - 6		3
C	TEXT_BLANK		Text/Blank judgment priority level select		0 - 6		4
D	HT_LV		Dot area judgment threshold value adjustment		0 - 6		1
E	AE_AREA_LV		Color AE judgment target area adjustment		0 - 6		3
F	AE_LV_CC		AE background detection division result adjustment: For color copy		0 - 8		4
G	AE_LV_MC		AE background detection division result adjustment: For monochrome copy		0 - 8		4
H	AE_LV_CS		AE background detection division result adjustment: For color scan		0 - 8		4
I	AE_LV_MS		AE background detection division result adjustment: For monochrome scan		0 - 8		4
J	AE_JUDGE_LV_L_U		Color AE background density threshold value adjustment (lower limit)		0 - 4		0
K	AE_JUDGE_LV_L_O		Color AE background density threshold value adjustment (upper limit)		0 - 10		0
L	AE_JUDGE_LV_C		Color AE background detection level adjustment (Chroma)		0 - 10		5
M	AE_ONOFF_CC	ON	AE mode ON/OFF switch : For color copy	ON	0 - 1	0	0(ON)
		OFF		OFF		1	
N	AE_ONOFF_MC	ON	AE mode ON/OFF switch : For monochrome copy	ON	0 - 1	0	0(ON)
		OFF		OFF		1	
O	AE_ONOFF_CS	ON	AE mode ON/OFF switch : For color scan	ON	0 - 1	0	0(ON)
		OFF		OFF		1	
P	AE_ONOFF_MS	ON	AE mode ON/OFF switch : For monochrome scan	ON	0 - 1	0	0(ON)
		OFF		OFF		1	
Q	AREA_EXCLUDE		Document size judgment select		0 - 3		Linked with the destination 0: AB series (Japan) 2: Inch series (EX Japan)
R	BLANK_JUDGE_LV_L		Blank decision level adjustment (brightness)		0 - 10		0
S	BLANK_JUDGE_LV_C		Blank decision level adjustment (saturation)		0 - 10		0
T	MODE0_UNDER		Mode 0 photography mode select		0 - 6		0
U	MODE1_UNDER		Mode 1 photography mode select		0 - 6		0
V	MODE5_UNDER		Mode 5 photography mode select		0 - 6		0
W	MODE6_UNDER		Mode 6 photography mode select		0 - 6		0

* Items M - P are "Item name: Details display."

Example: AE_ONOFF_CC: ON

46-63

Purpose Adjustment/Setup

Function (Purpose) Used to adjust the density in the copy low density section.

Section

Operation/Procedure

1) Select a target adjustment item with [↑] [↓] key.
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.

- **Color model**

Item/Display		Content	Setting range	Default value
A	COLOR COPY : TEXT/PRINTED PHOTO	Text print (color copy)	1 - 9	3
B	COLOR COPY : TEXT	Text (color copy)	1 - 9	3
C	COLOR COPY : PRINTED PHOTO	Printed photo (color copy)	1 - 9	5
D	COLOR COPY : PHOTOGRAPH	Photograph (color copy)	1 - 9	5
E	COLOR COPY : TEXT/PHOTO	Text/Photograph (color copy)	1 - 9	3
F	COLOR COPY : MAP	Map (color copy)	1 - 9	5
G	COLOR COPY : LIGHT	Light document (color density)	1 - 9	6
H	COLOR COPY : TEXT/PRINTED PHOTO (COPY TO COPY)	Copy document, Character print (color copy)	1 - 9	5
I	COLOR COPY : TEXT (COPY TO COPY)	Copy document, Character (color copy)	1 - 9	5
J	COLOR COPY : PRINTED PHOTO (COPY TO COPY)	Copy document, Printed photo (color copy)	1 - 9	5
K	COLOR PUSH : TEXT/PRINTED PHOTO	Text print (color PUSH)	1 - 9	3
L	COLOR PUSH : TEXT	Text (color PUSH)	1 - 9	3
M	COLOR PUSH : PRINTED PHOTO	Printed photo (color PUSH)	1 - 9	5
N	COLOR PUSH : PHOTOGRAPH	Photograph (color PUSH)	1 - 9	5
O	COLOR PUSH : TEXT/PHOTO	Text/Photograph (color PUSH)	1 - 9	3
P	COLOR PUSH : MAP	Map color PUSH)	1 - 9	5

• **Mono color model**

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

46-74

Purpose Adjustment

Function (Purpose) Copy color balance adjustment (Auto adjustment)/Printer color balance adjustment (Auto adjustment) (Color model)

Section

Operation/Procedure

This simulation is used to perform SIM46-24 and SIM67-24 continuously.

To perform both the copy color balance adjustment (Automatic adjustment) and the printer color balance adjustment (Automatic adjustment), use this simulation for efficient adjustment operations.

1) Press [EXECUTE] key, and the high density process control is performed. Then, the copy color balance adjustment pattern is printed.
2) Plate the printed adjustment pattern on the document table, select [FACTORY] or [SERVICE] mode.
3) Press [EXECUTE] key, and the copy color balance adjustment is performed and the adjustment result pattern is printed.
4) Press [EXECUTE] key, and the printer color balance adjustment pattern is printed.
5) Plate the printed adjustment pattern on the document table, select [FACTORY] or [SERVICE] mode.
6) Press [EXECUTE] key, and the printer color balance adjustment (automatic adjustment) is performed and the adjustment result pattern is printed.
7) Press [OK] key.

   The half tone correction target is registered.

NOTE: The adjustment result becomes effective only when the adjustment operations in the both modes are completed all the way. For example, when the copy color balance adjustment (automatic adjustment) is performed and the simulation is canceled, the adjustment result is not effective.

46-74

Purpose Adjustment

Function (Purpose) Copy density and gradation adjustment (Auto adjustment)/Printer density and gradation adjustment (Auto adjustment) (Mono color model)

Section

Operation/Procedure

This simulation is used to perform SIM46-24 and SIM67-24 continuously.

To perform both the copy density and gradation adjustment (Automatic adjustment) and the printer density and gradation 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 density and gradation adjustment pattern is printed.
2) Plate the printed adjustment pattern on the document table.
3) Press [EXECUTE] key, and the copy density and gradation adjustment (automatic adjustment) is performed and the adjustment result pattern is printed.
4) Press [EXECUTE] key, and the printer density and gradation adjustment pattern is printed.
5) Plate the printed adjustment pattern on the document table.
6) Press [EXECUTE] key, and the printer density and gradation adjustment (automatic adjustment) is performed and the adjustment result pattern is printed.
7) Press [OK] key.

   The half tone correction target is registered.

NOTE: The adjustment result becomes effective only when the adjustment operations in the both modes are completed all the way. For example, when the copy density and gradation adjustment (automatic adjustment) is performed and the simulation is canceled, the adjustment result is not effective.

48

48-1

Purpose Adjustment

Function (Purpose) Used to adjust the scan image magnification ratio (in the main scanning direction and the sub scanning direction).

Section

Operation/Procedure

1) Select a target adjustment item with [↑] [↓] key.
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 or C 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.

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 (Main scan)	1 - 99	50
D	SPF (SUB)	DSPF document front surface magnification ratio (Sub scan)	1 - 99	50
E	SPFB (MAIN)	DSPF document back surface magnification ratio (Main scan)	30 - 99	50

48-5

Purpose	Adjustment
Function (Purpose)	Used to correction the scan image magnification ratio (in the sub scanning direction).
Section	Scanner section

Operation/Procedure

1) Select a target adjustment item with [↑] [↓] key.
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	SPF(HI)	Document feed (SPF) motor (High speed)	1 - 99	50
D	SPF(MID)	Document feed (SPF) motor (Reference speed)	1 - 99	50

48-6

Purpose	Adjustment
Function (Purpose)	Used to adjust the rotation speed of each motor.
Section	

Operation/Procedure

1) Select an adjustment target mode.
2) Select a target adjustment item with [↑] [↓] key on the touch panel.
3) Enter the set value with 10-key.
4) Press [OK] key.
   The set value is saved.

When the adjustment value is increased, the speed is increased, and vice versa. A change of 1 in the adjustment value corresponds to a change of about 0.1% in the speed.

- **Color model**

Item/Display		Content	Mode Select		Setting range	Default value
A	RRM	Registration motor correction value	Color	COLOR	1 - 99	52
			Mono chrome	MONO		
			Heavy paper	HEAVY		46
B	DVM_K	Developing K motor correction value	Color	COLOR	1 - 99	52
			Mono chrome	MONO		
			Heavy paper	HEAVY		
C	FSM	Fusing motor correction value	Color	COLOR	1 - 99	17
			Mono chrome	MONO		
			Heavy paper	HEAVY		23
D	DVM_CL	Developing CL motor correction value	Color	COLOR	1 - 99	52
			Heavy paper	HEAVY		
E	PFM	Paper transport motor correction value.		COLOR	1 - 99	50
F	POM	Paper exit motor correction value		COLOR	1 - 99	45
G	FUSER SETTING	Fusing speed select timing		HEAVY	1 - 99	50
H	RRM START	RRM speed increasing start timing		HEAVY	1 - 255	90
I	RRM END	RRM speed increasing end timing		HEAVY	1 - 255	30

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.

- **Mono color model**

Item/Display		Content	Mode Select		Setting range	Default value
A	RRM	Registration motor correction value	Mono-chrome	MONO	1 - 99	52
			Heavy paper	HEAVY		46
B	DVM_K	Developing K motor correction value	Mono-chrome	MONO	1 - 99	52
			Heavy paper	HEAVY		
C	FSM	Fusing motor correction value	Mono-chrome	MONO	1 - 99	20
			Heavy paper	HEAVY		23
D	PFM	Paper transport motor correction value.		MONO	1 - 99	50
E	POM	Paper exit motor correction value		MONO	1 - 99	45
F	FUSER SETTING	Fusing speed select timing		HEAVY	1 - 99	50
G	RRM START	RRM speed increasing start timing		HEAVY	1 - 255	90
H	RRM END	RRM speed increasing end timing		HEAVY	1 - 255	30

NOTE: This must be set to the default unless any change is specially required.
When the adjustment value is set to a value greatly different from the default value, a jam, paper wrinkle, or image quality trouble may occur.

49

49-1

Purpose	
Function (Purpose)	Used to perform the firmware update.
Section	

Operation/Procedure

1) Save the firmware to the USB memory.
2) Insert the USB memory into the main unit.
3) Select a target firmware file for update.
   Press [ALL] key to select all the Firmware collectively.
4) Press [EXECUTE] key.
5) Press [YES] key.
   The selected firmware is updated.
   When the operation normally completed, "COMPLETE" is displayed. When terminated abnormally, "ERROR" is displayed.

• **Color model**

Item/Display	Content
CONFIG	Configuration data
ICU (MAIN)	ICU Main section former half
ICU (BOOTM)	ICU Boot section main
ICU (BOOTCN)	ICU Boot section CN
LANGUAGE	Language support data program (General term)
GRAPHIC	Graphic data for L-LCD
SLIST	SLIST data for L-LCD
PCU (BOOT)	PCU Boot section
PCU (MAIN)	PCU Main section
DESK (BOOT)	Desk unit BOOT section
DESK (MAIN)	Desk unit MAIN section
FIN (BOOT)	Inner finisher BOOT section
FIN (MAIN)	Inner finisher MAIN section
SCU (BOOT)	SCU Boot section
SCU (MAIN)	SCU Main section
DSPF (BOOT)	DSPF Main section
DSPF (MAIN)	DSPF Boot section
FAX (BOOT)	FAX1 Boot section
FAX (MAIN)	FAX1 Main section
ESCP_FONT	ESC/P font
PDL_FONT	PDL font
ANIMATION	Animation data
IMAGE_DATA	Image ASIC data
COLOR PROFILE	Color profile
WEB HELP	Color profile
UNICODE	UNICODE table

List of error displays in case of abnormal end

Item/Display	Content
CONF	Configuration data
ICUM	ICU Main section former half
ICUBM	ICU Boot section main
ICUCN	ICU Boot section CN
LANG	Language support data program (General term)
GRAPH	Graphic data for L-LCD
SLIST	SLIST data for L-LCD
PCUB	PCU Boot section
PCUM	PCU Main section
DESKB	Desk unit BOOT section
DESKM	Desk unit MAIN section
FINB	Inner finisher BOOT section
FINM	Inner finisher MAIN section
SCUB	SCU Boot section
SCUM	SCU Main section
DSPFB	DSPF Boot section
DSPFM	DSPF Main section
FAXB	FAX1 Boot section
FAXM	FAX1 Main section
ESCP	ESC/P font
PDL	PDL font
ANIME	Animation data
IMGDT	Image ASIC data
CORP	Color profile
WEBHP	WEB help
UNICD	UNICODE table

• **Mono color model**

Item/Display	Content
CONFIG	Configuration data
ICU (MAIN)	ICU Main section former half
ICU (BOOTM)	ICU Boot section main
ICU (BOOTCN)	ICU Boot section CN
LANGUAGE	Language support data program (General term)
GRAPHIC	Graphic data for L-LCD
SLIST	SLIST data for L-LCD
PCU (BOOT)	PCU Boot section
PCU (MAIN)	PCU Main section
DESK (BOOT)	Desk unit BOOT section
DESK (MAIN)	Desk unit MAIN section
FIN (BOOT)	Inner finisher BOOT section
FIN (MAIN)	Inner finisher MAIN section
SCU (BOOT)	SCU Boot section
SCU (MAIN)	SCU Main section
DSPF (BOOT)	DSPF Main section
DSPF (MAIN)	DSPF Boot section
FAX (BOOT)	FAX1 Boot section
FAX (MAIN)	FAX1 Main section
ESCP_FONT	ESC/P font
PDL_FONT	PDL font
ANIMATION	Animation data
IMAGE_DATA	Image ASIC data
WEB HELP	Color profile
UNICODE	UNICODE table

List of error displays in case of abnormal end

Item/Display	Content
CONF	Configuration data
ICUM	ICU Main section former half
ICUBM	ICU Boot section main
ICUCN	ICU Boot section CN
LANG	Language support data program (General term)
GRAPH	Graphic data for L-LCD
SLIST	SLIST data for L-LCD
PCUB	PCU Boot section
PCUM	PCU Main section
DESKB	Desk unit BOOT section
DESKM	Desk unit MAIN section
FINB	Inner finisher BOOT section
FINM	Inner finisher MAIN section
SCUB	SCU Boot section
SCUM	SCU Main section
DSPFB	DSPF Boot section
DSPFM	DSPF Main section
FAXB	FAX1 Boot section
FAXM	FAX1 Main section
ESCP	ESC/P font
PDL	PDL font
ANIME	Animation data
IMGDT	Image ASIC data
WEBHP	WEB help
UNICD	UNICODE table

49-3

Purpose

Function (Purpose) Used to update the operation manual 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.

50

50-1

Purpose Adjustment

Function (Purpose) Copy image position, image loss adjustment

Section

Operation/Procedure

1) Select an adjustment target item with [↑] [↓] key.
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	Registration motor ON timing adjustment	Standard Tray	1 - 99	50
C		RRCB-DSK		Desk	1 - 99	50
D		RRCB-MFT		Manual paper feed	1 - 99	50
E		RRCB-ADU		ADU	1 - 99	50
F	Image loss area setting value	LEAD	Lead edge image loss area setting		0 - 99	30
G		SIDE	Side image loss area adjustment		0 - 99	20
H	Void area adjustment	DENA	Lead edge void area adjustment		1 - 99	30
I		DENB	Rear edge void area adjustment		1 - 99	30
J		FRONT/REAR	FRONT/REAR void area adjustment		1 - 99	30
K	Off-center adjustment	OFSET_OC	OC document off-center adjustment		1 - 99	50
L	Magnification ratio correction	SCAN_SPEED_OC	SCAN sub scanning magnification ratio adjustment (CCD)		1 - 99	50
M	Sub scanning direction print area correction value	DENB-MFT	Manual feed correction value		1 - 99	50
N		DENB-CS1	Tray 1 correction value		1 - 99	50
O		DENB-CS2	Tray 2 correction value		1 - 99	50
P		DENB-CS3	Tray 3 correction value		1 - 99	50
Q		DENB-CS4	Tray 4 correction value		1 - 99	50
R		DENB-ADU	ADU correction value		1 - 99	50

A. (RRC-A) Timing from starting document scanning to specifying the image lead edge reference is adjusted. (01.mm/step)

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

B - E. (RRC-B) Timing of paper (registration roller ON) for the image position on the transfer belt is adjusted. (0.1mm/step)

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

F. (LEAD) The lead edge image loss amount is adjusted. (0.1mm/step)

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

G. (SIDE) The side image loss amount is adjusted.

* When the value is increased, the image loss is increased. (0.1mm/step)

H. (DEN-A) The paper lead edge void amount is adjusted. (0.1mm/step)

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

I. (DEN-B) The paper rear edge void amount is adjusted. (0.1mm/step)

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

J. (FRONT/REAR) The void amount on the right and left edges of paper is adjusted. (0.1mm/step)

50-2

Purpose Adjustment

Function (Purpose) Used to adjust the copy image position and the image loss. (This simulation is a simplified version of SIM 50-1).

Section

Operation/Procedure

1) Set item A (L1) and item B (L2) to 0.
2) Place a rule on the left edge of the document table, and make a copy at a magnification ratio of 200%.
3) Measure the length of L1 and L2 on the copied image in the unit of 0.1mm (referring to the figure below). Enter the adjustment values of L1 x 10 and L2 x 10. Be sure to enter the both adjustment values of L1 and L2.

   L1: Distance from the lead edge of the copied image to 10mm scale.

   L2: Distance from the paper lead edge to the copy image lead edge.

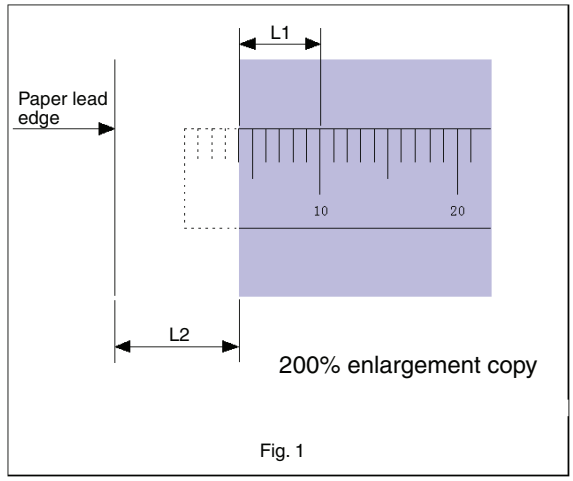


Fig. 1

4) Press [EXECUTE] key. (The set value is saved.)
5) Make a copy at the magnification ratio of 100%, and adjust the lead edge void.

Item/Display			Description	Setting range	Default value
A	Actual measurement value	L1	Distance from the image lead edge to the scale of 10mm. (Platen 400%, 0.1mm increment)	0 - 999	-
B		L2	Distance from the paper lead edge to the image lead edge (0.1mm increment)	0 - 999	0

Item/Display			Description	Setting range	Default value
C	Image loss area setting value	LEAD	Lead edge image loss amount setting (When the adjustment value is increased, the image loss is increased.)	0 - 99	30
D		SIDE	Side edge image loss amount setting (When the adjustment value is increased, the image loss is increased.)	0 - 99	20
E	Void area adjustment	DENA	Lead edge void area adjustment (When the adjustment value is increased, the void is increased.)	1 - 99	30
F		DENB	Rear edge void area adjustment (When the adjustment value is increased, the void is increased.)	1 - 99	30
G		FRONT/ REAR	FRONT/REAR void amount adjustment (When the adjustment value is increased, the void is increased.)	1 - 99	30

Same as the adjusted items of SIM50-01 except for A and B.

The values adjusted with A and B are reflected to the document lead edge reference position (RRC-A) of SIM50-01 and all the paper lead edge positions (RRCB-**).

All adjustment items: 1 step = 0.1mm change

50-5

Purpose Adjustment

Function (Purpose) Used to adjust the print lead edge image position. (PRINTER MODE)

Section

Operation/Procedure

1) Select a target adjustment item (DEN-C) with [↑] [↓] key.
2) Enter the adjustment value using the 10-key.
3) Press [EXECUTE] key.

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

   Standard reference value: 3.0±2.0mm

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

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

Item/Display			Content		Setting range		Default value	NOTE
A	DEN-C		Used to adjust the print lead edge image position. (PRINTER MODE)		1 - 99		30	Adjustment value too align the print lead edge for the printer. When the adjustment value of this item is decreased by 1, the printer print start position in the paper transport direction is shifted to the lead edge by 0.1mm.
B	DEN-B		Rear edge void area adjustment		1 - 99		30	Void amount generated at the paper rear edge. When the adjustment value of item B (DEN-B) is decreased by 1, the print area adjustment value in the sub scanning direction for the paper transport direction is decreased by 0.1mm.
C	FRONT/REAR		FRONT/REAR void area adjustment		1 - 99		30	Adjustment of the void amount generated on the left and right edges of paper. When the adjustment value is increased, the void amount is increased.
D	DENB-MFT		Manual feed rear edge void area adjustment correction value		1 - 99		50	Fine adjustment value of each paper feed source for the adjustment value of DEN-B
E	DENB-CS1		Tray 1 rear edge void area adjustment correction value		1 - 99		50	
F	DENB-CS2		Tray 2 rear edge void area adjustment correction value		1 - 99		50	
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-ADU		ADU rear edge void aria adjustment correction value		1 - 99		50	
J	MULTI COUNT		Number of print		1 - 999		1	Adjustment pattern print conditions setting
K	PAPER	MFT	Tray selection	Manual paper feed	1 - 5	1	2 (CS1)	
		CS1		Tray 1		2		
		CS2		Tray 2		3		
		CS3		Tray 3		4		
		CS4		Tray 4		5		

Item/Display			Content		Setting range		Default value	NOTE
L	DUPLEX	YES	Duplex print selection	Yes	0 - 1	0	1 (NO)	
		NO		No		1		

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

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

50-6

Purpose Adjustment

Function (Purpose) Used to adjust the copy image position and the image loss. (DSPF mode)

Section DSPF

Operation/Procedure

1) Select an adjustment target item with [↑] [↓] key.
2) Enter the set value with 10-key.
3) Press [OK] key. (The set value is saved.)

Item/Display			Content	Setting range	Default value
A	SIDE1		Front surface document scan position adjustment (CCD)	1 - 99	50
B	SIDE2		Back surface document scan position adjustment (CCD)	1 - 99	50
C	Image loss amount setting SIDE1	LEAD_EDGE (SIDE1)	Front surface lead edge image loss amount setting	0 - 99	20
D	Image loss amount setting SIDE1	FRONT_REAR (SIDE1)	Front surface side image loss amount setting	0 - 99	20
E		TRAIL_EDGE (SIDE1)	Front surface rear edge image loss amount setting	0 - 99	30
F	Image loss amount setting SIDE2	LEAD_EDGE (SIDE2)	Back surface lead edge image loss amount setting	0 - 99	30
G		FRONT_REAR (SIDE2)	Back surface side image loss amount setting	0 - 99	20
H		TRAIL_EDGE (SIDE2)	Back surface rear edge image loss amount setting	0 - 99	20
I	OFSET_SPF1		SPF front surface document off-center adjustment	1 - 99	50
J	OFSET_SPF2		SPF back surface document off-center adjustment	1 - 99	50
K	SCAN_SPEED_SPF1		DSPF document front surface magnification ratio (Sub scan)	1 - 99	50

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

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

Item A - H: 1 step = 0.1mm change

50-7

Purpose Adjustment

Function (Purpose) Used to adjust the copy image position and the image loss (DSPF mode). (This simulation is a simplified version of SIM 50-6.)

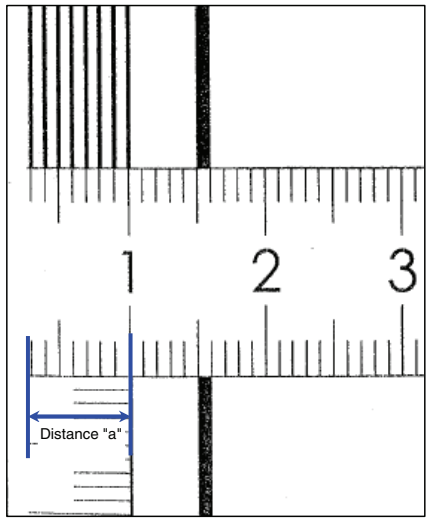
Section DSPF

Operation/Procedure

1) Select an adjustment target item with [↑] [↓] key.
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

Item/Display		Content	Setting range	Default value
H	TRAIL_EDGE (SIDE2)	Back surface rear edge image loss amount setting	0 - 99	20

Items C - H: When the adjustment value is increased, the image loss is increased.

Items A - H: 1 step = 0.1mm change

Items C - H are linked with items C - H of SIM50-06.

50-10

Purpose	Adjustment
Function (Purpose)	Used to adjust the black print image magnification ratio and the off-center position. (The adjustment is made separately for each paper feed section.)
Section	

Operation/Procedure

1) Select an adjustment target item with [↑] [↓] key.
2) Enter the set value with 10-key.
3) Press [EXECUTE] key. (The set value is saved.)

Item/Display			Content		Setting range		Default value	NOTE
A	BK-MAG		Main scan print magnification ratio BK		60 - 140		100	Adjustment Item List
B	MAIN-MFT		Print off center adjustment value (Manual paper feed)		1 - 99		65	
C	MAIN-CS1		Print off center adjustment value (Tray 1)		1 - 99		65	
D	MAIN-CS2		Print off center adjustment value (Tray 2)		1 - 99		50	
E	MAIN-CS3		Print off center adjustment value (Tray 3)		1 - 99		50	
F	MAIN-CS4		Print off center adjustment value (Tray 4)		1 - 99		50	
G	MAIN-ADU		Print off center adjustment value (Duplex) (NOTE) If the adjustment items A - F are not properly adjusted, this adjustment cannot be executed properly.		1 - 99		50	Adjustment Item List
H	SUB-MFT		Registration motor ON timing adjustment	Manual paper feed	1 - 99		60	
I	SUB-CS1			Standard cassette	1 - 99		60	
J	SUB-DSK			DESK	1 - 99		50	
K	SUB-ADU			ADU	1 - 99		50	
L	MULTI COUNT		Number of print		1 - 999		1	Adjustment pattern print conditions setting
M	PAPER	MFT	Tray selection	Manual paper feed	1 - 5	1	2 (CS1)	
		CS1		Tray 1		2		
		CS2		Tray 2		3		
		CS3		Tray 3		4		
		CS4		Tray 4		5		
N	DUPLEX	YES	Duplex print selection	Yes	0 - 1	0	1 (NO)	
		NO		No		1		

Item A: When the set value is increased, the BK image magnification ratio in the main scanning direction is increased. When the set value is decreased, the image magnification ratio is decreased.

Item B - G: When the adjustment value is increased, it is shifted to the front frame side. When the adjustment value is decreased, it is shifted to the rear frame side.

Item B - G: 1 step = 0.1mm change

50-12

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

Operation/Procedure

1) Select an adjustment target item with [↑] [↓] key.
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)	DSPF front surface image off-center adjustment	1 - 99	50
C	SPF(SIDE2)	DSPF back surface image off-center adjustment	1 - 99	50

50-20

Purpose	Adjustment
Function (Purpose)	Image registration adjustment (Manual adjustment)
Section	

Operation/Procedure

1) Select an adjustment target item with [↑] [↓] key.
2) Enter the set value with 10-key.
3) Press [EXECUTE] key. (The set value is saved.)

Item/Display			Content	Setting range		Default value	NOTE
A	CYAN (FRONT)		Image registration adjustment value (Main scanning direction) (Cyan) (F side)	1 - 199		100	Adjustment Item List
B	CYAN (REAR)		Image registration adjustment value (Main scanning direction) (Cyan) (R side)	1 - 199		100	
C	MAGENTA (FRONT)		Image registration adjustment value (Main scanning direction) (Magenta) (F side)	1 - 199		100	
D	MAGENTA (REAR)		Image registration adjustment value (Main scanning direction) (Magenta) (R side)	1 - 199		100	
E	YELLOW (FRONT)		Image registration adjustment value (Main scanning direction) (Yellow) (F side)	1 - 199		100	
F	YELLOW (REAR)		Image registration adjustment value (Main scanning direction) (Yellow) (R side)	1 - 199		100	
G	CYAN(SUB)		Image registration adjustment value (Sub scanning direction) (Cyan)	1 - 199		100	
I	MAGENTA(SUB)		Image registration adjustment value (Sub scanning direction) (Magenta)	1 - 199		100	
H	YELLOW(SUB)		Image registration adjustment value (Sub scanning direction) (Yellow)	1 - 199		100	
J	MULTICOUNT		Number of print	1 - 199		1	Adjustment pattern print conditions setting
K	PAPER	MFT	Tray selection	1	Manual paper feed	2	
		CS1		2	Tray 1		
		CS2		3	Tray 2		
		CS3		4	Tray 3		
		CS4		5	Tray 4		
L	DUPLEX	YES	Duplex print selection	0	Select	1	
		NO		1	Not select		

50-22

Purpose	Adjustment
Function (Purpose)	Used to adjust the image registration. (Main scan direction, sub scan direction) (Auto adjustment)/OPC drum phase adjustment (Auto adjustment) (Only color model)
Section	

Operation/Procedure

1) Select a target adjustment item.

ALL	The image registration adjustment (in the main scanning direction and the sub scanning direction) and the OPC drum phase adjustment are automatically performed.
REGIST	The image registration adjustment (in the main scanning direction and the sub scanning direction) is automatically performed.
DRUM POS	The OPC drum phase adjustment (automatic adjustment) is automatically performed.

2) Press [EXECUTE] key.

   The adjustment is automatically performed, and the adjustment data are displayed.

NOTE: The contents of the following list are mainly used by the technical division, and are not necessary for the market.

Item/Display				Content	Display	Default value	NOTE
ALL Image registration adjustment/ OPC drum phase adjustment	REGIST (Auto image registration adjustment)	MAIN F	C	Image registration adjustment value (Main scanning direction) (Position of writing by cyan laser is F side)	1.0 - 199.0	100	
			M	Image registration adjustment value (Main scanning direction) (Position of writing by magenta laser is F side)	1.0 - 199.0	100	
			Y	Image registration adjustment value (Main scanning direction) (Position of writing by yellow laser is F side)	1.0 - 199.0	100	
		MAIN R	C	Image registration adjustment value (Main scanning direction) (Position of writing by cyan laser is R side)	1.0 - 199.0	100	
			M	Image registration adjustment value (Main scanning direction) (Position of writing by magenta laser is R side)	1.0 - 199.0	100	
			Y	Image registration adjustment value (Main scanning direction) (Position of writing by yellow laser is R side)	1.0 - 199.0	100	
		SUB	C	Image registration adjustment value (Sub scanning direction) (Cyan drum to black drum)	1.0 - 199.0	100	
			M	Image registration adjustment value (Sub scanning direction) (Magenta drum to cyan drum)	1.0 - 199.0	100	
			Y	Image registration adjustment value (Sub scanning direction) (Yellow drum to magenta drum)	1.0 - 199.0	100	
		SKEW	C	Calculated result of print skew amount (Cyan)	-99.9 - 99.9	-	If the value is plus, R is displayed to left side of numerical value. If the value is minus, L is displayed to left side of numerical value. When the value is -4 - +4, "(OK)" is place at the back of the value. For the other cases, "(NG)" is displayed. *1
			M	Calculated result of print skew amount (magenta)	-99.9 - 99.9	-	
			Y	Calculated result of print skew amount (yellow)	-99.9 - 99.9	-	
	DRUM POS (Auto OPC drum phase adjustment)	PHASE	Phase adjustment value BK → CL	Angle step 0°(1) → 45°(2) → 90°(3) → 135°(4) → 180°(5) → 225°(6) → 270°(7) → 315°(8)	1 - 8	2	Same item as SIM44-31.

*1: The color image skew adjustment is performed according to this display value.
When "R" is displayed in front of the value, turn and click the skew adjustment screw (LSU) clockwise by the value.
When "L" is displayed in front of the value, turn and click the skew adjustment screw (LSU) counterclockwise by the value.
At that time, the values under the decimal point are rounded.

<Error displays in case of abnormal end >

	Error code	Error display	Error content	Description
Forcible end error	-	SUSPENDED	Door open end	Door open during operation
	-	SUSPENDED	CA end	CA button pressed during operation
	-	-	OFF end	Unconfirmed operation during operation (Power OFF)
Basic error	1	TONNER EMPTY 01	Toner Empty	BK or ALL Color toner EMPTY detection
	2	BEFORE BEHAVIOR 02	Other condition	Other condition
	4	SENSOR CALIBRATIO N 04	Calibration error	The target is not reached by 3 times of retry of F or R
	5	TIME OVER 05	Time error	No data are obtained for 90sec from data acquisition
	7	PROCESS CONTROL 07	Process control error	Process control error detection
Sub scanning adjust-ment error	10	SUB BLACK FRONT 10	Number of line error sub scanning color (Black) F	The pitch data number are not the specified value.
	11	SUB BLACK FRONT 11	Pitch error sub scanning color (Black) F	The pitch data are not within the allowable range.
Sub scanning adjust-ment error	15	SUB BLACK REAR 15	Number of line error sub scanning color (Black) R	The pitch data are not within the specified range.
	16	SUB BLACK REAR 16	Pitch error sub scanning color (Black) R	The pitch data are not within the allowable range.
	20	SUB CYAN FRONT 20	Number of line error sub scanning color (Cyan) F	The pitch data number are not the specified value.
	21	SUB CYAN FRONT 21	Pitch error sub scanning color (Cyan) F	The pitch data are not within the allowable range.
	22	SUB CYAN FRONT 22	Adjustment value number error sub scanning color (Cyan) F	The calculation result value is not within the allowable range.
	23	SUB CYAN FRONT 23	Result value error sub scanning color (Cyan) F	The variation in the calculation result value is above the allowable range.
	25	SUB CYAN REAR 25	Number of lines error sub scanning color (Cyan) R	The pitch data number are not the specified value.
	26	SUB CYAN REAR 26	Pitch error sub scanning color (Cyan) R	The pitch data are not within the allowable range.

	Error code	Error display	Error content	Description
Sub scanning adjust-ment error	27	SUB CYAN REAR 27	Adjustment value number error sub scanning color (Cyan) R	The calculation result value is not within the allowable range.
	28	SUB CYAN REAR 28	Result value error sub scanning color (Cyan) R	The variation in the calculation result value is above the allowable range.
	30	SUB MAGENTA FRONT 30	Number of lines error sub scanning color (Magenta) F	The pitch data number are not the specified value.
	31	SUB MAGENTA FRONT 31	Pitch error sub scanning color (Magenta) F	The pitch data are not within the allowable range.
	32	SUB MAGENTA FRONT 32	Adjustment value number error sub scanning color (Magenta) F	The calculation result value is not within the allowable range.
	33	SUB MAGENTA FRONT 33	Result value error sub scanning color (Magenta) F	The variation in the calculation result value is above the allowable range.
	35	SUB MAGENTA REAR 35	Number of lines error sub scanning color (Magenta) R	The pitch data number are not the specified value.
	36	SUB MAGENTA REAR 36	Pitch error sub scanning color (Magenta) R	The pitch data are not within the allowable range.
	37	SUB MAGENTA REAR 37	Adjustment value number error sub scanning color (Magenta) R	The calculation result value is not within the allowable range.
	38	SUB MAGENTA REAR 38	Result value error sub scanning color (Magenta) R	The variation in the calculation result value is above the allowable range.
	40	SUB YELLOW FRONT 40	Number of lines error sub scanning color (Yellow) F	The pitch data number are not the specified value.
	41	SUB YELLOW FRONT 41	Pitch error sub scanning color (Yellow) F	The pitch data are not within the allowable range.
	42	SUB YELLOW FRONT 42	Adjustment value number error sub scanning color (Yellow) F	The calculation result value is not within the allowable range.
	43	SUB YELLOW FRONT 43	Result value error sub scanning color (Yellow) F	The variation in the calculation result value is above the allowable range.
	45	SUB YELLOW REAR 45	Number of lines error sub scanning color (Yellow) R	The pitch data number are not the specified value.
	46	SUB YELLOW REAR 46	Pitch error sub scanning color (Yellow) R	The pitch data are not within the allowable range.
	47	SUB YELLOW REAR 47	Adjustment value number error sub scanning color (Yellow) R	The calculation result value is not within the allowable range.
	48	SUB YELLOW REAR 48	Result value error sub scanning color (Yellow) R	The variation in the calculation result value is above the allowable range.

	Error code	Error display	Error content	Description
Main scanning adjust-ment error	50	MAIN BLACK FRONT 50	Number of lines error main scanning color (Black) F	The pitch data number are not the specified value.
	51	MAIN BLACK FRONT 51	Pitch error main scanning color (Black) F	The pitch data are not within the allowable range.
	55	MAIN BLACK REAR 55	Number of lines error main scanning color (Black) R	The pitch data are not within the specified range.
	56	MAIN BLACK REAR 56	Pitch error main scanning color (Black) R	The pitch data are not within the allowable range.
	60	MAIN CYAN FRONT 60	Number of lines error main scanning color (Cyan) F	The pitch data number are not the specified value.
	61	MAIN CYAN FRONT 61	Pitch error main scanning color (Cyan) F	The pitch data are not within the allowable range.
	62	MAIN CYAN FRONT 62	Adjustment value number error main scanning color (Cyan) F	The calculation result value is not within the allowable range.
	63	MAIN CYAN FRONT 63	Result value error main scanning color (Cyan) F	The variation in the calculation result value is above the allowable range.
	65	MAIN CYAN REAR 65	Number of lines error main scanning color (Cyan) R	The pitch data number are not the specified value.
	66	MAIN CYAN REAR 66	Pitch error main scanning color (Cyan) R	The pitch data are not within the allowable range.
	67	MAIN CYAN REAR 67	Adjustment value error main scanning color (Cyan) R	The calculation result value is not within the allowable range.
	68	MAIN CYAN REAR 68	Result value error main scanning color (Cyan) R	The variation in the calculation result value is above the allowable range.
	70	MAIN MAGENTA FRONT 70	Number of lines error main scanning color (Magenta) F	The pitch data number are not the specified value.
	71	MAIN MAGENTA FRONT 71	Pitch error main scanning color (Magenta) F	The pitch data are not within the allowable range.
	72	MAIN MAGENTA FRONT 72	Adjustment value number error main scanning color (Magenta) F	The calculation result value is not within the allowable range.
	73	MAIN MAGENTA FRONT 73	Result value error main scanning color (Magenta) F	The variation in the calculation result value is above the allowable range.
	75	MAIN MAGENTA REAR 75	Number of lines error main scanning color (Magenta) R	The pitch data number are not the specified value.
	76	MAIN MAGENTA REAR 76	Pitch error main scanning color (Magenta) R	The pitch data are not within the allowable range.

	Error code	Error display	Error content	Description
Main scanning adjust-ment error	77	MAIN MAGENTA REAR 77	Adjustment value error main scanning color (Magenta) R	The calculation result value is not within the allowable range.
	78	MAIN MAGENTA REAR 78	Result value error main scanning color (Magenta) R	The variation in the calculation result value is above the allowable range.
	80	MAIN YELLOW FRONT 80	Number of lines error main scanning color (Yellow) F	The pitch data number are not the specified value.
	81	MAIN YELLOW FRONT 81	Pitch error main scanning color (Yellow) F	The pitch data are not within the allowable range.
	82	MAIN YELLOW FRONT 82	Adjustment value error main scanning color (Yellow) F	The calculation result value is not within the allowable range.
	83	MAIN YELLOW FRONT 83	Result value error main scanning color (Yellow) F	The variation in the calculation result value is above the allowable range.
	85	MAIN YELLOW REAR 85	Number of lines error main scanning color (Yellow) R	The pitch data number are not the specified value.
	86	MAIN YELLOW REAR 86	Pitch error main scanning color (Yellow) R	The pitch data are not within the allowable range.
	87	MAIN YELLOW REAR 87	Adjustment value error main scanning color (Yellow) R	The calculation result value is not within the allowable range.
	88	MAIN YELLOW REAR 88	Result value error main scanning color (Yellow) R	The variation in the calculation result value is above the allowable range.
	99	OTHER 99	Other errors	Other errors

When an error occurs, try the adjustment again. If an error still occurs, there may be an abnormality in the process section. Check the process section for any abnormality.

50-24

Purpose (This simulation is normally not used in the market.) (Only color model)

Function (Purpose) Used to display the detail data of SIM 44-2, 50-20 and 22.

Section

Operation/Procedure

NOTE: This simulation is mainly used by the technical division, and is not necessary for the market.

1) Select a target color of data display.
2) Use [BACK] and [NEXT] keys to select the display category.

Item classific ation	Display	Item content	Setting range	Related SIM
Regist-ration adjust-ment status check	REG_EXE_CNT	Number of executions of the registration adjustment (Auto execution)	0 - 99999999	50-22
	REG_SUC_CNT	Number of success of the registration adjustment (Auto execution)	0 - 99999999	50-22
	REG_CNT	Registration adjustment registration counter	0 - 99999999	-
Error record status check	ERROR HISTORY	Error record status check	-	50-22

50-27

Purpose Adjustment

Function (Purpose) Used to perform the image loss adjustment of scanned images in the FAX or image send mode.

Section

Operation/Procedure

1) Select a target adjustment mode.
2) Select an adjustment target item with [↑] [↓] key on the touch panel.
3) Enter the set value with 10-key.
4) Press [OK] key. (The set value is saved.)

Item/Display				Content	Setting range	Default value
FAX send	A	Image loss amount setting OC	LEAD_EDGE (OC)	OC lead edge image loss amount setting	0 - 100	30 (3mm)
	B		FRONT _REAR (OC)	OC side image loss amount setting	0 - 100	20 (2mm)
	C		TRAIL_EDGE (OC)	OC rear edge image loss amount setting	0 - 100	20 (2mm)
	D	Image loss amount setting SPF SIDE1	LEAD_EDGE (SPF_SIDE1)	Front surface lead edge image loss amount setting	0 - 100	20 (2mm)
	E		FRONT _REAR (SPF_SIDE1)	Front surface side image loss amount setting	0 - 100	20 (2mm)
	F		TRAIL_EDGE (SPF_SIDE1)	Front surface rear edge image loss amount setting	0 - 100	30 (3mm)

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

A-I: When the adjustment value is increased, the image loss is increased.

1step = 0.1mm

50-28

Purpose Adjustment

Function (Purpose) Used to automatically adjust the image loss, void area, image off-center, and image magnification ratio.

Section

Operation/Procedure

Item/Display	Content	Section
OC ADJ	Image loss off-center sub scanning direction image magnification ratio adjustment (Document table mode)	Scanner
BK-MAG ADJ	Main scanning direction image magnification ratio adjustment	Engine
SPF ADJ	Image loss off-center sub scanning direction image magnification ratio adjustment (DSPF mode)	Scanner
SETUP/PRINT ADJ	Print lead edge adjustment, image off-center (each paper feed tray, duplex mode) adjustment	Engine
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 adjusted.
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 face up in the DSPF.
6) Press [EXECUTE] key, and the adjustment pattern is scanned.
7) Set the adjustment pattern face down in the DSPF.
8) Press [EXECUTE] key, and the adjustment pattern is scanned.
9) 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.

(5) Adjustment result display

(6) Adjustment operation data display

RESCAN: The adjustment pattern is scanned.

REPRINT: The adjustment pattern is printed again.

RETRY: Shifts to the top menu.

51

51-1

Purpose	Adjustment/Setup
Function (Purpose)	Used to adjust the ON/OFF timing of the secondary transport voltage. (Only color model)
Section	

Operation/Procedure

1) Select an adjustment target item with [↑] [↓] key.
2) Enter the set value with 10-key.
3) Press [OK] key. (The set value is saved.)

When the adjustment value is decreased, the transfer ON/OFF timing for the paper is advanced. When the adjustment value is increased, the timing is delayed.

When the adjustment value is changed by 1, the timing is changed by about 10ms. The setting range is -490 - +490ms.

Item/Display		Content	Default value
A	TC2 ON TIMING	Secondary transfer voltage ON timing setting	40
B	TC2 OFF TIMING	Secondary transfer voltage OFF timing setting	60

51-2

Purpose	Adjustment/Setup
Function (Purpose)	Used to adjust the contact pressure (deflection amount) on paper by the main unit and the DSPF registration roller. (This adjustment is performed when there is a considerable variation in the print image position on the paper or when paper jams frequently occur.)
Section	

Operation/Procedure

1) Select a target adjustment mode.
2) Select a target item to be adjusted with [↑] [↓] key.
3) Enter the set value with 10-key.
4) Press [OK] key. (The set value is saved.)

Mode		Display/Item	Content		Setting range	Default value
A	SIDE1	NORMAL_PLAIN_HIGH	DSPF front surface document deflection amount adjustment value (Normal/Plain paper/HIGH)	-	1 - 99	50
B		NORMAL_PLAIN_LOW	DSPF front surface document deflection amount adjustment value (Normal/Plain paper/LOW)	-	1 - 99	50
C		NORMAL_THIN _HIGH	DSPF front surface document deflection amount adjustment value (Normal/Thin paper/HIGH)	-	1 - 99	50
D		NORMAL_THIN _LOW	DSPF front surface document deflection amount adjustment value (Normal/Thin paper/LOW)	-	1 - 99	50
E		NORMAL_CARD_HIGH	DSPF front surface document deflection amount adjustment value (Normal/Card/HIGH)	-	1 - 99	50
F		NORMAL_CARD_LOW	DSPF front surface document deflection amount adjustment value (Normal/Card/LOW)	-	1 - 99	50

Mode		Display/Item	Content		Setting range	Default value
A	ENGINE	TRAY1(S)	Main unit cassette 1 (Upper stage)/deflection adjustment value (Plain paper/Small size)	LT size (215mm) or less	1 - 99	30
B		TRAY1(L)	Main unit cassette 1 (Upper stage)/deflection adjustment value (Plain paper/Large size)	LT size (216mm) or above	1 - 99	30
C		MANUAL PLAIN PAPER(S)	Manual feed tray/deflection adjustment value (Plain paper/Small size)	LT size (215mm) or less	1 - 99	50
D		MANUAL PLAIN PAPER(L)	Manual feed tray/deflection adjustment value (Plain paper/Large size)	LT size (216mm) or above	1 - 99	50
E		MANUAL HEAVY PAPER(S)	Manual feed tray/deflection adjustment value (Heavy paper/Small size)	LT size (215mm) or less	1 - 99	90
F		MANUAL HEAVY PAPER(L)	Manual feed tray/deflection adjustment value (Heavy paper/Large size)	LT size (216mm) or above	1 - 99	90
G		MANUAL OHP	Manual feed tray/deflection adjustment value (OHP)	-	1 - 99	90
H		MANUAL ENV	Manual feed tray/deflection adjustment value (Envelope)	-	1 - 99	90
I		ADU PLAIN PAPER(S)	ADU/deflection adjustment value (Plain paper/Small size)	LT size (215mm) or less	1 - 99	20
J		ADU PLAIN PAPER(L)	ADU/deflection adjustment value (Plain paper/Large size)	LT size (216mm) or above	1 - 99	20
K		DESK(S)	DESK/deflection adjustment value (Plain paper/Small size)	LT size (215mm) or less	1 - 99	30
L		DESK(L)	DESK/deflection adjustment value (Plain paper/Large size)	LT size (216mm) or above	1 - 99	30

<Note on "Large size" and "Small size">

"Small size": The paper length in the transport direction is LT size (216mm) or less.

"Large size": The paper length in the transport direction is greater than LT size (216mm).

<Adjustment value>

When the adjustment value is increased, the warp amount is increased. When the adjustment value is decreased, the warp amount is decreased.

When the adjustment value is changed by 1, the stop timing is changed by 0.1mm.

53

53-8

Purpose Adjustment

Function (Purpose) Used to adjust the document lead edge reference and the DSPF mode document scan position.

Section

Operation/Procedure

Select an adjustment item [AUTO] [MANUAL].

<AUTO: Document lead edge reference (RRCA) adjustment>

1) Set a sheet of black paper of A4 or 11"x 8.5" on the document table.
2) Press [EXCUTE] key. (The adjustment is performed and the adjustment value is saved.)

Item/Display	Content	Setting range	Default value
MEASUREMENT DISTANCE	Document lead edge measurement distance	0-255 (0.1mm unit)	-
RRCA	Document lead edge reference position	0 - 99	50

<MANUAL: 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	50

- 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.

55

55-1

Purpose (Do not use this function unless specially required.)

Function (Purpose) Used to set the specifications of the engine control operations. (SOFT SW)

Section

Operation/Procedure

55-2

Purpose (Do not use this function unless specially required.)

Function (Purpose) Used to set the specifications of the scanner control operation. (SOFT SW)

Section

Operation/Procedure

55-3

Purpose	(Do not use this function unless specially required.)
Function (Purpose)	Used to set the specifications of the controller operation. (SOFT SW)
Section	

Operation/Procedure

56

56-1

Purpose	Data backup (Data transfer)
Function (Purpose)	Used to transport data between HDD - MFP PWB SRAM/EEPROM. (Used to repair the PWB.)
Section	

Operation/Procedure

1) Select a target content of data transfer.
2) Press [EXECUTE] key and press [YES] key.
   Data transfer of the item selected in procedure 1) is executed.
   When the operation is completed normally, "COMPLETE" is displayed. In case of an abnormal end, "ERROR" is displayed.

ALL → HDD	All the memory contents are transferred to the HDD.
HDD → ALL	The HDD contents are transferred to all the memories.
EEPROM → HDD	Transfer from EEPROM to HDD
HDD → EEPROM	Transfer from HDD to EEPROM
SRAM → HDD	Data transfer from SRAM to HDD. (Including the FAX memory) When the FAX memory or an option memory (memory for FAX) is installed, the contents in the memory for FAX are also transferred to HDD.
HDD → SRAM	Transfer from HDD to SRAM (including the FAX memory) When the FAX memory or an option memory (memory for FAX) is installed, the contents of the FAX memory are also transferred to HDD.

56-2

Purpose	Data backup (Data transfer)
Function (Purpose)	Used to backup the data in the EEPROM. SRAM, and HDD (including user authentication data and address data) to the USB memory. (Corresponding to the device cloning and the storage backup.)
Section	

Operation/Procedure

1) Insert the USB memory into the main unit.
2) Select a transfer mode.
3) Select a target transfer file.
4) Press [EXECUTE] key, and press [YES] key.
   Data transfer 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 transfer mode.
3) Select a target transfer file.
4) Enter the password with 10 key.
5) Press [SET] key.
6) Press [EXECUTE] key, and press [YES] key.
   Data transfer is performed.
   When the operation is completed normally, "COMPLETE" is displayed. In case of an abnormal end, "ERROR" is displayed.

<Data list outside the backup targets>

(EEPROM/SRAM)

PWB Type	Content	NOTE
Controller	Machine serial No.	
	Product key information	
	Various counter	Copy counter/FAX send counter etc.
	Trouble history	
PCU	Machine serial No.	
	Various counter	Maintenance counter
	Machine adjustment execute history	
	Trouble history	
SCU	Various counter	Maintenance counter
	Trouble history	

(HDD)

Classification	Content	NOTE
User authentication	User pixel counter	
Japanese FEP	User dictionary	
Job end list	Job end list display data (The image send series include the preserved job list.)	
Log	Job log	Read from WEB is enable.
New N/A	• Print history information • JAM history information • Trouble history information • Same position continuous jam count value • Charging information • Life information	
Operation manual	E-manual	
Program	Main program data	

56-3

Purpose	Data backup (Data transfer)
Function (Purpose)	Used to backup the document filling data to the USB memory.
Section	

Operation/Procedure

1) Insert the USB memory into the main unit.
2) Select a transfer mode.
3) Select a target transfer file.
4) Press [EXECUTE] key, and press [YES] key.
   Data transfer 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 (Data transfer)
Function (Purpose)	Used to backup the JOB log data to the USB memory.
Section	

Operation/Procedure

1) Insert the USB memory into the main unit.
2) Press [JOB LOG EXPORT] key.

3) Press [EXECUTE] key, and press [YES] key.
Data transfer selected in the procedure 2) is performed.
When the operation is completed normally, "COMPLETE" is displayed. In case of an abnormal end, "ERROR" is displayed.

60

60-1

Purpose Operation test/check

Function (Purpose) Used to check the operations (read/write) of the MFP PWB memory.

Section

Operation/Procedure

1) Press [EXECUTE] key.
Start the test.

Result display	Description
OK	Success
NG	Error
NONE	Not installed (Including DIMM trouble)
INVALID	Execution disable

- **Color model**

SLOT	Description	
SLOT1	System memory (expansion)	DIMM2
SLOT2	System memory (standard)	DIMM1
SLOT3	Local memory (MFP expansion)	DIMM4
SLOT4	Local memory (MFP standard)	DIMM3
SLOT5	Local memory (Codec standard)	DIMM5

- **Mono color model**

SLOT	Description	
SLOT1	System memory (expansion)	DIMM2
SLOT2	System memory (standard)	DIMM1
SLOT3	Local memory (MFP expansion)	DIMM4
SLOT4	Local memory (MFP standard)	DIMM3

60-2

Purpose (This simulation is normally not used in the market.)

Function (Purpose) Used to set the MFP PWB on-board SDRAM.

Section

Operation/Procedure

1) Select a target item of setting with [↑] [↓] key.
2) Enter the set value with 10-key.
3) Press [OK] key.

NOTE: Set to the default value.

Item/Display			Content		Setting range		Default value
A	SETTING ENABLE	DISABLE	SDRAM setting change flag	DDR setting of On-board SPD	0 - 1	0	0
		ENABLE		DDR setting of B or later		1	
B	NUMBER OF ROW	11BIT	ROW address width		0 - 2	0	2
		12BIT				1	
		13BIT				2	
C	NUMBER OF COLUMN	8BIT	COLUMN address width		0 - 4	0	2
		9BIT				1	
		10BIT				2	
		11BIT				3	
		12BIT				4	
D	TWR SETTING VALUE	2CLOCK	TWR set value		0 - 3	0	1
		3CLOCK				1	
		4CLOCK				2	
		5CLOCK				3	
E	TRAS SETTING VALUE	4CLOCK	TRAS set value		0 - 3	0	2
		5CLOCK				1	
		6CLOCK				2	
		7CLOCK				3	
F	TRC SETTING VALUE	6CLOCK	TRC set value		0 - 4	0	3
		7CLOCK				1	
		8CLOCK				2	
		9CLOCK				3	
		10CLOCK				4	
G	TRCD SETTING VALUE	2CLOCK	TRCD set value		0 - 3	0	1
		3CLOCK				1	
		4CLOCK				2	
		5CLOCK				3	
H	TRP SETTING VALUE	2CLOCK	TRP set value		0 - 3	0	1
		3CLOCK				1	
		4CLOCK				2	
		5CLOCK				3	
I	TFRC SETTING VALUE	7CLOCK	TFRC set value		0 - 13	0	3
		8CLOCK				1	
		-				-	
		20CLOCK				1 3	
J	CAS LATENCY	CL=2	CAS latency		0 - 2	0	1
		CL=2.5				1	
		CL=3				2	
K	TTL NUM OF MB ONBOARD DDR	NONE	On-board DDR total capacity		0 - 2	0	1
		128M BYTE				1	
		256M BYTE				2	
L	NUM OF ONBD-DDR CS-BANK	NONE	On-board DDR bunk number		0 - 2	0	1
		1CHIP				1	
		2CHIP				2	

61

61-1

Purpose Operation test/check

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

Section LSU

Operation/Procedure

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

- **Color model**

Display	Content
LSU TESTRESULT NG: PG	Polygon mirror rotation abnormality
LSU TESTRESULT NG: K	Laser abnormality (K)
LSU TESTRESULT NG: CL	Laser light emitting abnormality (C,M,Y)

- **Mono color model**

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

61-3

Purpose	Adjustment/Setup
Function (Purpose)	Used to set the laser power
Section	

Operation/Procedure

1) Select a target mode for adjustment.
2) Select an adjustment target item with [↑] [↓] key.
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.

- **Color model**

Mode	Item/Display		Content	Setting range	Default value	Destination linkage
COPY	A	LASER POWER MIDDLE (K1)	Used to set the laser power (Middle speed/ K1)	0 - 255	128	×
	B	LASER POWER MIDDLE (K2)	Used to set the laser power (Middle speed/ K2)	0 - 255	128	×
	C	LASER POWER MIDDLE (C1)	Used to set the laser power (Middle speed/ C1)	0 - 255	128	×
	D	LASER POWER MIDDLE (C2)	Used to set the laser power (Middle speed/ C2)	0 - 255	128	×
	E	LASER POWER MIDDLE (M1)	Used to set the laser power (Middle speed/ M1)	0 - 255	128	×
	F	LASER POWER MIDDLE (M2)	Used to set the laser power (Middle speed/ M2)	0 - 255	128	×
	G	LASER POWER MIDDLE (Y1)	Used to set the laser power (Middle speed/ Y1)	0 - 255	128	×
	H	LASER POWER MIDDLE (Y2)	Used to set the laser power (Middle speed/ Y2)	0 - 255	128	×
	I	LASER POWER LOW (K1)	Used to set the laser power (Low speed/ K1)	0 - 255	128	×
	J	LASER POWER LOW (K2)	Used to set the laser power (Low speed/ K2)	0 - 255	128	×
	K	LASER POWER LOW (C1)	Used to set the laser power (Low speed/ C1)	0 - 255	128	×
	L	LASER POWER LOW (C2)	Used to set the laser power (Low speed/ C2)	0 - 255	128	×
	M	LASER POWER LOW (M1)	Used to set the laser power (Low speed/ M1)	0 - 255	128	×
	N	LASER POWER LOW (M2)	Used to set the laser power (Low speed/ M2)	0 - 255	128	×
	O	LASER POWER LOW (Y1)	Used to set the laser power (Low speed/ Y1)	0 - 255	128	×
	P	LASER POWER LOW (Y2)	Used to set the laser power (Low speed/ Y2)	0 - 255	128	×
	Q	LASER POWER MIDDLE (BW1)	Used to set the laser power (Middle speed/ BW1)	0 - 255	128	×
	R	LASER POWER MIDDLE (BW2)	Used to set the laser power (Middle speed/ BW2)	0 - 255	128	×
	S	LASER POWER LOW (BW1)	Used to set the laser power (Low speed/ BW1)	0 - 255	128	×
	T	LASER POWER LOW (BW2)	Used to set the laser power (Low speed/ BW2)	0 - 255	128	×
	U	LASER DUTY MIDDLE (K)	Laser DUTY select middle speed (K)	0 - 255	0	○
	V	LASER DUTY MIDDLE (C)	Laser DUTY select middle speed (C)	0 - 255	0	○
	W	LASER DUTY MIDDLE (M)	Laser DUTY select middle speed (M)	0 - 255	0	○
	X	LASER DUTY MIDDLE (Y)	Laser DUTY select middle speed (Y)	0 - 255	0	○
	Y	LOW (K)	Laser DUTY select low speed (K)	0 - 255	0	○
	Z	LOW (C)	Laser DUTY select low speed (C)	0 - 255	0	○
	AA	LOW (M)	Laser DUTY select low speed (M)	0 - 255	0	○
	AB	LOW (Y)	Laser DUTY select low speed (Y)	0 - 255	0	○
	AC	LASER DUTY MIDDLE (BW)	Laser DUTY select middle speed (BW)	0 - 255	0	○
	AD	LASER DUTY LOW (BW)	Laser DUTY select low speed (BW)	0 - 255	0	○

Mode	Item/Display		Content	Setting range	Default value	Destination linkage
PR600/ FAX	A	LASER POWER MIDDLE (K1)	Used to set the laser power (Middle speed/ K1)	0 - 255	128	×
	B	LASER POWER MIDDLE (K2)	Used to set the laser power (Middle speed/ K2)	0 - 255	128	×
	C	LASER POWER MIDDLE (C1)	Used to set the laser power (Middle speed/ C1)	0 - 255	128	×
	D	LASER POWER MIDDLE (C2)	Used to set the laser power (Middle speed/ C2)	0 - 255	128	×
	E	LASER POWER MIDDLE (M1)	Used to set the laser power (Middle speed/ M1)	0 - 255	128	×
	F	LASER POWER MIDDLE (M2)	Used to set the laser power (Middle speed/ M2)	0 - 255	128	×
	G	LASER POWER MIDDLE (Y1)	Used to set the laser power (Middle speed/ Y1)	0 - 255	128	×
	H	LASER POWER MIDDLE (Y2)	Used to set the laser power (Middle speed/ Y2)	0 - 255	128	×
	I	LASER POWER LOW (K1)	Used to set the laser power (Low speed/ K1)	0 - 255	128	×
	J	LASER POWER LOW (K2)	Used to set the laser power (Low speed/ K2)	0 - 255	128	×
	K	LASER POWER LOW (C1)	Used to set the laser power (Low speed/ C1)	0 - 255	128	×
	L	LASER POWER LOW (C2)	Used to set the laser power (Low speed/ C2)	0 - 255	128	×
	M	LASER POWER LOW (M1)	Used to set the laser power (Low speed/ M1)	0 - 255	128	×
	N	LASER POWER LOW (M2)	Used to set the laser power (Low speed/ M2)	0 - 255	128	×
	O	LASER POWER LOW (Y1)	Used to set the laser power (Low speed/ Y1)	0 - 255	128	×
	P	LASER POWER LOW (Y2)	Used to set the laser power (Low speed/ Y2)	0 - 255	128	×
	Q	LASER POWER MIDDLE (BW1)	Used to set the laser power (Middle speed/ BW1)	0 - 255	128	×
	R	LASER POWER MIDDLE (BW2)	Used to set the laser power (Middle speed/ BW2)	0 - 255	128	×
	S	LASER POWER LOW (BW1)	Used to set the laser power (Low speed/ BW1)	0 - 255	128	×
	T	LASER POWER LOW (BW2)	Used to set the laser power (Low speed/ BW2)	0 - 255	128	×
	U	LASER DUTY MIDDLE (K)	Laser DUTY select middle speed (K)	0 - 255	0	○
	V	LASER DUTY MIDDLE (C)	Laser DUTY select middle speed (C)	0 - 255	0	○
	W	LASER DUTY MIDDLE (M)	Laser DUTY select middle speed (M)	0 - 255	0	○
	X	LASER DUTY MIDDLE (Y)	Laser DUTY select middle speed (Y)	0 - 255	0	○
	Y	LOW (K)	Laser DUTY select low speed (K)	0 - 255	0	○
	Z	LOW (C)	Laser DUTY select low speed (C)	0 - 255	0	○
	AA	LOW (M)	Laser DUTY select low speed (M)	0 - 255	0	○
	AB	LOW (Y)	Laser DUTY select low speed (Y)	0 - 255	0	○
	AC	LASER DUTY MIDDLE (BW)	Laser DUTY select middle speed (BW)	0 - 255	0	○
	AD	LASER DUTY LOW (BW)	Laser DUTY select low speed (BW)	0 - 255	0	○
PR1200	A	LASER POWER MIDDLE (K1)	Used to set the laser power (Middle speed/ K1)	0 - 255	128	×
	B	LASER POWER MIDDLE (K2)	Used to set the laser power (Middle speed/ K2)	0 - 255	128	×
	C	LASER POWER MIDDLE (C1)	Used to set the laser power (Middle speed/ C1)	0 - 255	128	×
	D	LASER POWER MIDDLE (C2)	Used to set the laser power (Middle speed/ C2)	0 - 255	128	×
	E	LASER POWER MIDDLE (M1)	Used to set the laser power (Middle speed/ M1)	0 - 255	128	×
	F	LASER POWER MIDDLE (M2)	Used to set the laser power (Middle speed/ M2)	0 - 255	128	×
	G	LASER POWER MIDDLE (Y1)	Used to set the laser power (Middle speed/ Y1)	0 - 255	128	×

Mode	Item/Display		Content	Setting range	Default value	Destination linkage
PR1200	H	LASER POWER MIDDLE (Y2)	Used to set the laser power (Middle speed/ Y2)	0 - 255	128	×
	I	LASER POWER LOW (K1)	Used to set the laser power (Low speed/ K1)	0 - 255	128	×
	J	LASER POWER LOW (K2)	Used to set the laser power (Low speed/ K2)	0 - 255	128	×
	K	LASER POWER LOW (C1)	Used to set the laser power (Low speed/ C1)	0 - 255	128	×
	L	LASER POWER LOW (C2)	Used to set the laser power (Low speed/ C2)	0 - 255	128	×
	M	LASER POWER LOW (M1)	Used to set the laser power (Low speed/ M1)	0 - 255	128	×
	N	LASER POWER LOW (M2)	Used to set the laser power (Low speed/ M2)	0 - 255	128	×
	O	LASER POWER LOW (Y1)	Used to set the laser power (Low speed/ Y1)	0 - 255	128	×
	P	LASER POWER LOW (Y2)	Used to set the laser power (Low speed/ Y2)	0 - 255	128	×
	Q	LASER POWER MIDDLE (BW1)	Used to set the laser power (Middle speed/ BW1)	0 - 255	128	×
	R	LASER POWER MIDDLE (BW2)	Used to set the laser power (Middle speed/ BW2)	0 - 255	128	×
	S	LASER POWER LOW (BW1)	Used to set the laser power (Low speed/ BW1)	0 - 255	128	×
	T	LASER POWER LOW (BW2)	Used to set the laser power (Low speed/ BW2)	0 - 255	128	×
	U	LASER DUTY MIDDLE (K)	Laser DUTY select middle speed (K)	0 - 255	0	×
	V	LASER DUTY MIDDLE (C)	Laser DUTY select middle speed (C)	0 - 255	0	×
	W	LASER DUTY MIDDLE (M)	Laser DUTY select middle speed (M)	0 - 255	0	×
	X	LASER DUTY MIDDLE (Y)	Laser DUTY select middle speed (Y)	0 - 255	0	×
	Y	LOW (K)	Laser DUTY select low speed (K)	0 - 255	0	×
	Z	LOW (C)	Laser DUTY select low speed (C)	0 - 255	0	×
	AA	LOW (M)	Laser DUTY select low speed (M)	0 - 255	0	×
	AB	LOW (Y)	Laser DUTY select low speed (Y)	0 - 255	0	×
	AC	LASER DUTY MIDDLE (BW)	Laser DUTY select middle speed (BW)	0 - 255	0	×
	AD	LASER DUTY LOW (BW)	Laser DUTY select low speed (BW)	0 - 255	0	×

- **Mono color model**

Mode	Item/Display		Content	Setting range	Default value
COPY	A	LASER POWER MIDDLE (BW1)	Used to set the laser power (Middle speed/BW1)	0 - 255	128
	B	LASER POWER MIDDLE (BW2)	Used to set the laser power (Middle speed/BW2)	0 - 255	128
	C	LASER POWER LOW (BW1)	Used to set the laser power (Low speed/BW1)	0 - 255	128
	D	LASER POWER LOW (BW2)	Used to set the laser power (Low speed/BW2)	0 - 255	128
	E	LASER DUTY MIDDLE (BW)	Laser DUTY select middle speed/BW	0 - 255	0
	F	LASER DUTY LOW (BW)	Laser DUTY select low speed/BW	0 - 255	0
PR600/ FAX	A	LASER POWER MIDDLE (BW1)	Used to set the laser power (Middle speed/BW1)	0 - 255	128
	B	LASER POWER MIDDLE (BW2)	Used to set the laser power (Middle speed/BW2)	0 - 255	128
	C	LASER POWER LOW (BW1)	Used to set the laser power (Low speed/BW1)	0 - 255	128
	D	LASER POWER LOW (BW2)	Used to set the laser power (Low speed/BW2)	0 - 255	128
	E	LASER DUTY MIDDLE (BW)	Laser DUTY select middle speed/BW	0 - 255	0
	F	LASER DUTY LOW (BW)	Laser DUTY select low speed/BW	0 - 255	0
PR1200	A	LASER POWER MIDDLE (BW1)	Used to set the laser power (Middle speed/BW1)	0 - 255	128
	B	LASER POWER MIDDLE (BW2)	Used to set the laser power (Middle speed/BW2)	0 - 255	128
	C	LASER POWER LOW (BW1)	Used to set the laser power (Low speed/BW1)	0 - 255	128
	D	LASER POWER LOW (BW2)	Used to set the laser power (Low speed/BW2)	0 - 255	128
	E	LASER DUTY MIDDLE (BW)	Laser DUTY select middle speed/BW	0 - 255	0
	F	LASER DUTY LOW (BW)	Laser DUTY select low speed/BW	0 - 255	0

61-4

Purpose	Adjustment
Function (Purpose)	Used to print the print image skew adjustment pattern. (LSU unit)
Section	

Operation/Procedure

1) Select a target item with [↑] [↓] key.
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
B	PAPER	MFT	Tray selection	1	Manual paper feed	2 (CS1)
		CS1		2	Tray 1	
		CS2		3	Tray 2	
		CS3		4	Tray 3	
		CS4		5	Tray 4	

62

62-1

Purpose	
Function (Purpose)	Used to execute the hard disk format (except operation manual area).
Section	

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key.
   Used to execute the hard disk format.

When the operation is completed, [EXECUTE] key returns to the normal display.

62-2

Purpose	Operation test/check
Function (Purpose)	Used to check read/write of the hard disk (partial).
Section	

Operation/Procedure

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

62-3

Purpose	Operation test/check
Function (Purpose)	Used to check read/write of the hard disk (all areas).
Section	

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key.
   Read/write operations are performed.

62-6

Purpose	Operation test/check
Function (Purpose)	Used to perform the self diagnostics of the hard disk.
Section	

Operation/Procedure

1) Select the self 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)	Used to print the hard disk self diagnostics error log.
Section	

Operation/Procedure

1) Press [EXECUTE] key.

ERROR LOG SECTOR of the SMART function is executed, and the result is printed.

When the operation is completed, [EXECUTE] key returns to the normal display.

62-8

Purpose	
Function (Purpose)	Used to format the hard disk. (Excluding the system area and the operation manual area)
Section	

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key.
   Used to execute the hard disk format.

When the operation is completed, [EXECUTE] key returns to the normal display.

* When the HDD formatting (except for the system area) is not completed normally, "HDD FORMAT (EXCEPT SYSTEM AREA) NG" is displayed.

62-10

Purpose	Data clear
Function (Purpose)	Used to delete the job log data.
Section	

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key.
   Used to delete the job log data.

When the operation is completed, [EXECUTE] key returns to the normal display.

62-11

Purpose	Data clear
Function (Purpose)	Used to delete the document filing data.
Section	

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key.
   Used to delete the document filing data.

When the operation is completed, [EXECUTE] key returns to the normal display.

62-12

Purpose	Setting
Function (Purpose)	Used to set Enable/Disable of auto format in a hard disk trouble.
Section	

Operation/Procedure

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

When it is set to Enable, if a read error of HDD occurs in the system data storage area (FAX/device cloning data, etc.), only the system data storage area is cleared.

A	0	Enable
	1	Disable (Default)

62-13

Purpose	Data clear
Function (Purpose)	Used to format the hard disk. (only the operation manual area)
Section	

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key.
   The operation manual data are deleted.

When the operation is completed, [EXECUTE] key returns to the normal display.

63

63-1

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

Operation/Procedure

1) Select a target color and mode to display.

Item/Display		Content	NOTE
OC	GAIN ODD	Gain adjustment value (odd number)	
	GAIN EVEN	Gain adjustment value (even number)	
	OFFSET ODD	Offset value (odd number)	
	OFFSET EVEN	Offset value (even number)	
	SMP AVE ODD	Reference plate sampling average value (ODD)	
	SMP AVE EVEN	Reference plate sampling average value (EVEN)	
	TARGET VALUE	Target value	
	BLACK LEVEL	Black output level	
	ERROR CODE	Error code (0, 1-14) (for debug)	0: No error 1: STAGE1: Loop number over 2: STAGE2: The target value is under the specified value. 3: STAGE3: The gain set value is negative. 4: END is not asserted. (Gain adjustment) 5: (reserve) 6: STAGE2: Underflow 7: Black shading error 8: Other error 9: END is not asserted. (White shading) 10: END is not asserted. (Black shading) 11: END is not asserted. (Light quantity correction) 12: END is not asserted. (Scan) 13: Register check error. (When booting/Before gain) 14: Register check error. (Before light quantity correction)
DSPF	DSPF BACK WHITE LEVEL 1ST	First scan DSPF back white reference level	
	DSPF BACK WHITE LEVEL 2ND	Second scan DSPF back white reference level	
	GAIN ODD	Gain adjustment value (odd number)	
	GAIN EVEN	Gain adjustment value (Even number)	
	OFFSET ODD	Offset value (odd number)	
	OFFSET EVEN	Offset value (even number)	
	SMP AVE ODD	Reference plate sampling average value (ODD)	
	SMP AVE EVEN	Reference plate sampling average value (EVEN)	
	TARGET VALUE	Target value	
	BLACK LEVEL	Black output level	

Item/Display		Content	NOTE	
DSPF	ERROR CODE	Error code (0, 1-14) (for debug)	0	No error
			1	STAGE1: Loop number over
			2	STAGE2: The target value is under the specified value.
			3	STAGE3: The gain set value is negative.
			4	END is not asserted. (Gain adjustment)
			5	(reserve)
			6	STAGE2: Underflow
			7	Black shading error
			8	Other error
			9	END is not asserted. (White shading)
			10	END is not asserted. (Black shading)
			11	END is not asserted. (Light quantity correction)
			12	END is not asserted. (Scan)
			13	Register check error. (When booting/Before gain)
			14	Register check error. (Before light quantity correction)
	DSPF FACE WHITE LEVEL 1ST	First scan DSPF face white reference level		
	DSPF FACE WHITE LEVEL 2ND	Second scan DSPF face white reference level		

63-2

Purpose Adjustment

Function (Purpose) Used to perform shading.

Section

Operation/Procedure

1) Select a shading mode to display.
2) Press [EXECUTE] key.
   Used to perform shading.

When the operation is completed, [EXECUTE] key returns to the normal display.

Item/Display	Content
OC SHADING	The OC analog correction level is corrected, and the shading correction data are formed. (Document table mode)
DSPF SHADING	The DSPF analog correction level is corrected, and the shading correction data are formed. (SPF mode)

Result display

Display	Content
COMPLETE	(Normal) Completion
ERROR	Abnormal completion (When executing DSPF shading)
INCOMPLETE	Uncompleted, interruption (When executing DSPF shading)

63-3

Purpose Adjustment

Function (Purpose) Used to 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 side center of the document table. For the DSPF mode, put 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.

When the operation is completed, [EXECUTE] key returns to the normal display.

After completion of the operation, press [RESULT] key, and the adjustment data are displayed. At that time, the target color of data display can be selected with [R] [G] [B] key.

63-4

Purpose Operation data check

Function (Purpose) Used to display the SIT chart patch density.

Section

Operation/Procedure

1) Set the SIT chart (UKOG-0280FCZZ or UKOG-0280FCZ1) to the reference position on the left side center of the document table. For the DSPF mode, put 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) Used to perform the scanner (CCD) color balance and gamma default setting.

Section

Operation/Procedure

1) Select [OC] or [DSPF] key.
2) Press [EXECUTE] key, and press [YES] key.
3) The scanner (CCD) color balance and gamma are set to the default.

63-6

Purpose	Adjustment/Setting/Operation data check
Function (Purpose)	Used to display the scan level and the density level of the copy color balance adjustment patch. (Only color model)
Section	

Operation/Procedure

1) Set the color balance adjustment pattern sheet printed with SIM46-21 on the document table.
2) Press [EXECUTE] key.

   The patch image of the adjustment pattern sheet is scanned.

   Select a target color with [C] [M] [Y] [K] key.

63-7

Purpose	Adjustment/Setup
Function (Purpose)	Used to register the service target of the copy mode auto color balance adjustment. (Only color model)
Section	

Operation/Procedure

1) Press [SETUP] key on the touch panel.
2) Set the color balance adjustment pattern sheet printed with SIM46-21 on the document table.
3) Press [EXECUTE] key.

   The patch image of the adjustment pattern sheet is scanned.
4) Press [OK] key.

   The service target of the copy mode automatic color balance adjustment is registered according to the patch image of the scanned adjustment pattern sheet.

   The registered color balance and the density are displayed.

   Select a target color with [C] [M] [Y] [K] key.

NOTE: This simulation is executed only when the copy color balance is manually adjusted.

B	Point B target value
C	Point C target value
D	Point D target value
E	Point E target value
F	Point F target value
G	Point G target value
H	Point H target value
I	Point I target value
J	Point J target value
K	Point K target value
L	Point L target value
M	Point M target value
N	Point N target value
O	Point O target value
BASE	Background sampling value

63-8

Purpose	Adjustment/Setup
Function (Purpose)	Used to set the default of the service target of the copy mode auto color balance adjustment. (Only color model)
Section	

Operation/Procedure

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

   The service target of the copy mode automatic color balance adjustment is set to the default.

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

63-11

Purpose	Adjustment/Setup
Function (Purpose)	Used to set the target color balance of the copy mode auto color balance adjustment. (Only color model)
Section	

Operation/Procedure

1) Select the target color balance.

Item/Display		Content	Default value
Target color balance	DEF1	The engine color balance adjustment target in the automatic color balance operation is slightly shifted to Magenta. When this target is selected, the color balance is converted into natural gray color balance by the color table in an actual copy mode and print is made.	DEF 1
	DEF2	The engine color balance adjustment target in the automatic color balance operation is slightly shifted to natural gray color balance. When this target is selected, the color balance is slightly shifted to Cyan by the color table in an actual copy mode and print is made.	
	DEF3	The engine color balance adjustment target in the automatic color balance operation is slightly shifted to Cyan. When this target is selected, the color balance is converted into the color balance with enhanced Cyan by the color table in an actual copy mode and print is made.	

64

64-1

Purpose	Operation test/check
Function (Purpose)	Test print. (Self print) (Color mode) (Only color model)
Section	

Operation/Procedure

1) Set the print conditions.
   Select an item to be print condition with [↑] [↓] keys.
   Set the print conditions with 10 key.
   Select a target print color.
2) Press [EXECUTE] key.
   The test print (self print) is performed.

Display			Content		Setting range		Default value
A	PRINT PATTERN (1,2,9 - 11,15 - 19,21,22,29)		Specification of the print pattern (* For details, refer to the description below.)		1 - 58 (Printable only 1, 2, 9 - 11, 15 - 19, 21, 22, 29)		1
B	DOT1 (DOT1>=2 IF A:2,11)		Setting of print dot number (M parameter) (Self print pattern: m by n)		1-255 (Pattern 2,11: 2-255 except above: 1-255)		1
C	DOT2 (DOT2>=2 IF A:2,11)		Setting of blank dot number (N parameter) (Self print pattern: m by n)		0-255 (Pattern2,11: 2-255 except above: 0-255)		254
D	DENSITY (FIXED "255" IF A: 9)		Used to specify the print gradation.		1-255 (Pattern 9: 255 Fixed except above:1-255)		255
E	MULTI COUNT		Number of print		1 - 999		1
F	EXPOSURE (2 - 8 IF A: 15 - 19)	THR	Exposure mode specification	No process (through)	1-8 (Pattern 15-19: 2-8 except above:1-8)	1	8 (STANDARD DITHER)
		CH/PC		Text/Printed Photo		2	
		CH/PR		Text/ Photograph		3	
		CHAR		Text		4	
		PR PC		Printed Photo		5	
		PR PP		Photograph		6	
		MAP		Map		7	
		STD D		Dither without correction		8	
G	PAPER	MFT	Tray selection	Manual paper feed	1 - 5	1	2 (CS1)
		CS1		Tray 1		2	
		CS2		Tray 2		3	
		CS3		Tray 3		4	
		CS4		Tray 4		5	
H	DUPLEX	YES	Duplex print selection	Yes	0 - 1	0	1 (NO)
		NO		No		1	
I	PAPER TYPE	PLAIN	Paper type	Standard paper	1 - 4	1	1 (PLAIN)
		HEAVY		Heavy paper		2	
		OHP		OHP		3	
		ENVELOPE		Envelope		4	

<Print pattern of Item A>

Pattern No.	Content	Pattern generating section	NOTE
1	Grid pattern	LSU-ASIC	
2	Dot print		-
9	Each color 10% area (A4/A4E) density print		Each interval is 41.86mm (989dot).
10	8-color belt print		
11	4-color dot print (sub scan)		
15	16 gradations + M by N (center gradations only): Sub scan	MFP ASIC	• When all colors are selected, print is made in CMY. • 16 gradations print • The gradation is changed for every 256 dots.
16	16 gradations + M by N (center gradations only): Main scan		
17	All background (half tone)	Half tone (MFP ASIC rear process)	When all colors are selected, print is made in CMY.
18	256 gradations pattern (Other dither)		• When all colors are selected, print is made in CMY. • 16 gradations are printed in the main scanning direction, and feedback is made, and the next 16 gradations are printed. (16 x 16 patch print) • Print is made from 255 gradations, and 0-254 gradations are printed.
19	256 gradations pattern (For text dither)		
20	-	-	-
21	4-point dot print (main scan)	LSU-ASIC	
22	Slant line		
29	Dot print 1200dpi		

64-2

Purpose	Operation test/check
Function (Purpose)	Test print. (Self print) (Monochrome mode)
Section	

Operation/Procedure

1) Set the print conditions.
   Select an item to be print condition with [↑] [↓] keys.
   Set the print conditions with 10 key.
2) Press [EXECUTE] key.
   The test print (self print) is performed.

Display			Content		Setting range		Default value
A	PRINT PATTERN (1,2,9 - 11,15 - 19,21,22,29)		Print pattern specification (* For details, refer to the description below.)		1 - 58 (Printable only 1, 2, 9 - 11, 15 - 19, 21, 22, 29)		1
B	DOT1 (DOT1>=2 IF A:2,11)		Setting of print dot number (M parameter) (Self print pattern: m by n)		1-255 (Pattern 2,11: 2-255 except above: 1-255)		1
C	DOT2 (DOT2>=2 IF A:2,11)		Setting of blank dot number (N parameter) (Self print pattern: m by n)		0-255 (Pattern2,11: 2-255 except above: 0-255)		254
D	DENSITY (FIXED "255" IF A: 9)		Used to specify the print gradation.		1-255 (Pattern 9: 255 Fixed except above:1-255)		255
E	MULTI COUNT		Number of print		1 - 999		1
F	EXPOSURE (2 - 8 IF A: 15 - 19)	THR	Exposure mode specification	No process (through)	1-8 (Pattern 15-19: 2-8 except above:1-8)	1	8 (STANDARD DITHER)
		CH/PC		Text/Printed Photo		2	
		CH/PR		Text/ Photograph		3	
		CHAR		Text		4	
		PR PC		Printed Photo		5	
		PR PP		Photograph		6	
		MAP		Map		7	
		STD D		Dither without correction		8	
G	PAPER	MFT	Tray selection	Manual paper feed	1 - 5	1	2 (CS1)
		CS1		Tray 1		2	
		CS2		Tray 2		3	
		CS3		Tray 3		4	
		CS4		Tray 4		5	
H	DUPLEX	YES	Duplex print selection	Yes	0 - 1	0	1 (NO)
		NO		No		1	
I	PAPER TYPE	PLAIN	Paper type	Standard paper	1 - 4	1	1 (PLAIN)
		HEAVY		Heavy paper		2	
		OHP		OHP		3	
		ENVELOPE		Envelope		4	

<Print pattern of Item A>

Pattern No.	Content	Pattern generating section	NOTE
1	Grid pattern	LSU-ASIC	
2	Dot print		-
9	Each color 10% area (A4/A4R) density print		
10	8-color belt print		
11	4-color dot print (sub scan)		Print of each color is made for every 1/4 of the sub scanning paper size.
15	16 gradations + M by N (center gradations only): Sub scan	MFP ASIC	• When all colors are selected, print is made in CMY. • 16 gradations print • The gradation is changed for every 256 dots.
16	16 gradations + M by N (center gradations only): Main scan		
17	All background (half tone)	Half tone (MFP ASIC after process)	-
18	256 gradations pattern (Other dither)		-
19	256 gradations pattern (For text dither)		-
20	-	-	-
21	4-point dot print (main scan)	LSU-ASIC	
22	Slant line		
29	Dot print 1200dpi		

64-4

Purpose	Operation test/check
Function (Purpose)	Printer test print. (Self print) (256 gradations)
Section	

Operation/Procedure

1) Set the print conditions.
   Select an item to be print condition with [↑] [↓] keys.
   Set the print conditions with 10 key.
   Select a target print color.
2) Press [EXECUTE] key.
3) The test print (self print) is performed.

• **MX-C402SC/C382SC**

Display			Content		Setting range		Default value
A	PRINT PATTERN		Specification of the print pattern (* For details, refer to the description below.)		1 - 5		3
B	DENSITY		Used to specify the print gradation.		1 - 255		128
C	MULTI COUNT		Number of print		1 - 999		1
D	PAPER	MFT	Paper feed tray selection	Manual paper feed	1 - 5	1	2 (CS1)
		CS1		Tray 1		2	
		CS2		Tray 2		3	
		CS3		Tray 3		4	
		CS4		Tray 4		5	
E	HALFTONE	LOW	Halftone	Low line number	0 - 1	0	0 (LOW)
		HIGH		High line number		1	
F	QUALITY	STANDARD	Image quality setting	Standard	0 - 2	0	1 (HIGHQUALITY)
		HIGHQUALITY		Fine image quality		1	
		FINE		Ultra fine text		2	
G	DITHER	STRAIGHT	Specification of dither correction	Straight	1 - 2	1	1 (Straight)
		CALIB		Calibration		2	
H	PAPER TYPE	PLAIN	Paper type	Standard paper	0 - 1	0	0
		HEAVY		Heavy paper		1	

<Print pattern of Item A>

Pattern No.	Content
1	256 gradations pattern (COLOR)
2	256 gradations pattern (B/W)
3	256 gradations pattern (COLOR) (Y-M-C-K continuous)
4	Half tone pattern (COLOR)
5	Half tone pattern (B/W)
6	4-color background, dot print (Sub scanning)

• **MX-B402SC/B382SC**

Item/Display			Content		Setting range		Default value
A	PRINT PATTERN		Specification of the print pattern (* For details, refer to the description below.)		1 - 3		3
B	DENSITY		Used to specify the print gradation.		1 - 255		128
C	MULTI COUNT		Number of print		1 - 999		1
D	PAPER	MFT	Paper feed tray selection	Manual paper feed	1 - 5	1	2 (CS1)
		CS1		Tray 1		2	
		CS2		Tray 2		3	
		CS3		Tray 3		4	
		CS4		Tray 4		5	
E	QUALITY	STANDARD	Image quality setting	Standard	0 - 2	0	1 (HIGHQUALITY)
		HIGHQUALITY		Fine image quality		1	
		FINE		Ultra fine text		2	
F	DITHER	STRAIGHT	Specification of dither correction	Straight	1 - 2	1	1 (Straight)
		CALIB		Calibration		2	
G	PAPER TYPE	PLAIN	Paper type	Standard paper	0 - 1	0	0
		HEAVY		Heavy paper		1	

<Print pattern of Item A>

Pattern No.	Content
1	256 gradations pattern
2	Half tone pattern
3	Background, dot print (Sub scanning)

64-5

Purpose	Operation test/check
Function (Purpose)	Printer test print. (Self print) (PCL)
Section	

Operation/Procedure

1) Set the print conditions.
   Select an item to be print condition with [↑] [↓] keys.
   Set the print conditions with 10 key.
   Select a target print color with 10 key.
2) Press [EXECUTE] key.
   The test print (self print) is performed.

• **MX-C402SC/C382SC**

Display			Content		Setting range		Default value
A	PRINT PATTERN		Specification of the print pattern (* For details, refer to the description below.)		1 - 3		3
B	DITHER	STRAIGHT	Specification of dither correction	Straight	1 - 2	1	2
		CALIB		Calibration		2	
C	MULTI COUNT		Number of print		1 - 999		1
D	PAPER	MFT	Paper feed tray selection	Manual paper feed	1 - 5	1	2 (CS1)
		CS1		Tray 1		2	
		CS2		Tray 2		3	
		CS3		Tray 3		4	
		CS4		Tray 4		5	
E	HALFTONE	LOW(IMAGE)	Halftone	For Photo	0 - 1	0	0 (LOW)
		HIGH(TEXT)		For text		1	
F	QUALITY	STANDARD	Image quality setting	Standard (600dpi, 1bit)	0 - 2	0	1 (HIGHQUALITY)
		HIGHQUALITY		Fine image quality (600dpi, 4bit)		1	
		FINE		Ultra Fine (1200dpi, 1bit)		2	
G	INTENT	PERCEPTUAL	Rendering indent	Perceptual	0 - 2	0	0 (PERCEPTUAL)
		COLORIMETRIC		Color metric		1	
		SATURATION		Saturation		2	
H	OUTPUT PROFILE	SHARP	Output profile	Standard	0 - 1	0	0 (SHARP)
		STANDARD		For Photo image		1	
I	RGB SOURCE PROFILE	SRGB	RGB source profile	SRGB	0 - 4	0	1 (Gamma1.6)
		GAMMA1.6		Gamma 1.6		1	
		GAMMA1.8		Gamma 1.8		2	
		GAMMA2.0		Gamma 2.0		3	
		TONER SAVE		TONER SAVE mode		4	
J	GRAY COMPENSATION	K	Gray compensation	K only	0 - 1	0	0 (K)
		KCMY		KCMY		1	
K	TONER SAVE MODE	ON	Toner save mode	set.	0 - 1	0	1 (OFF)
		OFF		not set.		1	
L	PAPER TYPE	PLAIN	Paper type	Standard paper	0 - 1	0	0 (PLAIN)
		HEAVY		Heavy paper		1	

<Print pattern of Item A>

Pattern No.	Content
1	COLOR
2	B/W
3	Continuous COLOR,B/W

• **MX-B402SC/B382SC**

Item/Display			Content		Setting range		Default value
A	PRINT PATTERN		Specification of the print pattern (* For details, refer to the description below.)		1		1
B	DITHER	STRAIGHT	Specification of dither correction	Straight	1 - 2	1	2
		CALIB		Calibration		2	
C	MULTI COUNT		Number of print		1 - 999		1
D	PAPER	MFT	Paper feed tray selection	Manual paper feed	1 - 5	1	2 (CS1)
		CS1		Tray 1		2	
		CS2		Tray 2		3	
		CS3		Tray 3		4	
		CS4		Tray 4		5	
E	QUALITY	STANDARD	Image quality setting	Standard (600dpi, 1bit)	0 - 2	0	1 (HIGHQUALITY)
		HIGHQUALITY		Fine image quality (600dpi, 4bit)		1	
		FINE		Ultra Fine (1200dpi, 1bit)		2	
F	TONER SAVE MODE	ON	Toner save mode	set.	0 - 1	0	1 (OFF)
		OFF		not set.		1	
G	PAPER TYPE	PLAIN	Paper type	Standard paper	0 - 1	0	0 (PLAIN)
		HEAVY		Heavy paper		1	

<Print pattern of Item A>

Pattern No.	Content
1	B/W

64-6

Purpose	Operation test/check
Function (Purpose)	Printer test print. (Self print) (PS)
Section	

Operation/Procedure

1) Set the print conditions.
   Select an item to be print condition with [↑] [↓] keys.
   Set the print conditions with 10 key.
   Select a print color.
2) Press [EXECUTE] key.
   The test print (self print) is performed.

• **MX-C402SC/C382SC**

Display			Content		Setting range		Default value
A	PRINT PATTERN		Specification of the print pattern (* For details, refer to the description below.)		1 - 2		1
B	DITHER	STRAIGHT	Specification of dither correction	Straight	1 - 2	1	2
		CALIB		Calibration		2	
C	MULTI COUNT		Number of print		1 - 999		1
D	PAPER	MFT	Paper feed tray selection	Manual paper feed	1 - 5	1	2 (CS1)
		CS1		Tray 1		2	
		CS2		Tray 2		3	
		CS3		Tray 3		4	
		CS4		Tray 4		5	
E	HALFTONE	LOW(IMAGE)	Halftone	Photograph	0 - 1	0	0 (LOW)
		HIGH(TEXT)		For text		1	
F	QUALITY	STANDARD	Image quality setting	Standard (600dpi, 1bit)	0 - 2	0	1 (HIGHQUALITY)
		HIGHQUALITY		Fine image quality (600dpi, 4bit)		1	
		FINE		Ultra Fine (1200dpi, 1bit)		2	
G	INTENT	PERCEPTUAL	Rendering indent	Perceptual	0 - 2	0	0 (PERCEPTUAL)
		COLORIMETRIC		Color metric		1	
		SATURATION		Saturation		2	
H	OUTPUT PROFILE	SHARP	Output profile	Standard	0 - 1	0	0 (SHARP)
		STANDARD		For Photo image		1	
I	RGB SOURCE PROFILE	SRGB	RGB source profile	SRGB	0 - 5	0	1 (GAMMA1.6)
		GAMMA1.6		Gamma 1.6		1	
		GAMMA1.8		Gamma 1.8		2	
		GAMMA2.0		Gamma 2.0		3	
		TONER SAVE		Gamma 0.6		4	
J	GRAY COMPENSATION	K	Gray compensation	K only	0 - 1	0	0 (K)
		KCMY		KCMY		1	

Display			Content		Setting range		Default value
K	CMY INK SIMULATION	OFF	Ink simulation	OFF	0 - 3	0	0 (OFF)
		SWOP		SWOP		1	
		EURO		EURO		2	
		JAPAN COLOR		JAPAN COLOR		3	
L	PAPER TYPE	PLAIN	Paper type	Standard paper	0 - 1	0	0 (PLAIN)
		HEAVY		Heavy paper		1	

<Print pattern of Item A>

Pattern No.	Content
1	COLOR
2	B/W

- **MX-B402SC/B382SC**

Item/Display			Content		Setting range		Default value
A	PRINT PATTERN		Specification of the print pattern (* For details, refer to the description below.)		1		1
B	DITHER	STRAIGHT	Specification of dither correction	Straight	1 - 2	1	2
		CALIB		Calibration		2	
C	MULTI COUNT		Number of print		1 - 999		1
D	PAPER	MFT	Paper feed tray selection	Manual paper feed	1 - 5	1	2 (CS1)
		CS1		Tray 1		2	
		CS2		Tray 2		3	
		CS3		Tray 3		4	
		CS4		Tray 4		5	
E	QUALITY	STANDARD	Image quality setting	Standard (600dpi, 1bit)	0 - 2	0	1 (HIGHQUALITY)
		HIGHQUALITY		Fine image quality (600dpi, 4bit)		1	
		FINE		Ultra Fine (1200dpi, 1bit)		2	
F	PAPER TYPE	PLAIN	Paper type	Standard paper	0 - 1	0	0 (PLAIN)
		HEAVY		Heavy paper		1	

<Print pattern of Item A>

Pattern No.	Content
1	B/W

64-7

Purpose Operation test/check

Function (Purpose) Used to print the adjustment pattern of the test print. (Self print). (The adjustment pattern of SIM46-21 is printed.)

Section

Operation/Procedure

1) Set the print conditions.
   Select an item to be print condition with [↑] [↓] keys.
   Set the print conditions with 10 key.
2) Press [EXECUTE] key.
   The adjustment pattern of SIM46-21 is printed.

Item/Display				Content	Setting range	Default value	Writing
A	COPIES			Number of print	1 - 999	1	No
B	PROC ADJ	YES	0	The half tone process control correction value is reflected.	0 - 1	1	Yes
		NO	1	The half tone process control correction value is not reflected.			

65

65-1

Purpose Adjustment

Function (Purpose) Used to adjust the touch panel (LCD display section) detection coordinates.

Section Operation panel section

Operation/Procedure

Touch the center of the cross mark at the four corners of the screen.

When the adjustment is completed normally, the screen shifts to the simulation sub number entry menu.

In case of an error, the screen returns to the adjustment menu.

65-2

Purpose Operation check/test

Function (Purpose) Used to display the touch panel (LCD display section) detection coordinates.

Section

Operation/Procedure

Touch the touch panel.

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

65-5

Purpose	Operation check/test
Function (Purpose)	Used to check the operation panel key input.
Section	

Operation/Procedure

Press the keys sequentially according to the guidance displayed on the screen.

If the key entry is effective, the guidance for pressing the next key is displayed. When all the key entries are completed, "COMPLETE" is displayed.

<Check target key>

JOB STATUS	8
SYSTEM SETTINGS	9
HOME	AUDIT CLEAR
1	0
2	PROGRAM
3	CLEAR
4	STOP
5	CLEAR ALL/RESET
6	START (COLOR)
7	START (MONO)

66

66-1

Purpose	Setting
Function (Purpose)	Used to display the FAX-related soft SW (2 - 99) on the LCD to allow changing the soft SW while checking with the LCD.
Section	FAX

Operation/Procedure

1) Enter the [SW NO] with 10-key.
   * When [C] key is pressed, the entered value of [SW NO] is cleared.
2) Press [DATA] button.
   The soft SW data entered in procedure 1) is displayed.
   * When [SW NO] button is pressed, the display returns to the initial screen.
3) Enter the number corresponding to the bit to be changed with 10-key.
   [1] → [0]
   [0] → [1]
   * When [SW NO] button is pressed, the display returns to the initial screen.
4) When [EXECUTE] button is pressed, it is highlighted and the setting is saved.
   After saving the setting, [EXECUTE] button returns to the normal display.

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

66-2

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

Operation/Procedure

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

Operation/Procedure (Shifting to the country page)

* When [DEST CODE] button is pressed on the initial screen, the display is shifted to the country code list screen.
  Use [↑] [↓] buttons to select the country select page.
  When the table item is the top (last) item, [↑] [↓] buttons gray out. When [↑] [↓] buttons gray out, they are disabled.
* Press [BACK] button to return to the entry screen.

<Country code list>

JAPAN	00000000
U.S.A.	10110101
AUSTRALIA	00001001
U.K.	10110100
FRANCE	00111101
GERMANY	00000100
SWEDEN	10100101
NEWZEALAND	01111110
CHINA	00100110
SINGAPORE	10011100
TW	11111110
MIDDLEANDNEAREAST	11111101
SLOVAKIA	11111100
OTHER3	11111011
FINLAND	00111100
NORWAY	10000010
DENMARK	00110001
NETHERLANDS	01111011
ITALY	01011001
SWITZERLAND	10100110
AUSTRIA	00001010

INDONESIA	01010100
THAILAND	10101001
MALAYSIA	01101100
INDIA	01010011
PHILIPPINES	10001001
HONGKONG	01010000
RUSSIA	10111000
SOUTHAFRICA	10011111
SPAIN	10100000
PORTUGUESE	10001011
LUXEMBURG	01101001
BELGIUM	00001111
CZECH	00101110
HUNGARY	01010001
GREECE	01000110
POLAND	10001010
BRAZIL	00010110

66-3

Purpose	Operation test/Check
Function (Purpose)	Used to execute the read/write check of EEPROM on the MODEM controller, SDRAM, SRAM on the MFP controller, and flash ROM, and to display the results.
Section	FAX

Operation/Procedure

1) When the machine enters Simulation 66-03, the following screen is displayed.
   * Use [↑] [↓] buttons to select the country select page. (The highlighted section of the set value is switched and displayed on the set setting area.)
     When [↑] [↓] buttons gray out, they are disabled.
2) When the memory check item button is selected, the display is shifted to the memory check screen.
   * Only one memory check item can be selected.
3) When [EXECUTE] button is pressed, it is highlighted and the memory check of the selected item is started.
   * When [EXECUTE] button is pressed again during memory check, the operation is interrupted. (The display shows the status immediately before pressing [EXECUTE] button.)
     When [EXECUTE] button is pressed after interrupting the operation, memory check is resumed.
4) After completion of memory check, [EXECUTE] button returns to the normal display and the result of memory check is displayed.
   * For the memory which is not installed, [NO CHECK] 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.

* In the case of [REPEAT] check, the following display is made for every execution.

CHECKING 0001
CHECKING 0002
CHECKING 0003
:
:

The number of times is displayed in 4-digit decimal numbers. When the number exceeds 9999, it becomes 0000

Check is repeated until [EXECUTE] is pressed or [NG] occurs.

Memory check status

NO CHECK	No check	
CHECKING	During checking	
OK	Check complete OK	
NG A##	Check complete NG	Error occurring address or data line is displayed for each item.

Check item

	Check memory item	Remark
1	All Memory Device Check (once)	All the items are checked once.
2	MFP SRAM (once)	Check only once
3	MFP SRAM (repeat)	Repeat check
4	MFP FLASH + OP.FLASH (once)	Check only once
5	MFP FLASH + OP.FLASH (repeat)	Repeat check
6	MODEM EEPROM <1> (once)	Check only once in LINE1
7	MODEM EEPROM <1> (repeat)	Repeat check in LINE1
8	MODEM SDRAM <1> (once)	Check only once in LINE1
9	MODEM SDRAM<1>(repeat)	Repeat check in LINE1

The number in < > indicates the line.

66-4

Purpose	Operation test/Check
Function (Purpose)	Used to send the selected signals to the line and the main unit speaker. (Send level: max.)
Section	FAX

Operation/Procedure

1) When the machine enters Simulation 66-04, the screen on the right is displayed. (Default, left upper selected.)
   * Use [↑] [↓] buttons to switch the send mode select page. When the selected item is the top (last) item, [↑] [↓] buttons gray out. (The highlighted section of the set value is switched and displayed on the set setting area.)
     When [↑] [↓] buttons gray out, they are disabled.
2) When a button of a signal to be sent is selected, it is highlighted and the previously set button is shifted to the normal display.
   * Only one signal to be sent can be selected.
3) When [EXECUTE] button is pressed, it is highlighted and signals are sent.
4) To end signal send:
   When [EXECUTE] button is pressed, it is highlighted and signal send is interrupted.

* When [CA] key is pressed, the simulation is terminated.

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

<Signal send table>

Page1

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

Page2

DP MAKE	DP BRK	NO MSG

66-5

Purpose	Operation test/Check
Function (Purpose)	Used to send the selected signal to the line and the main unit speaker. (Send level: Soft SW setting) (For the kinds of send signals, refer to PART1 and PART2 of SIM66-04.)
Section	FAX

Operation/Procedure

1) When the machine enters Simulation 66-05, the following screen is displayed. (Default, left upper selected)
   * Use [↑] [↓] buttons to switch the send mode select page. When the selected item is the top (last) item, [↑] [↓] buttons gray out. (The highlighted section of the set value is switched and displayed on the set setting area.)

     When [↑] [↓] buttons gray out, they are disabled.
2) When a button of a signal to be sent is selected, it is highlighted and the previously set button is shifted to the normal display.
   * Only one signal to be sent can be selected.
3) When [EXECUTE] button is pressed, it is highlighted and signals are sent.
4) To end signal send:
   * When [EXECUTE] button is pressed, it is highlighted and signal send is interrupted.
   * When [CA] key is pressed, the simulation is terminated.
   * When [SYSTEM SETTINGS] key is pressed, the display returns to the sub number entry screen.

66-6

Purpose	Data output/Check
Function (Purpose)	Used to print the confidential registration check table (BOX NO., BOX name, passcode. (If there is no confidential registration, no print is made.)
Section	FAX

Operation/Procedure

1) When [EXECUTE] button is pressed, it is highlighted and the confidential checkable is printed.
   * If there is no confidential registration, no print is made even though [EXECUTE] key is pressed.
2) After completion of printing, [EXECUTE] button returns to the normal display.

* 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 [C], [CA], [SYSTEM SETTINGS], or [EXECUTE] key is pressed during printing, the operation is interrupted.

66-7

Purpose	Data output/Check
Function (Purpose)	Used to output all image data saved in the image memory. (Confidential data are also outputted.)
Section	FAX

Operation/Procedure

1) When [EXECUTE] button is pressed, it is highlighted and all image data saved in the image memory are outputted.
   * The confidential data are also outputted.

     After completion of printing, the image data are not cleared.
   * If there is no image memory, no print is made though [EXECUTE] button is pressed.
2) After completion of printing, [EXECUTE] button returns to the normal display.

* 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 [C], [CA], [SYSTEM SETTINGS], or [EXECUTE] key is pressed during printing, the operation is interrupted.

66-8

Purpose	Operation test/Check
Function (Purpose)	Used to send the selected sound messages to the line and the speaker. (Send level: Max.)
Section	FAX

Operation/Procedure

1) When the machine enters Simulation 66-08, the following screen is displayed. (Default, left upper selected)
2) When the sound message button to be sent is selected, it is highlighted and the previously set button returns to the normal display.
   * Only one sound message to be sent can be selected.
   * When [EXECUTE] button is pressed, it is highlighted and a sound message is sent.
   * When [EXECUTE] button is pressed, it is returns to the normal display and sending a sound message is interrupted.

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

<Sound message table>

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

66-9

Purpose	Operation test/Check
Function (Purpose)	Used to send the selected sound message to the line and the speaker. (Send level: max.) * For details of sound messages, refer to the sound message table of SIM66-08.
Section	FAX

Operation/Procedure

1) When the machine enters Simulation 66-09, the following screen is displayed. (Default, left upper setting)
2) When a button of a sound message to be sent is selected, it is highlighted and the previously set button returns to the normal display.
   * Only one sound message to be sent can be selected.
3) When [EXECUTE] button is pressed, it is highlighted and a sound message is sent.
4) To end signal send:

   When [EXECUTE] button is pressed, it is highlighted and signal send is interrupted.

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

66-10

Purpose	Data clear
Function (Purpose)	Used to clear all image data saved in the FAX image memory. (The confidential data are also cleared.)
Section	FAX

Operation/Procedure

1) Press [EXECUTE] button.
   [EXECUTE] button is highlighted and [YES] and [NO] buttons become active.
2) Press [YES] button.
   The image memory is cleared. [YES] button is highlighted.
   * When [NO] button is pressed, [EXECUTE] button returns to the normal display and [YES] and [NO] buttons gray out.
   * During clearing the image memory, [EXECUTE] and [YES] buttons are highlighted.
     The image memory can be cleared even if there is no image data.
3) After completion of clearing, press [CA] key to reboot the machine.

66-11

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

Operation/Procedure

1) When the machine enters Simulation 66-11, the following screen is displayed. (Default, left upper setting)
2) When a button of a sound message to be sent is selected, it is highlighted and the previously set button returns to the normal display.
   * Only one sound message to be sent can be selected.
3) When [EXECUTE] button is pressed, it is highlighted and a sound message is sent.
4) To end signal send:
   When [EXECUTE] button is pressed, it is highlighted and signal send is interrupted.

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

<300bps send signal table>

NO SIGNAL	11111	11110	00000
010101	00001		

66-12

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

Operation/Procedure

1) When the machine enters Simulation 66-12, the following screen is displayed. (Default, left upper setting)
2) When a button of a sound message to be sent is selected, it is highlighted and the previously set button returns to the normal display.
   * Only one sound message to be sent can be selected.
3) When [EXECUTE] button is pressed, it is highlighted and a sound message is sent.
4) To end signal send:
   When [EXECUTE] button is pressed, it is highlighted and signal send is interrupted.

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

66-13

Purpose	Setting
Function (Purpose)	Used to register dial numbers for SIM66-14/15/16, Dial test. (Up to 20 digits can be registered.)
Section	FAX

Operation/Procedure

1) When the machine enters Simulation 66-13, the following screen is displayed.
   * The number saved in the memory is displayed in the column of [PRESENT:]. (If there is no data, [-------] is displayed.)
2) Enter a number with 10-key.
   The entered number is displayed in the column of [NEW:].
   After entering 20 digits, 10-key is disabled (no response). Only [C] key is enabled. (10-key [0] to [9], [*], [#], [C] key (back by one digit))
3) When [SET] key is pressed after completion of entry, the entered number is displayed (registered) in the column of [PRESENT:]. The column of [NEW:] becomes blank.
   * If the "NEW:" column is blank, SET is inactive. When a value is entered to the "NEW:" column, it becomes active.

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

66-14

Purpose	Adjustment
Function (Purpose)	Used to execute the dial pulse (10PPS) send test and to adjust the make time.
Section	FAX

Operation/Procedure

1) When the machine enters Simulation 66-14, the following screen is displayed.
   * Enter the make time (0 to 15) with 10-key and press [OK] button, and the entered make time is temporality saved.
   * Enter the make time (0 to 15) with 10-key and press [EXECUTE] button instead of [OK] button, and [EXECUTE] button is highlighted and the dial pulse is sent from the line in the set make time.
2) When [EXECUTE] button is pressed, it is highlighted and the dial pulse is sent from the line in the set make time.
   * The dial pulse in this example is up to 20 digits registered with SIM66-13.
3) To end the dial test, press [EXCUTE] button again. The button returns to the normal display and the test is terminated.
   Also when dialing the number is completed, [EXECUTE] button returns to the normal display and the test is terminated.

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

66-15

Purpose	Adjustment
Function (Purpose)	Used to execute the dial pulse (20PPS) send test and to adjust the make time.
Section	FAX

Operation/Procedure

1) When the machine enters Simulation 66-15, the following screen is displayed.
   * Enter the make time (0 to 15) with 10-key and press [OK] button, and the entered make time is temporality saved.
   * Enter the make time (0 to 15) with 10-key and press [EXECUTE] button instead of [OK] button, and [EXECUTE] button is highlighted and the dial pulse is sent from the line in the set make time.
2) When [EXECUTE] button is pressed, it is highlighted and the dial pulse is sent from the line in the set make time.
   * The dial pulse in this example is up to 20 digits registered with SIM66-13.
3) To end the dial test, press [EXCUTE] button again. The button returns to the normal display and the test is terminated.

   Also when dialing the number is completed, [EXECUTE] button returns to the normal display and the test is terminated.

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

66-16

Purpose	Adjustment
Function (Purpose)	Used to execute the DTFM signal send test and to adjust the send level.
Section	FAX

Operation/Procedure

1) When the machine enters Simulation 66-16, the following screen is displayed.
   * Item A (High group frequency) and item B (High-Low group frequency) are selected with [↑] [↓] buttons. When the selected item is the top (last) item, [↑] [↓] buttons gray out. (The highlighted section of the set value is switched and displayed on the set setting area.)

     When [↑] [↓] buttons gray out, they are disabled.
   * Enter the High group or High - Low group (0 to 15) with 10-key and press [OK] button. The set sign send level is temporality saved.
   * Enter the single send level (0 to 15) with 10-key and press [EXECUTE] button instead of [OK] button, and [EXECUTE] button is highlighted and the dial pulse is sent from the line by the setting of high group or low group.
2) When [EXECUTE] button is pressed, it is highlighted and the dial pulse signal is sent from the line by the setting of high/low group of the signal send level.
3) To terminate the dial test, press [EXECUTE] button. The button returns to the normal display and the test is terminated.

   When dialing the dial number is completed, [EXECUTE] button returns to the normal display and the test is terminated.

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

66-17

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

Operation/Procedure

1) When the machine enters Simulation 66-17, the following screen is displayed. (Default, left upper selected)
2) When a button of a send signal is selected, it is highlighted and the previously set button returns to the normal display.
   * Only one kind of signal to be sent can be selected.
3) When [EXECUTE] button is pressed, it is highlighted and signals are sent.
   * When another signal send button is pressed during sending signals, the send signal can be changed.
4) To stop signal sending:

   When [EXECUTE] button is pressed, it returns to the normal display and signal sending is interrupted.

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

66-18

Purpose	Operation test/Check
Function (Purpose)	Used to send the DTMF signal to the line and the speaker. (Send level: Soft SW setting)
Section	FAX

Operation/Procedure

1) When the machine enters Simulation 66-18, the following screen is displayed.
2) When a button of a send signal is selected, it is highlighted and the previously set button returns to the normal display.
3) When [EXECUTE] button is pressed, it is highlighted and signals are sent.
   * When another signal send button is pressed during sending signals, the send signal can be changed.
4) To stop signal sending:

   When [EXECUTE] button is pressed, it returns to the normal display and signal sending is interrupted.

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

66-21

Purpose	Check
Function (Purpose)	Used to print the selected items (various registration information, communication management information, file management information, system error, protocol monitor).
Section	FAX

Operation/Procedure

1) When an item button to be printed is selected, it is highlighted and the previously set button returns to the normal display. (Default select: Left upper)
   * Only one item can be selected.
2) Press [EXECUTE] button.

   [EXECUTE] button is highlighted and printing is started.
   * During printing an item, [EXECUTE] and the print item button are highlighted.

3) After completion of printing, [EXECUTE] button returns to the normal display.

* 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 [C], [CA], [SYSTEM SETTINGS], or [EXECUTE] key is pressed during printing, the operation is interrupted.

<FAX information print content table>

REGISTERED	MANAGEMENT
FILE MANAGEMENT	SYSTEM ERROR LINE 1
PROTOCOL LINE 1	

66-22

Purpose	Setting
Function (Purpose)	Used to set the handset sound volume. (This simulation can be executed even though the handset setting is set to NO. When, however, the handset is not installed, the sound volume cannot be checked.) (Japan model only)
Section	FAX

Operation/Procedure

1) When the machine enters the simulation, the number of the set sound volume is displayed. (In this example, MIDDLE is set as the default sound volume.)
2) Use 10-key to set the handset sound volume. (0: MIN 1:MIDDLE 2:MAX)
   * Enter the sound volume (0 to 2) with 10-key and press [OK] button. The set sound volume is saved.
   * Enter the sound volume (0 to 2) with 10-key and press [EXECUTE] key instead of [OK] key. [EXECUTE] key is highlighted and the set sound volume is saved. The on-hold tone is delivered in the set sound volume.
3) Press [EXECUTE] button to deliver the selected on-hold tone.
   * The sound message is outputted to the handset and an external telephone. The speaker, however, is muted.
   * Even during sending the on-hold tone ([EXECUTE] button is highlighted), the sound volume can be changed by switching the sound volume button.
   * If, however, the handset is not installed, the sound volume cannot be checked. Execution is possible.
4) When [EXECUTE] button is pressed, it is highlighted and delivery of the on-hold tone is stopped.

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

66-24

Purpose	Data clear
Function (Purpose)	Used to clear the FAST save data.
Section	FAX

Operation/Procedure

1) Press [EXECUTE] button.

   [EXECUTE] button is highlighted and [YES] and [NO] buttons become active.
2) Press [YES] button.

   The FAST save data are cleared. [YES] button is highlighted.
   * When [NO] button is pressed, [EXECUTE] button returns to the normal display and [YES] and {NO} buttons gray out.
   * During execution of the FAST save data clear, [EXECUTE] and [YES] buttons are highlighted.
3) After completion of memory clear, [EXECUTE] button returns to the normal display and [YES] and {NO} buttons gray out.

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

66-25

Purpose	Setting
Function (Purpose)	Used to register the FAX number for MODEM dial-in.
Section	FAX

Operation/Procedure

1) When the machine enters Simulation 66-25, the following screen is displayed.
   * The stored number is displayed in the column of "PRESENT:". (If there is no data, [----------] is displayed.)
2) Enter a number with 10-key.

   Entry can be made up to 20 digits.

   After entering 20 digits. 10-key is disabled. Only [C] key is enabled.

   The entered number is displayed in the column of "NEW:".

   (10-key [0] to [9], [*], [#], [C] key (back by one digit))
3) When [SET] button is pressed after completion of entering a number, the entered umber is displayed (registered) in the column of "PREZENT:".

   The column of "NEW:" becomes blank.
   * When the column of "NEW:" is blank, [SET] becomes inactive. When a number is entered to "NEW:", [SET] becomes active.

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

66-26

Purpose	Setting
Function (Purpose)	Used to register external telephone numbers for MODEM dial-in.
Section	FAX

Operation/Procedure

1) When the machine enters Simulation 66-26, the screen on the right is displayed.
   * The stored number is displayed in the column of "PRESENT:". (If there data, [----------] is displayed.)
2) Enter a number with 10-key. Entry can be made up to 20 digits.

   After entering 20 digits. 10-key is disabled. Only [C] key is enabled.

   The entered number is displayed in the column of "NEW:". (10-key [0] to [9], [*], [#], [C] key (back by one digit))
3) When [SET] button is pressed after completion of entering a number, the entered umber is displayed (registered) in the column of "PRESENT:".

   The column of "NEW:" becomes blank.
   * When the column of "NEW:" is blank, [SET] becomes inactive. When a number is entered to "NEW:", [SET] becomes active.

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

66-29

Purpose	Clear
Function (Purpose)	Used to initialize the telephone book data (the one-touch registration table, the FTP/Desktop expansion table, the group expansion table, the program registration table, the interface memory box table, the meta data, Inbound Routing, and the Document Admin table).
Section	FAX

Operation/Procedure

1) Press [EXECUTE] button.
   [EXECUTE] button is highlighted and [YES] and [NO] buttons become active.
2) Press [YES] button.
   The telephone book data area cleared. [YES] button is highlighted.
   * When [NO] button is pressed, [EXECUTE] button returns to the normal display and [YES] and [NO] buttons gray out.
   * During the telephone book data clear, [EXECUTE] and [YES] buttons are highlighted.
3) After completion of memory clear, [EXECUTE] button returns to the normal display and [YES] and [NO] buttons gray out.

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

66-30

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

Operation/Procedure

1) When the machine enters Simulation 66-30, the following screen is displayed.
2) HS1, HS2, RHS, and EXHS are highlighted when the signal is detected, and displayed normally when the signal is not detected.

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

<TEL/LIU status change item description>

HS1	Polarity inversion signal
HS2	Polarity inversion signal
RHS	Handset hook SW
EXHS	External telephone hook SW

66-31

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

Operation/Procedure

1) When the machine enters Simulation 66-31, the following screen is displayed.
   * When starting execution of the simulation, the current setting is displayed.
2) Change the port setting.
   When a port is set to ON, the port display is highlighted. Two or more ports can be selected.
   * At that time, the actual port output is not reflected.
3) When [EXECUTE] button is pressed, the changed setting is reflected to the port which outputs to TEL/LIU.
4) To terminate the process, press [EXECUTE] button again. [EXECUTE] button returns to the normal display.

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

<Port which outputs to TEL/LIU>

CION	MR	EC	S.

66-32

Purpose	Operation test/Check
Function (Purpose)	Used to check the fixed data received from the line and to display the result.
Section	FAX

Operation/Procedure

1) Press [EXECUTE] button to check the fixed data received from the line. At that time, [EXECUTE] button is highlighted.
   * Fixed data check procedure
   • The data received from the line is checked of the following fixed data status for minutes, then if they are in accord with “OK” is displayed on LCD, if not “NG” is displayed.
   • The judgment is made in 2 minutes.
   Receive speed: 300BPS
   Receive data: 00H
   Judgment data: 100byte
2) After completion of check, [EXECUTE] button returns to the normal display. The result is displayed as "OK" or "NG."
   * To check the fixed data again, press [EXECUTE] button, and check of the fixed data can be made again.

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

66-33

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

Operation/Procedure

1) When the machine enters Simulation 66-33, the following screen is displayed.
2) When a signal is detected, "FNET" and "BUSY TONE CNG CED DTMF" are highlighted. When a signal is not detected, they are normally 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.

<Signal used for signal detection check>

(When "FNET" is selected)

FNET

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

BUSY TONE	CNG	CED	DTMF

66-34

Purpose	Operation test/Check
Function (Purpose)	Used to execute the send test and display the time required for sending image data in the test. Used to execute send test and display. (Unit: ms)
Section	FAX

Operation/Procedure

1) When the machine enters Simulation 66-34, the following screen is displayed.
2) When image data are actually sent, the time required for sending the image data is displayed on the LCD.

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

66-36

Purpose	Operation test/Check
Function (Purpose)	Used to check send and receive data from the MODEM controller to the MFP controller or the data line or the command line individually.
Section	FAX

Operation/Procedure

1) When the machine enters Simulation 66-36, the following screen is displayed. (Default: left upper selected)
2) Operation check

   Select an item to be checked on the screen.

   * When an item to be checked is selected, it is highlighted.

3.1. When "Operation check once" is selected:

● When (once) is selected:

When [EXECUTE] button is pressed under this state, [EXECUTE] button is highlighted and the operation check is started.

After completion of the operation check, [EXECUTE] button returns to the normal display and the check result is displayed.

When the check is normally completed, "OK" is displayed. In case of an error, [NG] is displayed.

3.2. When "Operation check repeat" is selected:

● When [repeat] is selected:

When [EXECUTE] button is pressed under this state, [EXECUTE] button is highlighted and the operation check is started.

* In the case of [Repeat] check, the title display is changed as follows for every execution of check.

  "MFP-MDMC I/F CHECK.- *"

  "MFP-MDMC I/F CHECK.- **"

  "MFP-MDMC I/F CHECK.- ***"

  "MFP-MDMC I/F CHECK.- ****"

  "MFP-MDMC I/F CHECK.- *****"

  Check is repeated until [EXECUTE] button is pressed or "NG" occurs.

  To stop the operation check, press [EXECUTE] button, and [EXEUTE] button returns to the normal display and the operation check is terminated.

  * When an abnormality occurs during check, "NG" is displayed and the operation is terminated.

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

<MFP controller I/F check item table>

MFP ← MDMC (DATA once) Data line Once	MFP → MDMC (DATA once) Data line Once
MFP ← MDMC (DATA repeat) Data line Repeat	MFP → MDMC (DATA repeat) Data line Repeat
MFP ← MDMC (CMD once) Command line Once	MFP → MDMC (CMD once) Command line Once
MFP ← MDMC (CMD repeat) Command line Repeat	MFP → MDMC (CMD repeat) Command line Repeat

66-39

Purpose	Setting
Function (Purpose)	Used to check and change the destination setting saved in EEPROM of the FAX BOX.
Section	FAX

Operation/Procedure

1) When the machine enters the simulation, the currently set destination button is highlighted. (In the default state, JAPAN is set as the destination.)
2) Select a destination button to set the destination. (In this example, USA/CANADA is selected.) The selected button is highlighted and the previously selected button returns to the normal display.

   * When the destination button is changed, the new destination setting is saved to EEPROM of the FAX BOX.
   * When, however, there is no destination setting in EERPOM of the FAX BOX, "NO DESTINATION" is displayed on the title line and all the destination buttons are normally 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.

<Destination setting table>

JAPAN	U.S.A/CANADA	EUROPE	AUSTRALIA
CHINA	ASIA&OTHERS		

66-42

Purpose	Setting
Function (Purpose)	Used to rewrite the program to power control installed in the FAX BOX.
Section	

Operation/Procedure

1) Press [EXECUTE] button.[EXECUTE] button is highlighted and YES] and [NO] buttons become active.
2) Press [YES] button.

   The power control program is rewritten.

   * During rewriting the power control program, [EXECUTE] and [YES] buttons are highlighted.
   * When [NO] button or [EXECUTE] button is pressed, [EXECUTE] button returns to the normal display, and [YES] and [NO] buttons gray out.
3) When rewriting of the power control program is normally completed, "OK" is displayed and [EXECUTE] button returns to the normal display, and [YES] and [NO] buttons gray out.
   * When rewriting of the power control program is failed, the error message of "NG" is displayed and [EXECUTE] button returns to the normal display, and [YES] and [NO] buttons gray out.

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

66-43

Purpose	Setting
Function (Purpose)	Used to write the adjustment value into the power control installed in the FAX BOX.
Section	FAX

Operation/Procedure

1) When the machine enters Simulation 66-43, the following screen is displayed. (Default: left upper selected)
   * Use [↑] [↓] buttons to select the select item of the power control adjustment value. Selection is made in Item A to H.

     When the selected item is the top (last) item, [↑] [↓] buttons gray out. (The highlighted section of the set value is switched and the new value is displayed on the setting area.)

     When [↑] [↓] buttons gray out, they are disabled.
   * Enter the power control adjustment value with 10-key and press [OK] button ([↑] [↓] buttons). The set power control adjustment value is saved to the primary memory area.
   * The set data are saved in the primary memory area. Therefore, the setting is reflected only when [EXECUTE] button is pressed to execute.
   * For the range of the power control adjustment value and each value, refer to the table.
2) When [EXECUTE] key is pressed, it is highlighted and writing to the power control is executed. When writing is normally completed, "OK" is displayed. When it is failed, "NG" is displayed.
3) After completion of writing, [EXECUTE] key returns to the normal display.

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

<Set range and default value of each set value>

	Item	Set range	Default value
A	CI_LEVEL_JUDGE	2 to 15	6
B	CI_CYCLE_MIN	1 to 254	10
C	CI_CYCLE_MAX	2 to 255	142
D	CI_COUNT	2 to 15	3
E	RES_3.3V_LEVEL_JUDGE	2 to 15	15
F	EXHS_LEVEL_JUDGE	2 to 225	240
G	RHS_LEVEL_JUDGE	2 to 15	2
H	SON_TIMEOUT	1 to 127	20

66-60

Purpose	Setting
Function (Purpose)	Used to provide the user the auto select function of a low-cost line by dialing with addition of the prefix to the dial number when calling
Section	FAX

Operation/Procedure

1) When the machine enters Simulation 66-60, the following screen is displayed.
   * Use [↑] [↓] buttons to select the ACR data select page. When the selected item is the top (last) item, [↑] [↓] buttons gray out. (The highlighted section of the set value is switched and displayed on the set setting area.)

     When [↑] [↓] buttons gray out, they are disabled.
   * In the column of [PRESENT:], the current ACR data code is displayed. (The data content varies depending on the code. When the data code is not registered, "Blank" is displayed.)
2) When a button of ACR data item to be changed is selected, the selected button is highlighted and the previously set button returns to the normal display. At that time, the content of [PRESENT:] is also changed according to the newly selected ACR data.
   * Only one ACR data item to be changed can be selected.
3) Enter ACR data with 10-key ([0] - [9]). The ACR data is entered to the column of NEW.
4) Press SET button to change the setting to the entered value of ACR data. The entered value is saved and displayed (registered) in the column of [PRESENT:] and the column of [NEW:] becomes blank.

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

Item	Key display	Data kind	Default	Number of digits	Title line display when entering number
1	LocalCarrierNum	Local carrier prefix	Null	Max. 6	Local Carrier Number
	LongCarrierNum.	Local carrier prefix	Null	Max. 6	Long-distance Carrier Number
	OverCarrierNum.	Overseas carrier prefix	Null	Max. 6	Overseas Carrier Number
	Bypass Num.	Bypass number	9999	Max. 4	Bypass Number
	User Area Code	User area code	Null	Max. 6	User Area Code
	Machine Code	Machine code	0621	Max. 4	Machine Code
	Version	Version number	0100	Max. 4	Version
	Thru Num.1	Through number 1	0120	Max. 4	Though Number1
	Thru Num.2	Through number 2	0140	Max. 4	Though Number2
	Thru Num.3	Through number 3	0150	Max. 4	Though Number3
	Thru Num.4	Through number 4	0160	Max. 4	Though Number4
	Thru Num.5	Through number 5	0170	Max. 4	Though Number5
	Thru Num.6	Through number 6	0180	Max. 4	Though Number6
	Thru Num.7	Through number 7	0190	Max. 4	Though Number7
	Thru Num.8	Through number 8	020	Max. 4	Though Number8
	Thru Num.9	Through number 9	030	Max. 4	Though Number9
	Thru Num.10	Through number 10	0330	Max. 4	Though Number10
	Thru Num.11	Through number 11	0360	Max. 4	Though Number11
	Thru Num.12	Through number 12	040	Max. 4	Though Number12
	Thru Num.13	Through number 13	0450	Max. 4	Though Number13
	Thru Num.14	Through number 14	050	Max. 4	Though Number14
	Thru Num.15	Through number 15	0570	Max. 4	Though Number15
1	Thru Num.16	Through number 16	060	Max. 4	Though Number16
	Thru Num.17	Through number 17	070	Max. 4	Though Number17
	Thru Num.18	Through number 18	0750	Max. 4	Though Number18
	Thru Num.19	Through number 19	080	Max. 4	Though Number19
	Thru Num.20	Through number 20	0840	Max. 4	Though Number20
	Thru Num.21	Through number 21	090	Max. 4	Though Number21
	Thru Num.22	Through number 22	0990	Max. 4	Though Number22
	Res. Thru Num.1	Reserve Through number 1	Null	Max. 4	Reserve Though Number
	Res. Thru Num.2	Reserve Through number 2	Null	Max. 4	Reserve Though Number2
	Res. Thru Num.3	Reserve Through number 3	Null	Max. 4	Reserve Though Number3
2	Res. Thru Num.4	Reserve Through number 4	Null	Max. 4	Reserve Though Number4
	Res. Thru Num.5	Reserve Through number 5	Null	Max. 4	Reserve Though Number5
	Res. Thru Num.6	Reserve Through number 6	Null	Max. 4	Reserve Though Number6
	Res. Thru Num.7	Reserve Through number 7	Null	Max. 4	Reserve Though Number7
	Res. Thru Num.8	Reserve Through number 8	Null	Max. 4	Reserve Though Number8

66-61

Purpose Setting

Function (Purpose) Used to display the FAX-related soft SW (100 - 170) on the LCD to allow changing the soft SW while checking with the LCD.

Section FAX

Operation/Procedure

1) Enter the [SW NO] with 10-key.
   * When [C] key is pressed, the entered value of [SW NO] is cleared.
2) Press [DATA] button.
   The soft SW data entered in procedure 1) is displayed.
   * When [SW NO] button is pressed, the display returns to the initial screen.
3) Enter the number corresponding to the bit to be changed with 10-key.
   [1] → [0]
   [0] → [1]
   * When [SW NO] button is pressed, the display returns to the initial screen.
4) When [EXECUTE] button is pressed, it is highlighted and the setting is saved.
   After saving the setting, [EXECUTE] button returns to the normal display.

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

67

67-17

Purpose

Function (Purpose) Used to reset the printer controller.

Section Printer

Operation/Procedure

1) Press [EXECUTE] key.
2) Press [YES] key.
   The setting data related to the printer are deleted. (including the data related to the network)

When the operation is completed, [EXECUTE] key returns to the normal display.

67-24

Purpose	Adjustment/Setup
Function (Purpose)	Printer color balance adjustment (Auto adjustment) (Color model)
Section	Printer

Operation/Procedure

1) Press [EXECUTE] key.
   The color patch image (adjustment pattern) is printed out.
2) Plate the printed adjustment pattern on the document table, select [FACTORY] or [SERVICE] mode.
3) Press [EXECUTE] key.
   The printer color balance auto adjustment is performed, and the adjustment result is printed.
4) Press [OK] key.
   The half tone correction target registration is processed.

67-24

Purpose	Adjustment/Setup
Function (Purpose)	Printer density and gradation adjustment (Auto adjustment) (Mono color model)
Section	Printer

Operation/Procedure

1) Press [EXECUTE] key.
   The patch image (adjustment pattern) is printed out.
2) Plate the printed adjustment pattern on the document table.
3) Press [EXECUTE] key.
   The printer density and gradation auto adjustment is performed, and the adjustment result is printed.
4) Press [OK] key.
   The half tone correction target registration is processed.

67-25

Purpose	Adjustment/Setup
Function (Purpose)	Printer color balance adjustment (Manual adjustment) (Color model)
Section	Printer

Operation/Procedure

1) Select an adjustment target color.
2) Select a target adjustment density level with [↑] [↓] key.
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.

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

When [EXECUTE] key is pressed, the check pattern is printed in the color balance and density corresponding to the adjustment value. (At the same time, the adjustment value is saved.)

Item/Display		Setting range	Default value
A	POINT1	1 - 99	50
B	POINT2	1 - 99	50
C	POINT3	1 - 99	50
D	POINT4	1 - 99	50
E	POINT5	1 - 99	50
F	POINT6	1 - 99	50
G	POINT7	1 - 99	50
H	POINT8	1 - 99	50
I	POINT9	1 - 99	50
J	POINT10	1 - 99	50
K	POINT11	1 - 99	50
L	POINT12	1 - 99	50
M	POINT13	1 - 99	50
N	POINT14	1 - 99	50
O	POINT15	1 - 99	50
P	POINT16	1 - 99	50
Q	POINT17	1 - 99	50

67-25

Purpose	Adjustment/Setup
Function (Purpose)	Printer density and gradation adjustment (Manual adjustment) (Mono color model)
Section	Printer

Operation/Procedure

1) Select a target adjustment density level with [↑] [↓] 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.

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

When [EXECUTE] key is pressed, the check pattern is printed in the density and gradation corresponding to the adjustment value. (At the same time, the adjustment value is saved.)

Item/Display		Setting range	Default value
A	POINT1	1 - 99	50
B	POINT2	1 - 99	50
C	POINT3	1 - 99	50
D	POINT4	1 - 99	50
E	POINT5	1 - 99	50
F	POINT6	1 - 99	50
G	POINT7	1 - 99	50
H	POINT8	1 - 99	50
I	POINT9	1 - 99	50
J	POINT10	1 - 99	50
K	POINT11	1 - 99	50
L	POINT12	1 - 99	50
M	POINT13	1 - 99	50
N	POINT14	1 - 99	50
O	POINT15	1 - 99	50
P	POINT16	1 - 99	50
Q	POINT17	1 - 99	50

67-26

Purpose	Adjustment/Setup
Function (Purpose)	Used to set the target color balance of the printer mode auto color balance adjustment. (Only color model)
Section	Printer

Operation/Procedure

1) Select the target color balance.

Item/Display		Content	Default value
Target value table select	DEF1	The engine color balance adjustment target in the automatic color balance operation is slightly shifted to Magenta. When this target is selected, the color balance is converted into natural gray color balance by the color table in an actual printer mode and print is made.	DEF 1
	DEF2	The engine color balance adjustment target in the automatic color balance operation is slightly shifted to natural gray color balance. When this target is selected, the color balance is slightly shifted to Cyan by the color table in an actual copy mode and print is made.	
	DEF3	The engine color balance adjustment target in the automatic color balance operation is slightly shifted to Cyan. When this target is selected, the color balance is converted into the color balance with enhanced Cyan by the color table in an actual copy mode and print is made.	

67-27

Purpose	Adjustment/Setup
Function (Purpose)	Used to set the service target of the printer mode auto color balance adjustment. (Only color model)
Section	Printer

Operation/Procedure

1) Select [SETUP].
2) Place the printed color balance adjustment pattern sheet printed in SIM 67-25 on the document table.
3) Press [EXECUTE] key.

   The patch image of the adjustment pattern sheet is scanned.
4) Press [OK] key.

   The service target of the printer mode auto color balance adjustment is set according to the scanned adjustment pattern sheet patch images.

   The registered color balance and the density are displayed.

Select a target color with [C] [M] [Y] [K] key.

NOTE: This simulation is executed only when the printer color balance is manually adjusted.

B	Point B target value
C	Point C target value
D	Point D target value
E	Point E target value
F	Point F target value
G	Point G target value
H	Point H target value
I	Point I target value
J	Point J target value
K	Point K target value
L	Point L target value
M	Point M target value
N	Point N target value
O	Point O target value
BASE	Background sampling value

67-28

Purpose	Adjustment/Setup
Function (Purpose)	Used to set the default of the service target of the printer mode auto color balance adjustment. (Only color model)
Section	Printer

Operation/Procedure

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

   The service target of the printer mode auto color balance adjustment is set to the default.

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

67-31

Purpose	Data clear
Function (Purpose)	Used to clear the printer calibration value.
Section	Printer

Operation/Procedure

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

   The printer calibration data (Half tone correction data) are cleared.
   (The printer color balance correction is canceled.)

67-33

Purpose	Adjustment/Setup
Function (Purpose)	Used to change the gamma of the printer screen. (for PCL/PS)
Section	Printer

Operation/Procedure

1) Select a target change color.
2) Select a target adjustment density level with [↑] [↓] key.
3) Enter the set value with 10-key.
4) Press [OK] key. (The set value is saved.)

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

- **Color model**

Item/Display		Content	Setting range	Default value
A	POINT1	Point 1	0 - 255	128
B	POINT2	Point 2	0 - 255	128
C	POINT3	Point 3	0 - 255	128
D	POINT4	Point 4	0 - 255	128
E	POINT5	Point 5	0 - 255	128
F	POINT6	Point 6	0 - 255	128
G	POINT7	Point 7	0 - 255	128
H	POINT8	Point 8	0 - 255	128
I	POINT9	Point 9	0 - 255	128
J	POINT10	Point 10	0 - 255	128
K	POINT11	Point 11	0 - 255	128
L	POINT12	Point 12	0 - 255	128
M	POINT13	Point 13	0 - 255	128
N	POINT14	Point 14	0 - 255	128
O	POINT15	Point 15	0 - 255	128
P	POINT16	Point 16	0 - 255	128
Q	POINT17	Point 17	0 - 255	128

Display	Content
SCREEN1	600dpi 1bit Photo
SCREEN2	600dpi 1 bit Graphics
SCREEN3	600dpi 4 bit Photo
SCREEN4	600dpi 4 bit Graphics
SCREEN5	1200dpi 1 bit Photo
SCREEN6	1200dpi 1 bit Graphics
SCREEN7	B/W 600dpi 1 bit
SCREEN8	B/W 600dpi 4 bit
SCREEN9	B/W 1200dpi 1 bit
SCREEN10	Toner Save B/W
HEAVY PAPER	Printer paper kind manual gamma correction (Heavy paper)

• **Mono color model**

Item/Display		Content	Setting range	Default value
A	POINT1	Point 1	0 - 255	128
B	POINT2	Point 2	0 - 255	128
C	POINT3	Point 3	0 - 255	128
D	POINT4	Point 4	0 - 255	128
E	POINT5	Point 5	0 - 255	128
F	POINT6	Point 6	0 - 255	128
G	POINT7	Point 7	0 - 255	128
H	POINT8	Point 8	0 - 255	128
I	POINT9	Point 9	0 - 255	128
J	POINT10	Point 10	0 - 255	128
K	POINT11	Point 11	0 - 255	128
L	POINT12	Point 12	0 - 255	128
M	POINT13	Point 13	0 - 255	128
N	POINT14	Point 14	0 - 255	128
O	POINT15	Point 15	0 - 255	128
P	POINT16	Point 16	0 - 255	128
Q	POINT17	Point 17	0 - 255	128

Display	Content
SCREEN1	B/W 600dpi 1 bit
SCREEN2	B/W 600dpi 4 bit
SCREEN3	B/W 1200dpi 1 bit
SCREEN4	Toner Save B/W
HEAVY PAPER	Printer paper kind manual gamma correction (Heavy paper)

NOTE: The adjustment value can be reset to the default value with SIM67-25.

67-34

Purpose	Adjustment/Setup
Function (Purpose)	Used to set the density correction in the printer high density section. (Support for the high density section tone gap)
Section	Printer

Operation/Procedure

1) Enter the set value with 10-key.

0	Enable
1	Disable

2) Press [OK] key. (The set value is saved.)

• **Color model**

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

• When tone gap is generated in the high density section, set items A and B to "0."
The density in the high density section is decreased, but tone gap is reduced.

• To increase the density in the high density section further, set items A and B to "1.
The tone gap may occur in high density part.

NOTE: Do not change the values of items C, D, E, and F. If these values are changed, the density in the high density area is changed.

• **Mono color model**

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

• When tone gap is generated in the high density section, set item A to "0".
The density in the high density section is decreased, but tone gap is reduced.

• To increase the density in the high density section further, set item A to "1".
The tone gap may occur in high density part.

NOTE: When the value of item B is changed, the density in the high density section is changed.

67-36

Purpose	Adjustment/Setup
Function (Purpose)	Used to adjust the density in the low density section.
Section	Printer

Operation/Procedure

1) Enter the adjustment value using the 10-key.

2) Press [OK] key.

When the adjustment value is increased, the low density images are strongly reduced. When the adjustment value is decreased, the low density are images are weakly reproduced.

When tone gap is generated in the low density section (highlight section), changing this adjustment value may improve the trouble.

67-52

Purpose	Adjustment
Function (Purpose)	Used to reset the printer color balance adjustment (adjustment for each dither) to the default value. (The set values of SIM67-54 and SIM67-33 are set to the default values.) (Only color model)
Section	

Operation/Procedure

This simulation is used to reset the adjustment values of SIM67-54 and SIM67-33 to the default values.

1) Select an item to be reset to the default (for each dither).

   To reset the adjustment values of all the items, select [ALL].

Select item (Mode)	Content
Heavy Paper	Adjustment item to improve the color balance in the heavy paper mode
1200dpi 1bit	Adjustment item to improve the color balance in 1200dpi mode (When 1200dpi mode is frequently used)
600dpi 1bit	Adjustment item to improve the color balance in 600dpi, 1bit mode.
B/W	Adjustment item to improve the density and gradation in the monochrome mode
ALL	Select all the items

2) Press [EXECUTE] key.
3) Press [YES] key.

The adjustment values of SIM67-54 and SIM67-33 are reset to the default values.

67-54

Purpose	Adjustment
Function (Purpose)	Printer color balance adjustment (Automatic adjustment for each dither) (Only color model)
Section	

Operation/Procedure

This simulation is used to adjust the color balance, the density, and the gradation in the monochrome mode, the heavy paper mode, the 1200dpi mode, and the 600dpi 1bit mode.

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

1) Press [EXECUTE] key. (A4 or 11" x 8.5" paper is automatically selected.)

   The color patch image (adjustment pattern) is printed out.
2) Set the color patch image (adjustment pattern) printed in the procedure 1) on the document table so that the thin lines on the printed color patch image (adjustment pattern) are on the left side. Place 5 sheets of white paper on the printed color patch image (adjustment pattern).
3) Press [EXECUTE] key.

   The color balance adjustment is automatically performed.

   The adjustment pattern is printed out. Check it for any abnormality.
4) Press [OK] key.

   The list of the adjustment items (for each dither) is displayed.
5) Select an adjustment item (for each dither).

Select item (Mode)	Content
Heavy Paper	Adjustment item to improve the color balance in the heavy paper mode
1200dpi 1bit	Adjustment item to improve the color balance in 1200dpi mode (When 1200dpi mode is frequently used)
600dpi 1bit	Adjustment item to improve the color balance in 600dpi, 1bit mode.
B/W	Adjustment item to improve the density and gradation in the monochrome mode

6) Press [EXECUTE] key. (A4 or 11" x 8.5" paper is automatically selected.)

   The color patch image (adjustment pattern) is printed out.
7) Set the color patch image (adjustment pattern) printed in the procedure 6) on the document table so that the thin lines on the printed color patch image (adjustment pattern) are on the left side. Place 5 sheets of white paper on the printed color patch image (adjustment pattern).
8) Press [EXECUTE] key.

   The color balance adjustment is automatically performed, and the machine goes to the state of procedure 6).

   To complete the adjustment and enable the adjustment result, press [OK] key.
9) Make a print, and check the print image quality.

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

67-70

Purpose	Data clear
Function (Purpose)	MFP PWB SRAM data clear
Section	MFP PWB

Operation/Procedure

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

   MFP PWB SRAM data is cleared.

   When the operation is completed, [EXECUTE] key returns to the normal display.

NOTE: When replacing the MFP PWB and the HDD, if data backup cannot be made with SIM56-1 and 56-2, perform this simulation after replacement of the MFP PWB and the HDD.

[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.

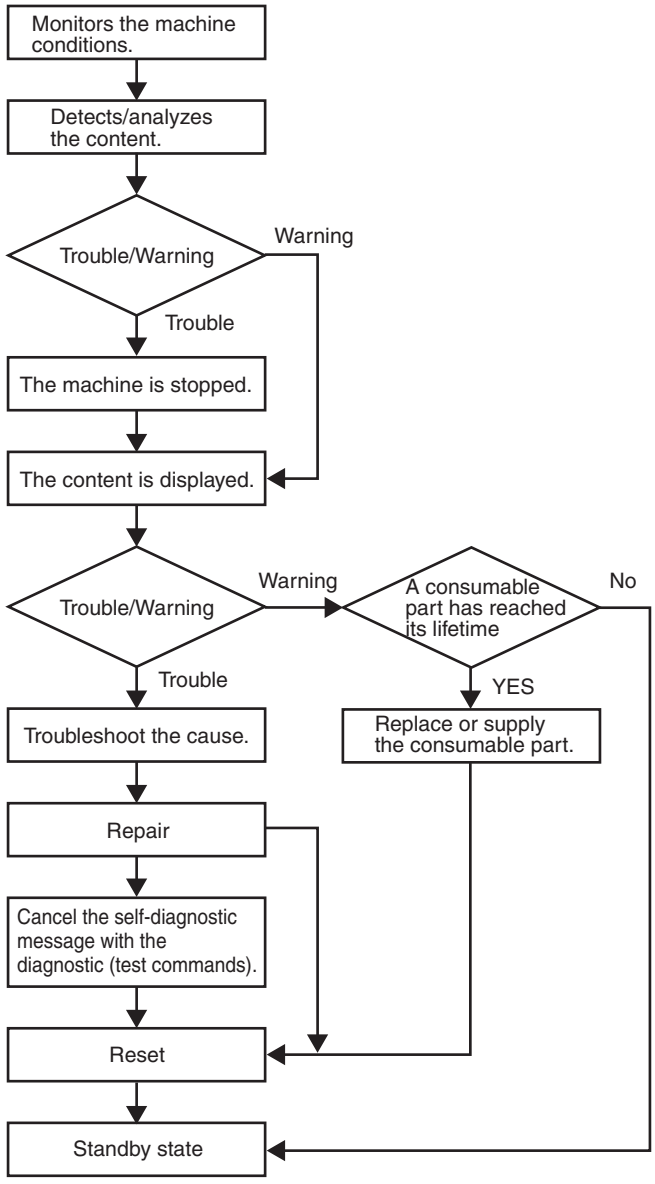
A warning message is displayed when a consumable part life is nearly expired or is expired.

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

a. Breakdown mode list

There are following cases of the breakdown mode.

Kind of trouble	Judgment block	Trouble code	Operation mode								
			Copy scan (including interruption)	Scan push	Scan pull	Scan-To HDD	FAX Send	FAX print	Print	List print	FAST Notifica-tion to host
FAX board trouble	MFP	F6 (00, 01, 04, 21, 30, 97, 98)	○	○	○	○	×	×	○	○	×
HDD trouble HDD-ASIC self test trouble		E7 (03, 04)	×	×	×	×	×	×	×	×	×
SCU communication trouble		E7 (80) A0 (02)	×	×	×	×	×	○	○	○	○
PCU communication trouble		E7 (90) A0 (01)	×	×	×	×	×	×	×	×	○
Power controller trouble		L8 (20)	×	×	×	×	×	×	×	×	○
Backup battery voltage fall		U1 (01)	×	×	×	×	×	×	×	×	○
Connection trouble (MFP detection)		E7 (60, 61, 62, 65) A0 (10, 11, 12, 15, 20)	×	×	×	×	×	×	×	×	×
Serial number discrepancy		U2 (30)	×	×	×	×	×	×	×	×	×
Serial vendor trouble		U7 (50, 51)	×	×	×	×	×	×	×	×	○
Memory error (included not installed the expansion RAM)		U2 (00, 05, 10, 11, 22, 23, 24)	×	×	×	×	×	×	×	×	△ 15
HDD registration data sum error		U2 (50)	×	×	×	×	×	×	×	×	○
Image memory trouble, decode error		**MX-C402SC/C382SC:** E7 (01, 05, 06, 08, 09) **MX-B402SC/B382SC:** E7 (01, 05, 06, 08, 09, 18,19)	×	×	×	×	×	×	×	×	○
Personal counter installation trouble		PC (00)	×	×	×	×	×	×	×	×	○
Laser trouble	PCU	**MX-C402SC/C382SC:** E7 (20, 28, 29) L6 (10) **MX-B402SC/B382SC:** E7 (20, 21, 28, 29) L6 (10)	×	×	×	×	×	×	×	× *10	○
Connection trouble (PCU detection)		E7 (50, 55) A0 (21) F1 (50)	×	×	×	×	×	×	×	×	×

Kind of trouble	Judgment block	Trouble code	Operation mode								
			Copy scan (including interruption)	Scan push	Scan pull	Scan-To HDD	FAX Send	FAX print	Print	List print	FAST Notifica-tion to host
PCU section troubles (motor, fusing, etc.)	PCU	**MX-C402SC/C382SC:** C1 (10, 14) C4 (00) F2 (11, 12, 13, 14, 15, 16, 17, 18, 19, 21, 22, 26, 27, 28, 29, 40, 64, 70, 74) H2 (00, 01, 02, 03, 04, 05) H3 (00, 01, 02, 04, 05) H4 (00, 01, 02, 04, 30) H5 (01) H7 (10, 11, 12, 14) H8 (00) L4 (02, 03, 04, 05, 06, 12, 16, 29, 31, 32, 34, 35, 50, 51) L8 (01,02) U2 (90, 91) **MX-B402SC/B382SC:** C4 (00) F2 (11, 15, 19, 21, 22, 26) H2 (00, 01, 02, 03, 04, 05) H3 (00, 01, 02, 04, 05) H4 (00, 01, 02, 04, 30) H5 (01) H7 (10, 11, 12, 14) H8 (00) L4 (02, 03, 04, 06, 12, 16, 29, 31, 32, 34, 35, 50, 51) L8 (01, 02)	×	×	×	×	×	×	×	× *10	○
General PCU color system trouble		**MX-C402SC/C382SC**: E7 (21, 22, 23), F2 (23, 24, 25, 41, 42, 43, 65, 66, 67, 71, 72, 73, 75, 76, 77)	× *19	× *19	× *19	× *19	× *19	× *19	× *19	× *10 *19	○
Paper feed tray 1 trouble		F3 (12)	△ 3	○	○	○	○	△ 3	△ 3	△ 3 *10	○
Paper feed tray 3 trouble		U6 (01)	△ 3	○	○	○	○	△ 3	△ 3	△ 3 *10	○
Paper feed tray 4 trouble		U6 (02)	△ 3	○	○	○	○	△ 3	△ 3	△ 3 *10	○
Paper feed tray 5 trouble		U6 (03)	△ 3	○	○	○	○	△ 3	△ 3	△ 3 *10	○
Paper feed tray 6 trouble		**MX-B402SC/B382SC:** U6 (33,38)	△ 3	○	○	○	○	△ 3	△ 3	△ 3 *10	○
Paper feed tray other troubles		U6 (00,10,50)	△ 11	○	○	○	○	△ 11	△ 11	△ 11 *10	○
Staple trouble		F1 (10)	△ 4	△ 4	△ 4	△ 4	△ 4	△ 4	△ 4	△ 4 *10	○
After-process trouble		F1 (00, 03, 15, 19, 20, 21, 29, 37)	△ 4	△ 4	△ 4	△ 4	△ 4	△ 4	△ 4	△ 4 *10	○
Other troubles		EE (EL, EC, EU)	○	○	○	○	○	○	○	○	○
Process control trouble (PCU detection)		**MX-C402SC/C382SC:** F2 (22 - 25, 39, 49, 50, 51, 58, 78) **MX-B402SC/B382SC:** F2 (22, 39, 49, 50, 51, 58, 78)	○ *12	○	○	○	○	○	○	○	○
Connection trouble (SCU detection)	SCU	A0 (22) E7 (70, 75)	×	×	×	×	×	×	×	×	×
SCU color system troubles (SCU detection)		UC (02)	△ 9	△ 9	△ 9	△ 9	△ 9	○	○	○	○
Anti copy system		UC (20)	×	×	×	×	×	○	○	○	○
EEPROM faction		U2 (80, 81)	×	×	×	×	×	○	○	○	○
Scanner section troubles (mirror motor, lens, scanner lamp)		L1 (00), L3 (00)	×	×	×	×	×	○	○	○	○
CCD troubles (shading, etc.)		E7 (10, 11, 14)	×	×	×	×	×	○	○	○	○
DSPF/DF trouble		U5 (00, 16, 30, 31)	△ 5	△ 5	△ 5	△ 5	○	○	△ 5	○	○
General troubles in the DSPF back surface scanning section		E6 (10, 11, 14)	△ 5	△ 5	△ 5	△ 5	○	○	△ 5	○	○

Kind of trouble	Judgment block	Trouble code	Operation mode								
			Copy scan (including interruption)	Scan push	Scan pull	Scan-To HDD	FAX Send	FAX print	Print	List print	FAST Notification to host
Only history is left (PCU detection)	PCU	F2 (45)	○	○	○	○	○	○	○	○	○

○ : Operation enabled, × : Operation disabled

△ 2 : Based on the auditor specifications.

△ 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.

△ 5 : When detected during other than a job, the operation is enabled in the OC mode.

△ 9 : When detected during other than a job, the operation is enabled in the black and white mode.

* 10 : Since communication is enabled, reception can be transferred.

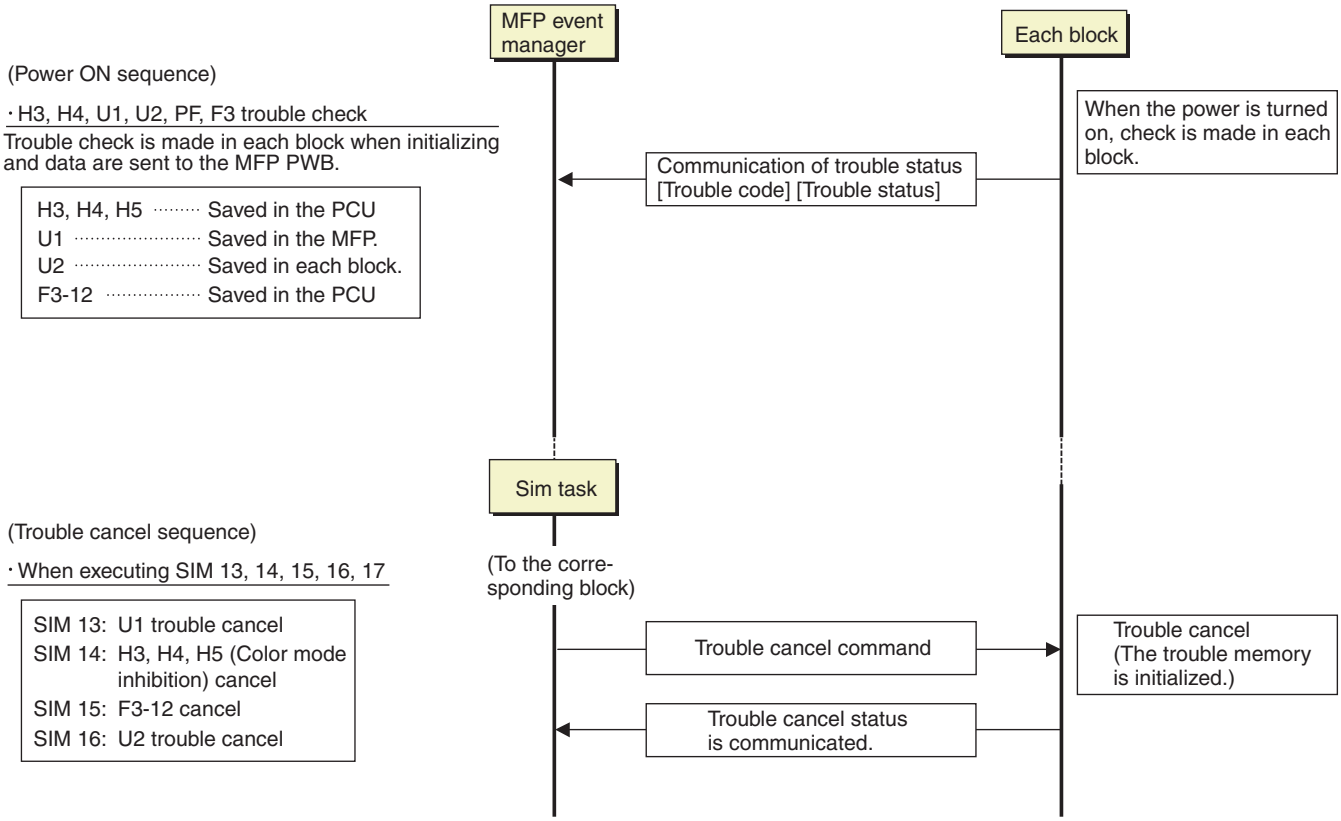
△ 11 : When detected during other than a job, the operation is enabled in other than the DESK.

* 12 : A trouble message is displayed. (Example: Copy is enable. F2 trouble)

△ 15 : When in U2-22, trouble notification cannot be made. If there is no abnormality in the FAX software or the FAST data in U2-23, trouble notification can be made.

* 19 : When the color mode is inhibited in "Color mode inhibit" setting of the system setting, the operation is performed in the monochrome mode.

(2) Power ON trouble detection sequence.



(3) Error cancel method for each error code

Simulation	Error code
SIM13	U1
SIM14	H3, H4, H5
SIM15	F3-12
SIM16	U2
Power OFF - ON	Errors other than above

2. Trouble code list

Trouble code		Trouble code content	Trouble detection	Mechanism	Option	Electricity	FAX	Supply
Main code	Sub code							
C1	10	Main charger trouble (BK)	PCU			○		
	14	Main charger trouble (Color)	PCU			○		
C4	00	PTC trouble	PCU			○		
E6	10	Shading error (Black correction)	SCU			○		
	11	Shading error (White correction)	SCU			○		
	14	CCD-ASIC error	SCU			○		
E7	01	MFP image data error	MFP			○		
	03	HDD trouble	MFP			○		
	04	HDD-ASIC error	MFP			○		
	05	Standard memory/expansion memory read/write error (MFP PWB)	MFP			○		
	06	Image data decode error	MFP			○		
	08	MFP memory compatibility error (MFP PWB)	MFP			○		
	09	Standard memory size/Expansion memory size error (MFP PWB)	MFP			○		
	10	Shading error (Black correction)	SCU			○		
	11	Shading error (White correction)	SCU			○		
	14	CCD-ASIC error	SCU			○		
	20	LSU laser detection error (K)	PCU			○		
	21	LSU laser detection error (C)	PCU			○		
	22	LSU laser detection error (M)	PCU			○		
	23	LSU laser detection error (Y)	PCU			○		
	28	LSU-PCU connection error	PCU			○		
	29	LSU ASIC frequency error	PCU			○		
	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			○		
	65	MFP EEPROM sum check error	MFP			○		
	80	MFP-SCU PWB communication error	MFP			○		
	90	MFP-PCU PWB communication error	MFP			○		
EE	EC	Automatic toner density adjustment error (Sampling level 76 - 117/139 - 178)	PCU			○		
	EL	Automatic toner density adjustment error (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		○			
	10	Staple 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		○			
	29	Finisher PWB fan trouble	PCU		○			
	37	Finisher data backup RAM error	PCU		○			
	50	Main unit - Finisher combination error	PCU		○			
F2	11	Developing unit initial detection (K)	PCU					○
	12	Developing unit initial detection (C)	PCU					○
	13	Developing unit initial detection (M)	PCU					○
	14	Developing unit initial detection (Y)	PCU					○
	15	Drum unit initial detection trouble (K drum)	PCU					○
	16	Drum unit initial detection trouble (C drum)	PCU					○
	17	Drum unit initial detection trouble (M drum)	PCU					○
	18	Drum unit initial detection trouble (Y drum)	PCU					○
	19	Primary transfer unit initial detection trouble	PCU					○
	21	Secondary transfer unit initial detection trouble	PCU					○
	22	Discharge lamp trouble (K)	PCU					○
	23	Discharge lamp trouble (C)	PCU					○
	24	Discharge lamp trouble (M)	PCU					○
	25	Discharge lamp trouble (Y)	PCU					○
	26	Auto toner density control level setting trouble (K)	PCU					○
	27	Auto toner density control level setting trouble (C)	PCU					○
	28	Auto toner density control level setting trouble (M)	PCU					○
	29	Auto toner density control level setting trouble (Y)	PCU					○
	39	Process thermistor trouble	PCU					○
	40	Toner density sensor trouble (BLACK)	PCU					○
	41	Toner density sensor trouble (CYAN)	PCU					○
	42	Toner density sensor trouble (MAGENTA)	PCU					○
	43	Toner density sensor trouble (YELLOW)	PCU					○
	45	K image density sensor trouble	PCU					○

Trouble code		Trouble code content	Trouble detection	Mechanism	Option	Electricity	FAX	Supply
Main code	Sub code							
F2	49	LSU thermistor trouble	PCU					○
	50	K drum phase sensor trouble	PCU					○
	51	CL drum phase sensor trouble	PCU					○
	58	Process humidity sensor trouble	PCU					○
	64	Toner supply operation trouble (BK)	PCU					○
	65	Toner supply operation trouble (C)	PCU					○
	66	Toner supply operation trouble (M)	PCU					○
	67	Toner supply operation trouble (Y)	PCU					○
	70	Improper toner cartridge detection (BLACK)	PCU					○
	71	Improper toner cartridge detection (CYAN)	PCU					○
	72	Improper toner cartridge detection (MAGENTA)	PCU					○
	73	Improper toner cartridge detection (YELLOW)	PCU					○
	74	Toner cartridge CRUM error (BLACK)	PCU					○
	75	Toner cartridge CRUM error (CYAN)	PCU					○
	76	Toner cartridge CRUM error (MAGENTA)	PCU					○
	77	Toner cartridge CRUM error (YELLOW)	PCU					○
	78	Registration image density sensor trouble (Transfer belt substrate reflection rate abnormality)	PCU					○
F3	12	Paper feed tray 1 lift operation trouble	PCU	○				
H2	00	Thermistor open trouble (TH_UM_AD2)	PCU	○				
	01	Thermistor open trouble (TH_LM)	PCU	○				
	02	Sub thermistor open trouble (TH_US)	PCU	○				
	03	Compensation thermistor open trouble (TH_UM_AD1)	PCU	○				
	04	Thermistor open (TH_EX1)	PCU	○				
	05	Thermistor open (TH_EX2)	PCU	○				
H3	00	Fusing section high temperature trouble (TH_UM)	PCU	○				
	01	Fusing section high temperature trouble (TH_LM)	PCU	○				
	02	Fusing section high temperature trouble (TH_US)	PCU	○				
	04	Fusing section high temperature trouble (TH_EX1)	PCU	○				
	05	Fusing section high temperature trouble (TH_EX2)	PCU	○				
H4	00	Fusing section low temperature trouble (TH_UM_AD2)	PCU	○				
	01	Fusing section low temperature trouble (TH_LM)	PCU	○				
	02	Fusing section low temperature trouble (TH_US)	PCU	○				
	04	Fusing section low temperature trouble (TH_EX)	PCU	○				
	30	Thermistor input circuit trouble (TH_UM)	PCU	○				
H5	01	5 times continuous POD1 not-reach jam	PCU	○				
H7	10	Fusing low temperature recovery trouble (TH_UM_AD2).	PCU	○				
	11	Fusing low temperature recovery trouble (TH_LM)	PCU	○				
	12	Fusing low temperature recovery trouble (TH_US)	PCU	○				
	14	Low temperature trouble (TH_EX) in reset operation after JOB stop due to a fall in the fusing temperature during a JOB.	PCU	○				
H8	00	Fusing unit initial detection trouble	PCU	○				
L1	00	Scanner feed trouble	SCU	○				
L3	00	Scanner return trouble	SCU	○				
L4	02	Paper feed motor trouble	PCU			○		
	03	Fusing motor lock trouble	PCU			○		
	04	Developing motor trouble (BLACK)	PCU			○		
	05	Developing motor trouble (COLOR)	PCU			○		
	06	Transfer unit lift trouble	PCU			○		
	12	Secondary transfer separation trouble	PCU			○		
	16	Fusing pressure release trouble	PCU			○		
	29	HDD fan trouble	PCU			○		
	30	MFP fan motor trouble	MFP			○		
	31	Paper exit cooling fan trouble	PCU			○		
	32	Power source cooling fan trouble	PCU			○		
	34	LSU fan trouble	PCU			○		
	35	Fusing cooling fan trouble	PCU			○		
	50	Process fan trouble	PCU			○		
	51	Process fan 2 trouble	PCU			○		
L6	10	Polygon motor trouble	PCU			○		
L8	01	Full wave signal detection error	PCU			○		
	02	Full wave signal error	PCU			○		
	20	MFP PWB - Mother board communication error	MFP			○		
PC	-	Personal counter not detected	MFP	○				
U1	01	Battery trouble	MFP			○		

Trouble code		Trouble code content	Trouble detection	Mechanism	Option	Electricity	FAX	Supply
Main code	Sub code							
U2	00	MFP EEPROM read/write error	MFP			○		
	05	HDD/MFP PWB SRAM contents inconsistency	MFP			○		
	10	MFP PWB SRAM user authentication index check sum error	MFP			○		
	11	MFP PWB EEPROM counter check sum error	MFP			○		
	22	MFP PWB SRAM memory check sum error	MFP			○		
	23	MFP PWB SRAM memory individual data check sum error	MFP			○		
	24	MFP PWB SRAM memory user authentication counter check sum error	MFP			○		
	30	MFP PWB and PCU PWB manufacturing No. data inconsistency	MFP			○		
	50	HDD user authentication data check sum error	MFP			○		
	80	SCU PWB EEPROM read/write error	SCU			○		
	81	SCU PWB EEPROM check sum error	SCU			○		
	90	PCU PWB EEPROM read/write error	PCU			○		
	91	PCU PWB EEPROM check sum error	PCU			○		
U5	00	Document feed unit communication error	SCU			○		
	16	Document feed unit fan trouble	SCU			○		
	30	Document feed unit tray lift up trouble	SCU			○		
	31	Document feed unit tray lift down trouble	SCU			○		
U6	00	PCU PWB - Desk paper feed unit communication error	PCU			○		
	01	Desk paper feed tray 1 lift trouble	PCU		○			
	02	Desk paper feed tray 2 lift trouble	PCU		○			
	03	Desk paper feed tray 3 lift trouble	PCU		○			
	10	Desk paper feed unit paper transport motor trouble	PCU		○			
	50	Desk - Main unit combination trouble	PCU		○			
U7	50	MFP PWB - Vendor machine communication error	MFP			○		
	51	Vendor machine error	MFP			○		
UC	02	IPD ASIC (CPT) error	SCU			○		
	20	IPD ASIC (DOCC) error	SCU			○		
A0	01	PCU PWB ROM error	MFP			○		
	02	SCU PWB ROM error	MFP			○		
	10	MFP PWB ROM error	MFP			○		
	11	Firmware version inconsistency (MFP - PCU)	MFP			○		
	12	Firmware version inconsistency (MFP - SCU)	MFP			○		
	20	MFP firmware version and EEPROM data version inconsistency	MFP			○		
	21	PCU firmware version and EEPROM data version inconsistency	PCU			○		
	22	SCU firmware version and EEPROM data version inconsistency	SCU			○		

3. Details of trouble code

C1-10 Main charger trouble (BK)

Detail	PCU
Cause	The main charger unit (BK) is not installed properly. There is an abnormality in the main charger unit. Disconnection of the high voltage PWB connector. Breakage of the high voltage harness. MC/DV PWB trouble. PCU PWB trouble
Check & Remedy	Check the output of the main charger with SIM8-2. Check disconnection of the main charger./Replace. Check disconnection of the high voltage PWB. connector. /Replace. Replace the MC/DV PWB. Replace the PCU PWB.
Error cancel method	Power OFF - ON

C1-14 Main charger trouble (Color)

Detail	PCU
Cause	The main charger unit (CMY) is not installed properly. There is an abnormality in the main charger. Disconnection of the high voltage PWB connector. Breakage of the high voltage harness. MC 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 PWB. Replace the PCU PWB.
Error cancel method	Power OFF - ON

C4-00 PTC trouble

Detail	PCU
Cause	The PTC unit is not properly installed. PTC unit trouble. TC PWB trouble. PCU PWB trouble. Connector, harness connection trouble.
Check & Remedy	Clean the PTC with the PTC cleaner. Replace the PTC unit. Replace the secondary transfer PWB. Replace the PCU PWB. Check connection of the connector and the harness.
Error cancel method	Power OFF - ON

E6-10 Shading error (Black correction)

Trouble content	
Detail	SCU
Cause	Installation error of the CCD unit harness. CCD unit trouble. DSPF PWB trouble.
Check and remedy	Check the installing state of the harness to the CCD unit. Check the CCD unit. Check the DSPF PWB.

E6-11 Shading error (White correction)

Trouble content	
Detail	SCU
Cause	Installation error of the CCD unit harness. Copy lamp lighting trouble. Dirt on the mirror, the lens, or the reference white plate. CCD unit trouble. DSPF PWB trouble. Shading SIM not executed / Shading ROM abnormality.
Check and remedy	Check the installing state of the harness the CCD unit. Check the installing state of the harness to the copy lamp unit. Clean the mirror, the lens, or the reference white plate. Check the CCD unit. Check the DSPF PWB.

E6-14 CCD-ASIC error

Trouble content	
Detail	SCU
Cause	DSPF PWB trouble.
Check and remedy	Check the DSPF PWB.

E7-01 MFP image data error

Detail	MFP
Cause	Image data transfer error in the MFP PWB. MFP PWB trouble.
Check & Remedy	Check connection of the connector and the harness of the MFP PWB. Replace the MFP PWB.
Error cancel method	Power OFF - ON

E7-03 HDD trouble

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.
Error cancel method	Power OFF - ON

E7-04 HDD-ASIC error

Detail	MFP
Cause	HDD-ASIC trouble. An error occurs in the HDD-ASIC self test when booting.
Check & Remedy	Replace the MFP PWB.
Error cancel method	Power OFF - ON

E7-05 Standard memory/expansion memory read/write error (MFP PWB)

Detail	MFP
Cause	Improper insertion of the memory. Garbled memory data. The memory capacity is not the specified level.
Check & Remedy	Check insertion of the memory. Use SIM60-1 to check the read/write operations of the memory. Replace the expansion memory. Replace the MFP PWB.
Error cancel method	Power OFF - ON

E7-06 Image data decode error

Detail	MFP
Cause	Compressed image data abnormality. HDD connection trouble when HDD is installed. Image data compression/transfer data garble. MFP PWB trouble.
Check & Remedy	If the job at an occurrence of an error is a FAX job, check the FAX PWB. Check connection of the MFPC PWB and the HDD. Replace the MFPC PWB.
Error cancel method	Power OFF - ON

E7-08 MFP memory compatibility error (MFP PWB)

Detail	MFP
Cause	A DIMM of different specifications is installed to the MFP memory slot. DIMM trouble.
Check & Remedy	Check the installed DIMM. Replace the DIMM.
Error cancel method	Power OFF - ON

E7-09 Standard memory size/Expansion memory size error (MFP PWB)

Detail	MFP
Cause	A DIMM other than below is installed to the default throttle. • 38-sheet machine/40-sheet machine System memory: 1GB Local memory: 512MB • 31-sheet machine System memory: 512MB Local memory: 512MB DIMM trouble. Insufficient memory size.
Check & Remedy	Replace the DIMM.
Error cancel method	Power OFF - ON

E7-10 Shading error (Black correction)

Detail	SCU
Cause	Abnormality in the CCD black scan level when the scanner lamp is turned OFF. Improper installation of the harness to the CCD unit/SCU PWB. CCD unit abnormality. SCU PWB abnormality.
Check & Remedy	Check connection of the harness to the CCD unit/ SCU PWB. Check the CCD unit. Check the SCU PWB.
Error cancel method	Power OFF - ON

E7-11 Shading error (White correction)

Detail	SCU
Cause	Abnormality in the CCD white reference plate scan level when the scanner lamp is turned ON. Improper installation of the harness to the CCD unit/SCU PWB. 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/ SCU PWB. Check connection of the harness to the scanner lamp unit. Clean the mirror, the lens, and the reference white plate. Check the CCD unit. Check the SCU PWB.
Error cancel method	Power OFF - ON

E7-14 CCD-ASIC error

Detail	SCU
Cause	SCU PWB trouble.
Check & Remedy	Check the SCU PWB. Replace the SCU PWB.
Error cancel method	Power OFF - ON

E7-20 LSU laser detection error (K)

Detail	PCU
Cause	Optical axis shift. Reduced laser power, lighting error, laser diode trouble. BD PWB trouble. Harness and connector trouble between the LD/BD PWB and the LSU 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.
Error cancel method	Power OFF - ON

E7-21 LSU laser detection error (C)

Detail	PCU
Cause	Reduced laser power, lighting error, laser diode trouble. Harness and connector 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.
Error cancel method	Power OFF - ON

E7-22 LSU laser detection error (M)

Detail	PCU
Cause	Reduced laser power, lighting error, laser diode trouble. Harness and connector 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.
Error cancel method	Power OFF - ON

E7-23 LSU laser detection error (Y)

Detail	PCU
Cause	Reduced laser power, lighting error, laser diode trouble. Harness and connector 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.
Error cancel method	Power OFF - ON

E7-28 LSU-PCU connection error

Detail	PCU
Cause	Communication error between the CPU in the PCU PWB and the control ASIC. Improper connection of the communication connector between the PCU PWB and the LSU control PWB (interface PWB). Harness trouble between the PCU PWB and the LSU control PWB (interface PWB) PCU PWB or LSU control PWB (interface PWB) trouble
Check & Remedy	Check connection of the connector and the harness between the PCU PWB and the LSU control PWB (interface PWB). Replace the LSU control PWB. Replace the PCU PWB.
Error cancel method	Power OFF - ON

E7-29 LSU ASIC frequency error

Detail	PCU
Cause	Oscillation abnormality of the external oscillator and the internal oscillating circuit used in the LSU ASIC. LSU ASIC abnormality on the LSU ASIC PWB.
Check & Remedy	Replace the LSU control PWB.
Error cancel method	Power OFF - ON

E7-50 Engine connection trouble

Detail	PCU
Cause	A PWB, or firmware, or LSU which is not supported by the machine specifications is detected in the PCU PWB. PCU PWB trouble. LSU trouble.
Check & Remedy	Check the kind and the version of the firmware. Check the LSU, and replace it if necessary. Check the PCU PWB, and replace it if necessary.
Error cancel method	Power OFF - ON

E7-55 PWB information sum error (Engine detection)

Detail	PCU
Cause	PCU EEPROM sum check error. PCU EEPROM trouble. PCU EEPROM contact trouble. Malfunction due to noises
Check & Remedy	Replace the PCU PWB. Replace the PCU EEPROM.
Error cancel method	Power OFF - ON

E7-60 Combination error between the MFP PWB and other PWB, firmware

Detail	MFP
Cause	A PWB or firmware which is not supported by the machine specifications is detected in the MFP PWB. MFP PWB trouble. The PWB/firmware which is not supported by the machine specifications is connected.
Check & Remedy	Check the kind and the version of the firmware. Check the MFP PWB, and replace it if necessary.
Error cancel method	Power OFF - ON

E7-61 Combination error between the MFP PWB and the PCU PWB

Detail	MFP
Cause	Combination error between the MFP PWB and the PCU PWB. MFP PWB trouble. PCU PWB trouble.
Check & Remedy	Check the combination between the MFP PWB and the PCU PWB. Replace the MFP PWB. Replace the PCU PWB.
Error cancel method	Power OFF - ON

E7-65 MFP EEPROM sum check error

Detail	MFP
Cause	MFP PWB EEPROM device breakdown. Contact trouble of the MFP EEPROM device. Malfunction due to noises.
Check & Remedy	Replace the MFP PWB. Replace the MFP PWB EEPROM.
Error cancel method	Power OFF - ON

E7-80 MFP-SCU PWB communication error

Detail	MFP
Cause	SCU PWB connector connection trouble. SCU PWB - MFP PWB connection trouble. SCU PWB mother board connection trouble. SCU PWB trouble. MFP PWB trouble. Replace the mother board.
Check & Remedy	Check connection of the SCU PWB, the MFP PWB, and the mother board. Check the earth line. Replace the SCU PWB. Replace the MFP PWB. Replace the mother board.
Error cancel method	Power OFF - ON

E7-90 MFP-PCU PWB communication error

Detail	MFP
Cause	PCU PWB connector connection trouble. PCU PWB - MFP PWB connection trouble. PCU PWB motherboard connection trouble. PCU PWB trouble. MFP PWB trouble. Replace the mother board.
Check & Remedy	Check connection of the PCU PWB, the MFP PWB, and the mother board. Check the earth line. Replace the PCU PWB. Replace the MFP PWB. Replace the mother board.
Error cancel method	Power OFF - ON

EE-EC Automatic toner density adjustment error (Sampling level 76 - 117/139 - 178)

Detail	PCU
Cause	Toner density sensor trouble. Developing unit trouble. PCU PWB trouble.
Check & Remedy	Replace the toner density sensor. Replace the developing unit. Replace the PCU PWB.
Error cancel method	Power OFF - ON

EE-EL Automatic toner density adjustment error (Over toner)

Detail	PCU
Cause	Toner density sensor trouble. Charging voltage/ developing voltage trouble, toner density trouble, or developing unit trouble. PCU PWB trouble.
Check & Remedy	Replace the toner density sensor. Replace the developing unit. Replace the PCU PWB.
Error cancel method	Power OFF - ON

EE-EU Automatic toner density adjustment error (Under toner)

Detail	PCU
Cause	Toner density sensor trouble. Charging voltage/ developing voltage trouble, toner density trouble, or developing unit trouble. PCU PWB trouble.
Check & Remedy	Replace the toner density sensor. Replace the developing unit. Replace the PCU PWB.
Error cancel method	Power OFF - ON

F1-00 Finisher - PCU PWB communication error

Detail	PCU
Cause	Connection trouble of the connector and the harness between the finisher and the PCU PWB. Finisher control PWB trouble. PCU PWB trouble. Strong external noises.
Check & Remedy	Check the connector and the harness between the finisher and the PCU PWB. Replace the finisher control PWB. Replace the PCU PWB.
Error cancel method	Power OFF - ON

F1-03 Finisher paper exit roller lifting operation trouble

Detail	PCU
Cause	Finisher paper exit roller lift motor trouble. Harness and connector connection trouble. Home position sensor trouble. Finisher control PWB trouble.
Check & Remedy	Use SIM3-3 to check the operation of the paper exit roller lift motor. Replace the paper exit roller lift motor. Check connection of the connector and the harness. Replace the home position sensor. Replace the finisher control PWB.
Error cancel method	Power OFF - ON

F1-10 Staple operation trouble

Detail	PCU
Cause	Staple motor trouble. Finisher control PWB trouble. Home position sensor trouble.
Check & Remedy	Use SIM3-3 to check the operation of the staple motor. Replace the staple motor. Check connection of the connector and the harness. Replace the home position sensor. Replace the finisher control PWB.
Error cancel method	Power OFF - ON

F1-15 Finisher paper exit tray lift operation trouble

Detail	PCU
Cause	Paper exit tray lift motor trouble. Finisher control PWB trouble.
Check & Remedy	Use SIM3-3 to check the operation of the paper exit tray lift motor. Replace the finisher control PWB. Replace the paper exit tray lift motor.
Error cancel method	Power OFF - ON

F1-19 Finisher alignment operation trouble F

Detail	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.
Error cancel method	Power OFF - ON

F1-20 Finisher alignment operation trouble R

Detail	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.
Error cancel method	Power OFF - ON

F1-21 Finisher fan trouble

Detail	PCU
Cause	Finisher fan motor trouble. Finisher control PWB trouble. Harness and connector connection trouble.
Check & Remedy	Use SIM3-3 to check the operation of the fan motor. Check connection between the finisher control PWB and the fan. Replace the fan. Replace the finisher control PWB.
Error cancel method	Power OFF - ON

F1-29 Finisher PWB fan trouble

Detail	PCU
Cause	Finisher PWB fan lock. Finisher control PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Use SIM 3-3 to check the operation of the control PWB cooling fan (FBCF). Replace the finisher PWB fan. Replace the finisher control PWB. Connection trouble of the connector and the harness.
Error cancel method	Power OFF - ON

F1-37 Finisher data backup RAM error

Detail	PCU
Cause	Finisher control PWB trouble. Malfunction due to noises
Check & Remedy	Replace the finisher control PWB. Readjust the finisher. (Use SIM3-10,Finisher control PWB DIP SW adjustment.)
Error cancel method	Power OFF - ON

F1-50 Main unit - Finisher combination error

Detail	PCU
Cause	The finisher which is not supported by the main unit model is installed. Finisher control PWB trouble.
Check & Remedy	Install a proper finisher. Replace the finisher control PWB.
Error cancel method	Power OFF - ON

F2-11 Developing unit initial detection (K)

Detail	PCU
Cause	The initial detection fuse is not blown off though it is conducted for the specified time. (K) Developing unit trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Use SIM6-51 to check the operation of the [DVCRU K] fuse blowing circuit. Use SIM30-1 to check the [DVCRU K] initial detection input signal. Replace the developing unit. Replace the PCU PWB. Check connection of the connector and the harness.
Error cancel method	Power OFF - ON

F2-12 Developing unit initial detection (C)

Detail	PCU
Cause	The initial detection fuse is not blown off though it is conducted for the specified time. (C) Developing unit trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Use SIM6-51 to check the operations of the [DVCRU C] fuse blowing circuit. Use SIM30-1 to check the [DVCRU C] initial detection input signal. Replace the developing unit. Replace the PCU PWB. Check connection of the connector and the harness.
Error cancel method	Power OFF - ON

F2-13 Developing unit initial detection (M)

Detail	PCU
Cause	The initial detection fuse is not blown off though it is conducted for the specified time. (M) Developing unit trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Use SIM6-51 to check the operations of the [DVCRU M] fuse blowing circuit. Use SIM30-1 to check the [DVCRU M] initial detection input signal. Replace the developing unit. Replace the PCU PWB. Check connection of the connector and the harness.
Error cancel method	Power OFF - ON

F2-14 Developing unit initial detection (Y)

Detail	PCU
Cause	The initial detection fuse is not blown off though it is conducted for the specified time. (Y) Developing unit trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Use SIM6-51 to check the operations of the [DVCRU Y] fuse blowing circuit. Use SIM30-1 to check the [DVCRU Y] initial detection input signal. Replace the developing unit. Replace the PCU PWB. Check connection of the connector and the harness.
Error cancel method	Power OFF - ON

F2-15 Drum unit initial detection trouble (K drum)

Detail	PCU
Cause	When the newly installed drum is driven for the specified time after installation, the new state is not canceled. (K) Detection switch [DRCRU-K] trouble Process cartridge trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Use SIM30-1 to check the operation of the [DRCRU-K] switch. Replace the process (drum) cartridge. Replace the PCU PWB. Check connection of the connector and the harness.
Error cancel method	Power OFF - ON

F2-16 Drum unit initial detection trouble (C drum)

Detail	PCU
Cause	When the newly installed drum is driven for the specified time after installation, the new state is not canceled. (C) Detection switch [DRCRU-C] trouble Process cartridge trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Use SIM30-1 to check the operation of the [DRCRU-C] switch. Replace the process (drum) cartridge. Replace the PCU PWB. Check connection of the connector and the harness.
Error cancel method	Power OFF - ON

F2-17 Drum unit initial detection trouble (M drum)

Detail	PCU
Cause	When the newly installed drum is driven for the specified time after installation, the new state is not canceled. (M) Detection switch [DRCRU-M] trouble Process cartridge trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Use SIM30-1 to check the operation of the [DRCRU-M] switch. Replace the process (drum) cartridge. Replace the PCU PWB. Check connection of the connector and the harness.
Error cancel method	Power OFF - ON

F2-18 Drum unit initial detection trouble (Y drum)

Detail	PCU
Cause	When the newly installed drum is driven for the specified time after installation, the new state is not canceled. (Y) Detection switch [DRCRU-Y] trouble Process cartridge trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Use SIM30-1 to check the operation of the [DRCRU-Y] switch. Replace the process (drum) cartridge. Replace the PCU PWB. Check connection of the connector and the harness.
Error cancel method	Power OFF - ON

F2-19 Primary transfer unit initial detection trouble

Detail	PCU
Cause	When the newly installed primary transfer unit is driven for the specified time after installation, the new state is not canceled. 1TUD K sensor trouble Primary transfer initial operation clutch mechanism trouble Primary transfer unit initial detection level trouble PCU PWB trouble. Connection trouble of the connector and the harness. Primary transfer belt unit trouble.
Check & Remedy	Use SIM30-1 to check the operation of the 1TUD-K sensor. Use SIM6-3 to check the switching operation of the primary transfer unit. Check to confirm that the initial detection level is inclined. Replace the PCU PWB. Check connection of the connector and the harness. Replace the primary transfer unit.
Error cancel method	Power OFF - ON

F2-21 Secondary transfer unit initial detection trouble

Detail	PCU
Cause	When the newly installed secondary transfer unit is driven for the specified time after installation, the new state is not canceled. PCU PWB trouble. Connection trouble of the connector and the harness. Secondary transfer UN initial detection mechanism trouble Initial detection electrode trouble Secondary transfer unit trouble.
Check & Remedy	Check conduction of the initial detection electrode plate and the initial detection GND electrode plate. Replace the PCU PWB. Check connection of the connector and the harness. Replace the secondary transfer unit.
Error cancel method	Power OFF - ON

F2-22 Discharge lamp trouble (K)

Detail	PCU
Cause	Contact trouble between the discharge lamp PWB (K) and the PCU PWB. Discharge lamp PWB (K) trouble. PCU PWB trouble.
Check & Remedy	Replace the discharge lamp PWB (K). Check the harness and the connector. Replace the PCU PWB.
Error cancel method	Power OFF - ON

F2-23 Discharge lamp trouble (C)

Detail	PCU
Cause	Contact trouble between the discharge lamp PWB (C) and the PCU PWB. Discharge lamp PWB (C) trouble. PCU PWB trouble.
Check & Remedy	Replace the discharge lamp PWB (C). Check the harness and the connector. Replace the PCU PWB.
Error cancel method	Power OFF - ON

F2-24 Discharge lamp trouble (M)

Detail	PCU
Cause	Contact trouble between the discharge lamp PWB (M) and the PCU PWB. Discharge lamp PWB (M) trouble. PCU PWB trouble.
Check & Remedy	Replace the discharge lamp PWB (M). Check the harness and the connector. Replace the PCU PWB.
Error cancel method	Power OFF - ON

F2-25 Discharge lamp trouble (Y)

Detail	PCU
Cause	Contact trouble between the discharge lamp PWB (Y) and the PCU PWB. Discharge lamp PWB (Y) trouble. PCU PWB trouble.
Check & Remedy	Replace the discharge lamp PWB (Y). Check the harness and the connector. Replace the PCU PWB.
Error cancel method	Power OFF - ON

F2-26 Auto toner density control level setting trouble (K)

Detail	PCU
Cause	The toner density sample level is not in the specified range when the automatic toner density control level is set. (K) Toner density sensor trouble. Developing unit trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	When the power is turned OFF/ON, the automatic developer adjustment is executed again. Replace the developer cartridge. Replace the PCU PWB. Check connection of the connector and the harness.
Error cancel method	Power OFF - ON

F2-27 Auto toner density control level setting trouble (C)

Detail	PCU
Cause	The toner density sample level is not in the specified range when the automatic toner density control level is set. (C) Toner density sensor trouble. Developing unit trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	When the power is turned OFF/ON, the automatic developer adjustment is executed again. Replace the developer cartridge. Replace the PCU PWB. Check connection of the connector and the harness.
Error cancel method	Power OFF - ON

F2-28 Auto toner density control level setting trouble (M)

Detail	PCU
Cause	The toner density sample level is not in the specified range when the automatic toner density control level is set. (M) Toner density sensor trouble. Developing unit trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	When the power is turned OFF/ON, the automatic developer adjustment is executed again. Replace the developer cartridge. Replace the PCU PWB. Check connection of the connector and the harness.
Error cancel method	Power OFF - ON

F2-29 Auto toner density control level setting trouble (Y)

Detail	PCU
Cause	The toner density sample level is not in the specified range when the automatic toner density control level is set. (Y) Toner density sensor trouble. Developing unit trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	When the power is turned OFF/ON, the automatic developer adjustment is executed again. Replace the developer cartridge. Replace the PCU PWB. Check connection of the connector and the harness.
Error cancel method	Power OFF - ON

F2-39 Process thermistor trouble

Detail	PCU
Cause	Process thermistor trouble. Process thermistor harness connection trouble. PCU PWB trouble
Check & Remedy	Replace the process thermistor. Check connection of the harness and the connector. Replace the PCU PWB.
Error cancel method	Power OFF - ON

F2-40 Toner density sensor trouble (BLACK)

Detail	PCU
Cause	Toner density sensor output abnormality (Sample level 25 or less, or 231 or above) Connection trouble of the connector and the harness. Developing unit trouble. PCU PWB trouble
Check & Remedy	Replace the toner density sensor. Harness and connector connection trouble. Replace the developing unit. Replace the PCU PWB.
Error cancel method	Power OFF - ON

F2-41 Toner density sensor trouble (CYAN)

Detail	PCU
Cause	Toner density sensor output abnormality (Sample level 25 or less, or 231 or above) Connection trouble of the connector and the harness. Developing unit trouble. PCU PWB trouble
Check & Remedy	Replace the toner density sensor. Harness and connector connection trouble. Replace the developing unit. Replace the PCU PWB.
Error cancel method	Power OFF - ON

F2-42 Toner density sensor trouble (MAGENTA)

Detail	PCU
Cause	Toner density sensor output abnormality (Sample level 25 or less, or 231 or above) Connection trouble of the connector and the harness. Developing unit trouble. PCU PWB trouble
Check & Remedy	Replace the toner density sensor. Harness and connector connection trouble. Replace the developing unit. Replace the PCU PWB.
Error cancel method	Power OFF - ON

F2-43 Toner density sensor trouble (YELLOW)

Detail	PCU
Cause	Toner density sensor output abnormality (Sample level 25 or less, or 231 or above). Connection trouble of the connector and the harness. Developing unit trouble. PCU PWB trouble.
Check & Remedy	Replace the toner density sensor. Harness and connector connection trouble. Replace the developing unit. Replace the PCU PWB.
Error cancel method	Power OFF - ON

F2-45 K image density sensor trouble

Detail	PCU
Cause	K image density sensor sensitivity adjustment trouble. K image density sensor trouble. Harness and connector connection trouble. K image density sensor dirt. Calibration plate dirt. Calibration plate solenoid trouble. PCU PWB trouble.
Check & Remedy	Replace the K image density sensor. Check connection of the connectors and the harness. Clean the K image density sensor. Replace the calibration plate. Replace the calibration plate solenoid. Replace the PCU PWB. Use SIM44-2 to adjust the process control sensor sensitivity.
Error cancel method	Power OFF - ON

F2-49 LSU thermistor trouble

Detail	PCU
Cause	The LSU detection temperature is outside of -28°C - 78°C. LSU thermistor trouble. Harness and connector connection trouble. PCU PWB trouble LSU control PWB trouble.
Check & Remedy	Replace the LSU thermistor. Check connection of the connectors and the harness. Replace the PCU PWB. Replace the LSU control PWB. Replace the LSU.
Error cancel method	Power OFF - ON

F2-50 K drum phase sensor trouble

Detail	PCU
Cause	Drum phase sensor trouble. Harness and connector connection trouble. Drum drive section trouble. PCU PWB trouble
Check & Remedy	Use SIM30-1 to check the operation of "DHPD_K.". Replace the drum phase sensor. Check connection of the connectors and the harness. Repair the drum drive section. Replace the PCU PWB.
Error cancel method	Power OFF - ON

F2-51 CL drum phase sensor trouble

Detail	PCU
Cause	Drum phase sensor trouble. (DHPCL) Harness and connector connection trouble. Drum drive section trouble. PCU PWB trouble.
Check & Remedy	Use SIM30-1 to check the operation of "DHPD_CL". Replace the drum phase sensor. Check connection of the connectors and the harness. Repair the drum drive section. Replace the PCU PWB.
Error cancel method	Power OFF - ON

F2-58 Process humidity sensor trouble

Detail	PCU
Cause	Process humidity sensor trouble. Harness and connector connection trouble. PCU PWB trouble.
Check & Remedy	Replace the process humidity sensor. Check connection of the connectors and the harness. Replace the PCU PWB.
Error cancel method	Power OFF - ON

F2-64 Toner supply operation trouble (BK)

Detail	PCU
Cause	Toner motor trouble. Toner density sensor trouble. Connector/harness trouble. PCU PWB trouble. Toner cartridge trouble. Developing unit trouble.
Check & Remedy	Replace the toner motor. Replace the toner density sensor. Connector/harness trouble. Replace the PCU PWB. Replace the toner cartridge. Replace the developing unit.
Error cancel method	Power OFF - ON

F2-65 Toner supply operation trouble (C)

Detail	PCU
Cause	Toner motor trouble. Toner density sensor trouble. Connector/harness trouble. PCU PWB trouble Toner cartridge trouble. Developing unit trouble.
Check & Remedy	Replace the toner motor. Replace the toner density sensor. Connector/harness trouble. Replace the PCU PWB. Replace the toner cartridge. Replace the developing unit.
Error cancel method	Power OFF - ON

F2-66 Toner supply operation trouble (M)

Detail	PCU
Cause	Toner motor trouble. Toner density sensor trouble. Connector/harness trouble. PCU PWB trouble Toner cartridge trouble. Developing unit trouble.
Check & Remedy	Replace the toner motor. Replace the toner density sensor. Connector/harness trouble. Replace the PCU PWB. Replace the toner cartridge. Replace the developing unit.
Error cancel method	Power OFF - ON

F2-67 Toner supply operation trouble (Y)

Detail	PCU
Cause	Toner motor trouble. Toner density sensor trouble. Connector/harness trouble. PCU PWB trouble Toner cartridge trouble. Developing unit trouble.
Check & Remedy	Replace the toner motor. Replace the toner density sensor. Connector/harness trouble. Replace the PCU PWB. Replace the toner cartridge. Replace the developing unit.
Error cancel method	Power OFF - ON

F2-70 Improper toner cartridge detection (BLACK)

Detail	PCU
Cause	An improper toner cartridge is inserted. (The main unit detects a toner cartridge of a different specification.) Toner cartridge trouble. PCU PWB trouble
Check & Remedy	Replace the toner cartridge. Replace the PCU PWB.
Error cancel method	Power OFF - ON

F2-71 Improper toner cartridge detection (CYAN)

Detail	PCU
Cause	An improper toner cartridge is inserted. (The main unit detects a toner cartridge of a different specification.) Toner cartridge trouble. PCU PWB trouble.
Check & Remedy	Replace the toner cartridge. Replace the PCU PWB.
Error cancel method	Power OFF - ON

F2-72 Improper toner cartridge detection (MAGENTA)

Detail	PCU
Cause	An improper toner cartridge is inserted. (The main unit detects a toner cartridge of a different specification.) Toner cartridge trouble. PCU PWB trouble.
Check & Remedy	Replace the toner cartridge. Replace the PCU PWB.
Error cancel method	Power OFF - ON

F2-73 Improper toner cartridge detection (YELLOW)

Detail	PCU
Cause	An improper toner cartridge is inserted. (The main unit detects a toner cartridge of a different specification.) Toner cartridge trouble. PCU PWB trouble.
Check & Remedy	Replace the toner cartridge. Replace the PCU PWB.
Error cancel method	Power OFF - ON

F2-74 Toner cartridge CRUM error (BLACK)

Detail	PCU
Cause	Toner cartridge (CRUM) trouble. PCU PWB trouble. Connector/harness trouble.
Check & Remedy	Replace the toner cartridge. Replace the PCU PWB. Connector/harness trouble.
Error cancel method	Power OFF - ON

F2-75 Toner cartridge CRUM error (CYAN)

Detail	PCU
Cause	Toner cartridge (CRUM) trouble. PCU PWB trouble. Connector/harness trouble.
Check & Remedy	Replace the toner cartridge. Replace the PCU PWB. Connector/harness trouble.
Error cancel method	Power OFF - ON

F2-76 Toner cartridge CRUM error (MAGENTA)

Detail	PCU
Cause	Toner cartridge (CRUM) trouble. PCU PWB trouble. Connector/harness trouble.
Check & Remedy	Replace the toner cartridge. Replace the PCU PWB. Connector/harness trouble.
Error cancel method	Power OFF - ON

F2-77 Toner cartridge CRUM error (YELLOW)

Detail	PCU
Cause	Toner cartridge (CRUM) trouble. PCU PWB trouble. Connector/harness trouble.
Check & Remedy	Replace the toner cartridge. Replace the PCU PWB. Connector/harness trouble.
Error cancel method	Power OFF - ON

F2-78 Registration image density sensor trouble (Transfer belt substrate reflection rate abnormality)

Detail	PCU
Cause	Image density (registration) sensor trouble (Sensor sensitivity adjustment trouble). PCU PWB trouble. Connection trouble of the connector and the harness. Image density (registration) sensor dirt. Transfer belt dirt, scratch.
Check & Remedy	Replace the image density (registration) sensor. Replace the PCU PWB. Harness and connector connection trouble. Clean the image density (registration) sensor. Clean or replace the transfer belt.
Error cancel method	Power OFF - ON

F3-12 Paper feed tray 1 lift operation trouble

Detail	PCU
Cause	LUD1 is not turned ON within the specified time. CLUD1 sensor trouble Paper feed tray 1 lift unit trouble. PCU PWB trouble. Harness and connector connection trouble.
Check & Remedy	Check connection of the harness and the connector of LUD1. Replace the lift-up unit. Replace the PCU PWB.
Error cancel method	SIM15

H2-00 Thermistor open trouble (TH_UM_AD2)

Detail	PCU
Cause	Thermistor trouble. PCU PWB trouble Connection trouble of the connector and the harness. Fusing unit not installed.
Check & Remedy	Replace the thermistor. Replace the PCU PWB. Harness and connector connection trouble.
Error cancel method	Power OFF - ON

H2-01 Thermistor open trouble (TH_LM)

Detail	PCU
Cause	Thermistor trouble. PCU PWB trouble. Connection trouble of the connector and the harness. Fusing unit not installed.
Check & Remedy	Replace the thermistor. Replace the PCU PWB. Harness and connector connection trouble.
Error cancel method	Power OFF - ON

H2-02 Sub thermistor open trouble (TH_US)

Detail	PCU
Cause	Thermistor trouble. PCU PWB trouble. Connection trouble of the connector and the harness. Fusing unit not installed.
Check & Remedy	Replace the thermistor. Replace the PCU PWB. Harness and connector connection trouble.
Error cancel method	Power OFF - ON

H2-03 Compensation thermistor open trouble (TH_UM_AD1)

Detail	PCU
Cause	Thermistor trouble. PCU PWB trouble Connection trouble of the connector and the harness. Fusing unit not installed.
Check & Remedy	Replace the thermistor. Replace the PCU PWB. Harness and connector connection trouble.
Error cancel method	Power OFF - ON

H2-04 Thermistor open (TH_EX1)

Detail	PCU
Cause	Thermistor trouble. PCU PWB trouble. Connection trouble of the connector and the harness. Fusing unit not installed.
Check & Remedy	Replace the thermistor. Replace the PCU PWB. Harness and connector connection trouble.
Error cancel method	Power OFF - ON

H2-05 Thermistor open (TH_EX2)

Detail	PCU
Cause	Thermistor trouble. PCU PWB trouble. Connection trouble of the connector and the harness. Fusing unit not installed.
Check & Remedy	Replace the thermistor. Replace the PCU PWB. Harness and connector connection trouble.
Error cancel method	Power OFF - ON

H3-00 Fusing section high temperature trouble (TH_UM)

Detail	PCU
Cause	The fusing temperature exceeds the specified level. Thermistor trouble. PCU PWB trouble Connection trouble of the connector and the harness. Power unit trouble.
Check & Remedy	Use SIM5-2 to check the flashing operation of the heater lamp. Use SIM14 to cancel the trouble. Replace the thermistor. Replace the PCU PWB. Harness and connector connection trouble. Replace the power unit.
Error cancel method	SIM14

H3-01 Fusing section high temperature trouble (TH_LM)

Detail	PCU
Cause	The fusing temperature exceeds the specified level. Thermistor trouble. PCU PWB trouble.Harness and connector connection trouble. Power unit trouble.
Check & Remedy	Use SIM5-2 to check the flashing operation of the heater lamp. Use SIM14 to cancel the trouble. Replace the thermistor. Replace the PCU PWB. Harness and connector connection trouble. Replace the power unit.
Error cancel method	SIM14

H3-02 Fusing section high temperature trouble (TH_US)

Detail	PCU
Cause	The fusing temperature exceeds the specified level. Thermistor trouble. PCU PWB trouble Connection trouble of the connector and the harness. Power unit trouble.
Check & Remedy	Use SIM5-2 to check the flashing operation of the heater lamp. Use SIM14 to cancel the trouble. Replace the thermistor. Replace the PCU PWB. Harness and connector connection trouble. Replace the power unit.
Error cancel method	SIM14

H3-04 Fusing section high temperature trouble (TH_EX1)

Detail	PCU
Cause	The fusing temperature exceeds the specified level. Thermistor trouble. PCU PWB trouble. Connection trouble of the connector and the harness. Power unit trouble. Fusing unit not installed.
Check & Remedy	Replace the power unit. Replace the PCU PWB. Harness and connector connection trouble. Use SIM14 to cancel the trouble.
Error cancel method	SIM14

H3-05 Fusing section high temperature trouble (TH_EX2)

Detail	PCU
Cause	The fusing temperature exceeds the specified level. Thermistor trouble. PCU PWB trouble. Connection trouble of the connector and the harness. Power unit trouble.
Check & Remedy	Replace the thermistor. Replace the PCU PWB. Harness and connector connection trouble. Replace the power unit. Use SIM14 to cancel the trouble.
Error cancel method	SIM14

H4-00 Fusing section low temperature trouble (TH_UM_AD2)

Detail	PCU
Cause	The fusing temperature does not reach the specified level within the specified time from turning ON the power relay. Thermistor trouble. Heater lamp trouble. PCU PWB trouble. Thermostat trouble. Connector, harness connection trouble. Power unit trouble. Interlock switch trouble.
Check & Remedy	Replace the thermistor. Replace the heater lamp. Replace the PCU PWB. Replace the thermostat. Check connection of the connector and the harness. Replace the power unit. Replace the interlock switch. Use SIM5-2 to check the flashing operation of the heater lamp. Use SIM14 to cancel the trouble.
Error cancel method	SIM14

H4-01 Fusing section low temperature trouble (TH_LM)

Detail	PCU
Cause	The fusing temperature does not reach the specified level within the specified time from turning ON the power relay. Thermistor trouble. Heater lamp trouble. PCU PWB trouble Thermostat trouble. Connector, harness connection trouble. Power unit trouble. Interlock switch trouble.
Check & Remedy	Replace the thermistor. Replace the heater lamp. Replace the PCU PWB. Replace the thermostat. Check connection of the connector and the harness. Replace the power unit. Replace the interlock switch. Use SIM5-2 to check the flashing operation of the heater lamp. Use SIM14 to cancel the trouble.
Error cancel method	SIM14

H4-02 Fusing section low temperature trouble (TH_US)

Detail	PCU
Cause	The fusing temperature does not reach the specified level within the specified time from turning ON the power relay. Thermistor trouble. Heater lamp trouble. PCU PWB trouble Thermostat trouble. Connector, harness connection trouble. Power unit trouble. Interlock switch trouble.
Check & Remedy	Replace the thermistor. Replace the heater lamp. Replace the PCU PWB. Replace the thermostat. Check connection of the connector and the harness. Replace the power unit. Replace the interlock switch. Use SIM5-2 to check the flashing operation of the heater lamp. Use SIM14 to cancel the trouble.
Error cancel method	SIM14

H4-04 Fusing section low temperature trouble (TH_EX)

Detail	PCU
Cause	The specified temperature is not reached within the specified time from starring warm-up. Thermistor trouble. Heater lamp trouble. PCU PWB trouble. Thermostat trouble. Power unit trouble.
Check & Remedy	Use SIM5-2 to check the operation of the heater lamp. Replace the thermistor. Replace the PCU PWB. Check connection of the connector and the harness. Replace the heater lamp. Replace the power unit. Use SIM14 to cancel the trouble.
Error cancel method	SIM14

H4-30 Thermistor input circuit trouble (TH_UM)

Detail	PCU
Cause	The values of TH_UM_AD1 and TH_UM_AD2 do not exceed the specified value (50 counts in AD value) within the specified time from turning ON the HL_UM. Thermistor trouble. Heater lamp trouble. PCU PWB trouble Thermostat trouble. Connector, harness connection trouble. Power unit trouble. Interlock switch trouble
Check & Remedy	Replace the thermistor. Replace the heater lamp. Replace the PCU PWB. Replace the thermostat. Check connection of the connector and the harness. Replace the power unit. Replace the interlock switch. Use SIM5-2 to check the flashing operation of the heater lamp. Use SIM14 to cancel the trouble.
Error cancel method	SIM14

H5-01 5 times continuous POD1 not-reach jam

Detail	PCU
Cause	A fusing jam is not canceled completely. (A jam paper remains.) POD1 sensor trouble. Fusing unit installation trouble. Connector, harness connection trouble. PCU PWB trouble
Check & Remedy	Replace the POD1 sensor. Check the installing position of the fusing unit. Replace the fusing unit. Check connection of the connector and the harness. Replace the PCU PWB. Use SIM14 to cancel the trouble.
Error cancel method	SIM14

H7-10 Fusing low temperature recovery trouble (TH_UM_AD2).

Detail	PCU
Cause	The fusing temperature does not reach the specified level within the specified time from stopping a job due to fall in the fusing temperature. Thermistor trouble. Heater lamp trouble. PCU PWB trouble Thermostat trouble. Connector, harness connection trouble. Power unit trouble. Interlock switch trouble.
Check & Remedy	Replace the thermistor. Replace the heater lamp. Replace the PCU PWB. Replace the thermostat. Check connection of the connector and the harness. Replace the power unit. Replace the interlock switch. Use SIM5-2 to check the flashing operation of the heater lamp.
Error cancel method	Power OFF - ON

H7-11 Fusing low temperature recovery trouble (TH_LM)

Detail	PCU
Cause	The fusing temperature does not reach the specified level within the specified time from stopping a job due to fall in the fusing temperature. Thermistor trouble. Heater lamp trouble. PCU PWB trouble Thermostat trouble. Connector, harness connection trouble. Power unit trouble. Interlock switch trouble.
Check & Remedy	Replace the thermistor. Replace the heater lamp. Replace the PCU PWB. Replace the thermostat. Check connection of the connector and the harness. Replace the power unit. Replace the interlock switch. Use SIM5-2 to check the flashing operation of the heater lamp.
Error cancel method	Power OFF - ON

H7-12 Fusing low temperature recovery trouble (TH_US)

Detail	PCU
Cause	The fusing temperature does not reach the specified level within the specified time from stopping a job due to fall in the fusing temperature. Thermistor trouble. Heater lamp trouble. PCU PWB trouble Thermostat trouble. Connector, harness connection trouble. Power unit trouble. Interlock switch trouble.
Check & Remedy	Replace the thermistor. Replace the heater lamp. Replace the PCU PWB. Replace the thermostat. Check connection of the connector and the harness. Replace the power unit. Replace the interlock switch. Use SIM5-2 to check the flashing operation of the heater lamp.
Error cancel method	Power OFF - ON

H7-14 Low temperature trouble (TH_EX) in reset operation after JOB stop due to a fall in the fusing temperature during a JOB.

Detail	PCU
Cause	The specified temperature is not reached within the specified time in reset operation of the fusing temperature. Thermistor trouble. Heater lamp trouble. PCU PWB trouble. Thermostat trouble. Connector, harness connection trouble. Power unit trouble.
Check & Remedy	Use SIM5-2 to check the operation of the heater lamp. Replace the thermistor. Replace the PCU PWB. Check connection of the connector and the harness. Replace the heater lamp. Replace the power unit. Use SIM14 to cancel the trouble.
Error cancel method	Power OFF - ON

H8-00 Fusing unit initial detection trouble

Detail	PCU
Cause	The initial detection fuse is not blown off though it is conducted for the specified time. Fusing unit trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Use SIM6-51 to check the operations of the [FUCRU] fuse blowing circuit. Use SIM30-1 to check the [FUCRU] initial detection input signal. Replace the fusing unit. Replace the PCU PWB. Check connection of the connector and the harness.
Error cancel method	Power OFF - ON

L1-00 Scanner feed trouble

Detail	SCU
Cause	Scanner feed is not completed within the specified time. Scanner unit trouble. SCU PWB trouble Scanner control PWB trouble. Harness and connector connection trouble. Scanner home position sensor trouble. Scanner motor trouble.
Check & Remedy	Use SIM1-1 to check the scan operation. Replace the scanner unit. Replace the SCU PWB. Check connection of the connectors and the harness. Replace the scanner home position sensor. Replace the scanner motor.
Error cancel method	Power OFF - ON

L3-00 Scanner return trouble

Detail	SCU
Cause	Scanner return is not completed within the specified time. Scanner unit trouble. SCU PWB trouble Scanner control PWB trouble. Harness and connector connection trouble. Scanner home position sensor trouble. Scanner motor trouble.
Check & Remedy	Use SIM1-1 to check the scan operation. Replace the scanner unit. Replace the SCU PWB. Check connection of the connectors and the harness. Replace the scanner home position sensor. Replace the scanner motor.
Error cancel method	Power OFF - ON

L4-02 Paper feed motor trouble

Trouble content	
Detail	PCU
Cause	The lock signal is not detected within 1 sec when turning ON the paper feed motor when warming up, canceling a jam. Paper feed motor trouble. Harness and connector connection trouble. PCU PWB trouble
Check & Remedy	Use SIM6-1 to check the operation of the paper feed motor. Replace the paper feed motor. Check connection of the connectors and the harness. Replace the PCU PWB.

L4-03 Fusing motor lock trouble

Detail	PCU
Cause	The motor lock signal is detected during rotation of the fusing motor. Fusing motor trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Use Sim6-1 to check the operation of the fusing motor. Replace the fusing motor. Replace the PCU PWB. Check connection of the connector and the harness.
Error cancel method	Power OFF - ON

L4-04 Developing motor trouble (BLACK)

Detail	PCU
Cause	The motor lock signal is detected during rotation of the developing motor. Developing motor trouble. Harness and connector connection trouble. PCU PWB trouble Developing unit trouble.
Check & Remedy	Use SIM25-1 to check the operation of the developing motor. Replace the developing motor. Check connection of the connectors and the harness. Replace the PCU PWB. Replace the developing motor. Replace the developing unit.
Error cancel method	Power OFF - ON

L4-05 Developing motor trouble (COLOR)

Detail	PCU
Cause	The motor lock signal is detected during rotation of the developing motor. Developing motor trouble. Harness and connector connection trouble. PCU PWB trouble Developing unit trouble.
Check & Remedy	Use SIM25-1 to check the operation of the developing motor. Replace the developing motor. Check connection of the connectors and the harness. Replace the PCU PWB. Replace the developing motor. Replace the developing unit.
Error cancel method	Power OFF - ON

L4-06 Transfer unit lift trouble

Detail	PCU
Cause	Transfer unit position sensor trouble. PCU PWB trouble. Connection trouble of the connector and the harness. Transfer unit separation clutch operation trouble. Primary transfer belt unit is not installed.
Check & Remedy	Use SIM6-3 to check the separating operation of the transfer unit. Install the primary transfer belt unit. Replace the transfer unit position sensor. Replace the PCU PWB. Harness and connector connection trouble. Replace the transfer unit separation clutch.
Error cancel method	Power OFF - ON

L4-12 Secondary transfer separation trouble

Detail	PCU
Cause	A change in the state of the separation sensor is not detected in the specified time during separating operation of the secondary transfer unit. Secondary transfer unit separation mechanism trouble Secondary transfer unit separation motor trouble. Secondary transfer unit separation sensor trouble. Connection trouble of the connector and the harness. PCU PWB trouble.
Check & Remedy	Check the operation of the secondary transfer unit separation mechanism. Replace the secondary transfer unit separation motor. Replace the secondary transfer unit separation sensor. Check connection of the connector and the harness. Replace the PCU PWB.
Error cancel method	Power OFF - ON

L4-16 Fusing pressure release trouble

Detail	PCU
Cause	No change in the fusing pressure release sensor signal is detected within the specified time after turning ON the fusing pressure release solenoid. Fusing pressure release sensor trouble. Fusing pressure release solenoid trouble. Fusing pressure release level F, R trouble. PCU PWB trouble. Fusing motor trouble. Connection trouble of the connector and the harness.
Check & Remedy	Replace the fusing pressure release sensor. Replace the fusing pressure release solenoid. Replace the fusing pressure release lever F, R. Replace the PCU PWB. Fusing motor trouble. Harness and connector connection trouble.
Error cancel method	Power OFF - ON

L4-29 HDD fan trouble

Detail	PCU
Cause	The fan lock signal is detected during rotation of the HDD fan. HDD fan trouble. MFP 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 HDD fan. Replace the MFP PWB. Replace the connector or the harness.
Error cancel method	Power OFF - ON

L4-30 MFP fan motor trouble

Trouble content	
Detail	MFP
Cause	Fan motor trouble. MFP PWB trouble.Harness and connector connection trouble. PCU PWB trouble
Check & Remedy	Use SIM6-2 to check the operation of the fan motor. Replace the fan motor. Replace the MFP PWB. Check connection of the connector and the harness. Replace the PCU PWB.

L4-31 Paper exit cooling fan trouble

Detail	PCU
Cause	The fan operation signal is not detected within the specified time in the paper exit cooling fan operation. Paper exit cooling fan trouble. PCU PWB trouble Connection trouble of the connector and the harness.
Check & Remedy	Check connection of the connectors and the harness. Use SIM6-2 to check the rotating operation of the fan. Replace the paper exit cooling fan. Replace the PCU PWB.
Error cancel method	Power OFF - ON

L4-32 Power source cooling fan trouble

Detail	PCU
Cause	The fan operation signal is not detected within the specified time in the power cooling fan operation. Power cooling fan trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Use SIM6-2 to check the rotating operation of the fan. Replace the power cooling fan. Replace the PCU PWB. Check/replace the connector or the harness.
Error cancel method	Power OFF - ON

L4-34 LSU fan trouble

Detail	PCU
Cause	The fan rotation signal is not detected in the specified time during operation of the LSU fan. Connection trouble of the connector and the harness. LSU fan trouble. LSU control PWB trouble.
Check & Remedy	Use Sim6-2 to check the operation of the fan. Check connection of the connector and the harness. Replace the LSU fan. Replace the LSU control PWB.
Error cancel method	Power OFF - ON

L4-35 Fusing cooling fan trouble

Detail	PCU
Cause	The fan operation signal is not detected within the specified time in the fusing cooling fan operation. Fusing cooling fan trouble. PCU PWB trouble Connection trouble of the connector and the harness.
Check & Remedy	Use SIM6-2 to check the rotating operation of the fan. Replace the fusing cooling fan. Replace the PCU PWB. Harness and connector connection trouble.
Error cancel method	Power OFF - ON

L4-50 Process fan trouble

Detail	PCU
Cause	The fan operation signal is not detected within the specified time in the process fan operation. Process fan trouble. PCU PWB trouble Connection trouble of the connector and the harness.
Check & Remedy	Check that the fan is rotating after turning ON the power. Replace the process fan. Replace the PCU PWB. Harness and connector connection trouble.
Error cancel method	Power OFF - ON

L4-51 Process fan 2 trouble

Detail	PCU
Cause	The fan operation signal is not detected within the specified time in the process fan 2 operation. Process fan trouble. PCU PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Check that the fan is rotating after turning ON the power. Replace the process fan 2. Replace the PCU PWB. Check connection of the connector and the harness.
Error cancel method	Power OFF - ON

L6-10 Polygon motor trouble

Detail	PCU
Cause	The motor does not reach the specified rpm in 7 sec after starting rotation of the polygon motor. Polygon motor trouble. LSU control PWB trouble. Connection trouble of the connector and the harness.
Check & Remedy	Use SIM61-1 to check the operation of the polygon motor. Check connection of the connectors and the harness. Replace the polygon motor. Replace the LSU. Replace the LSU control PWB.
Error cancel method	Power OFF - ON

L8-01 Full wave signal detection error

Detail	PCU
Cause	No full wave signal is detected. PCU PWB trouble Power unit trouble. Connection trouble of the connector and the harness.
Check & Remedy	Replace the PCU PWB. Replace the power unit. Check connection of the connectors and the harness.
Error cancel method	Power OFF - ON

L8-02 Full wave signal error

Detail	PCU
Cause	An abnormality in the full wave signal frequency is detected. (The frequency is detected as 65Hz or above, or 45Hz or less.)PCU PWB trouble. Power unit trouble. Connection trouble of the connector and the harness. Power frequency, waveform abnormality.
Check & Remedy	Replace the PCU PWB. Replace the power unit. Check connection of the connectors and the harness. Check the power waveform.
Error cancel method	Power OFF - ON

L8-20 MFP PWB - Mother board communication error

Detail	MFP
Cause	Mother board PWB - MFPC PWB connection trouble. MFP PWB trouble. Replace the mother board.
Check & Remedy	Check connection between the mother board and the MFPC PWB. Check the earth line of the main unit. Replace the MFPC PWB. Replace the mother board.
Error cancel method	Power OFF - ON

PC-- Personal counter not detected

Detail	MFP
Cause	The personal counter is not installed. The personal counter is not detected.
Check & Remedy	Check connection of the connectors and the harness. Replace the SCU PWB.
Error cancel method	Power OFF - ON

U1-01 Battery trouble

Detail		MFP
Case 1	Cause	1) Battery life 2) Battery circuit abnormality
	Check & Remedy	Check to confirm that the battery voltage is about 2.0V or above. Use SIM13 to cancel the trouble.
Error cancel method		SIM13

U2-00 MFP EEPROM read/write error

Detail	MFP
Cause	MFP PWB EEPROM trouble. EEPROM socket contact trouble. MFP PWB trouble. Strong external noises.
Check & Remedy	Use SIM16 to cancel the error. Replace the MFP PWB EEPROM. Replace the MFP PWB. Check the power environment.
Error cancel method	Power OFF - ON

U2-05 HDD/MFP PWB SRAM contents inconsistency

Detail	MFP
Cause	The HDD or the MFP PWB which differs from that before turning OFF the power is installed. HDD trouble. MFP PWB trouble.
Check & Remedy	Use SIM16 to cancel the error. If there is backup data (export data by device cloning), import it.
Error cancel method	SIM16

U2-10 MFP PWB SRAM user authentication index check sum error

Detail	MFP
Cause	SRAM user index information (user authentication basic data) check sum error. MFP PWB SRAM trouble. Strong external noises.
Check & Remedy	Use SIM16 to cancel the error. Transfer the user index information data in the HDD to the SRAM. Replace the MFP PWB.
Error cancel method	SIM16

U2-11 MFP PWB EEPROM counter check sum error

Detail	MFP
Cause	MFP PWB EEPROM trouble. EEPROM socket contact trouble. MFP PWB trouble. Strong external noises.
Check & Remedy	Use SIM16 to cancel the error. Replace the MFP PWB.
Error cancel method	SIM16

U2-22 MFP PWB SRAM memory check sum error

Detail	MFP
Cause	The identifier which controls the communication management table stored in the SRAM and the FAX soft switch is not detected correctly. MFP PWB SRAM trouble. MFP PWB trouble. Strong external noises.
Check & Remedy	Since the data of the communication management table and the FAX soft switch stored in the SRAM are initialized when an error occurs, register the deleted data again individually. Use SIM16 to cancel the error. Replace the MFP PWB.
Error cancel method	SIM16

U2-23 MFP PWB SRAM memory individual data check sum error

Detail	MFP
Cause	The check sum value for individual data of the communication table and the sender registration does not match. MFP PWB SRAM trouble. MFP PWB trouble. Strong external noises.
Check & Remedy	Turn OFF/ON the power to initialize the data related to the content of check sum error. Since the registered contents are deleted, register the deleted contents again. Use SIM16 to cancel the error. Replace the MFP PWB.
Error cancel method	SIM16

U2-24 MFP PWB SRAM memory user authentication counter check sum error

Detail	MFP
Cause	MFP PWB SRAM trouble. MFP PWB trouble. Strong external noises.
Check & Remedy	Use SIM16 to cancel the error.
Error cancel method	SIM16

U2-30 MFP PWB and PCU PWB manufacturing No. data inconsistency

Detail	MFP
Cause	Inconsistency between the manufacturing No. saved in the PCU PWB and that in the MFP PWB. When replacing the PCU PWB or the MFP PWB, the EEPROM which was mounted on the PWB before replacement is not mounted on the new PWB. MFP PWB trouble. PCU PWB trouble
Check & Remedy	Check that the EEPROM is properly set. Check to confirm that the EEPROM which was mounted on the PWB before replacement is mounted on the new PWB. Use SIM16 to cancel the error. Replace the MFP PWB. Replace the PCU PWB.
Error cancel method	SIM16

U2-50 HDD user authentication data check sum error

Detail	MFP
Cause	HDD trouble. MFP PWB trouble. Strong external noises.
Check & Remedy	Initialize the data (one-touch, group, program, etc.) related to the check sum error by turning OFF/ON the power. Since the registered contents are deleted, register the deleted contents again. Use SIM16 to cancel the error. Replace the HDD. Replace the MFP PWB.
Error cancel method	SIM16

U2-80 SCU PWB EEPROM read/write error

Detail	SCU
Cause	SCU PWB EEPROM trouble. SCU PWB trouble. EEPROM socket contact trouble.
Check & Remedy	Replace the SCU PWB EEPROM. Replace the SCU PWB. Check contact of the EEPROM socket. Put down the counter/adjustment values in the simulation to prevent against loss of the counter data and the adjustment values. Use SIM16 to cancel the trouble.
Error cancel method	SIM16

U2-81 SCU PWB EEPROM check sum error

Detail	SCU
Cause	SCU PWB EEPROM trouble. Installation of non-initialized EEPROM. SCU PWB trouble. EEPROM socket contact trouble.
Check & Remedy	Replace the SCU PWB EEPROM. Replace the SCU PWB. Check contact of the EEPROM socket. Put down the counter/adjustment values in the simulation to prevent against loss of the counter data and the adjustment values. Use SIM16 to cancel the trouble.
Error cancel method	SIM16

U2-90 PCU PWB EEPROM read/write error

Detail	PCU
Cause	PCU PWB EEPROM trouble. Installation of non-initialized EEPROM. PCU PWB trouble EEPROM socket contact trouble.
Check & Remedy	Replace the PCU PWB EEPROM. Replace the PCU PWB. Check contact of the EEPROM socket. Put down the counter/adjustment values in the simulation to prevent against loss of the counter data and the adjustment values. Use SIM16 to cancel the trouble.
Error cancel method	SIM16

U2-91 PCU PWB EEPROM check sum error

Detail	PCU
Cause	PCU PWB EEPROM trouble. Installation of non-initialized EEPROM. PCU PWB trouble EEPROM socket contact trouble.
Check & Remedy	Replace the PCU PWB EEPROM. Replace the PCU PWB. Check contact of the EEPROM socket. Put down the counter/adjustment values in the simulation to prevent against loss of the counter data and the adjustment values. Use SIM16 to cancel the trouble.
Error cancel method	SIM16

U5-00 Document feed unit communication error

Trouble content	
Detail	SCU
Cause	Connector, harness connection trouble. SCU PWB trouble. DSPF PWB trouble.
Check & Remedy	Turn OFF/ON the power. Check connection of the connector and the harness. Replace the SCU PWB. Replace the DSPF PWB.

U5-16 Document feed unit fan trouble

Trouble content	
Detail	SCU
Cause	When the fan is operated, the fan operation signal is not detected within the specified time. Fan motor trouble. Connector, harness connection trouble. DSPF PWB trouble.
Check & Remedy	Use SIM2-3 to check that the fan is rotating. Replace the fan motor. Check connection of the connector and the harness. Replace the DSPF PWB.

U5-30 Document feed unit tray lift up trouble

Trouble content	
Detail	SCU
Cause	At the timing when the pickup roller has rotated 2 turns, if STUD is not turned ON, the tray confirmation message is displayed. When the trouble is detected 3 times continuously, it is judged as an error. Connection trouble of the connector and the harness. Replace the DSPF PWB.
Check & Remedy	Replace the STUD sensor. Check connection of the connector and the harness. Replace the DSPF PWB.

U5-31 Document feed unit tray lift down trouble

Trouble content	
Detail	SCU
Cause	At the timing when the pickup roller has rotated 2 turns, if STUD is not turned ON, the tray confirmation message is displayed. When the trouble is detected 3 times continuously, it is judged as an error. Connection trouble of the connector and the harness. Replace the DSPF PWB.
Check & Remedy	Replace the STUD sensor. Check connection of the connector and the harness. Replace the DSPF PWB.

U6-00 PCU PWB - Desk paper feed unit communication error

Detail	PCU
Cause	Error when testing the communication line after turning ON the power or canceling the simulation. Connector, harness connection trouble. Desk control PWB trouble. PCU PWB trouble Strong external noises.
Check & Remedy	Turn OFF/ON the power to cancel. Check the connector and the harness in the communication line. Replace the desk control PWB. Replace the PCU PWB.
Error cancel method	Power OFF - ON

U6-01 Desk paper feed tray 1 lift trouble

Detail	PCU
Cause	D1ULD does not turn ON within the specified time when lift-up operation. D1ULD sensor trouble. Desk control PWB trouble. Lift unit trouble. Connection trouble of the connector and the harness. PCU PWB trouble
Check & Remedy	Replace the D1ULD sensor. Replace the desk control PWB. Replace the lift unit. Harness and connector connection trouble. Replace the PCU PWB.
Error cancel method	Power OFF - ON

U6-02 Desk paper feed tray 2 lift trouble

Detail	PCU
Cause	D2ULD does not turn ON within the specified time when lift-up operation. D2ULD sensor trouble. Desk control PWB trouble. Lift unit trouble. Connection trouble of the connector and the harness. PCU PWB trouble
Check & Remedy	Replace the D2ULD sensor. Replace the desk control PWB. Replace the lift unit. Harness and connector connection trouble. Replace the PCU PWB.
Error cancel method	Power OFF - ON

U6-03 Desk paper feed tray 3 lift trouble

Detail	PCU
Cause	The D3ULD sensor is not turned ON within the specified time during lift-up operation. D3ULD sensor trouble. Desk control PWB trouble. Lift unit trouble. Connection trouble of the connector and the harness. PCU PWB trouble.
Check & Remedy	Replace the D3ULD sensor. Replace the desk control PWB. Replace the lift unit. Check connection of the connector and the harness. Replace the PCU PWB.
Error cancel method	Power OFF - ON

U6-10 Desk paper feed unit paper transport motor trouble

Detail	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. Harness and connector connection trouble.
Error cancel method	Power OFF - ON

U6-50 Desk - Main unit combination trouble

Detail	PCU
Cause	Improper combination between the main unit and the desk. Desk control PWB trouble.
Check & Remedy	Install a desk which is proper for the main unit mode. Replace the desk control PWB.
Error cancel method	Power OFF - ON

U7-50 MFP PWB - Vendor machine communication error

Detail	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 LCC control PWB. Replace the MFP PWB.
Error cancel method	Power OFF - ON

U7-51 Vendor machine error

Detail	MFP (Notification of a trouble from the serial vendor)
Cause	Serial vendor machine trouble. Connector, harness connection trouble.
Check & Remedy	Err.XX" is displayed on the operation panel of the vendor. (XX is the detail code.) Repair the vendor machine referring to the detail code. Check the connector and the harness in the communication line.
Error cancel method	Power OFF - ON

UC-02 IPD ASIC (CPT) error

Detail	SCU
Cause	IPD ASIC (CPT) operation error SCN PWB trouble.
Check & Remedy	Replace the SCN PWB.
Error cancel method	Power OFF - ON

UC-20 IPD ASIC (DOCC) error

Detail	SCU
Cause	IPD ASIC (DOCC) operation error SCN PWB trouble.
Check & Remedy	Replace the SCN PWB.
Error cancel method	Power OFF - ON

A0-01 PCU PWB ROM error

Detail	MFP
Cause	The firmware version-up is not completed properly by interruption of the power during the version-up operation, etc. ROM trouble.
Check & Remedy	Use SIM49-1 to perform the version-up procedure again. ROM trouble.
Error cancel method	Power OFF - ON

A0-02 SCU PWB ROM error

Detail	MFP
Cause	The firmware version-up is not completed properly by interruption of the power during the version-up operation, etc. ROM trouble.
Check & Remedy	Use SIM49-1 to perform the version-up procedure again. ROM trouble.
Error cancel method	Power OFF - ON

A0-10 MFP PWB ROM error

Detail	MFP
Cause	Firmware combination error between the MFP and the image ROM (color correction ROM).
Check & Remedy	Upgrade the firmware versions of the MFP and the image ROM (color correction ROM).
Error cancel method	Power OFF - ON

A0-11 Firmware version inconsistency (MFP - PCU)

Detail	MFP
Cause	Firmware combination error between the MFP and the PCU.
Check & Remedy	Check the combination between the MFP and the PCU.
Error cancel method	Power OFF - ON

A0-12 Firmware version inconsistency (MFP - SCU)

Detail	MFP
Cause	Firmware combination error between the MFP and the SCU.
Check & Remedy	Check the combination between the MFP and the SCU.
Error cancel method	Power OFF - ON

A0-20 MFP firmware version and EEPROM data version inconsistency

Detail	MFP
Cause	Inconsistency between the MFP firmware version and the EEPROM data version.
Check & Remedy	Check the combination of the firmware.
Error cancel method	Power OFF - ON

A0-21 PCU firmware version and EEPROM data version inconsistency

Detail	PCU
Cause	Inconsistency between the PCU firmware version and the EEPROM data version.
Check & Remedy	Check the combination of the firmware.
Error cancel method	Power OFF - ON

A0-22 SCU firmware version and EEPROM data version inconsistency

Detail	SCU
Cause	Inconsistency between the SCU firmware version and the EEPROM data version.
Check & Remedy	Check the combination of the firmware.
Error cancel method	Power OFF - ON

[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 ROM's installed in the other PWB's including options. Some combinations of each ROM's versions may cause malfunctions of the machine.

C. Update procedures and kinds of firmware

There are following methods of update of the firmware.

1) Firmware update using media
2) Firmware update using FTP
3) Firmware update using Web page
4) Emergency update (in case of an HDD breakdown)

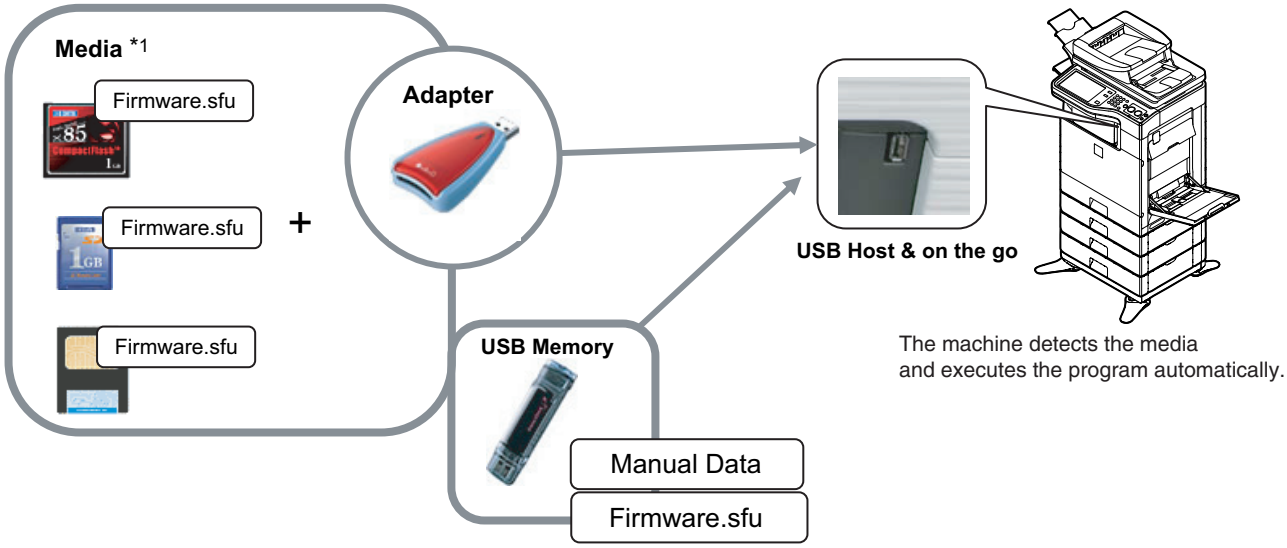
*** Firmware types**

	Display item	Item description
MAIN BODY	CONFIG	Configuration data
	ICU(MAIN)	First half of the ICU main section
	ICU(BOOTM)	ICU boot section main
	ICU(BOOTCN)	ICU boot section CN
	LANGUAGE	Data program for language support
	GRAPHIC	Graphic data for L-LCD
	SLIST	SLIST data for L-LCD
	PCU(BOOT)	PCU boot section
	PCU(MAIN)	PCU main section
	SCU(BOOT)	SCU boot section
	SCU(MAIN)	SCU main section
	ESCP_FONT	ESCP/P font
	PDL_FONT	PDL font
	ANIMATION	Animation data
	IMAGE_DATA	Image ASIC data
	WEB HELP	WEB help
	UNICODE	UNICODE table
OPTION	DESK(BOOT)	Desk unit boot section
	DESK(MAIN)	Desk unit main section
	FIN(BOOT)	Inner finisher boot section
	FIN(MAIN)	Inner finisher main section
	FAX(BOOT)	FAX1 boot section
	FAX(MAIN)	FAX1 main section

2. Update procedure

A. Firmware update using media

For the update, connect the media or USB memory to the USB port that exists in the main body, and select the firmware data in the media or USB memory by simulation screen in the main unit.



*1:

- Store the firmware data (xxx.sfu) to the media or USB memory beforehand.
- The media used for the update must have a minimum of 32MB of storage capacity.
- The USB memory equipped with the security (secure) function cannot be used.

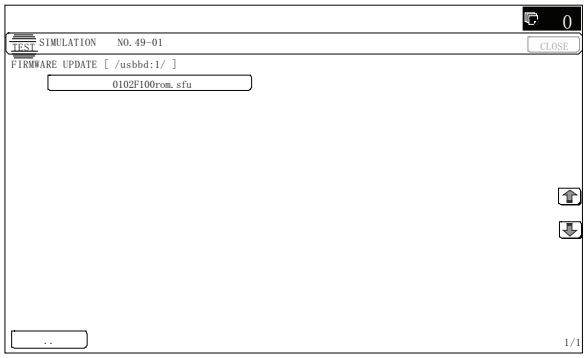
(1) Firmware update procedure from the USB memory

The firmware update executes by SIM49-01.

1) Insert the media or USB memory which stores the firmware into the main unit. (Use the USB I/F of the operation panel section.)

2) Enter the SIM49-01.

   Press the button key of the file to be updated. The screen transfers to the update screen.

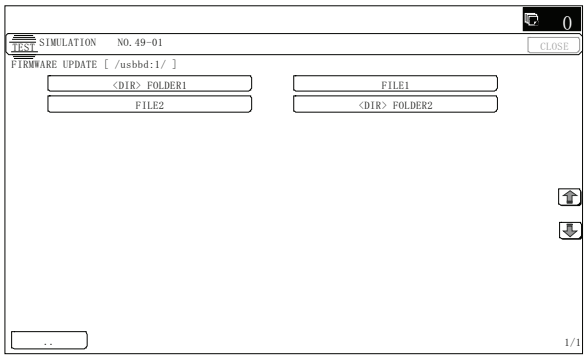


   * When entering the SIM49-01 mode, if no media or no USB memory is inserted, or if connection is defective, the message of "INSERT A USB MEMORY DEVICE CONTAINING MFP FIRMWARE" is displayed on the screen.

     In this case, insert the USB memory or check the connection.

     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.

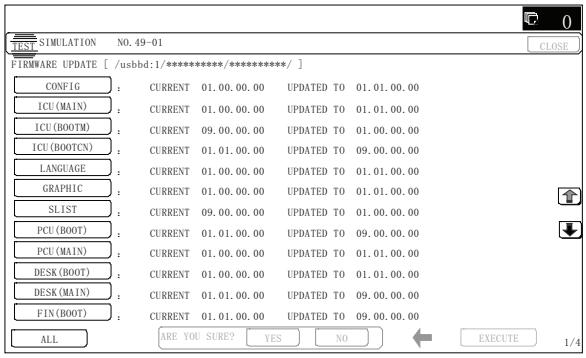
   * If the target firmware file is in the folder directory, select the folder and then select the firmware file.



3) The current version number and the version number to be updated will be shown for each kind of firmware respectively.

   The current version is indicated on the right of CURRENT, and the update version on the right of UP TO.

   It takes about dozens of seconds until the content is displayed in procedure 2).



4) Press [ALL] key.

   When all the firmware files are selected, all the firmware items are highlighted.

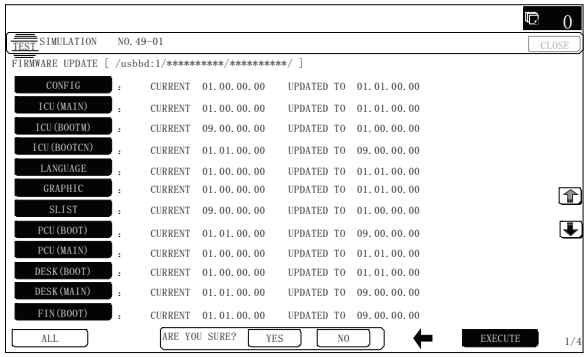
   * Normally select all the firmware programs and execute updating.

   * In this case, the firmware which does not exit on the machine side is ignored. (Example: The firmware of an option which is not installed cannot be updated.)

     To update a certain firmware only, select the firmware with the firmware display key.

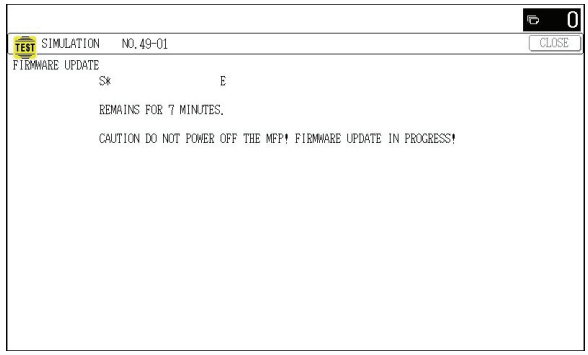
   * When the firmware key is not selected, [EXECUTE] key is grayed out and the operation is not accepted.

5) Press [EXECUTE] key. "SURE? [YES] [NO]" becomes clear. Press [YES] key, and the update of the selected firmware is executed.



   The process status is indicated with "*" mark under "FIRMWARE UPDATE" of the title section.

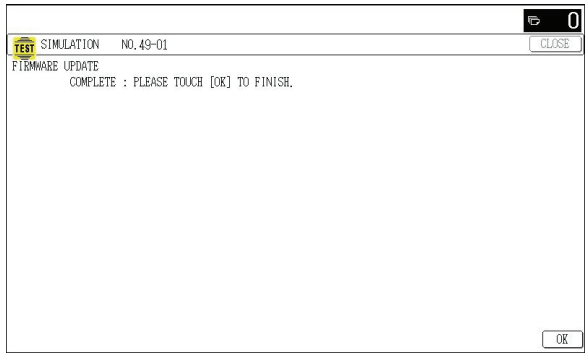
   Meaning of mark: S: Start, E: End



   During the update operation, the above screen is displayed, but the version and the firmware select key are not displayed.

6) If the update is normal completion, following screen is displayed.

   Press [OK] key.



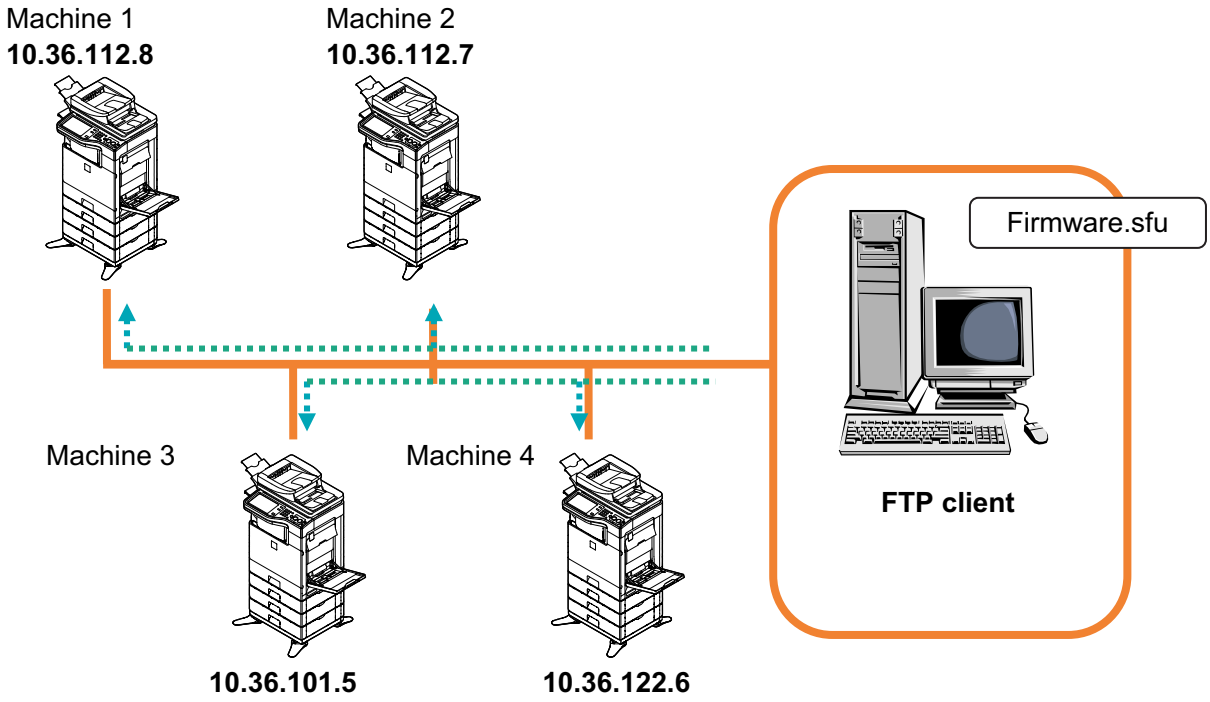
7) Turn OFF the power, and turn ON the power again and execute SIM22-05 to check that the firmware has been updated.

* When the power supply is turned off due to a black out etc. while updating or when the update terminated abnormally, a part of the main program stored in HDD may be damaged and may not booted normally.

  In this case, the firmware must be installed again by the emergency firmware update procedures described below.

B. Firmware update using FTP

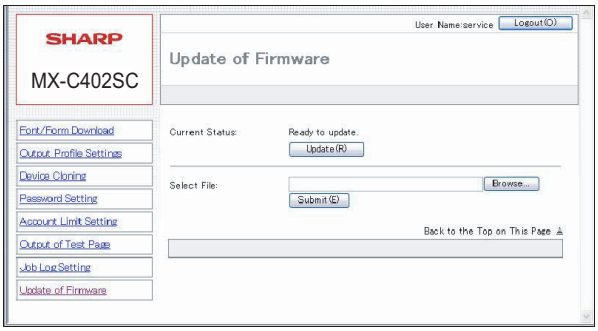
FTP software is used to transfer the firmware data (extension ".sfu") from the PC to the machine. The controller recognizes the firmware identifier and the machine automatically switches to firmware write mode. After the firmware is updated, the machine automatically resets.



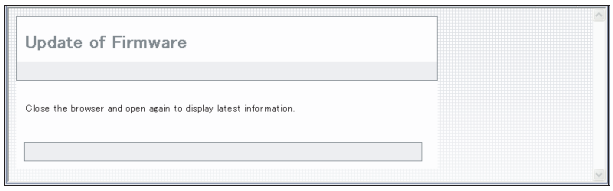
C. Firmware update using the Web page

An Web browser (service technician's Web page) is used to update the firmware.

1) Start the Web browser on a PC and enter the specified URL. A special firmware upgrade page appears.
2) Click the "Update of Firmware" key in the Web page. Click the [Browse] key and select the firmware for the update.
3) After selecting the file, click the [Submit] key to send the firmware to the machine. Update processing begins. While processing takes place, "Firmware Update, now processing..." appears.



4) When the firmware update is finished, "Firmware Update completed. Please reboot the MFP." appears. Pressing the [Reboot] key, the machine will restart to complete the update. The browser will shift to the following screen.



"Close the browser and open again to display latest information." will be displayed.

5) Check the firmware version of machine again.

D. Emergency update (in case of an HDD breakdown)

The HDD of this machine stores the main program along with the sophisticated variations.

When, therefore, the HDD breaks down, or when the HDD must be replaced with another HDD, or when the main program is damaged by turning OFF the power during the firmware updating, the firmware (main program) must be rewritten into the HDD by the following procedures. It is called the emergency update.

[Conditions where the emergency update is required]

The emergency update is required in the following cases:

1) "Main Program Error" is displayed on the panel.

   It means that the data are destroyed and that replacement of the HDD is not required. The problem can be settled by execution of the emergency update only.

2) "HDD Trouble (E7-03)" is displayed on the panel.

   It means a HDD breakdown. The HDD must be replaced with a new one, and the emergency update must be executed.

* When U2-05 (HDD/EEPROM/SRAM abnormality) or U2-50 (HDD data abnormality related to IMS) occurs, execute SIM16 only, and there is no need to execute the emergency update.

[Environment necessary for the emergency update]

1) The MFP with the HDD where the firmware is rewritten
2) The USB memory which stores the firmware for the emergency upgrade.

   File name: emupdate_p2.sfu

   * The firmware must be stored in the root folder of the USB memory.

[Emergency update procedures]

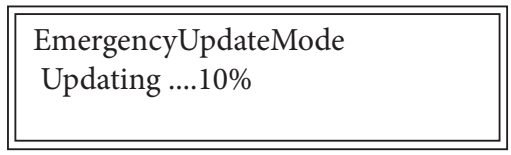
1) Insert the USB memory which stores the firmware for the emergency update into the USB port.
2) Turn on the main power.

   The firmware for the emergency update in the USB memory is automatically recognized to start reading the USB memory.
   It takes about 1 minute, and the booting animation is displayed during this period.

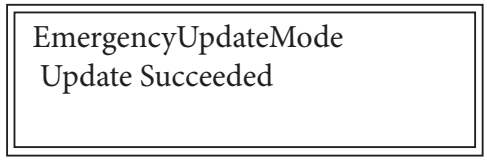
   Though "Main Program Error" is displayed once, wait until "EmergencyUpdateMode" is displayed.

3) Check to confirm that "EmergencyUpdateMode" is displayed on the panel.
   After that, the process is automatically executed.

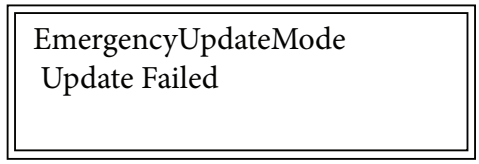
4) Check the procedure.
   When the process is going on normally, the following message is displayed.



5) Check the update result.
   When writing the program both to the HDD and to the Flash ROM is normally completed, the following message is displayed.



If writing to either of the HDD or the Flash ROM is failed, the following message is displayed.



In this case, if “Update Failed” is displayed, it may the HDD has been broken down probably. Replace the HDD with a new one, and execute the emergency update again.

6) Turn OFF the main power.
7) Remove the USB memory from the USB port.
8) Turn ON the main power.
9) Check the system operates normally.

[Note]

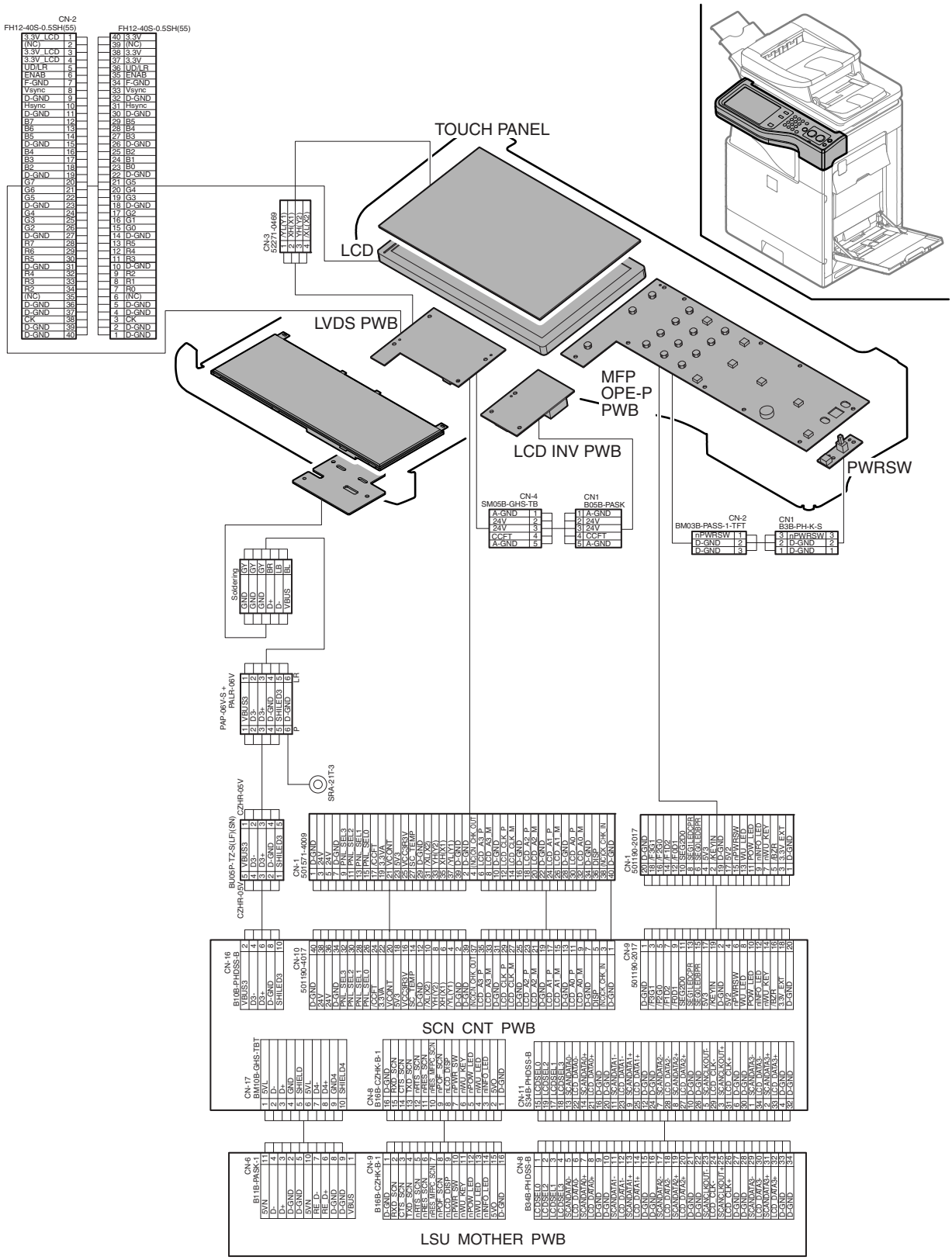
- It takes about 6 minutes for the emergency update.
- Never turn OFF the main power until the emergency update is completed.
- When the emergency update is completed, be sure to remove the USB memory for the emergency update. The machine does not boot normally with the USB memory inserted.

[8] OPERATIONAL DESCRIPTIONS

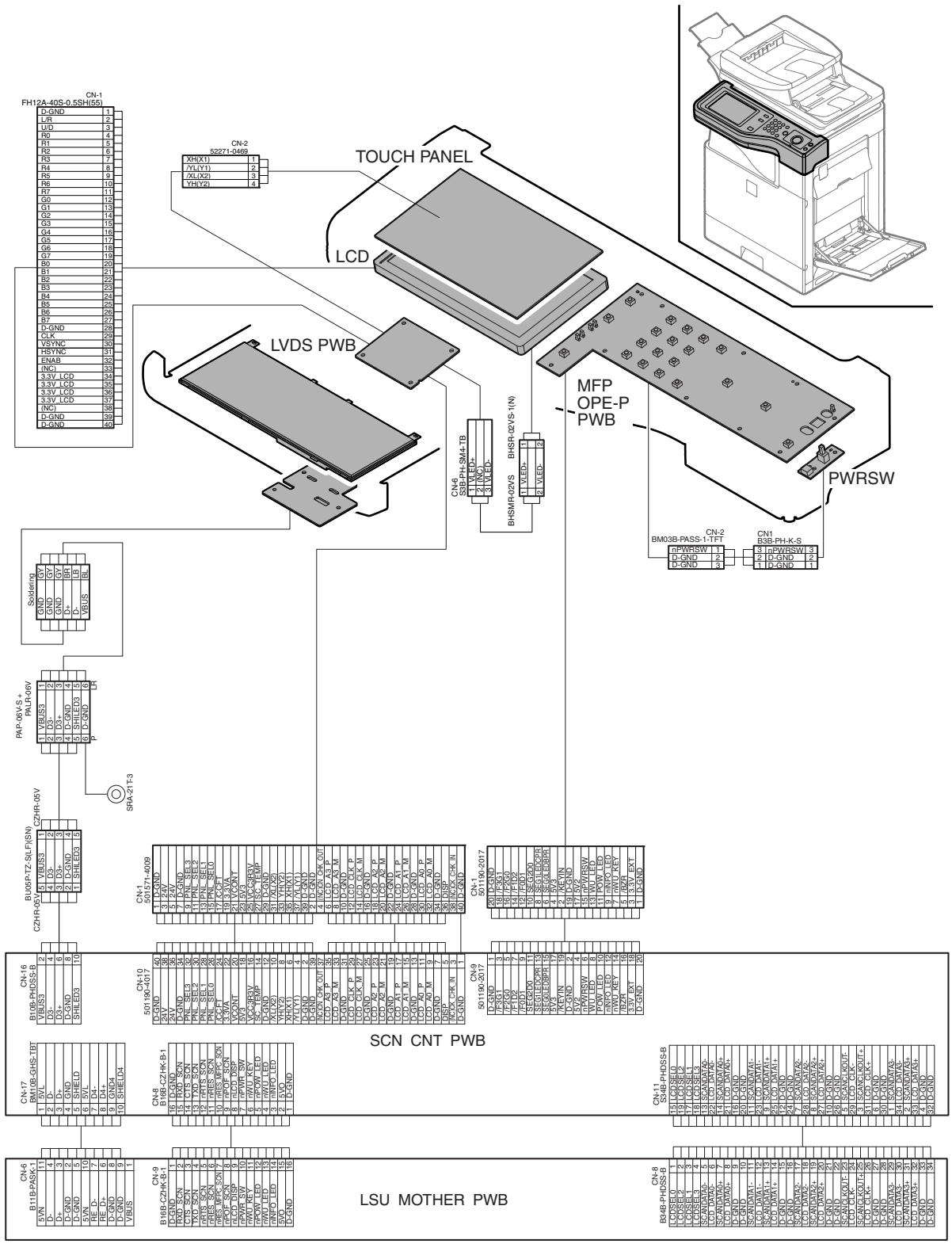
1. Operation panel

A. Electrical and mechanism relation diagram

(1) MX-C402SC/C382SC (8.5 inch model)



(2) MX-B402SC/B382SC (7.0 inch model)



B. Operational descriptions

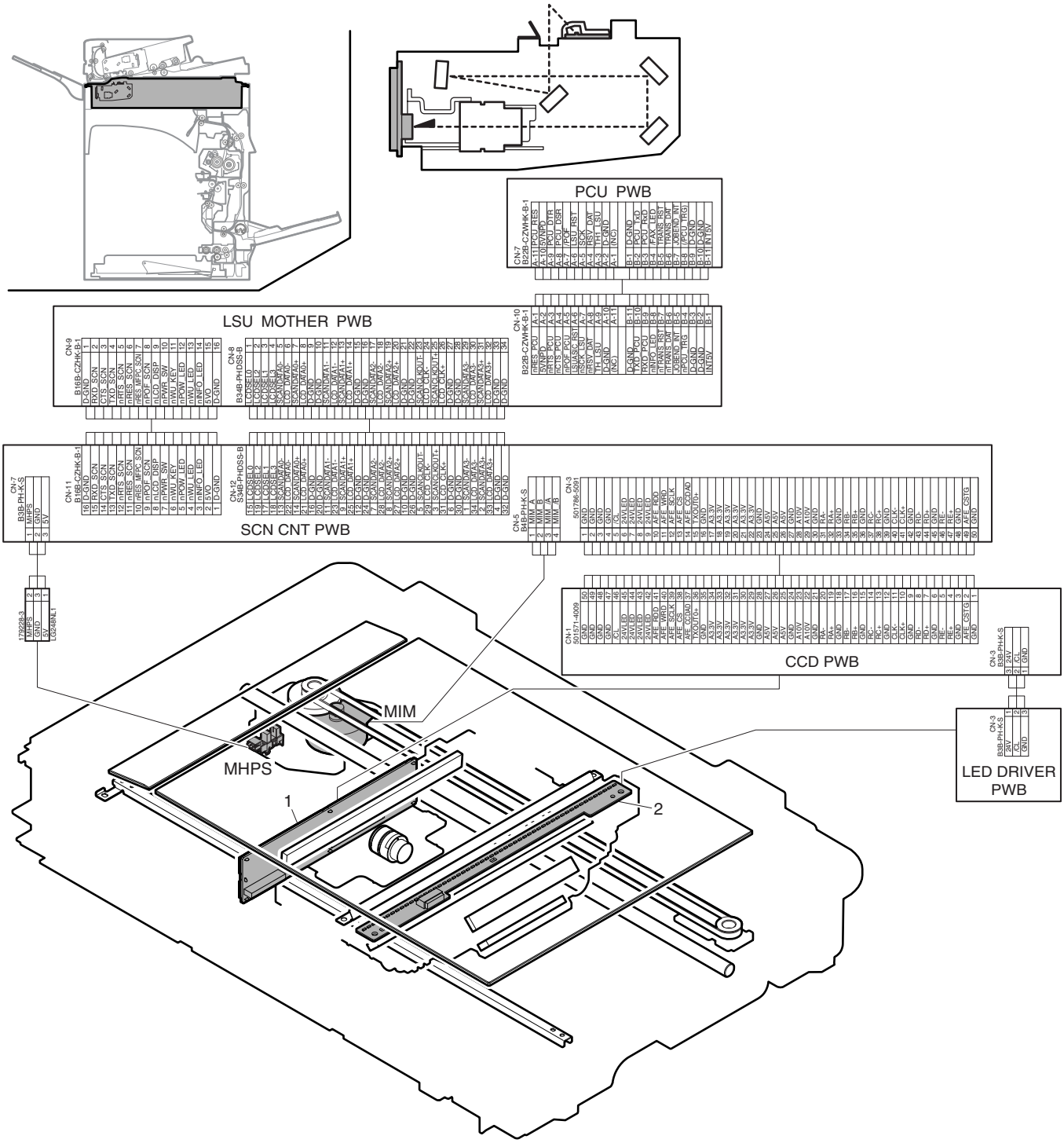
The operation panel of the machine is available in two types: 8.5 inch color LCD and 7.0 inch color LCD. They are difference in operations but are used to operate and set the machine as well as to display the machine state.

For the model with 8.5 inch LCD color, it is composed of the LVDS PWB, the LCD INV PWB, the MFP OPE-P PWB, the touch panel, the LCD unit, and the operation keys. Most of the operations can be performed with the LCD touch panel.

For the model with 7.0 inch LCD color, it is composed of the LVDS PWB, the MFP OPE-P PWB, the touch panel, the LCD unit, and the operation keys. Most of the operations can be performed with the LCD touch panel.

2. Scanner section

A. Electrical and mechanism relation diagram



Signal name	Name	Function/Operation
MIM	Scanner motor	Drives the carriage unit.
MHPS	Scanner home position sensor	Detects the scanner home position.

No.	Name	Function/Operation
1	CCD PWB	Scans the document images.
2	LED drive PWB	Drive the scanner lamp.

B. Outline

This section performs the following functions.

1) Light is radiated to the document by the scanner lamp, and the contrast of the reflected light is read by the CCD elements of three lines of RGB to be converted into the image signal (analog).
2) The image signals (analog) are converted into 10bit digital signals by the A/D converter.
3) The image signals (digital) are sent to the image process section (scanner control PWB).

C. Optical section drive

The CCD unit in the optical section is driven by the scanner motor (MIM) through the belt.

The scanner motor (MIM) is controlled by the drive signal sent from the scanner control PWB.

D. Scanner lamp drive

The scanner lamp (CLI) is driven by generating the scanner lamp drive voltage with the LED drive PWB in the carriage unit according to the control signal sent from the scanner control PWB.

E. Image scan/color separation

Light is radiated to the document by the scanner lamp, and the contrast of the reflected light is read by the CCD elements of three lines of RGB to be converted into the image signal (analog).

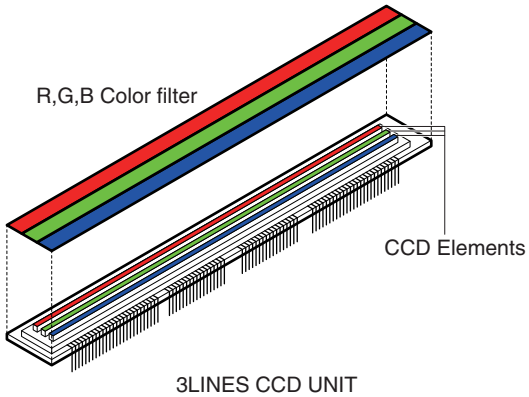
The color components of document images are extracted to R, G, and B separately by the three kinds of CCD elements (R,G,B).

The red CCD extracts the red component of document images, the green CCD green the components, and the blue CCD the blue components. This operation is called the color separation.

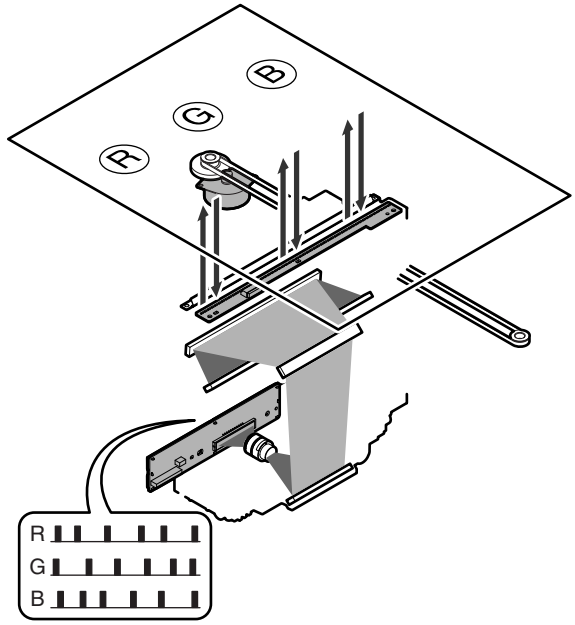
The CCD unit looks like one unit, but it includes three kinds of CCD elements, R, G, and B.

The document scan in the main scanning direction is performed by the CCD element. The document scan in the sub scanning direction is performed by shifting the carriage unit with the scanner motor. Document images are optically reduced by the lens and reflected to the CCD.

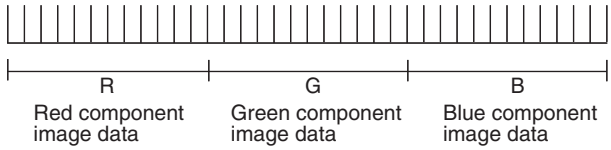
The scan resolution is 600 dpi.



3LINES CCD UNIT



(Image data for 1 line)



F. 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.

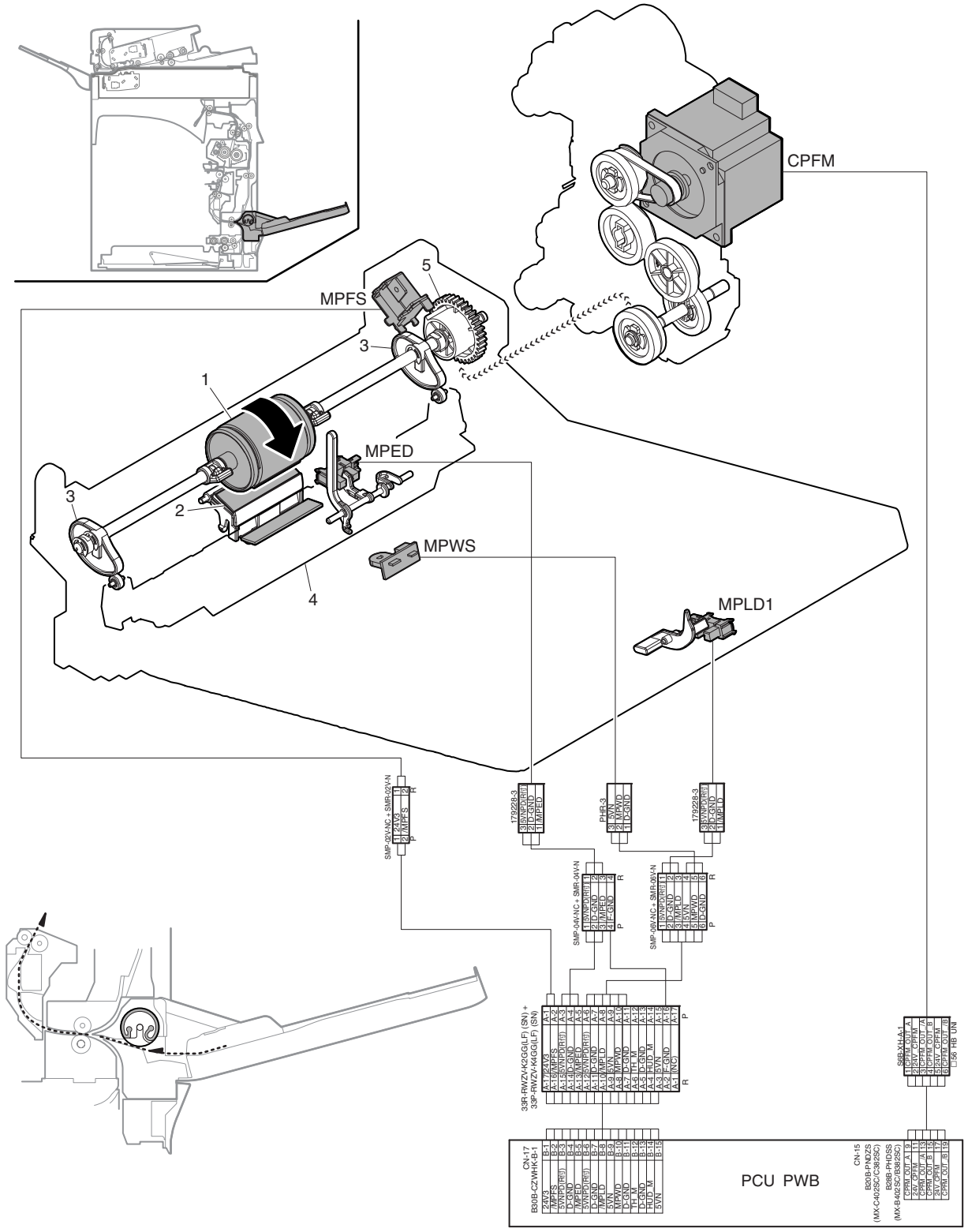
G. Zooming operation

Zooming in the sub scanning direction is performed by changing the scanning speed in the sub scanning direction and using the image process technology (software).

Zooming in the main scanning direction is not performed optically, but performed with the image process technology (by the software).

3. Manual paper feed section

A. Electrical and mechanism relation diagram



Signal name	Name	Function and operation
CPFM	Paper feed motor	Drives the paper feed section.
MPED	Manual feed paper empty detector	Detects paper empty in the manual paper feed tray.
MPFS	Paper feed clutch solenoid	Controls ON/OFF of the paper feed clutch.
MPLD1	Manual feed paper length detector	Detects the manual paper feed tray paper length.
MPWS	Manual paper feed tray paper width detector	Detects the manual paper feed tray paper width.

No.	Name	Function and operation
1	Paper feed roller	Feeds paper to the paper transport section.
2	Separation sheet	Separates paper to prevent double-feed.
3	Paper feed tray lift cam	Lifts the paper feed lift plate.
4	Paper feed lift plate	Presses paper on the top onto the paper feed roller.
5	Paper feed clutch	Controls ON/OFF of the manual paper feed roller.

B. Operational descriptions

Power of the paper feed motor (CPFM) is transmitted to the paper feed cam by the paper feed clutch to lift the paper feed lift plate so that paper on the top is pressed onto the paper feed roller and the paper feed roller is rotated to feed paper on the manual paper feed tray to the paper transport section.

Every time when one sheet of paper is fed, the paper feed roller rotates one turn and the paper feed lift plate performs lifting once.

The separation sheet is provided to prevent double-feed.

ON/OFF of paper feed operation is controlled by the manual paper feed clutch solenoid.

The paper size is detected by the paper width detector (MPWS) and the paper length detector (MPLD1).

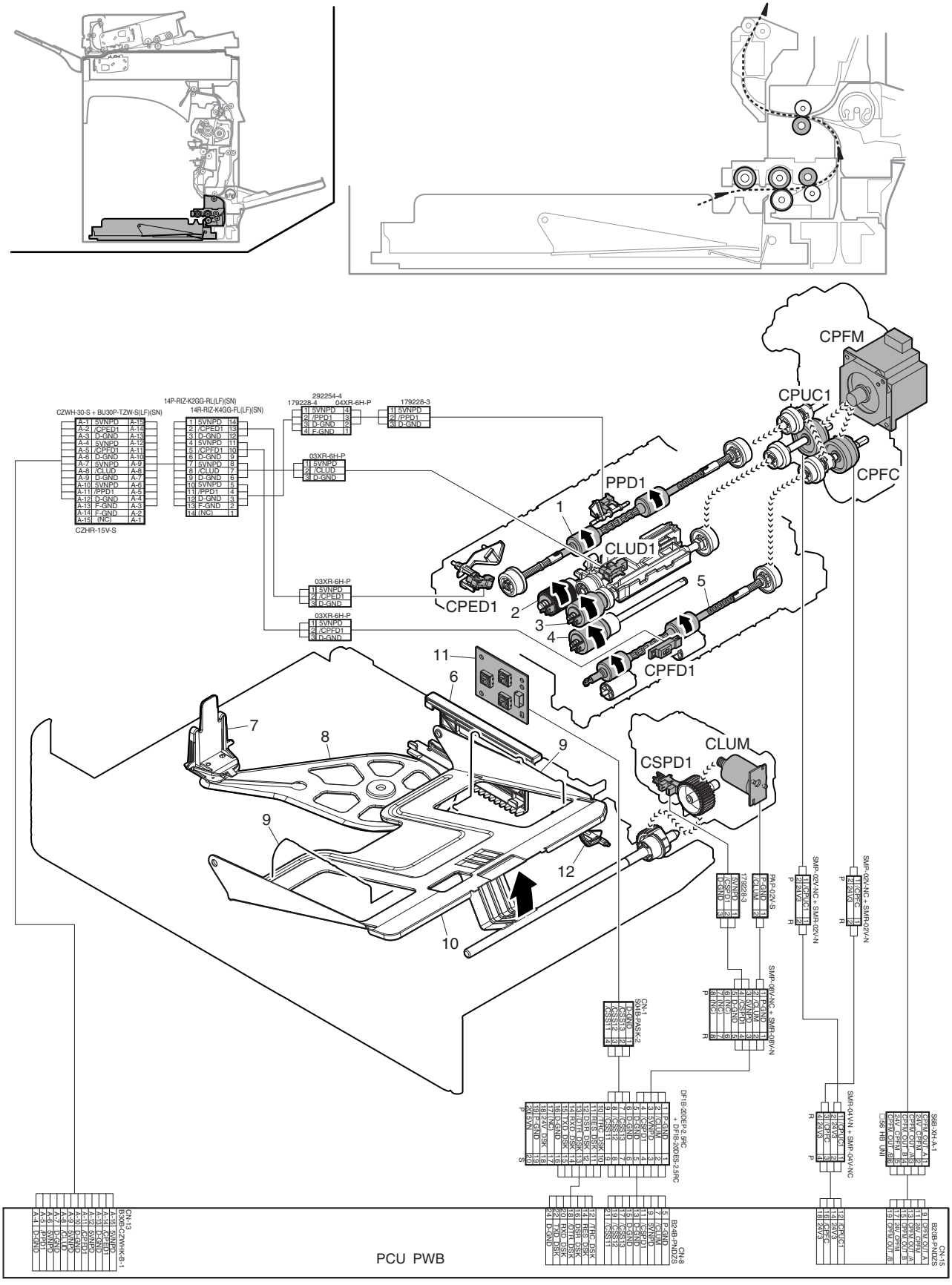
Relationship between paper size detection and the paper width detector (MPWS) and the paper length detector (MPLD1)

MPWS detection width (mm)	MPLD1	Metric series	Inch series	NOTE
207.9 – 221	ON	FC (8.5" x 13")	8.5" x 14"	
207.9 – 221		–	8.5" x 11"	
202 – 218		A4	-	
176.2 – 192.2			7.25" x 10.5"	
174 – 190		B5		
140.5 – 156.5		A5		
131.7 – 147.7			5.5" x 8.5"	
94 – 108		Postcard		Japan only

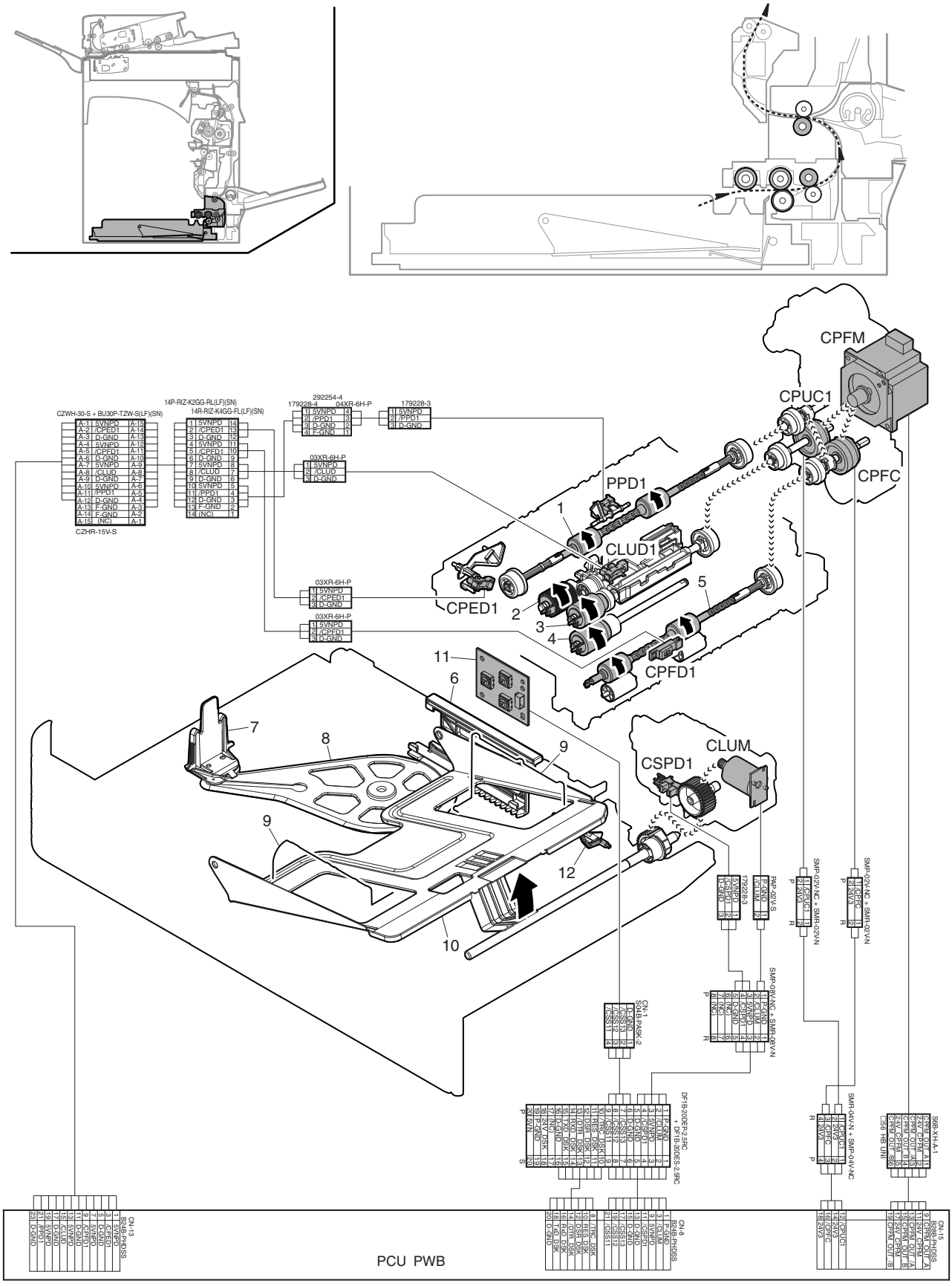
4. Paper feed tray section

A. Electrical and mechanism relation diagram

(1) MX-C402SC/C382SC



(2) MX-B402SC/B382SC



Signal name	Name	Function and operation
CLUD1	Paper feed tray 1 upper limit detector	Detects the upper limit of the paper feed tray 1, and maintains the contact pressure between paper on the top and the paper pickup roller to provide stable paper feed power.
CLUM	Paper feed tray 1 lift-up motor (Paper feed tray 1)	Drives the lift plate of the paper feed tray 1, and maintains the contact pressure between paper on the top and the paper pickup roller to provide stable paper feed power.
CPED1	Paper feed tray 1 paper empty detector	Detects paper empty in the paper feed tray 1.
CPFC	Paper feed tray vertical transport clutch	Controls ON/OFF of the paper transport roller 1 in the paper feed tray 1 section.
CPFD1	Paper transport detector 1	Detects paper pass in the paper transport roller 1. Detects a paper jam.
CPFM	Paper feed motor	Drives the paper feed section.
CPUC1	Paper feed clutch (Paper feed tray 1)	Controls ON/OFF of the rollers (the paper pickup roller, the paper feed roller, the paper transport roller 2) in the paper feed tray 1 section.
CSPD1	Paper remaining quantity detector	Detects the paper remaining quantity in the paper feed tray 1.
PPD1	Paper transport detector 2	Detects paper pass in the paper transport roller 2. Detects a paper jam.

No.	Name	Function and operation
1	Paper transport roller 2	Transports paper from the transport roller 1 to the registration roller.
2	Paper pickup roller (Paper feed tray 1)	Picks up paper on the top and feeds it to the paper feed roller.
3	Paper feed roller (Paper feed tray 1)	Feeds paper to the paper transport section.
4	Paper separation roller (Paper feed tray 1)	Separates paper to prevent double-feed.
5	Paper transport roller 1	Transports paper from the paper feed tray section to the transport roller 2.
6	Paper size detection block	The paper size is detected by the paper size detection PWB by utilizing that the concave and the convex positions of the block which is in contact with the paper size detection PWB detector are changed according to the paper length.
7	Paper guide (Longitudinal direction)	When the position is changed according to the paper length, the concave and the convex positions of the paper size detection block which is in contact with the paper size detection PWB detector are changed by the paper size detection block drive gear.
8	Paper size detection block drive gear	Transmits the paper guide (longitudinal direction) position to the paper size detection block position in order to perform paper size detection.
9	Paper guide (Lateral direction)	The guide plate to prevent paper feed skew.
10	Lift plate	Lifts up paper, and maintains the contact pressure between paper on the top and the paper pickup roller to provide stable paper feed power.
11	Paper size detection PWB	Detects the paper size by using combination of ON/OFF of three switches and the concave and the convex sections of the paper size detection block whose position is changed in connection with the paper guide (longitudinal direction).
12	Paper remaining quantity detection actuator	The lift plate position is changed according to the paper remaining quantity and the paper remaining quantity detection actuator position is also changed. The paper remaining detector detects the changes to recognize the paper remaining quantity.

B. Paper lifting operation

Set paper in the paper feed tray and insert the paper feed tray into the machine. The lift plate lifts up.

Paper is lifted by the lift motor (CLUM).

When the paper feed tray 1 upper limit detector (CLUD1) detects the top of paper, the lift motor (CLUM) stops and the contact pressure between paper on the top and the paper pickup roller becomes the proper level when paper is picked up.

When the paper remaining quantity is decreased, the lift plate lifts up in each case to maintain the contact pressure between paper on the top and the paper pickup roller at the proper level when paper is picked up.

C. Paper feed operation

The paper feed motor (CPFM) is turned ON, and then the paper feed clutch (CPUC1) is turned ON.

The power of the paper feed motor (CPFM) is transmitted through the paper feed clutch (CPUC1) to the paper pickup roller and the paper feed roller.

The paper pickup roller descends to pick up paper on the top and feed it to the paper feed roller.

The paper feed roller feeds paper to the paper transport section.

At that time, the separation roller rotates to prevent double-feed.

D. Paper size detection operation

Detects the paper size by using combination of ON/OFF of three switches and the concave and the convex sections of the paper size detection block whose position is changed in connection with the paper guide (longitudinal direction).

When the paper guide (longitudinal direction) position is changed, the concave and convex sections of the paper size detection block which are in contact with the paper size detection PWB detector are changed by the paper size detection block drive gear.

Relationship between paper size detection and the paper size detector (paper size detection PWB switch)

SW1	SW2	SW3	Metric series	Inch series
ON			–	8.5" x 14"
	ON		B5	7.25" x 10.5"
		ON	A4	–
ON	ON		A5	5.5" x 8.5"
ON		ON	FC (8.5" x 13")	–
	ON	ON	–	8.5" x 11"

E. Paper remaining quantity detection operation

There are four levels of the paper remaining quantity: 3 levels of remaining quantity and paper empty.

Paper empty:

The paper tray 1 paper empty detector (CRPED1) is turned ON.

When the paper remaining quantity is 2/3 - 3/3:

The paper remaining quantity detector (CSPD1) is not turned ON when paper on the paper feed tray is lifted up and the paper feed tray upper limit detector (CLUD) detects paper on the top and lifting is stopped.

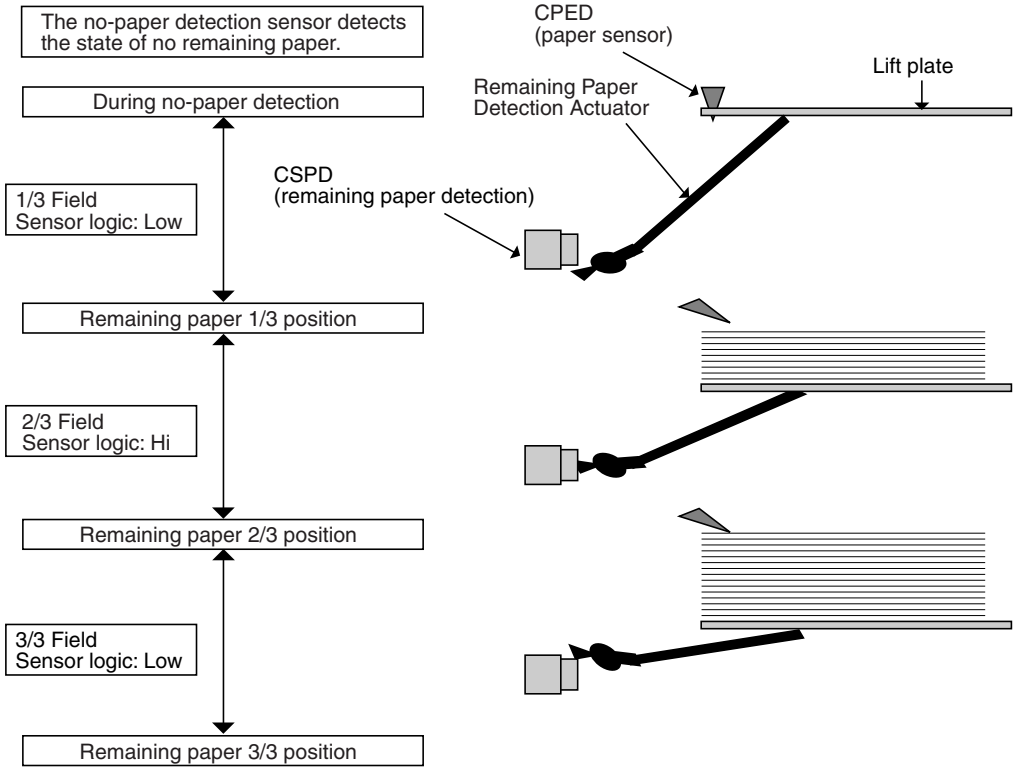
When the paper remaining quantity is 1/3 - 2/3:

The paper remaining quantity detector (CSPD1) is turned ON when paper on the paper feed tray is lifted up and the paper feed tray upper limit detector (CLUD) detects paper on the top and lifting is stopped.

When the paper remaining quantity is 1/3 or less:

The paper remaining quantity detector (CSPD1) is turned ON once, and then turned OFF.

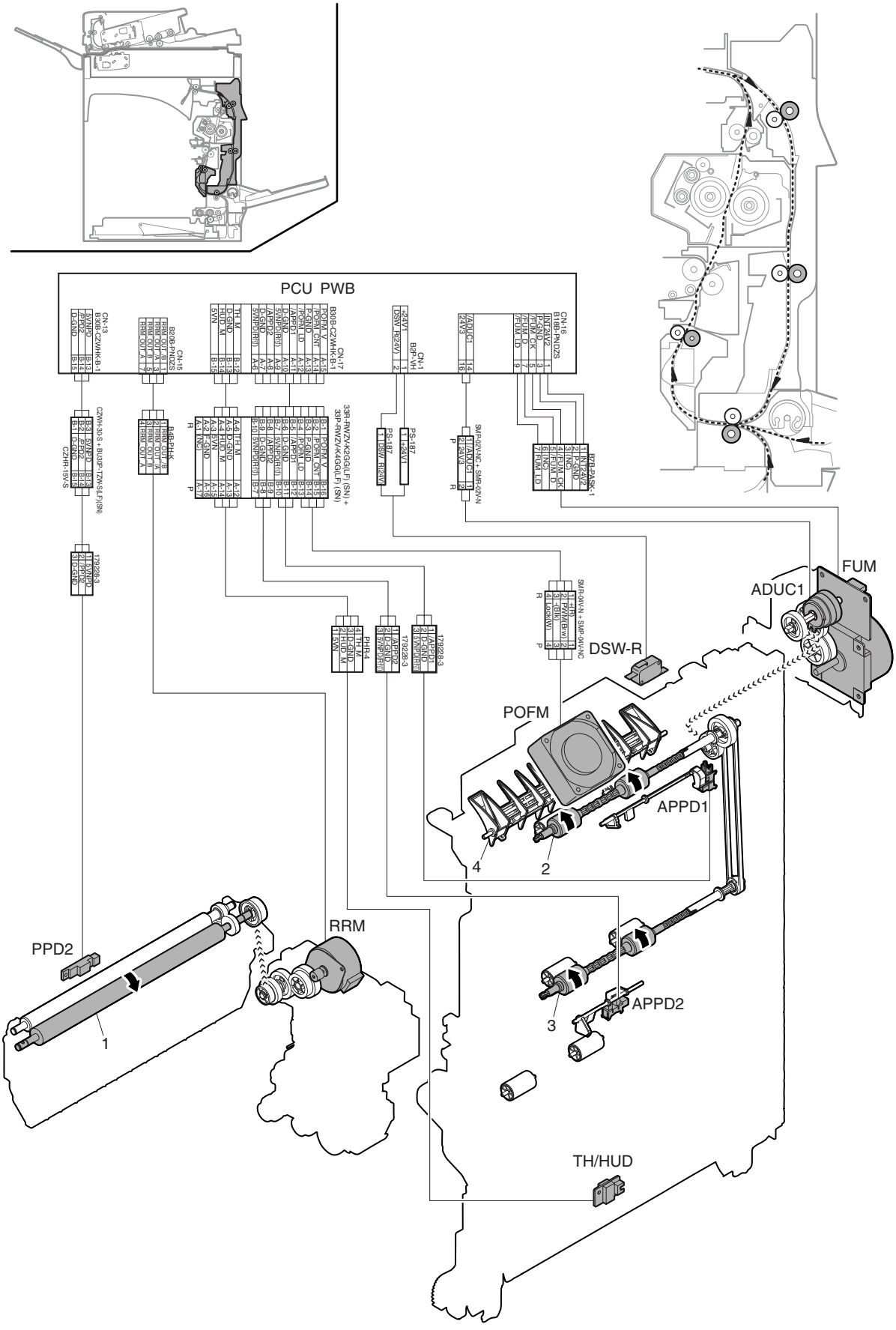
(Figure showing state transition of the remaining paper detection sensor during tray elevation and changes in status according to the number of remaining sheets)



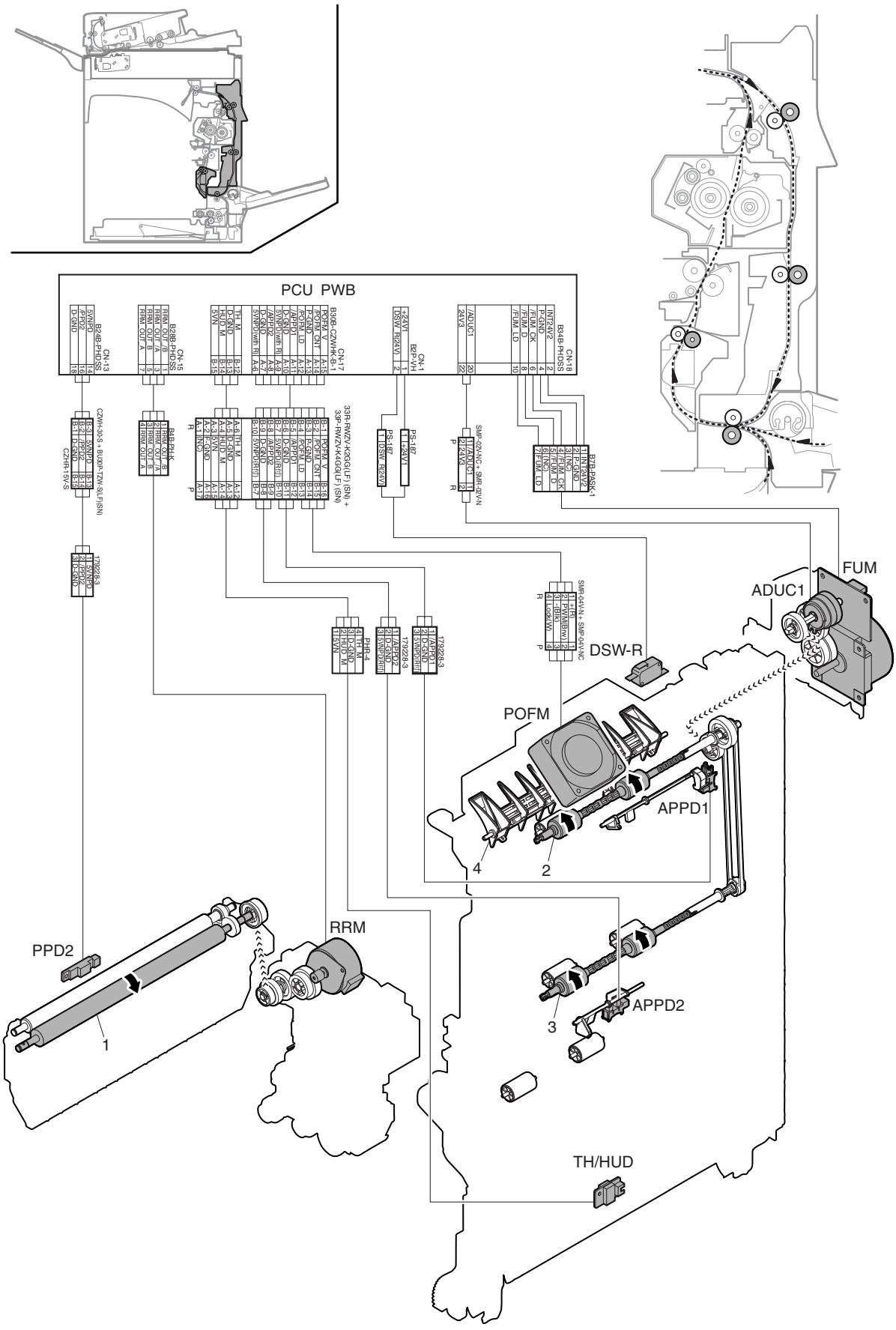
5. Paper transport and switchback section

A. Electrical and mechanism relation diagram

(1) MX-C402SC/C382SC



(2) MX-B402SC/B382SC



Signal name	Name	Function and operation
FUM	Fusing drive motor	Drives the paper transport section and the switchback section.
PPD2	Paper transport detector 3	Detects paper pass in front of the registration roller, and controls the stop timing of paper at the registration roller.
RRM	Registration motor	Controls ON/OFF of the registration roller. Controls the relationship between images and paper.
ADUC1	Switchback transport clutch	Controls ON/OFF of the paper transport roller in the switchback section.
DSW-R	Right door open/close detection switch	Detects open/close of the right door.
APPD1	Switchback paper transport detector 1	Detects paper pass in the switchback section. Detects a paper jam.
APPD2	Switchback paper transport detector 2	Detects paper pass in the switchback section. Detects a paper jam.
TH/HUD	Temperature and humidity sensor	Detects the temperature and the humidity to use them as process control parameters.
POFM	Paper exit cooling fan	Cools the paper exit section.

No.	Name	Function and operation
1	Registration roller (Drive)	Transports paper to the transfer section.
2	Paper transport roller 4	Transports paper in the switchback section.
3	Paper transport roller 5	Transports paper in the switchback section.
4	Switchback guide	Guides paper to the switchback section.

B. Functions and operations of the registration roller

The registration roller is driven by the registration motor (RRM). By changing the OFF/ON timing of the motor, the relationship between images and paper is controlled.

The transport roller 2 is stopped after passing a certain time from when the paper transport detector 3 (PPD2) detects passing of the paper lead edge and the paper lead edge reaches the registration roller position.

Due to this time lag, paper is warped between the paper transport roller 2 and the registration roller.

This warp is intentionally made to make the paper lead edge push onto the registration roller, reducing variations in the relationship between the paper and images.

Then, the paper transport roller and the registration roller rotate to transport the paper to the transfer section.

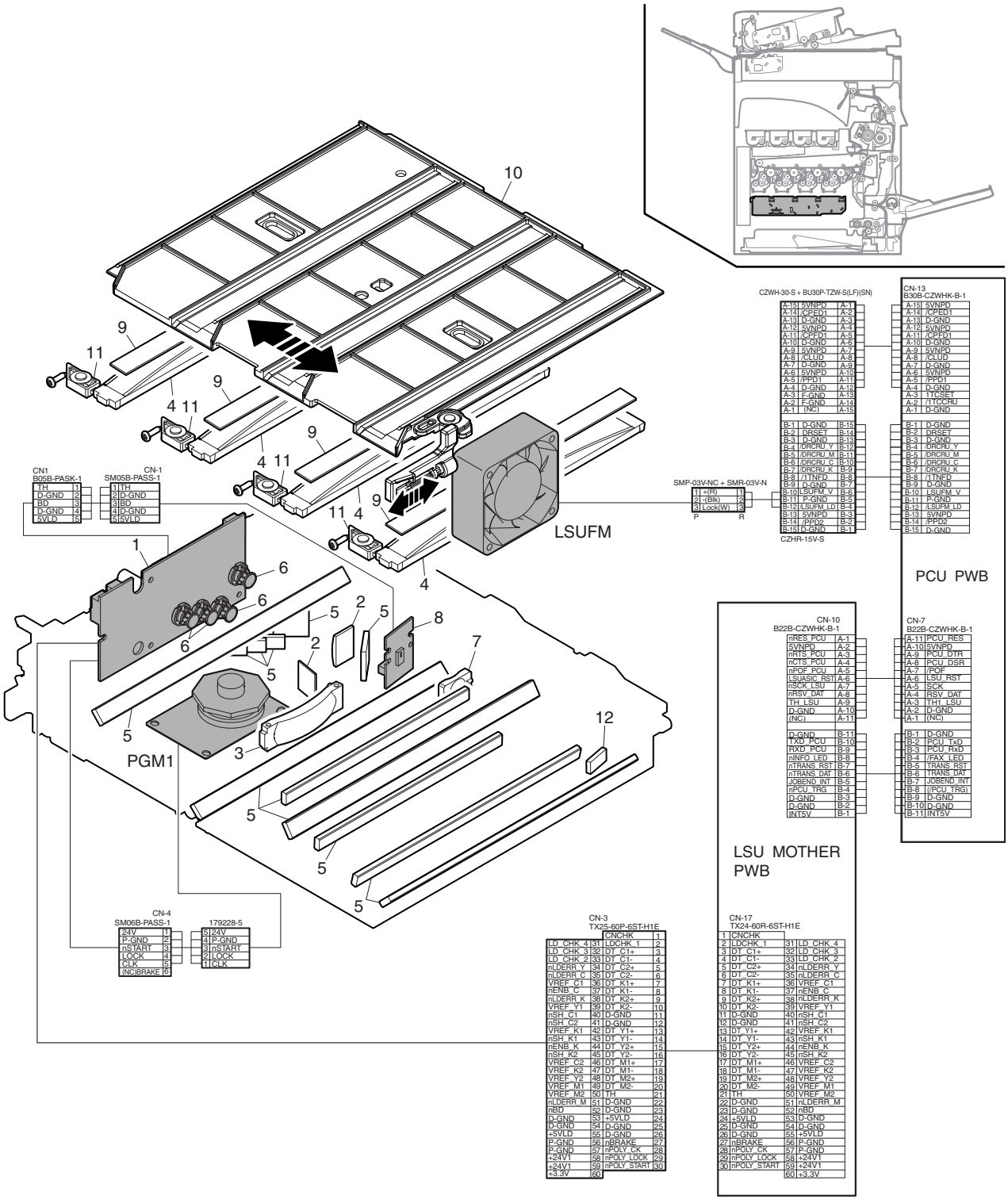
C. Paper transport to the switchback section

When printing is made on the back surface of paper in the duplex mode, the images on the front surface are transferred and the paper passes the fusing section, and then the paper is switched back in the paper exit section, and the paper is transported to the switchback section by the switchback guide.

6. LSU section

A. Electrical and mechanism relation diagram

(1) MX-C402SC/C382SC

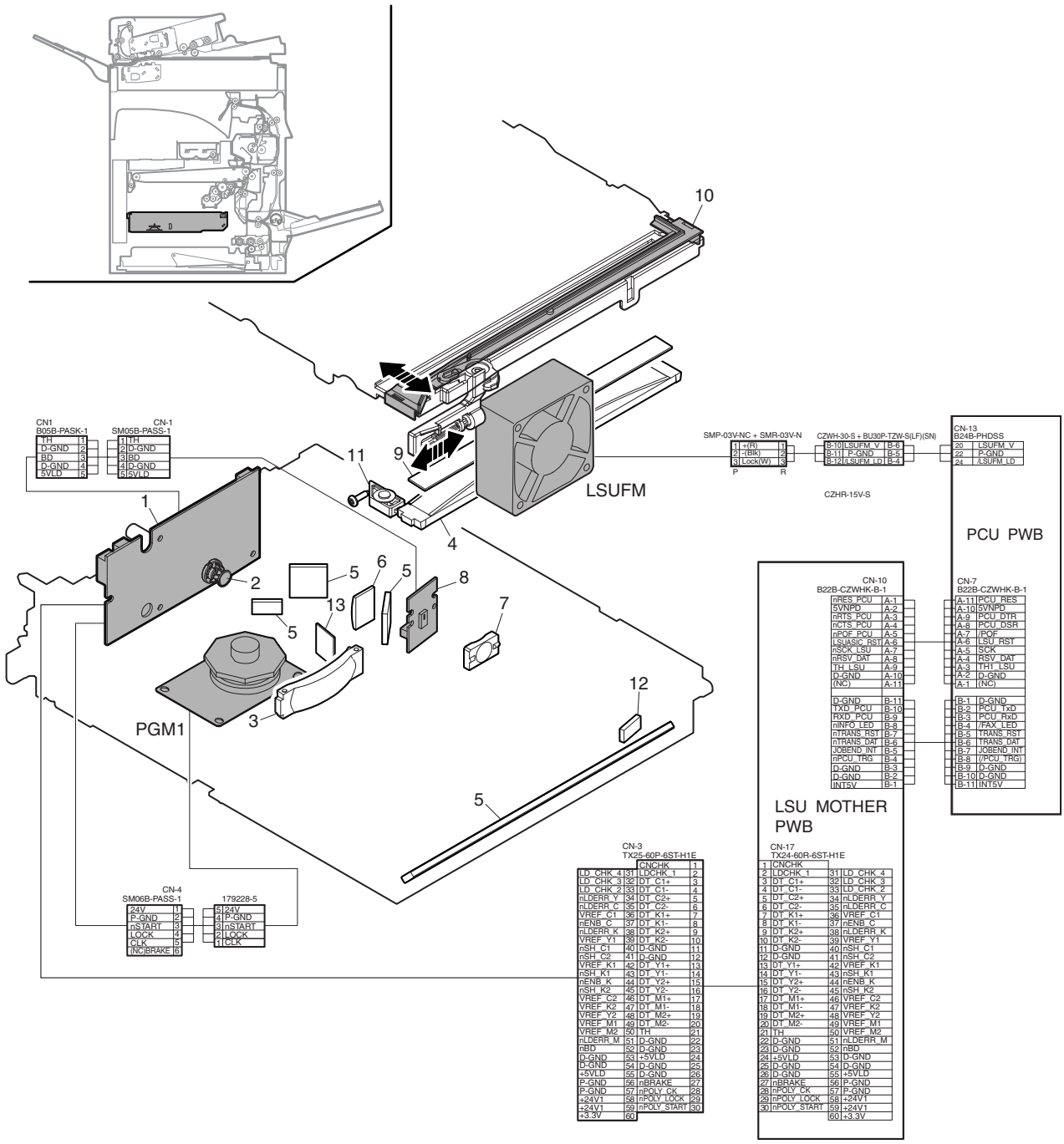


Signal name	Name	Function and operation
LSUFM	LSU fan	Cools the LSU high voltage PWB section.
PGM 1	Polygon motor	Rotates at a constant speed to scan laser beams.

No.	Name	Function and operation
1	LD PWB	Converts video data into laser beams. Controls laser beams and laser power.
2	Collimator lens	Forms laser beams.
3	fϕ lens 1	Uniformizes laser beam dot interval in the main scanning direction. (Equalizes the laser dot interval at the peripheral section and that at the center of the OPC drum.)
4	fϕ lens 2	

No.	Name	Function and operation
5	Mirror	Reflects laser beams to the OPC drum.
6	Incident cylindrical lens	Forms laser beams.
7	Condenser lens for BD	Condenses laser beams onto the BD PWB.
8	BD PWB	Detects the laser scan timing. Detects the temperature in the LSU. (The temperature in the LSU is detected by the temperature sensor to correct the LSU temperature distortion.)
9	Filter glass	Prevents dust and toner from entering the LSU.
10	Shutter	Closes the exposure opening in conjunction with the shutter when the waste toner bottle is removed.
11	Laser skew adjustment plate	Adjusts laser skew in the main scanning direction for the OPC drum.
12	BD mirror	Guides laser beams to the BD (Beam Detector).
13	Filter glass	Prevents dust and toner from entering the polygon motor.

(2) MX-B402SC/B382SC



Signal name	Name	Function and operation
LSUFM	LSU fan	Cools the LSU high voltage PWB section.
PGM 1	Polygon motor	Rotates at a constant speed to scan laser beams.

No.	Name	Function and operation
1	LD PWB	Converts video data into laser beams. Controls laser beams and laser power.
2	Collimator lens	Forms laser beams.
3	fϕ lens 1	Uniformizes laser beam dot interval in the main scanning direction. (Equalizes the laser dot interval at the peripheral section and that at the center of the OPC drum.)
4	fϕ lens 2	
5	Mirror	Reflects laser beams to the OPC drum.
6	Incident cylindrical lens	Forms laser beams.
7	Condenser lens for BD	Condenses laser beams onto the BD PWB.
8	BD PWB	Detects the laser scan timing. Detects the temperature in the LSU. (The temperature in the LSU is detected by the temperature sensor to correct the LSU temperature distortion.)
9	Filter glass	Prevents dust and toner from entering the LSU.
10	Shutter	Closes the exposure opening in conjunction with the shutter when the waste toner bottle is removed.
11	Laser skew adjustment plate	Adjusts laser skew in the main scanning direction for the OPC drum.
12	BD mirror	Guides laser beams to the BD (Beam Detector).
13	Filter glass	Prevents dust and toner from entering the polygon motor.

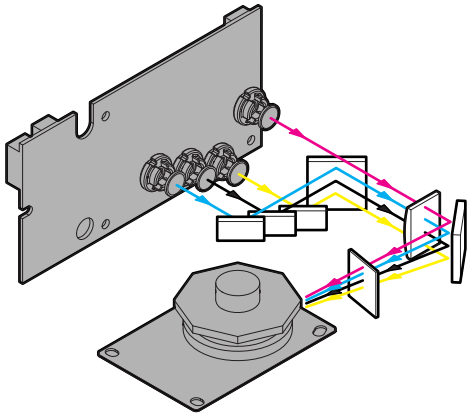
B. Laser scan operation

(1) MX-C402SC/C382SC

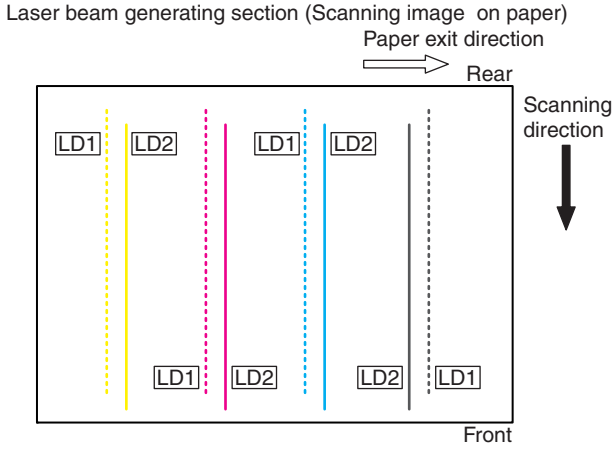
The image data sent from the MFP PWB are converted into video data by the ASIC in the LSU mother PWB, and then converted into laser beams by the LD PWB to be radiated on the OPC drum surface, forming electrostatic latent images on the OPC drum surface.

In this model, the 2-beam laser system is employed where two laser beams for each color are generated.

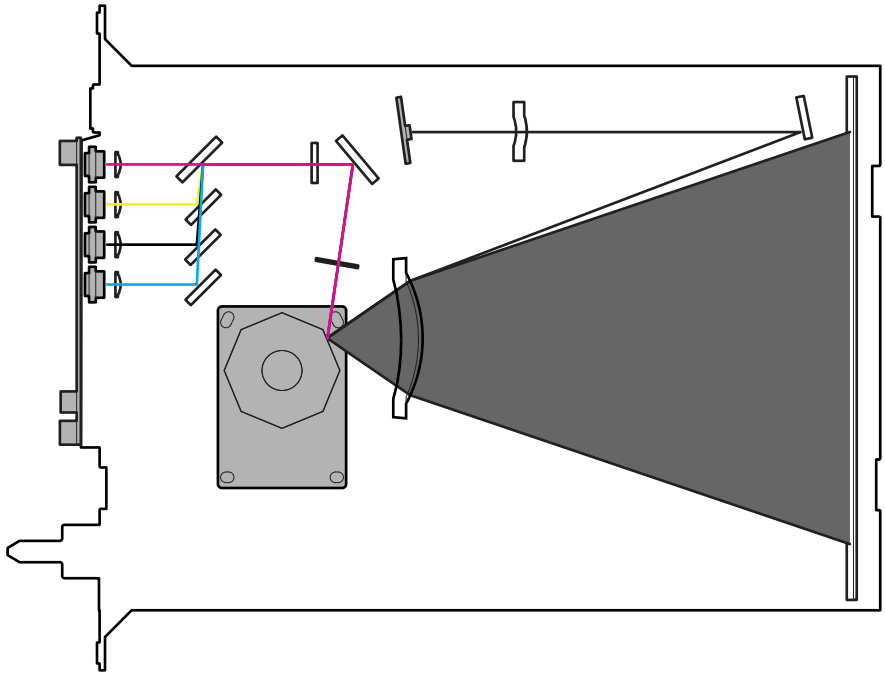
Laser beam generating section



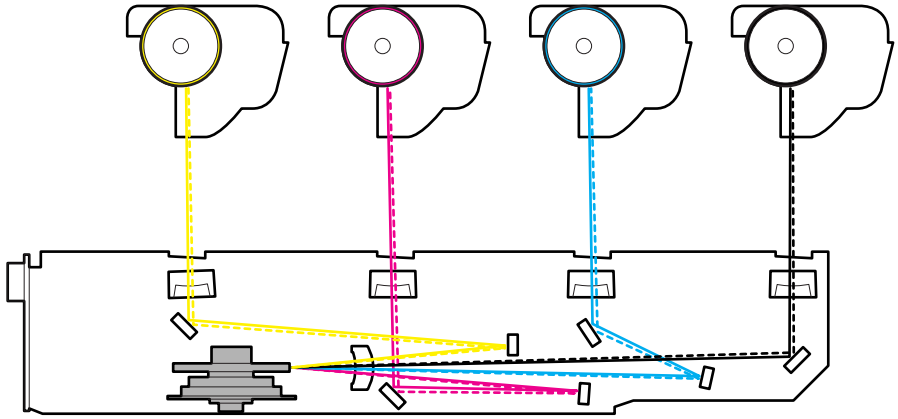
Laser beam generating section (Scanning image on paper)



Laser beam generating section (TOP)



Laser beam generating section (SIDE)

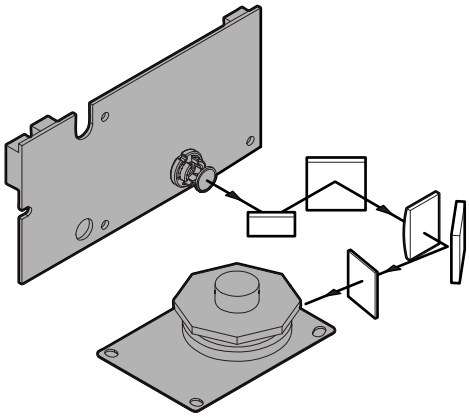


(2) MX-B402SC/B382SC

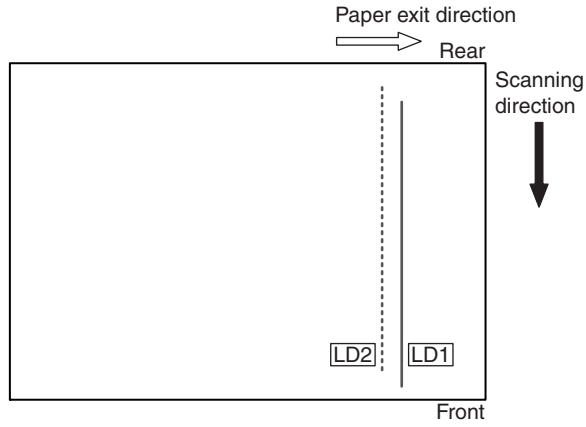
The image data sent from the MFP PWB are converted into video data by the ASIC in the LSU mother PWB, and then converted into laser beams by the LD PWB to be radiated on the OPC drum surface, forming electrostatic latent images on the OPC drum surface.

In this model, the 2-beam laser system is employed.

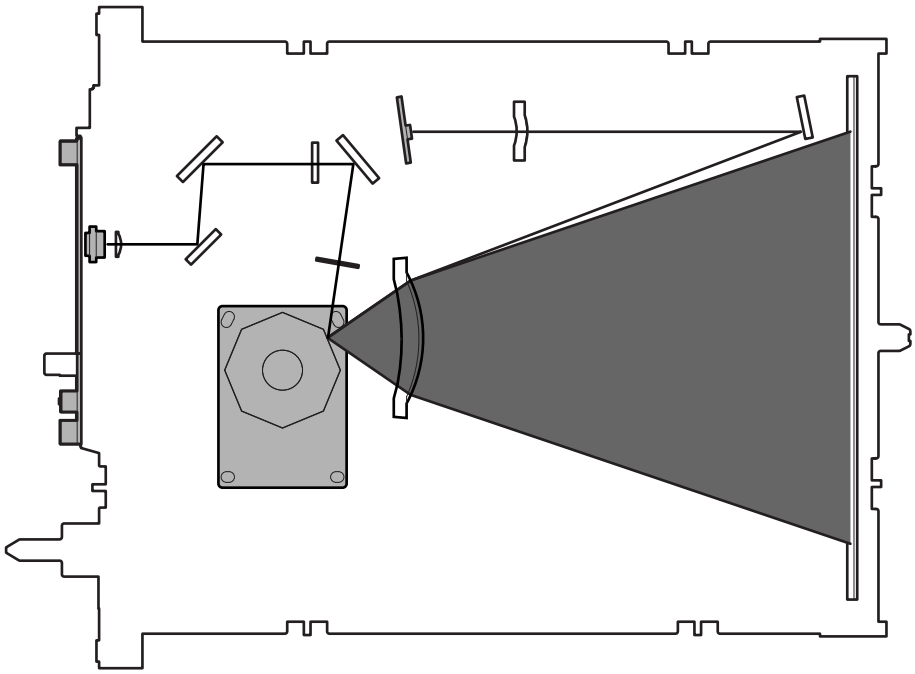
Laser beam generating section



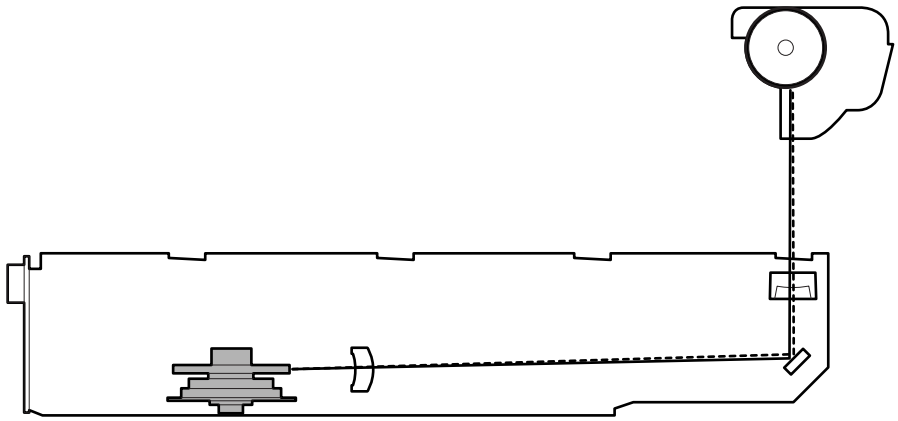
Laser beam generating section (Scanning image on paper)



Laser beam generating section (TOP)



Laser beam generating section (SIDE)



C. Shutter operation

(1) MX-C402SC/C382SC

When the waste toner is removed toner may drop. A shutter mechanism will close to prevent toner from contaminating the filter.

The machine is also provided with the mechanism to adjust skews of laser beams of each color.

By shifting the front frame section of the fϕ lens 2 with the cam mechanism, the laser skew adjustment can be made in the main scanning direction for the OPC drum.

(2) MX-B402SC/B382SC

When the toner is removed toner may drop. A shutter mechanism will close to prevent toner from contaminating the filter.

By shifting the front frame section of the fϕ lens 2 with the cam mechanism, the laser skew adjustment can be made in the main scanning direction for the OPC drum.

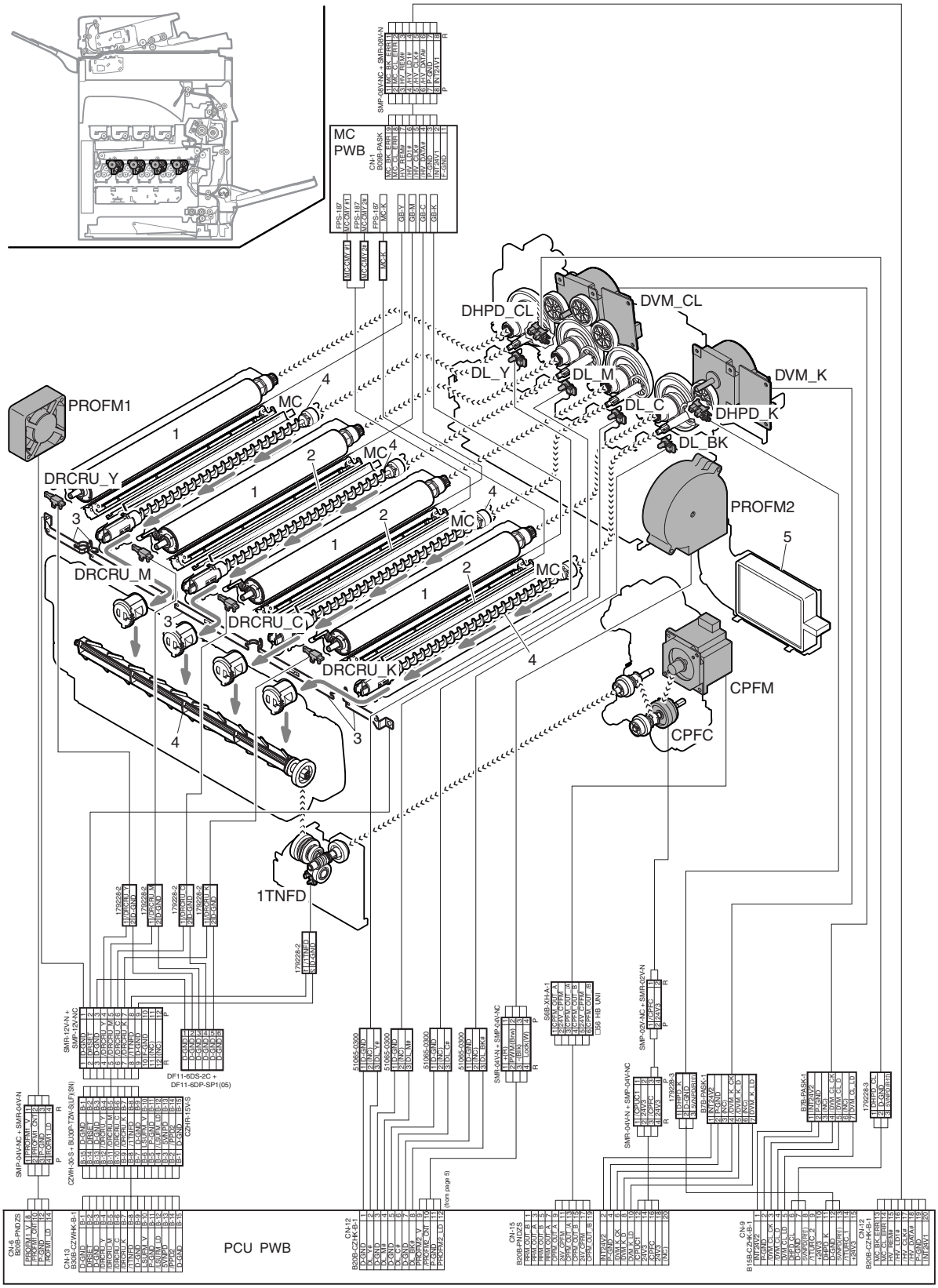
D. LSU specifications

Effective scan width	220mm
Resolution	1200dpi
Beam diameter	Main scan = 50 - 75μm, Sub scan = 50 - 75μm
Laser power	Max. 0.3mw
LD wavelength	750 - 800nm
Number of mirrors	8 surfaces
Rotation speed	39,862rpm

7. Photo-conductor section

A. Electrical and mechanism relation diagram

(1) MX-C402SC/C382SC

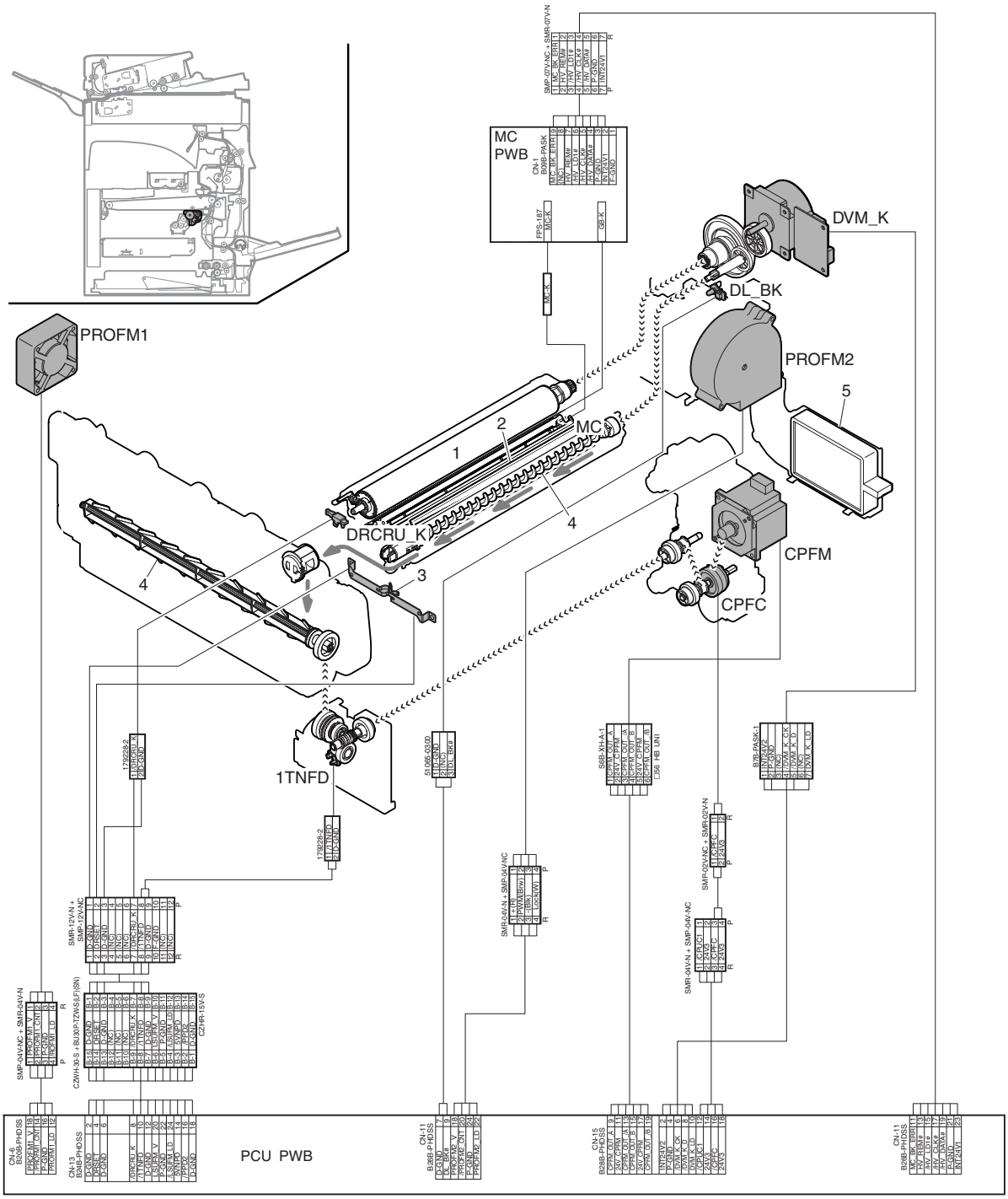


Signal name	Name	Function and operation
1TNFD	Waste toner full detector	Detects the waste toner full state.
CPFM	Paper feed motor	Drives the waste toner transport screw and the paper feed section.
DHPD_CL	Drum cartridge (CL) rotation detector	Detects the rotating state of the color drum cartridge.
DHPD_K	Drum cartridge (BK) rotation detector	Detects the rotating state of the black drum cartridge.

Signal name	Name	Function and operation
DL	Discharge lamp (Y,M,C,BK)	Radiates light on the discharge lens to discharges the OPC drum surface
DRCRU (Y, M, C, K)	OPC drum initial (new OPC drum) detector	Detects the OPC drum initial state (new OPC drum).
DVM_CL	Developing drive motor (Color)	Drives the color developing unit/color OPC drum.
DVM_K	Developing drive motor (Black)	Drives the black developing unit/black OPC drum.
MC	Main charger (Y, M, C, K)	Charges the OPC drum surface negatively.
PROFM1	Process fan 1	Cools the process section.
PROFM2	Process fan 2	Discharges ozone generated in the process section.

No.	Name	Function and operation
1	OPC drum (Y, M, C, K)	Forms electrostatic latent images.
2	Cleaning blade	Cleans residual toner from the OPC drum surface.
3	OPC drum installation detection contact (Y, M, C, K)	Detects installation of the OPC drum.
4	Waste toner transport screw	Transports waste toner to the waste toner bottle.
5	Ozone filter	Absorbs ozone generated in the image process section.

(2) MX-B402SC/B382SC



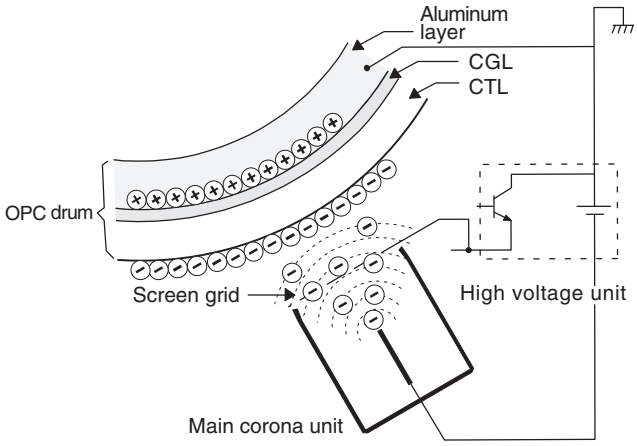
Signal name	Name	Function and operation
1TNFD	Waste toner full detector	Detects the waste toner full state.
CPFM	Paper feed motor	Drives the waste toner transport screw and the paper feed section.
DL	Discharge lamp	Radiates light on the discharge lens to discharges the OPC drum surface
DRCRU	OPC drum initial (new OPC drum) detector	Detects the OPC drum initial state (new OPC drum).
DVM_K	Developing drive motor	Drives the developing unit/OPC drum.
MC	Main charger	Charges the OPC drum surface negatively.
PROFM1	Process fan 1	Cools the process section.
PROFM2	Process fan 2	Discharges ozone generated in the process section.

No.	Name	Function and operation
1	OPC drum	Forms electrostatic latent images.
2	Cleaning blade	Cleans residual toner from the OPC drum surface.
3	OPC drum installation detection contact	Detects installation of the OPC drum.
4	Waste toner transport screw	Transports waste toner to the waste toner bottle.
5	Ozone filter	Absorbs ozone generated in the image process section.

B. Charging, electrostatic latent image forming, discharging

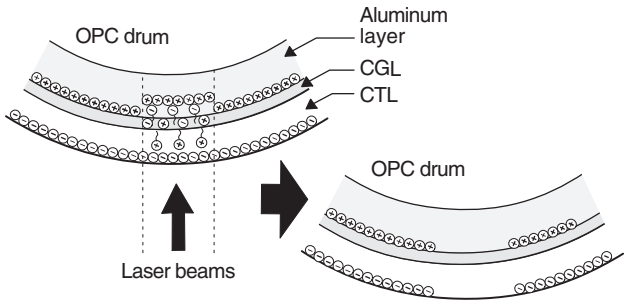
The OPC drum surface is charged negatively by the main charger, and laser beams are radiated to the LSU unit to form electrostatic latent images.

1) The OPC drum surface is charged negatively by the main charger.



The screen grid is attached to the main charger unit, and the OPC drum is charged at a voltage which virtually same as the voltage applied to the screen grid.

2) Laser beams are radiated to the OPC drum surface by the laser (writing) unit to form electrostatic latent images.



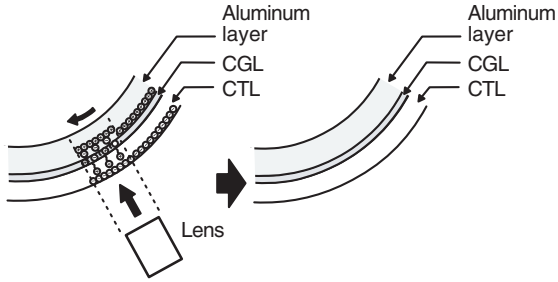
When laser beams are radiated on the OPC drum CGL, positive and negative charges are generated.

The positive charges generated in the CGL are attracted and shifted to the negative charged on the OPC drum surface. Meanwhile, the negative charges are attracted and shifted to the positive charges in the aluminum layer of the OPC drum. Therefore, on the surface and in the aluminum layer of the OPC drum, the positive charges and the negative charges are neutralized each other, reducing the amount of positive and negative charges to reduce the OPC drum surface potential.

For the areas where laser beams are not radiated, electric charges remain unchanged.

As a result, electrostatic latent images are formed on the OPC drum surface.

3) The whole surface of the OPC drum is discharged.



When the discharge lamp light is radiated to the discharge lens, the light is radiated through the lens to the OPC drum surface.

When the discharge lamp light is radiated to the OPC drum CGL, positive and negative charges are generated.

The positive charges generated in the CGL are attracted to the negative charges on the OPC drum surface. Meanwhile, the negative charges are attracted to the positive charges in the aluminum layer in the OPC drum.

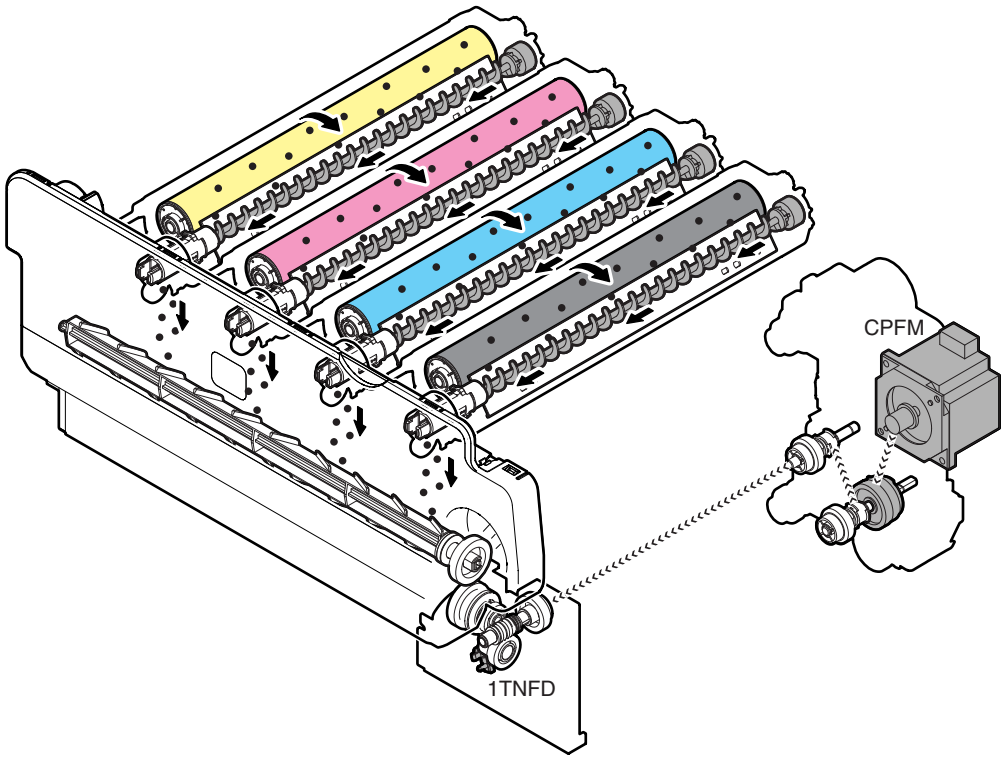
Therefore, on the OPC drum surface, the positive and the negative charges are neutralized each other, reducing the amount of positive and negative charges to reduce the surface potential of the OPC drum.

C. Cleaning operation

(1) MX-C402SC/C382SC

After completion of the transfer operation, residual toner on the OPC drum is removed by the cleaning blade.

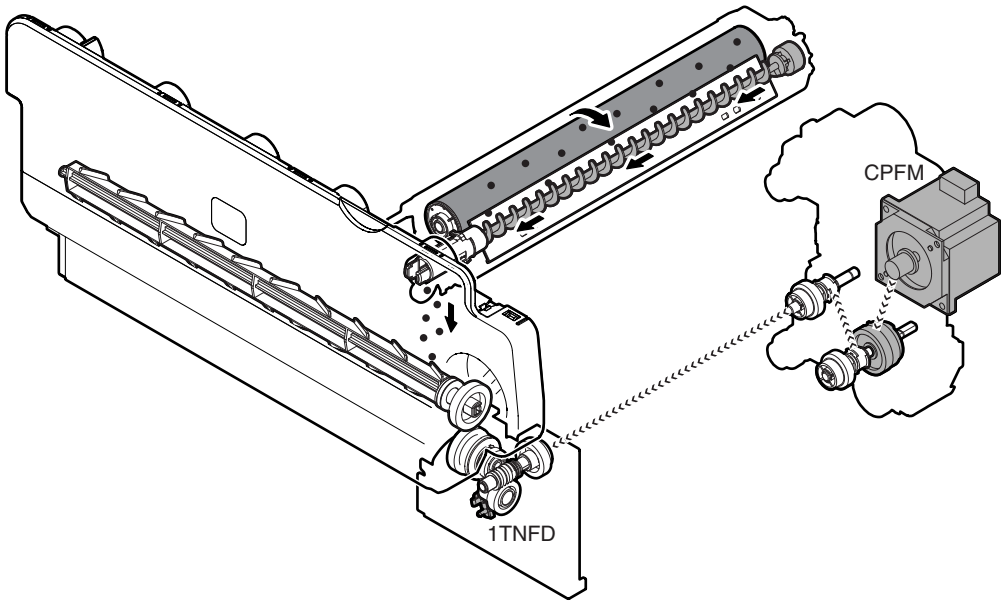
The residual toner removed from the OPC drum surface is transported to the waste toner bottle by the waste toner transport screw, which is driven by the paper feed motor (CPFM).



(2) MX-B402SC/B382SC

After completion of the transfer operation, residual toner on the OPC drum is removed by the cleaning blade.

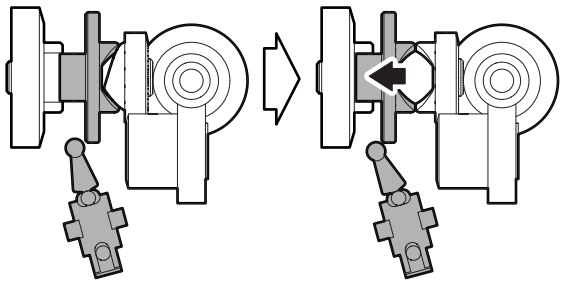
The residual toner removed from the OPC drum surface is transported to the waste toner bottle by the waste toner transport screw, which is driven by the paper feed motor (CPFM).



D. Waste toner full detection operation

The waste toner bottle section is provided with the waste toner full detection mechanism. When the waste toner quantity is increased to the full state, the rotation load of the waste toner transport screw is increased, and the waste toner transport screw drive coupler gets stranded, and the waste toner full detector (1TNFD) is turned ON.

When the waste toner full detection switch is kept ON for 1 sec or more, it is judged as near end and the message that the waste toner bottle must be replace soon. When 500 counts are exceeded from that time, the machine recognizes as the waste toner full and the message that the waste toner bottle must be replaced is displayed. (Paper exit of one sheet is counted 1, and one process control operation is counted 10.)



1TNFD (OFF) 1TNFD (ON)

E. OPC drum rotation control

The OPC drum (K) is driven by the K developing drive motor (DVM_K), and the rotation speed is monitored by the OPC drum (BK) rotation sensor (DHPD_K).

The color OPC drums (C, M, Y) are driven by the CL developing drive motor (DVM_CL), and are monitored by the CL OPC drum rotation sensor (DHPD_CL).

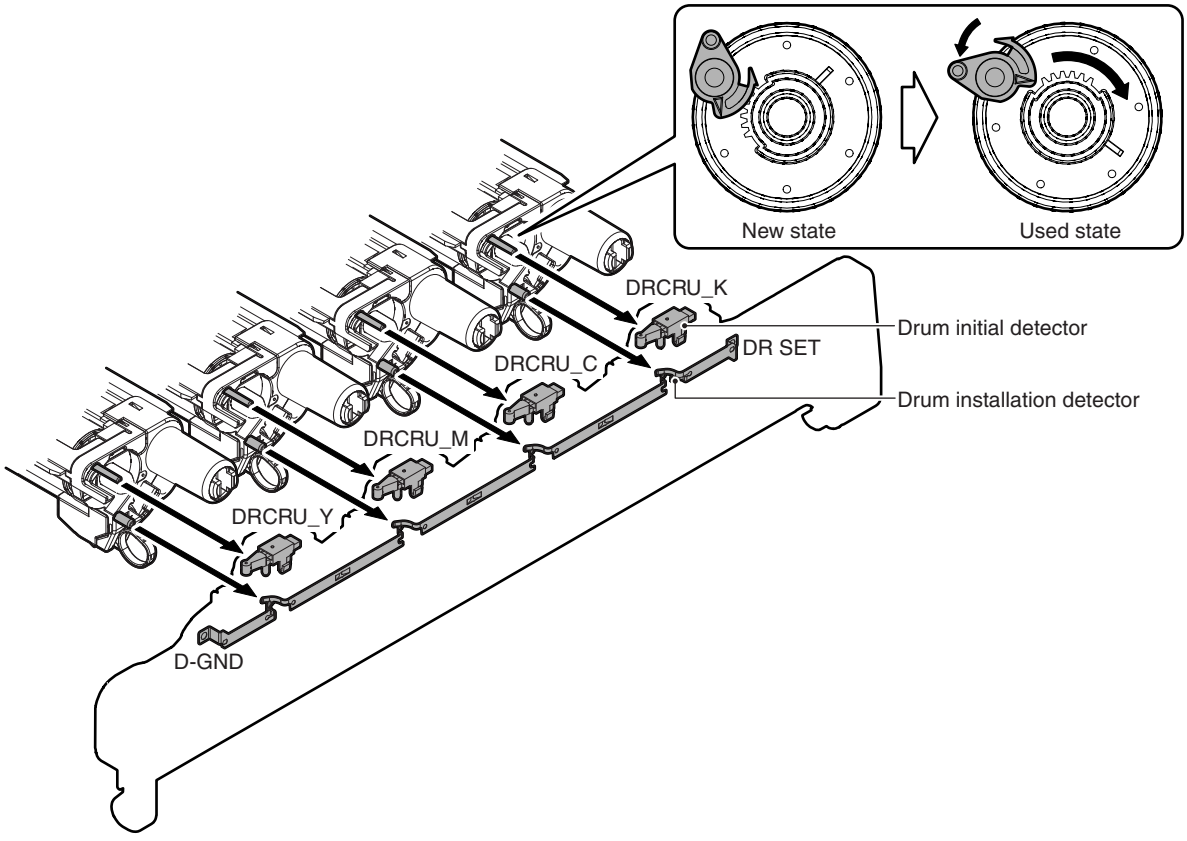
According to signals monitored by the above two sensors, the rotation speed and the rotation phase of the K OPC drum and the color OPC drums are controlled.

F. OPC drum initial operation/ OPC drum installation detection operation

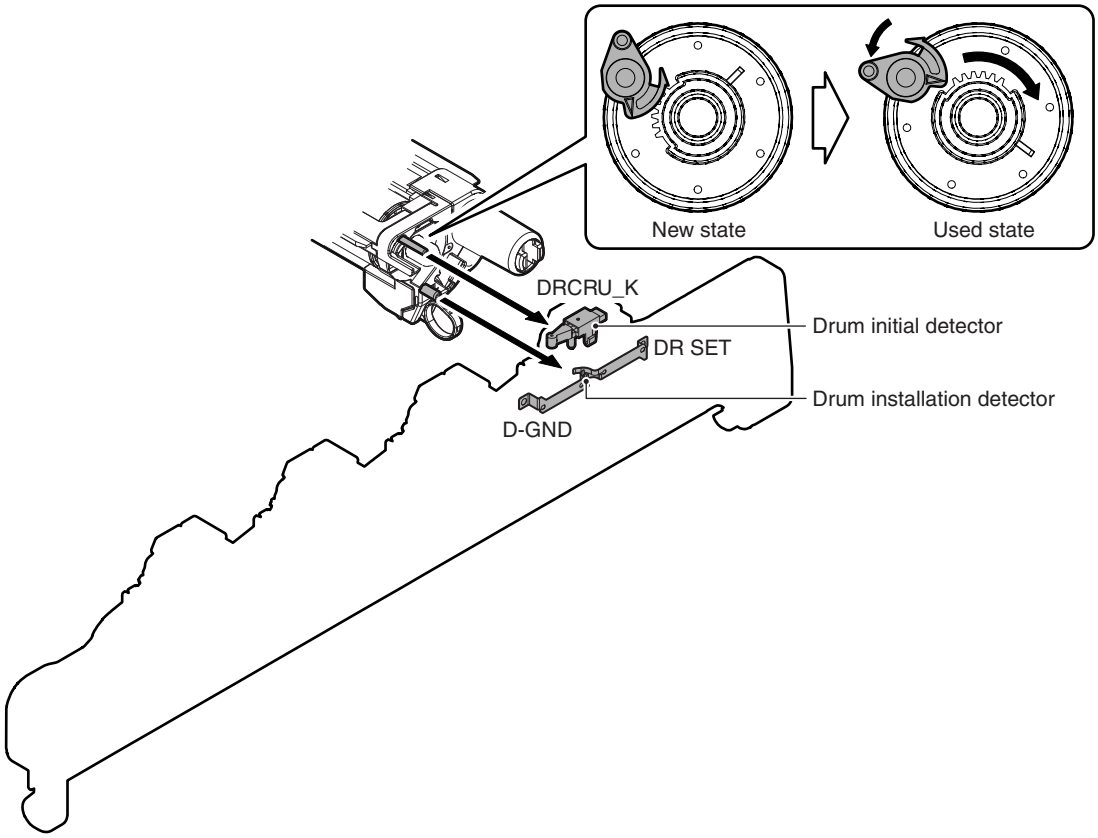
When a new OPC drum is installed, the OPC drum initial detector (DRCRU) is turned ON by the OPC drum initial actuator. When, thereafter, the drum rotates, the drum initial actuator position is changed to turn OFF the detector. By this series of operations, the drum is initialized and the OPC drum counter is reset.

NOTE: The initial operation means detection of a new unit, occurrence of a trigger for start of use, and resetting of the counter.

- **MX-C402SC/C382SC**



• **MX-B402SC/B382SC**

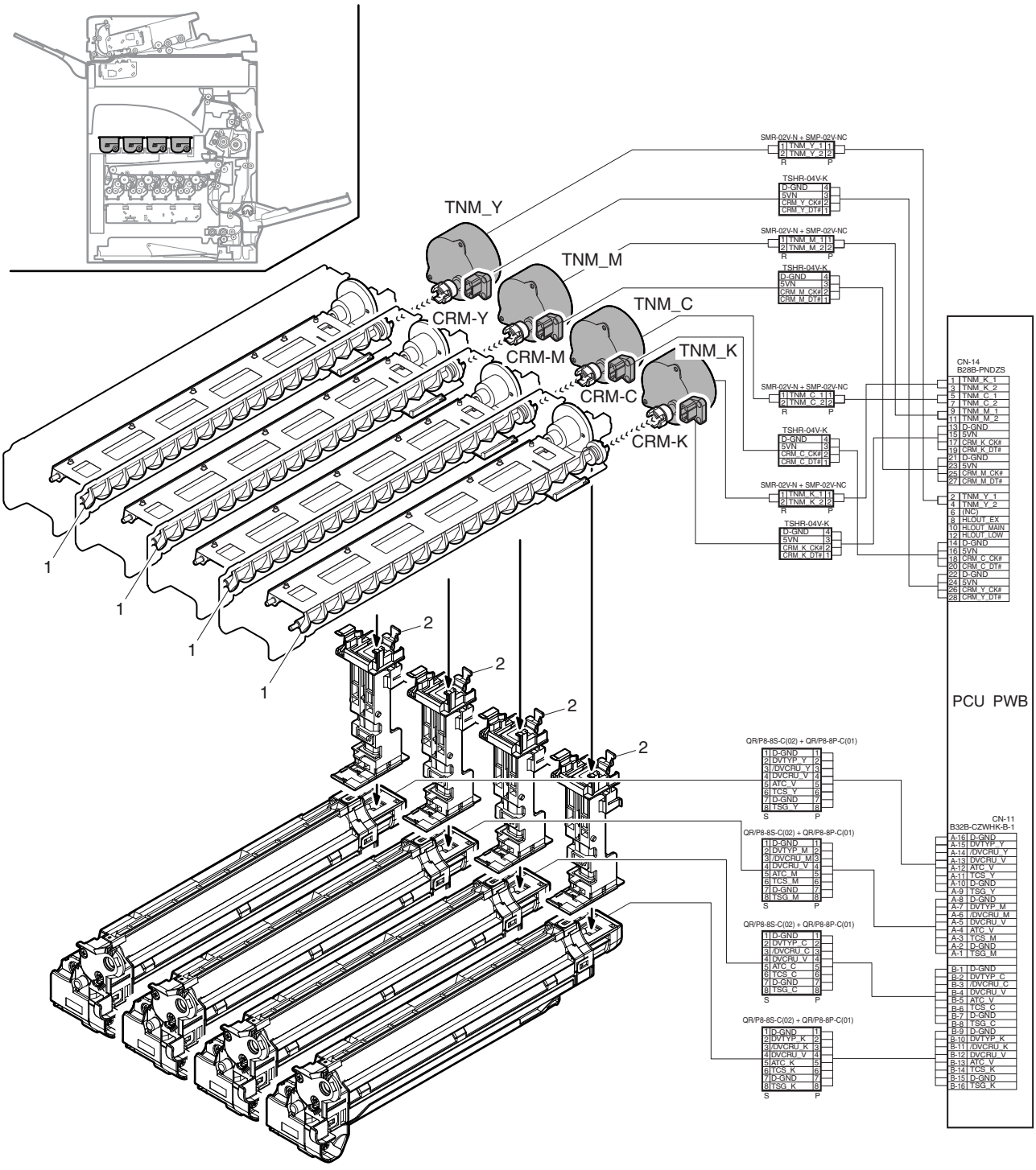


In the OPC drum positioning unit, there is a contact to detect installation of the OPC drum. If there is no OPC drum installed, it is detected and the message is displayed on the operation panel to show that there is no OPC drum installed.

8. Toner supply section

A. Electrical and mechanism relation diagram

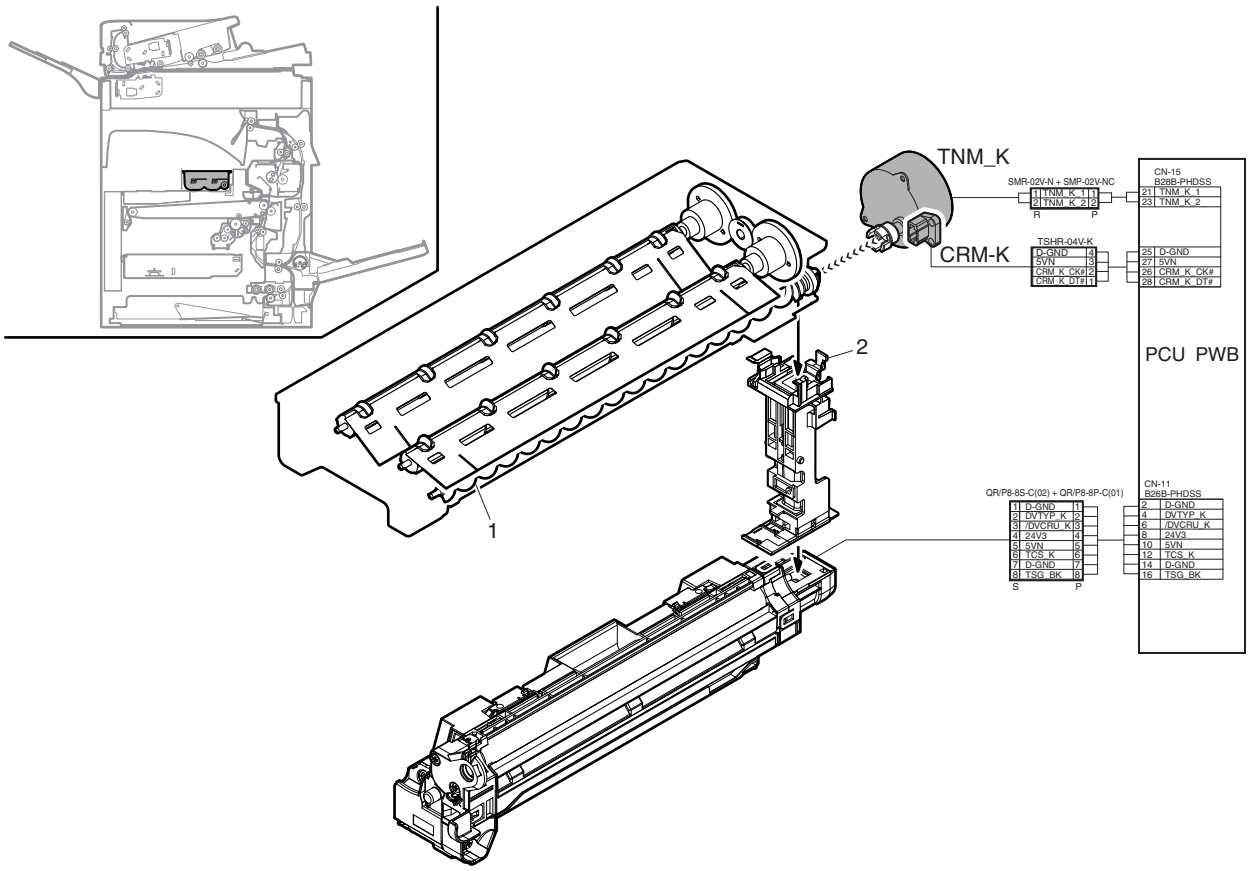
(1) MX-C402SC/C382SC



Signal name	Name	Function and operation
TNM (Y,M,C,K)	Toner motor (Y,M,C,K)	Drives the toner transport screw in the toner cartridge to supply toner to the developer cartridge.
CRM (Y,M,C,K)	Crum	Stores data related to control of the toner cartridge. Detects a new toner cartridge.

No.	Name	Function and operation
1	Toner transport/mixing screw	Mixes and transports toner in the toner cartridge.
2	Toner transport pipe	Used to supply toner from the toner cartridge to the developer cartridge.

(2) MX-B402SC/B382SC



Signal name	Name	Function and operation
TNM	Toner motor	Drives the toner transport screw in the toner cartridge to supply toner to the developing unit.
CRM	Crum	Stores data related to control of the toner cartridge. Detects a new toner cartridge.

No.	Name	Function and operation
1	Toner transport/mixing screw	Mixes and transports toner in the toner cartridge.
2	Toner transport pipe	Used to supply toner from the toner cartridge to the developing unit.

B. Operational descriptions

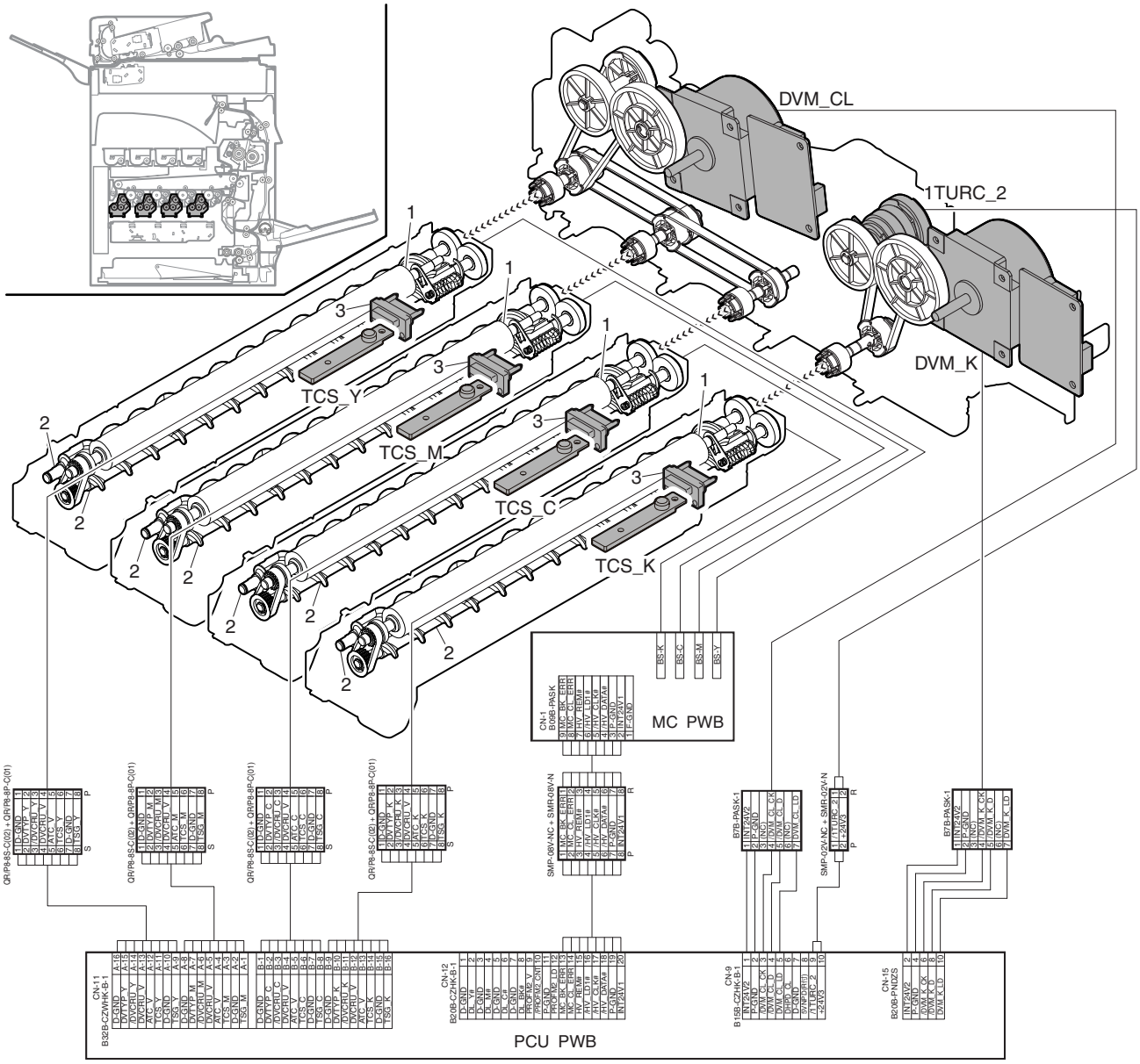
When the toner density sensor in the developing unit detects a fall in the toner density, the toner motor drives the toner transport screw in the toner cartridge to supply toner to the developing unit.

The toner motor is turned ON/OFF according to the output of the toner density sensor.

9. Developing section

A. Electrical and mechanism relation diagram

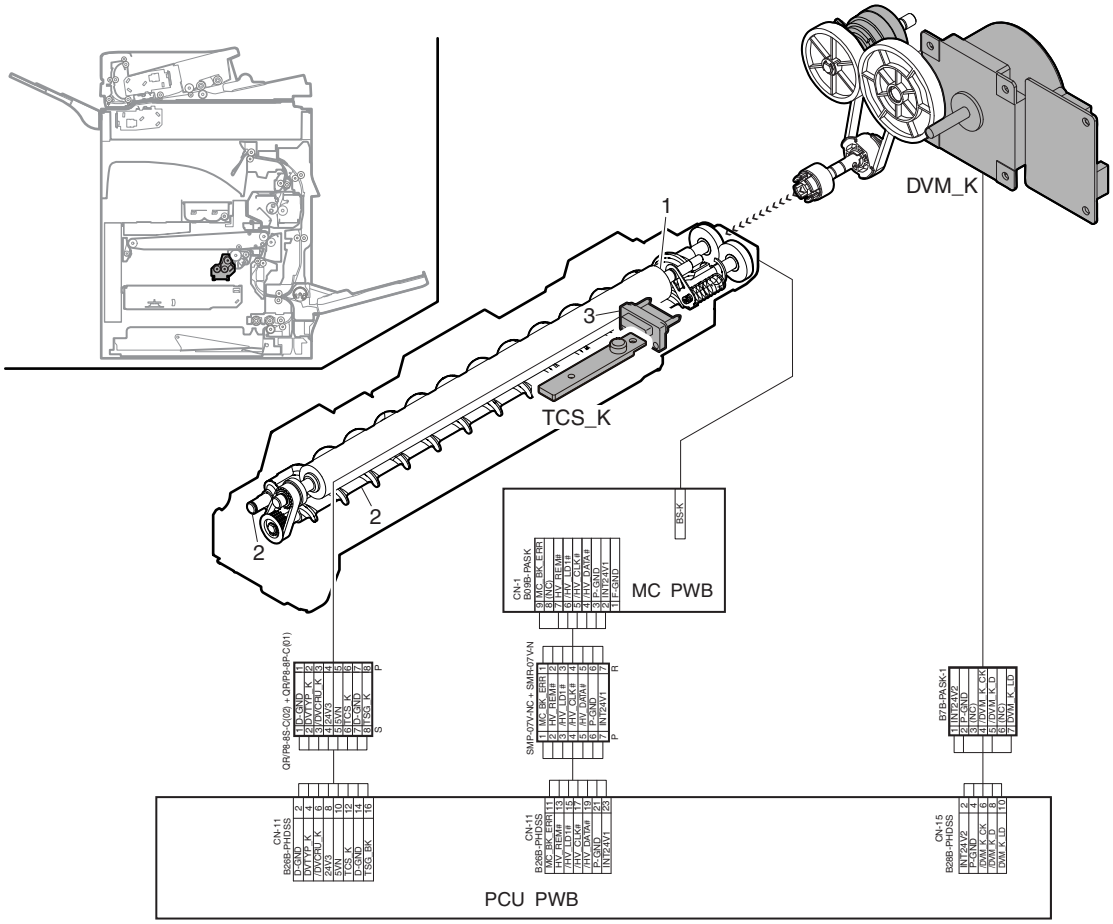
(1) MX-C402SC/C382SC



Signal name	Name	Function and operation
DVM_CL	Developing drive motor (Color)	Drives the color developer cartridge/color OPC drum.
DVM_K	Developing drive motor (Black)	Drives the black developer cartridge/black OPC drum/primary transfer belt.
TCS	Toner density sensor (Y,M,C,K)	Detects the toner density in the developer cartridge.

No.	Name	Function and operation
1	Developing roller	Converts electrostatic latent images on the OPC drum into visible images.
2	Mixing roller	Mixes and charges developer and toner.
3	Developing connector	Directly connected with the registration or and the fuse which identify the kind of the developer cartridge and detect initializing of the DV unit.

(2) MX-B402SC/B382SC

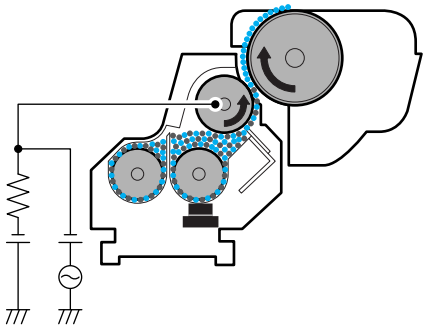


Signal name	Name	Function and operation
DVM_K	Developing drive motor	Drives the developing unit OPC drum/primary transfer belt.
TCS	Toner density sensor	Detects the toner density in the developing unit.

No.	Name	Function and operation
1	Developing roller	Converts electrostatic latent images on the OPC drum into visible images.
2	Mixing roller	Mixes and charges developer and toner.
3	Developing connector	Directly connected with the resistor which identify the kind of the developing unit.

B. Developing operations

Electrostatic latent images formed on the OPC drum surface by the laser (writing) unit (laser image beams) are converted into visible images by toner.



Toner and carrier in the developer cartridge are mixed and transported by the stirring roller.

When toner and carrier are stirred and transported, toner is negatively charged by mechanical friction with carrier.

In addition, the developing bias voltage (AC component of negative DC component) is applied to the developing roller.

Negatively charged toner is attached to the exposed area (high potential area) on the OPC drum by the developing bias voltage.

On the other hand, the potential of the unexposed area on the OPC drum is lower than the developing bias voltage and toner is not attached to it.

C. Toner density control

(1) MX-C402SC/C382SC

The toner density in the developer cartridge is detected by the toner density sensor in order to keep the toner density control level which is set in the initial operation of the developer cartridge.

When the toner density is lowered, the toner motor is rotated to supply toner from the toner cartridge to the developer cartridge.

(2) MX-B402SC/B382SC

The toner density in the developing unit is detected by the toner density sensor in order to keep the toner density control level which is set in the initial operation of the developer.

When the toner density is lowered, the toner motor is rotated to supply toner from the toner cartridge to the developing unit.

D. Developer cartridge initial operation (MX-C402SC/C382SC)

When the developer cartridge is installed, the state of the fuse of the connector in the developer cartridge is checked.

When the state that the fuse is not blown off is detected, the developing unit is judged as a new one, blowing off the fuse.

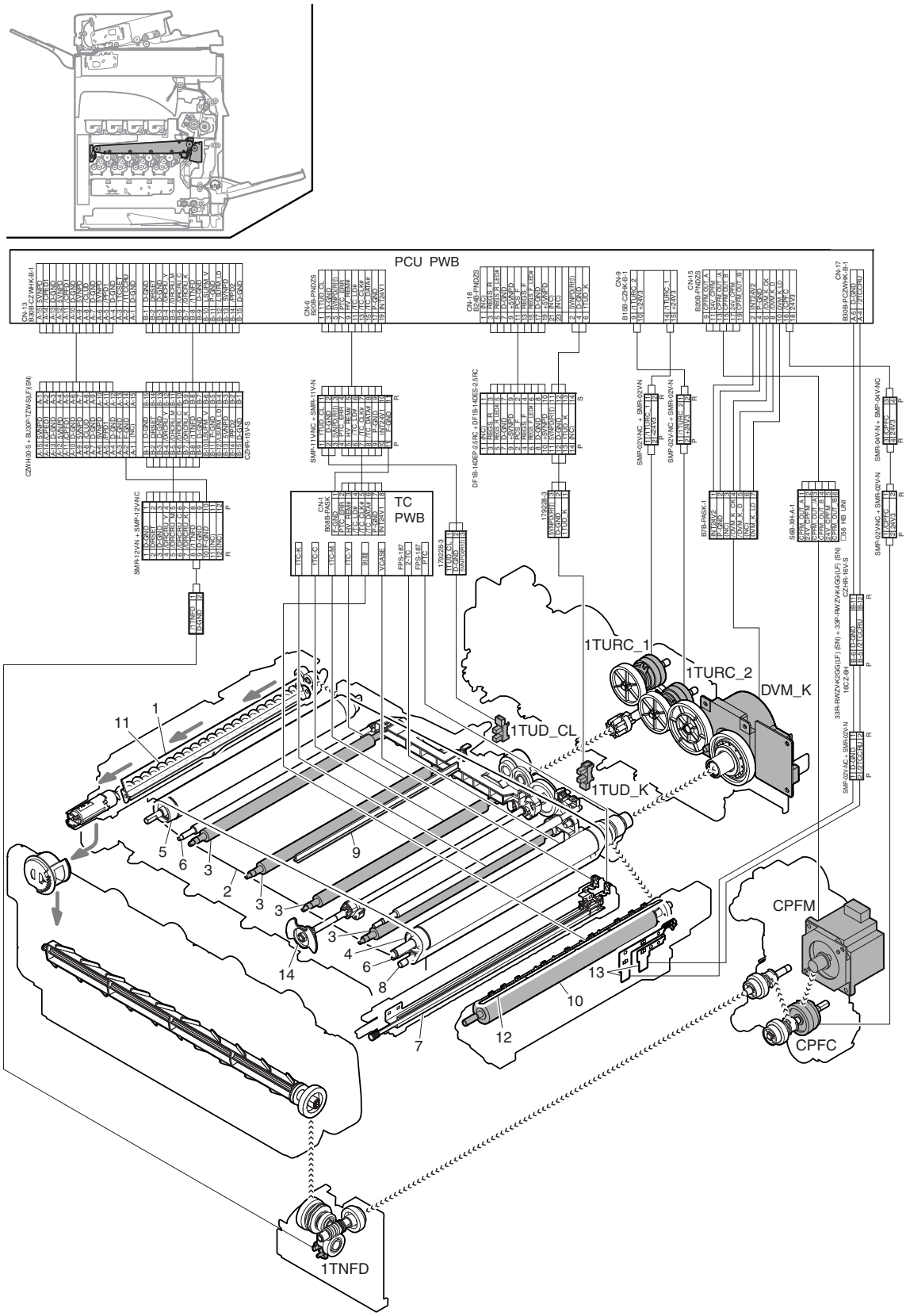
Simultaneously with this operation, setting of the toner density control level and reset of the developing counter are automatically performed.

NOTE: The initial operation means detection of a new unit, occurrence of a trigger for start of use, and resetting of the counter.

10. Transfer section

A. Electrical and mechanism relation diagram

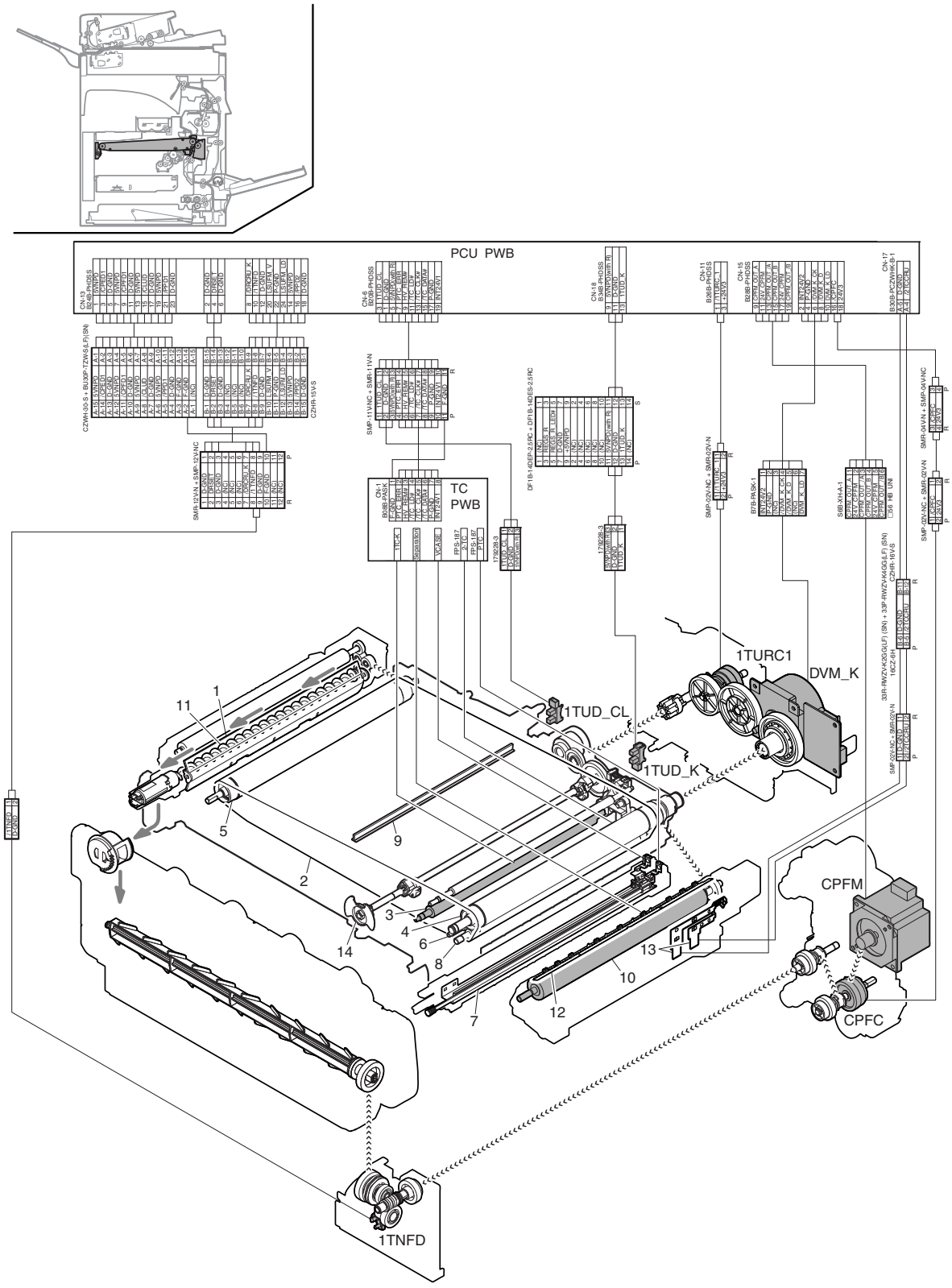
(1) MX-C402SC/C382SC



Signal name	Name	Function and operation
1TC (C,M,Y)	Primary transfer output (C, M, Y)	Primary transfer high voltage output (C,M,Y)
1TC (K)	Primary transfer output (K)	Primary transfer high voltage output (K)
1TUD_BK	Primary transfer belt position sensor (BK)	Detects the primary transfer belt position (BK) in combination with the 1TUD_BK output.

Signal name	Name	Function and operation
1TUD_CL	Primary transfer belt position sensor (CL)	Detects the primary transfer belt position (CL) in combination with the 1TUD_CL output.
1TURC 1	Primary transfer mode select clutch	Transports the developing motor (K) power to the primary transfer mode select cam to select the primary transfer mode. (The primary transfer mode select cam is rotated counterclockwise.)
1TURC 2	Primary transfer mode select clutch	Transports the developing motor (K) power to the primary transfer mode select cam to select the primary transfer mode. (The primary transfer mode select cam is rotated clockwise.)
PTC	PTC output	PTC high voltage output
2TC	Secondary transfer output	Secondary transfer high voltage output
DVM_K	Developing drive motor (K)	Drives the transfer belt. (Also drives the K developing unit.)

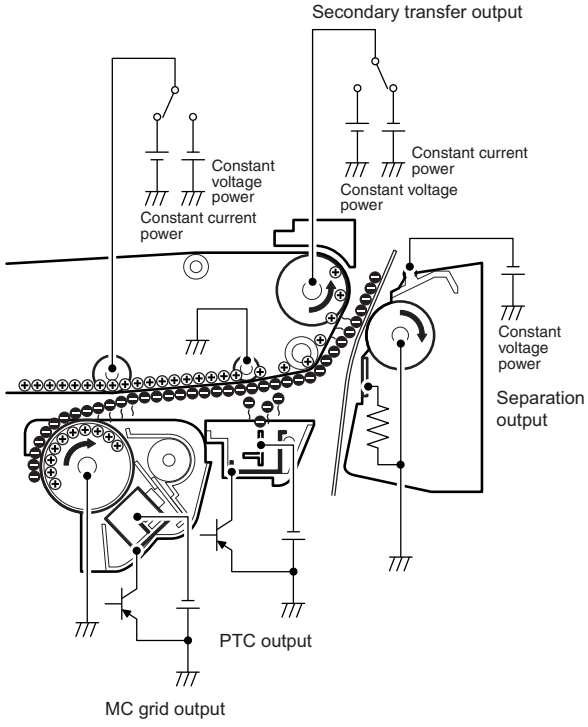
(2) MX-B402SC/B382SC



Signal name	Name	Function and operation
1TC (K)	Primary transfer output	Primary transfer high voltage output
1TUD_BK	Primary transfer belt position sensor (BK)	Detects the primary transfer belt position (BK) in combination with the 1TUD_BK output.
1TUD_CL	Primary transfer belt position sensor (CL)	Detects the primary transfer belt position (CL) in combination with the 1TUD_CL output.
1TURC 1	Primary transfer mode select clutch	Transports the developing motor power to the primary transfer mode select cam to select the primary transfer mode.
PTC	PTC output	PTC high voltage output
2TC	Secondary transfer output	Secondary transfer high voltage output
DVM_K	Developing drive motor	Drives the transfer belt. (Also drives the developing unit.)

No.	Name	Function and operation
1	Primary transfer cleaner blade	Cleans residual toner on the intermediate transfer belt.
2	Transfer belt	Transfers toner images on the OPC drum.
3	Primary transfer roller	Applies the transfer high voltage to transfer toner images on the OPC drum to the transfer belt. Cleans the transfer belt.
4	Transfer belt drive roller	Drives the transfer belt. Applies the transfer high voltage to transfer toner images on the transfer belt to paper.
5	Transfer roller follower roller	Follows the transfer belt.
6	Transfer belt tension roller	Applies a tension to the transfer belt.
7	PTC unit	Reduces positive charges on the primary transfer belt to increase the transfer efficiency.
8	PTC opposing roller	Used to flow the PTC current.
9	Transfer belt cleaning brush	Cleans the back surface of the transfer belt.
10	Cleaning blade	Cleans residual toner on the transfer belt surface.
11	Secondary transfer roller	Transfers toner images on the transfer belt to paper. Connected to GND to flow the secondary transfer high current.
12	Waste toner transport screw	Transports waste toner to the waste toner bottle.
13	Paper separation electrode	Applies a high negative voltage to discharge paper which is positively charged after transfer operation.
14	Mode select knob	Used to set the primary transfer unit to the free state. (Used to turn the mode select cam manually.)

B. Transfer operation



Toner images on the OPC drum are transferred onto the primary transfer belt by applying a high positive voltage to the primary transfer roller.

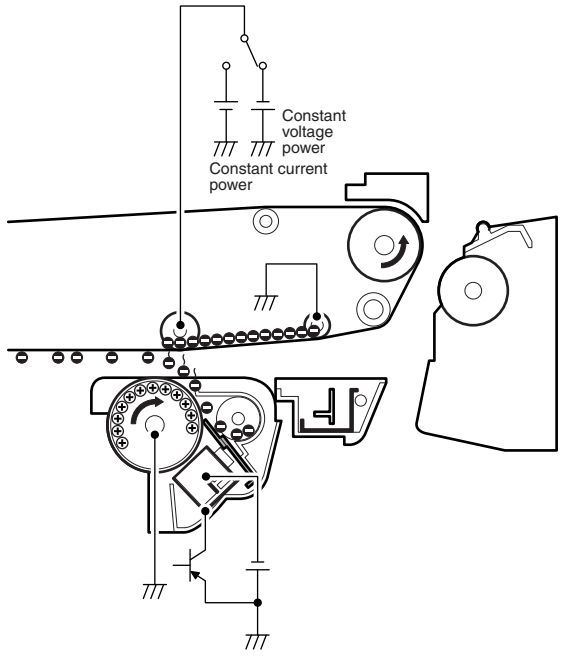
Negative charges are generated by the PTC unit to weaken positive charged on the transfer belt and to reduce the attracting force between the primary transfer belt and toner.

With this operation, the transfer efficiency in secondary transfer is improved.

Then, a high transfer voltage is applied to the transfer belt drive roller to transfer toner imaged on paper. The secondary transfer roller is connected to GND to flow the secondary transfer current.

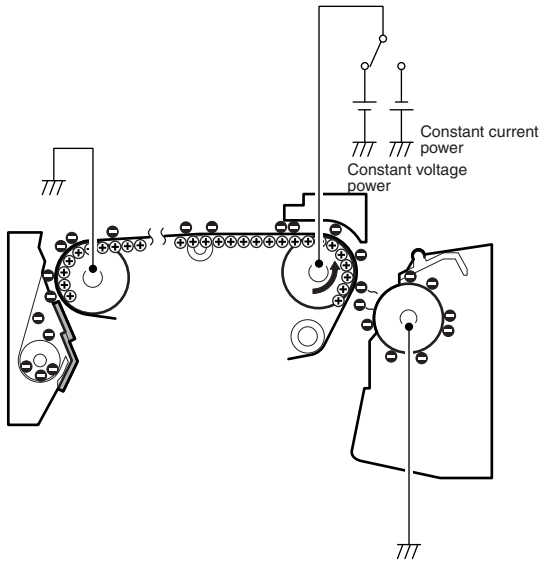
C. Transfer belt cleaning operation

A high negative voltage is applied to the primary transfer roller to attach unnecessary toner of the transfer belt onto the OPC drum, and clean with the OPC drum cleaning blade.



D. Secondary transfer roller cleaning operation

A high positive voltage is applied to the primary transfer belt drive roller to attach unnecessary toner of the primary transfer roller onto the transfer belt. The toner is cleaned with the transfer belt cleaning blade and transported to the waste toner section.



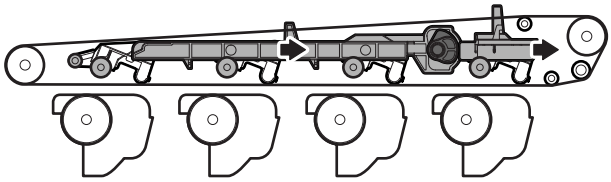
E. Transfer belt mode switch operation

(1) MX-C402SC/C382SC

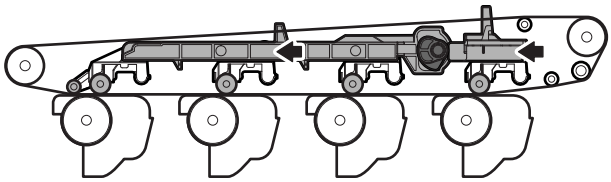
The transfer belt is in the three modes: the free position, the color print mode, and the monochrome print mode.

Free position	The OPC drums are separated from the transfer belt.
Color print mode	All the OPC drums are in close contact with the transfer belt.
Monochrome print mode	The K OPC drum is in close contact with the transfer belt.

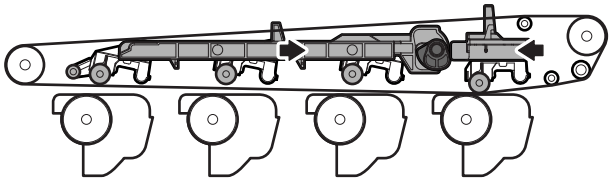
The mode is switched by the developing motor (K) and the mode switch clutches (1TURC 1, 1TURC 2). When the roller separation clutch (1TURC) is turned ON, the transfer cam is rotated to shift the primary transfer link and the primary transfer arm in the arrow direction in conjunction with the cam, separating the roller.



Free position



Color print mode



Monochrome print mode

Relationship between the transfer belt mode (state) and the transfer belt mode sensor

Mode (State)	Sensor state	
	1TUD CL	1TUD K
Color print mode	OFF	ON
Free position	ON	OFF
Monochrome print mode	ON	ON

(2) MX-B402SC/B382SC

There are two modes of the transfer belt; the free position and the monochrome print mode.

Free position	The OPC drum is separated from the transfer belt.
Print mode	The OPC drum is in close contact with the transfer belt.

The mode is switched by the developing motor and the primary transfer mode select clutch (1TURC1). The operations: the primary transfer mode select clutch (1TURC1) is turned ON to rotate the transfer cam clockwise, separating the roller.

Free position

Print mode

F. Primary transfer belt initial operation

(1) MX-C402SC/C382SC

When a new primary transfer unit is installed, the mode sensor (1TUD CL) and the both mode sensors (1TUD K) are ON with the primary transfer unit at the free position. This state is recognized as a new unit.

In the normal mode, with the primary transfer unit at the free position, the mode sensor (1TUD CL) is ON and both mode sensors (1TUD K) are OFF.

The mode sensor (1TUD CL) and both mode sensors (1TUD K) are ON with a new unit because the sensors (1TUD K) are turned ON by the actuator.

Then the primary transfer unit performs the initial operation.

By rotation of the mode switch cam in the transfer unit, the primary transfer unit is shifted to the free position, the color print mode position, the monochrome print mode position, and the free position (home position).

The K position detection actuator of the primary transfer unit is shifted by the mode switch cam, and the initial actuator of the primary transfer unit falls down.

When the primary transfer unit returns to the free position (home position), the mode sensor (1TUD CL) is turned ON and both mode sensors (1TUD K) are turned OFF.

With the above operations, the primary transfer counter is automatically reset.

NOTE: The initial operation means detection of a new unit, occurrence of a trigger for start of use, and resetting of the counter.

Relationship between the primary transfer unit position (mode) and the transfer position sensor

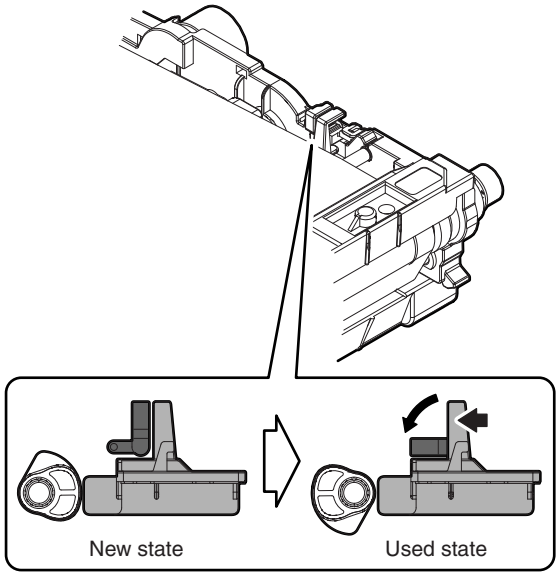
Primary transfer unit position (mode)	Sensor status		
	1TUD CL	1TUD K	
Color print mode: All the OPC drums and the transfer belt are in contact.	OFF	ON	
Free position: The OPC drum is separated from the transfer belt. (Home position)	ON	OFF	
Monochrome print mode: The K OPC drum is in contact with the transfer belt.	ON	ON	
Initial operation (When a new primary transfer unit is installed.)	ON → OFF → ON → ON	ON → ON → ON → OFF	If the primary transfer unit is a new one, immediately after turning ON the power, both sensors are ON. Then the status is changed as shown in the left.

Primary transfer unit position (mode) shift and sensor status in the initial operation (when a new primary transfer unit is installed)

Sensor	Free position (Home position)	Color print mode	Monochrome print mode	Free position (Home position)
1TUD CL	ON	OFF	ON	ON
1TUD K	ON	ON	ON	OFF

Normal primary transfer unit position (mode) shift and sensor status

Sensor	Free position (Home position)	Color print mode	Monochrome print mode	Free position (Home position)
1TUD CL	ON	OFF	ON	ON
1TUD K	OFF	ON	ON	OFF

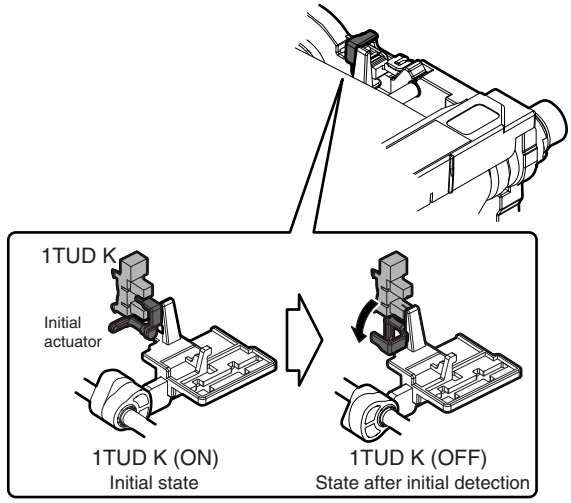


(2) MX-B402SC/B382SC

Normally a new unit is in the free position but the initial actuator is up. When, therefore, a new primary transfer unit is installed, 1TUD K and 1TUD CL are turned ON together.

When, next, the mode switch cam in the transfer unit is rotated, the primary transfer unit is shifted from the free position to the monochrome print mode position.

At that time, the movement of the mode switch cam puts the initial actuator down to turn OFF 1TUDK, and on this timing the machine recognizes that a new unit is installed.



NOTE: The initial operation means detection of a new unit, occurrence of a trigger for start of use, and resetting of the counter.

Relationship between the primary transfer unit position (mode) and the transfer position sensor

Primary transfer unit position (mode)	Relationship between the primary transfer unit position (mode) and the transfer position sensor	
	1TUD CL	1TUD K
Shift from the free position to the print mode	ON ↓ The transfer cam rotates. ON When the transfer cam rotates for about 0.2 sec (0.4 sec for heavy paper) from the free mode, the position is recognized as the print position.	OFF
Shift from the print mode to the free position	ON ↓ The transfer cam rotates. OFF ↓ The transfer cam rotates. ON ↓ The transfer cam rotates. ON When 1TUD_CL turns ON and rotates for about 0.1 sec (about 0.2 sec for heavy paper), the position is recognized as the free mode. (*1)	OFF
Initial operation (when a new primary transfer unit is installed)	ON	Initial detection is made when the state shifts from ON to OFF.

*1: During transition process from the print mode to the free position, 1TUD_CL turns OFF once, but it turns ON again when transition to the free mode is completed.

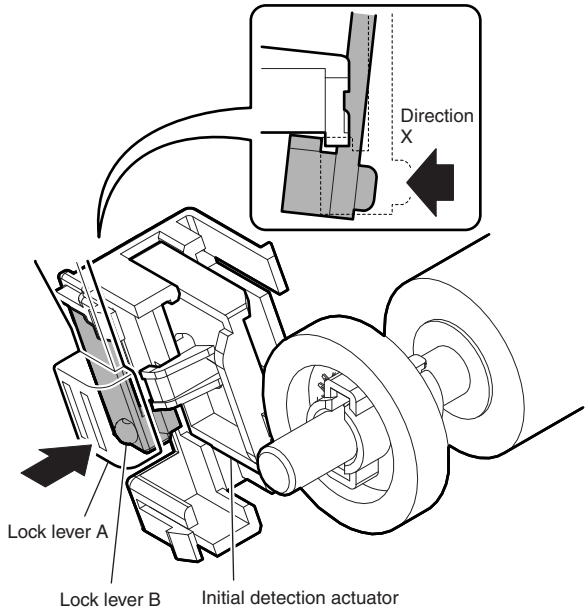
That is, 1TUD_CL itself does not indicate the primary transfer unit position (mode) but it only serves as the base point to control the rotating time of the transfer cam.

G. Secondary transfer belt initial operation

In a new secondary transfer unit, the initial detection electrode is closed by the initial detection actuator. (On state)

When a new secondary transfer unit is installed to the machine, the initial detection actuator lock release lever A is in contact with the machine frame rib.

Consequently, the initial detection actuator lock lever B is pushed in the arrow direction X to release the lock of the initial detection actuator.



When the secondary transfer roller rotates, the secondary transfer unit initial detection actuator is shifted in the arrow direction Y by the drive gear.

Consequently, the initial detection electrode is opened.

When the initial electrode section is shifted from the closed state to the open state, it is recognized as the initial operation.

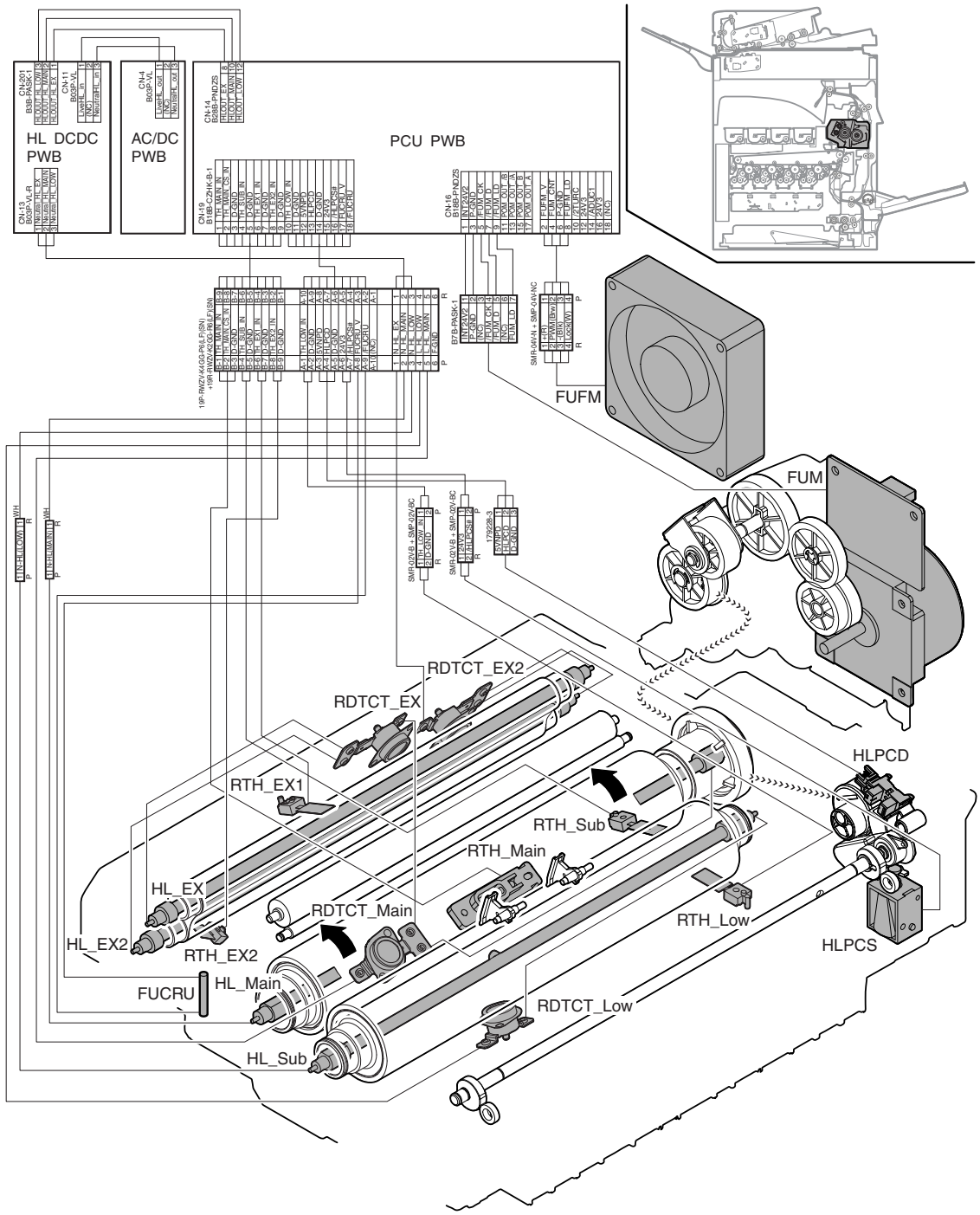
The primary transfer counter is automatically reset.

NOTE: The initial operation means detection of a new unit, occurrence of a trigger for start of use, and resetting of the counter.

11. Fusing section

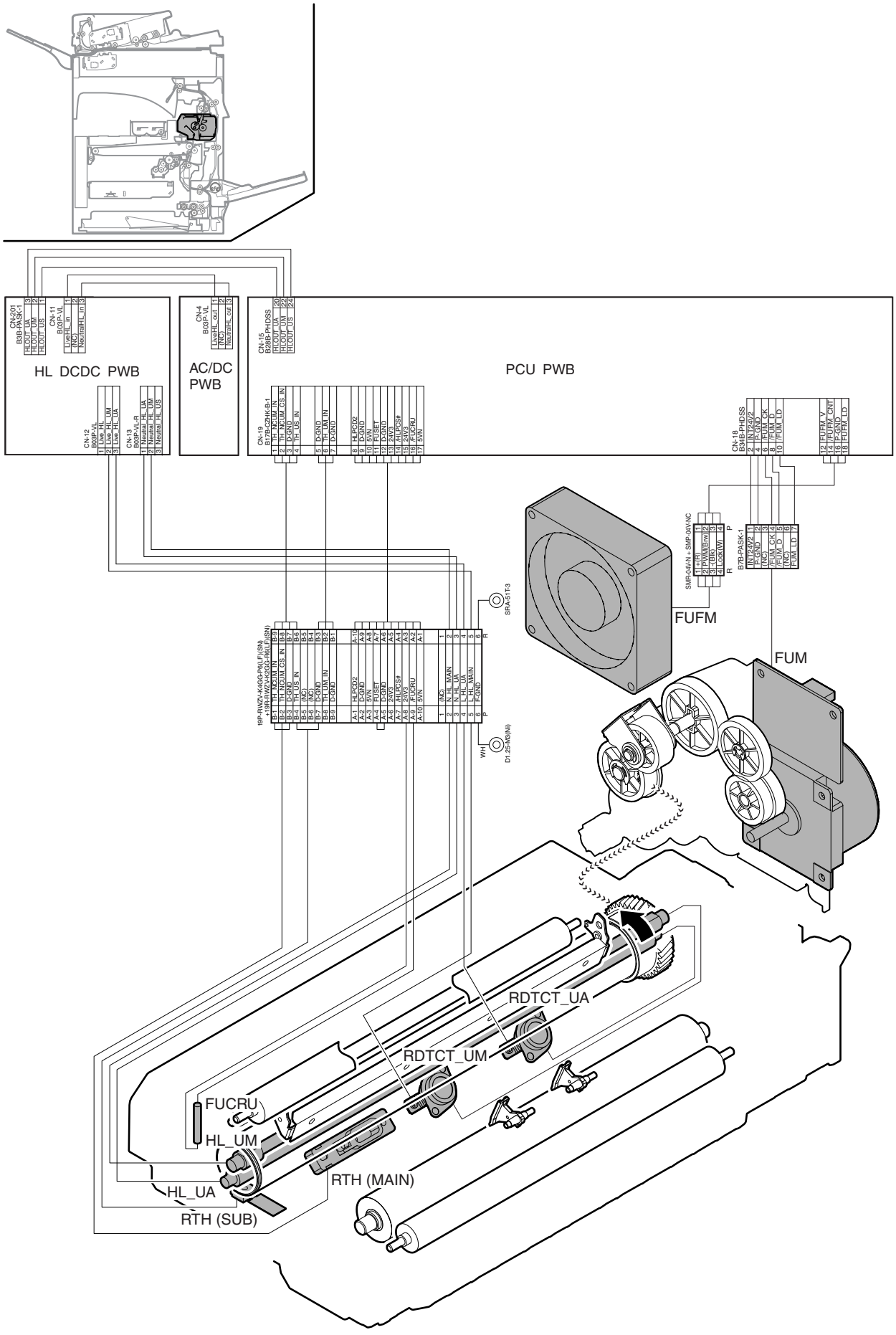
A. Electrical and mechanism relation diagram

(1) MX-C402SC/C382SC



Signal name	Name	Function and operation
FUCRU	Fusing unit initial detection	Detects the initial state of the fusing unit.
FUM	Fusing drive motor	Drives the fusing unit.
FUFM	Fusing cooling fan motor	Cools the fusing unit.
HLPCD	Fusing roller pressure release detector	Detects separation of the upper and the lower heat rollers.
HLPCS	Fusing pressure release solenoid	Controls the pressure applied to the upper and the lower heat rollers in the fusing section.
RDTCT_EX	External thermostat	Prevents against overheating of the fusing roller.
RDTCT_EX2	External thermostat 2	Prevents against overheating of the fusing roller.
RDTCT_Low	Lower thermostat	Prevents against overheating of the fusing roller.
RDTCT_Main	Upper thermostat	Prevents against overheating of the fusing roller.
HL_EX	External heater lamp	Heats the upper heat roller through an external heat roller.
HL_EX2	External heater lamp 2	Heats the upper heat roller through an external heat roller.
HL_Main	Upper heater lamp	Heats the upper heat roller. (Main)
HL_Sub	Lower heater lamp	Heats the lower heat roller. (Main)

(2) MX-B402SC/B382SC



Signal name	Name	Function and operation
FUCRU	Fusing unit initial detection	Detects the initial state of the fusing unit.
FUM	Fusing drive motor	Drives the fusing unit.
FUFM	Fusing cooling fan motor	Cools the fusing unit.
RDTCT_UA	Upper thermostat	Prevents against overheating of the fusing roller.
RDTCT_UM	Upper thermostat	Prevents against overheating of the fusing roller.
HL_UM	Upper heater lamp	Heats the upper heat roller. (Main)
HL_UA	Upper heater lamp	Heats the upper heat roller (ALL)
RTH_Main	Upper heat roller non-contact thermistor	Detects the temperature of the upper heat roller.
RTH_Sub	Upper heat roller contact thermistor	

B. 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 (stepping motor) is performed according to the control signal sent from the PCU.

C. 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 DCDC 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.

D. Fusing operation

Color toner (Y, M, C, K) on paper is subject to heat and pressure to be fused on paper.

At that time, color toner of Y, M, C, and K are mixed to reproduce colors approximate to the document image colors.

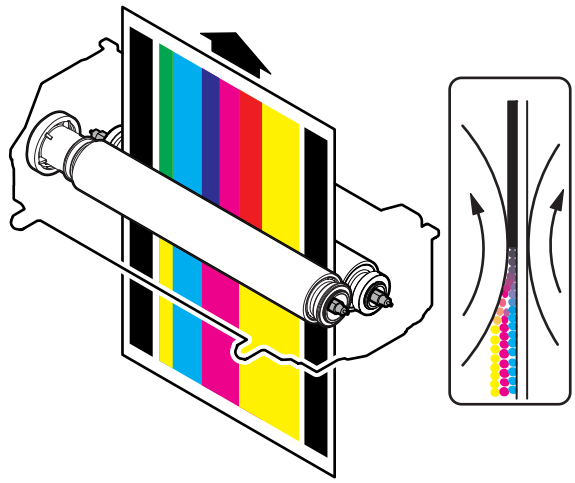
The heater lamps are provided in the lower and the upper heat roller to heat paper from the upper and the lower sides.

This is because paper must be heated both from the upper side and from the lower side together in order to melt and fuse toner in the four layers on the paper.

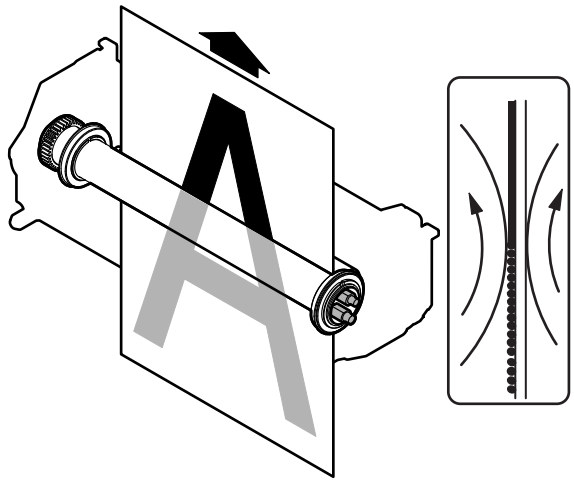
The upper and the lower heat rollers of silicon rubber are employed.

This is because of the following reasons.

- **MX-C402SC/C382SC**



- **MX-B402SC/B382SC**



1) To increase the nip quantity. To increase the heating capacity for paper.
2) By pressing the flexible roller, multi-layer toner can be fused without deformation.
3) An even pressure can be applied to rough surface of toner layers (multi-layer structure).

E. Automatic pressure release system (MX-C402SC/C382SC)

The upper and the lower heat rollers are normally pressed. When, however, one of the following conditions is satisfied, they are released from the pressure.

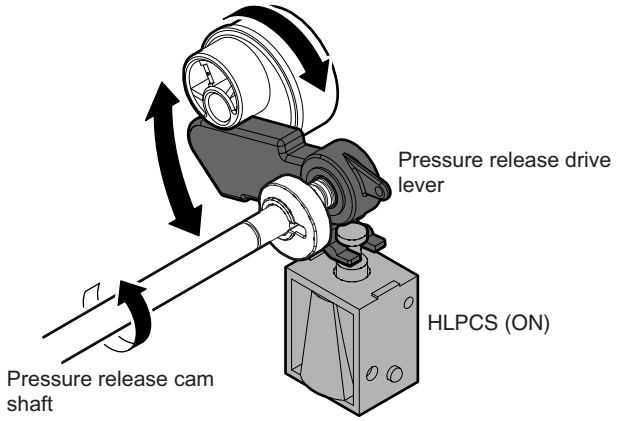
- When the machine shifts to the pre-heating mode.
- When the machine shifts to the auto power shut off mode.
- When the power switch of the operation panel is turned OFF.
- When the machine has been left in the ready state for 20 minutes.
- When the envelope mode is used.

(1) Pressure release operation

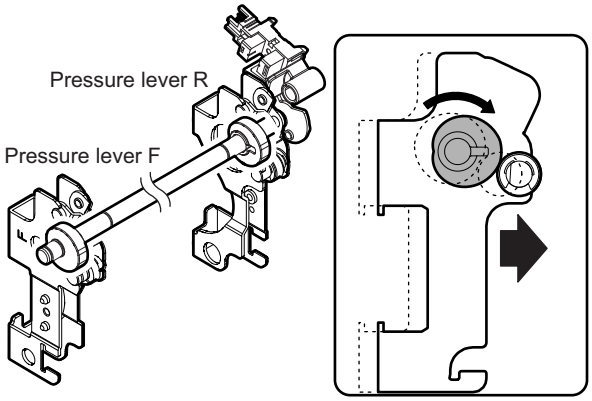
When the machine is in the conditions for operating the pressure release system, the fusing pressure release solenoid (HLPCS) is turned ON and the pressure release drive lever is in contact with the eccentric cam section of the pressure release drive gear.

Under this state, when the upper heat roller gear is rotated, the pressure release drive gear is also rotated and the pressure release drive lever is reciprocated in the arrow direction by the eccentric cam.

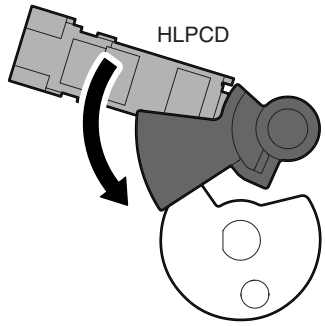
The pressure release drive lever is provided with the one-way clutch in it, and the pressure release cam shaft is rotated by reciprocating operations of the pressure release drive lever.



The pressure release cam shaft is provided with the pressure release cams on two positions (the front side and the rear side), and these cams press down the pressure lever F/R to release the pressure.



The pressure release camshaft also drives the pressure release control lever. As the pressure release operation goes on, the fusing pressure release control lever is driven in the arrow direction and the fusing roller pressure release detector (HLPCD) is brought into the transmission state.



In 10ms from when the fusing roller pressure release detector (HLPCD) is brought into the transmission state, the fusing pressure release solenoid is turned OFF and the pressure release operation is completed.

(2) Pressing operation

When the end user performs any operation or when the machine receives a job signal, the same operation as the pressure release operation is performed to rotate the pressure release cam shaft.

By rotation of the pressure release cam shaft, the pressure release cam do not press down the pressure lever F/R, applying a pressure.

Similarly to the pressure release operation, by rotation of the pressure release cam shaft, the pressure release control lever is also driven to bring the fusing roller pressure release detector (HLPCD) into the non-transmission state.

In 10ms from when the fusing roller pressure detector (HLPCD) is brought into the non-transmission state, the fusing pressure release solenoid is turned OFF to complete the pressure release operation.

(3) Note

When turning OFF the main power switch of the machine, be sure to turn OFF the power switch of the operation panel and leave the machine for 20 sec (without opening the front cabinet and the right door during this period). After that, turn OFF the main power switch.

If the main power switch is turned OFF without leaving the machine for 20 sec, the power is turned OFF before completion of the pressure release operation. If the machine is left for a long time under this state, the upper and the lower heat rollers will be deformed.

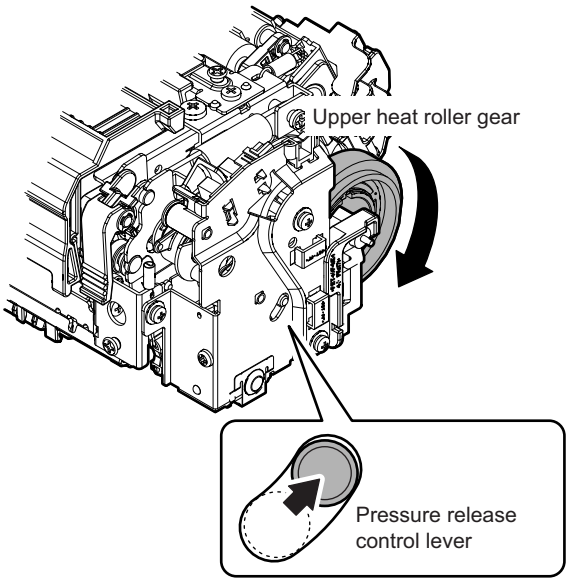
When, in addition, the fusing roller is installed again after removing it, be sure to install it under the pressure release state.

When, however, the machine power is turned ON immediately after installation of the fusing unit, there is no problem in installation under the pressed state.

Remove the fusing unit. If the unit is stored for a long period or is transported, be sure to set it to the pressure release state.

By executing the following procedures, the fusing unit under pressing state can be brought into the pressure release state even though there is no machine available.

- Shift the pressure release control lever in the arrow direction, and keep it under that state.
- Turn the upper heat roller gear in the arrow direction.



F. Fusing temperature control

The temperature sensors are provided at the center and the edge section of the upper heat roller, at the edge section of the lower heat roller, and at the center and the edge section of the external heating roller.

The heat roller temperature is detected by each temperature sensor to control the heater lamp to maintain the temperature at the specified level.

In addition, the fusing temperature is switched according to the kind of paper.

(For details, refer to SIM43-01 and SIM43-02.)

G. Fusing unit initial operation

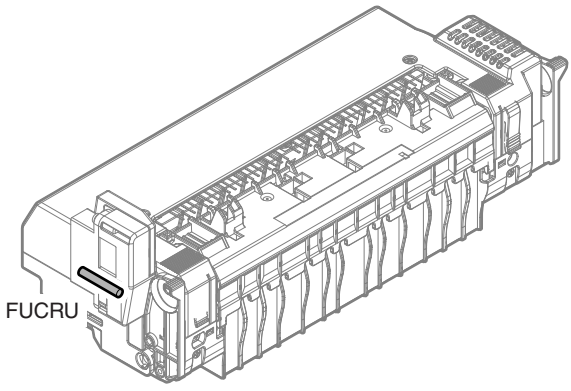
When the fusing unit is installed, the fuse in the fusing unit is checked for blown or not.

If the state that the fuse is not blown is detected, it is judged as a new fusing unit, and the fuse is blown off.

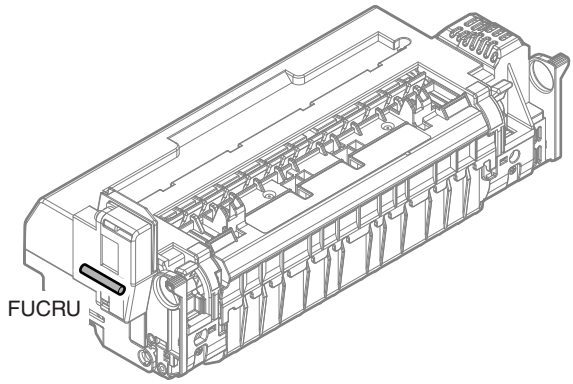
Simultaneously with this operation, the fusing unit counter is automatically reset.

NOTE: The initial operation means detection of a new unit, occurrence of a trigger for start of use, and resetting of the counter.

- **MX-C402SC/C382SC**



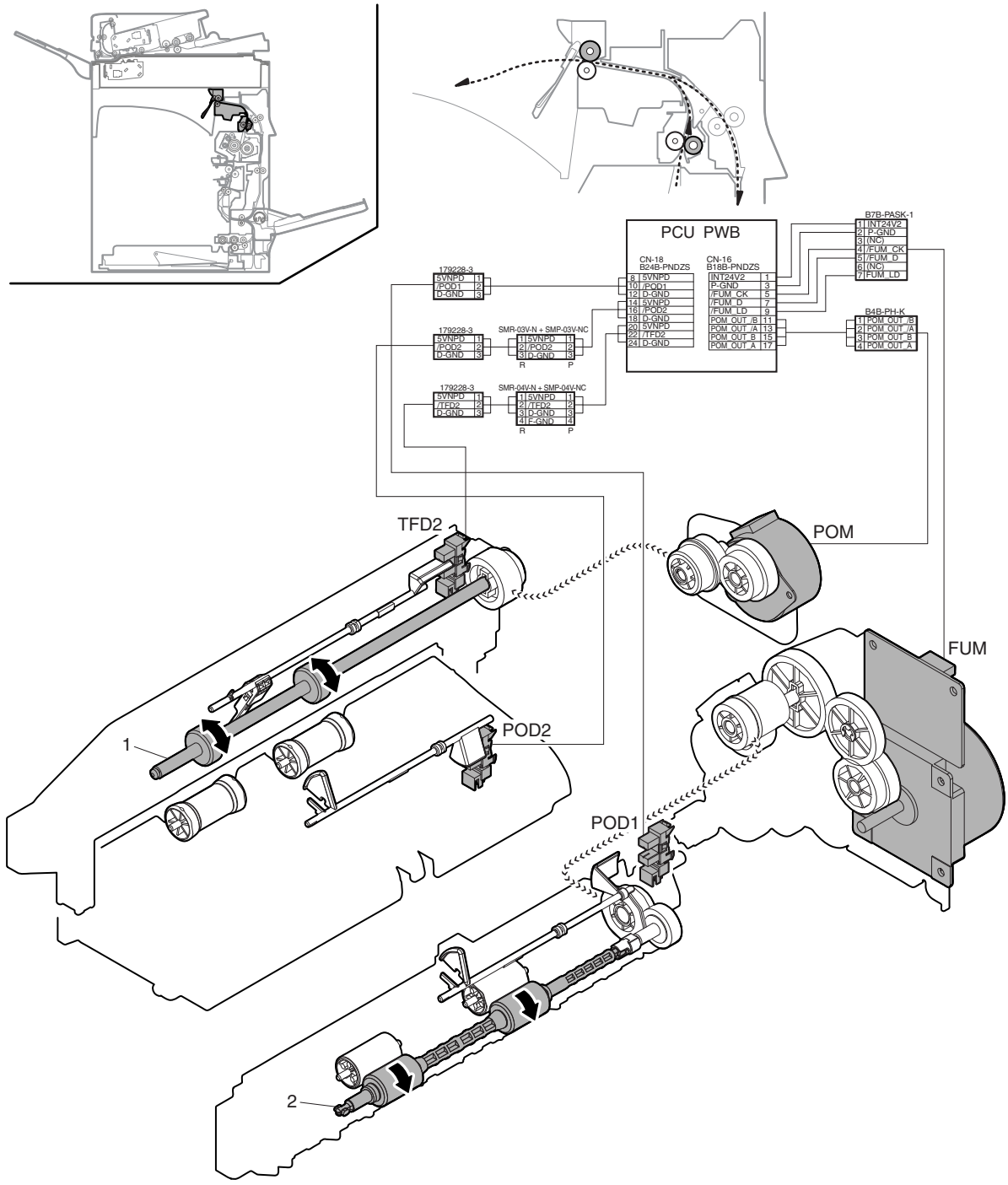
- **MX-B402SC/B382SC**



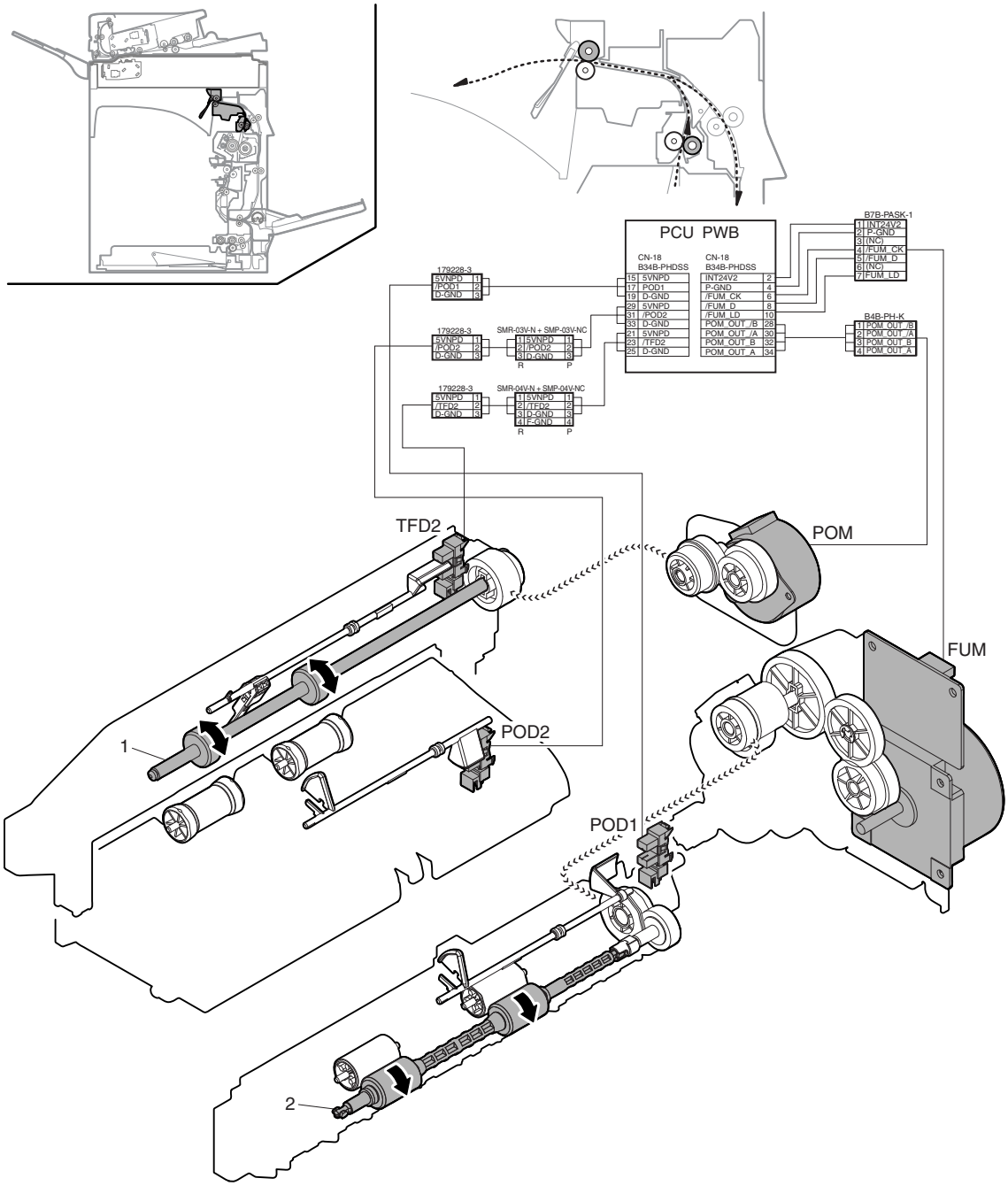
12. Paper exit section

A. Electrical and mechanism relation diagram

(1) MX-C402SC/C382SC



(2) MX-B402SC/B382SC



Signal name	Name	Function and operation
POM	Paper exit drive motor	Drives the paper transport roller in the paper exit section.
FUM	Fusing drive motor	Drives the paper transport roller in the paper exit section.
POD1	Paper exit detector 1	Detects paper pass in the paper exit section. Detects a paper jam.
POD2	Paper exit detector 2	Detects paper pass in the paper exit section. Detects a paper jam.
TFD2	Paper exit tray full detector	Detects paper full in the paper exit tray.

No.	Name	Function and operation
1	Paper holding arm	Holds paper in the paper exit tray.
2	Paper exit roller	Discharges paper to the paper exit tray. Switches back paper to transport it to the switchback section.
3	Paper transport roller 3	Transports paper to the paper exit roller.

B. Paper exit operation

Paper transported from the fusing section is transported to the paper exit roller by the paper transport roller 3 which is driven by the fusing drive motor (FUM).

Then paper is transported to the paper exit tray or the inner finisher by the paper exit roller which is driven by the paper exit drive motor (POM).

C. Switchback operation

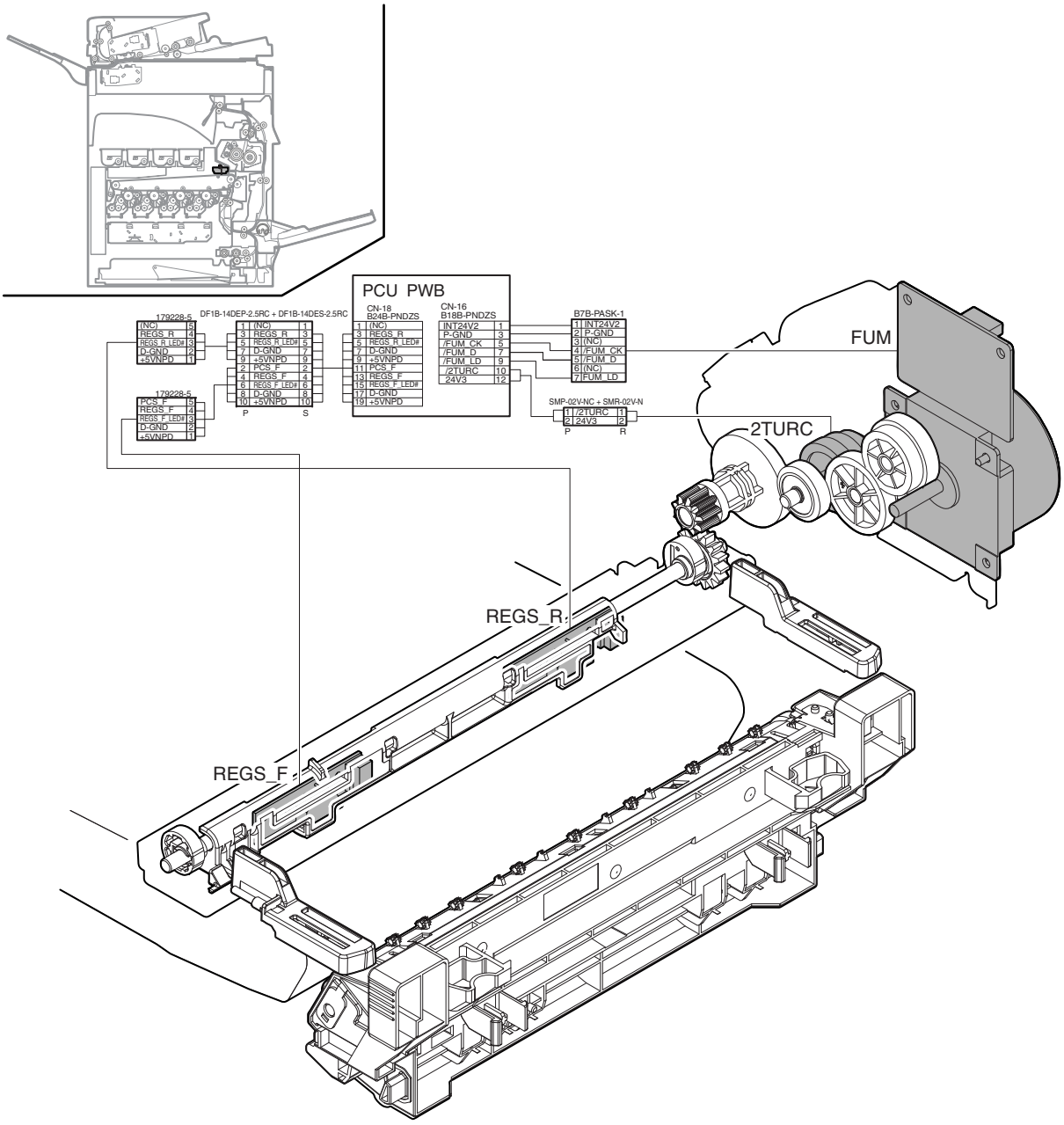
In the duplex print mode, the paper exit drive motor (POM) rotates in the switchback direction after passing a certain time (depending on the paper size) from when the POD2 detects the lead edge of the paper transported from the fusing section.

Consequently, the paper is transported to the switchback section.

13. Process control sensor, image registration sensor section

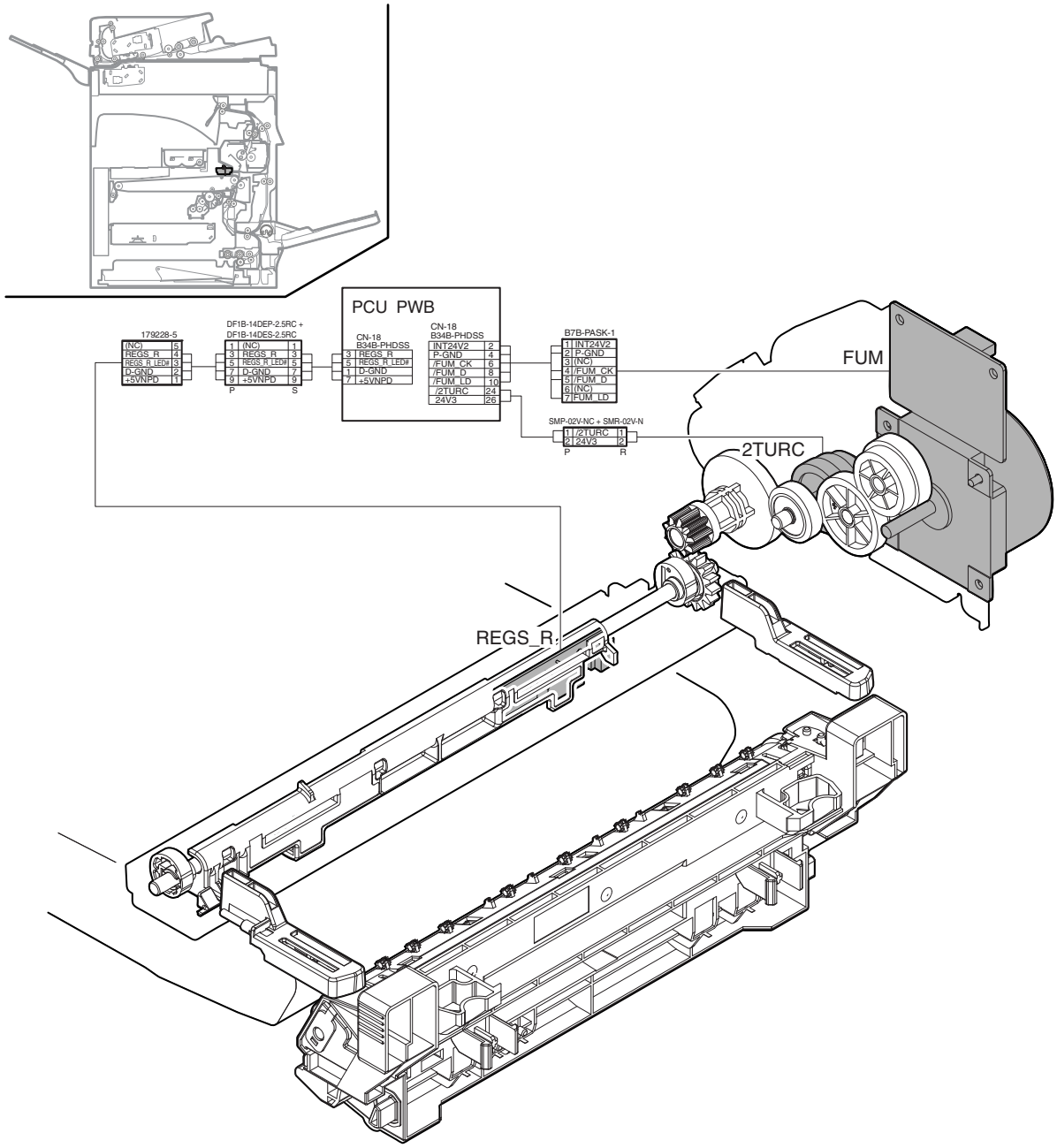
A. Electrical and mechanism relation diagram

(1) MX-C402SC/C382SC



Signal name	Name	Function and operation
2TURC	Sensor reference reflection plate drive clutch	Opens/closes the sensor shutter. Switches the secondary transfer roller transfer position and the non-transfer position.
FUM	Fusing drive motor	Opens/closes the sensor reference reflection plate.
REGS_F	Color image density sensor/ Image registration sensor F	Detects registration shift on the machine front (F) side, and detects the color toner patch density.
REGS_R	Black image density sensor/ Image registration sensor R	Detects registration shift on the machine rear (rear) side, and detects the black toner patch density. Detects open/close of the reference reflection plate, the secondary transfer roller transfer position, and the non-transfer position.

(2) MX-B402SC/B382SC



Signal name	Name	Function and operation
2TURC	Sensor reference reflection plate drive clutch	Opens/closes the sensor shutter. Switches the secondary transfer roller transfer position and the non-transfer position.
FUM	Fusing drive motor	Opens/closes the sensor reference reflection plate.
REGS_R	Image density sensor/ Image registration sensor R	Detects registration shift on the machine rear (rear) side, and detects the toner patch density. Detects open/close of the reference reflection plate, the secondary transfer roller transfer position, and the non-transfer position.

B. Image density detection and registration detection

Image density and image registration are detected by the sensors provided on the front frame side and the rear frame side.

(1) Functions and operations of the color image density sensor and the image registration sensor F (REGS F) provided on the front frame side

With one sensor, the color toner patch density is detected in the process control, and image registration shift on the front frame side is detected in the image registration adjustment.

The reference reflection plate is provided on the sensor. Before the process control operation, the shutter plate is closed and the sensor sensitivity is adjusted by using the reference reflection plate.

Open/close operation of the reference reflection plate is controlled by the fusing drive motor (FUM) and the sensor reference reflection plate drive clutch (2TURC).

This control operation is made in synchronization with the switching operation of the secondary transfer roller transfer position and the non-transfer position.

The non-transfer position is the home position of the secondary transfer roller. It is switched to the transfer position at every printing operation.

(2) Functions and operations of the black image density sensor and the image registration sensor R (REGSR) provided on the rear frame side

With one sensor, the black toner patch density is detected in the process control, and image registration shift on the rear frame side is detected in the image registration adjustment.

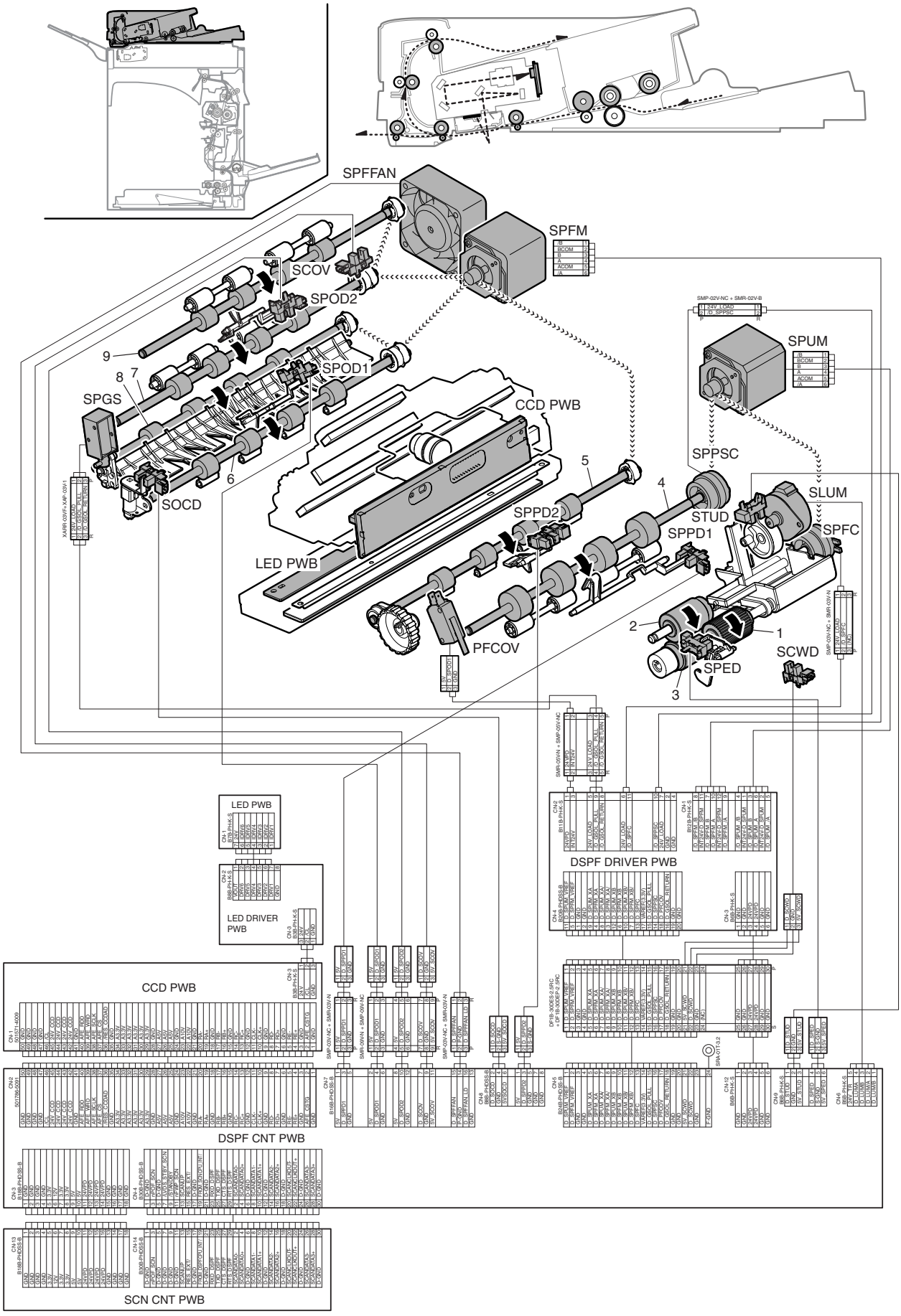
The sensor detects open/close of the reference reflection plate, the secondary transfer roller transfer position, and the non-transfer position.

When the sensor detects the reference reflection plate, it is judged that the reference reflection plate is closed and that the secondary transfer roller is at the transfer position.

When the sensor detects the transfer belt surface, it is judged that the reference reflection plate is opened and that the secondary transfer roller is at the non-transfer position.

14. Automatic document feeder

A. Electrical and mechanism relation diagram



Signal name	Name [Type]	Function/Operation
PFCOV	Document paper feed section cover open detection	Detects the document paper feed section cover open.
SCOV	Upper cover open/close detection	Detects the upper cover open/close.
SCWD	Card width detection	Detects the card width.
SOCD	DSPF open detection	Detects open/close of the DSPF cover.
SPED	Document set detection	Detects document set.
SPFC	Paper feed clutch	Controls the paper feed clutch.
SPFFAN	SPF fan	Cools the DSPF unit.
SPFM	Transport motor	Controls the transport motor.
SPGS (D)	DSPF document exit gate solenoid	Switches the document exit destination to the left paper exit tray.
SPGS (U)	DSPF document exit gate solenoid	Switches the document exit destination to the DSPF upper paper exit tray.
SPOD1	Paper exit detection 1	Detects paper exit.
SPOD2	Paper exit detection 2	Detects paper exit.
SPPD1	Paper pass detection	Detects paper pas.
SPPD2	Paper pass detection	Detects paper pas.
SPPSC	PS clutch	Controls the PS clutch.
SPUM	Paper feed motor	Controls the paper feed motor.
STUD	Tray upper limit detection	Detects tray upper limit.

No.	Name	Function/Operation
1	Pickup roller (DSPF)	Picks up a document and feeds it to the paper feed roller.
2	Paper feed roller (DSPF)	Performs the paper feed operation of documents.
3	Separation roller (DSPF)	Separate a document to prevent against double-feed.
4	Registration roller (Drive) (DSPF)	Performs registration of document transport.
5	Transport roller 1 (Drive) (DSPF)	Applied a pressure to document and the transport roller, and provides the transport power of the transport roller to document.
6	Transport roller 2 (Drive) (DSPF)	Transports document to the transport 3 roller.
7	Transport roller 3 (Drive) (DSPF)	Transports document from the transport roller 2 to the paper exit roller.
8	Paper exit roller (Drive) (DSPF)	Output the document. (left side exit tray)
9	Paper exit roller 2 (Drive)	Output the document. (Upper exit tray)

B. Operational descriptions

(Initializing operations when getting started or during the ready state)

The pick lift motor is rotated clockwise at the specified speed. When the pick lift motor is rotated by the specified number of rotations after detection of "Transmission → Shielding" by the pickup HP sensor, it is stopped to shift the pick roller to the lifting position.

(1) Determination of the descending and paper exit positions of the pickup roller

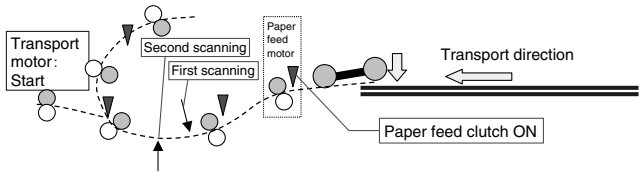
The pickup roller lift motor (SLUM) is rotated and the home position is detected by the sensor. Then the motor is further rotated to stop the pickup roller at the descending position.

For straight paper exit, suction of the paper exit gate solenoid (SPGS) is performed for the specified time and the gate is shifted to the straight side.

(2) Paper feed start

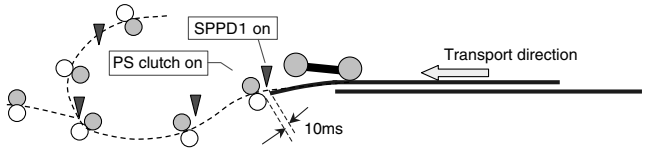
Simultaneously with rotations of the pick lift motor in (1), the paper feed motor (SPUM) is started at the specified paper feed speed and the paper feed clutch (SPUG) is turned ON as well, starting paper feed of the first sheet.

Also the transport motor is started simultaneously at the specified scanning speed.



(3) PS clutch ON

When the specified time has passed after turning ON the paper entry detection 1 sensor (SPPD1), the PS clutch (SPPSC) turns ON.



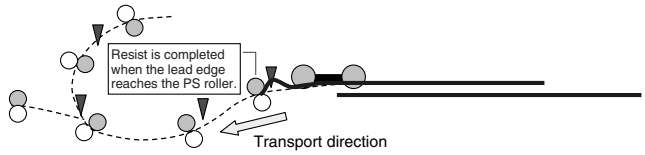
a. Lift motor (SLUM) lifting (Limited to the document width 77mm or less)

Simultaneously when the paper entry detection 1 sensor (SPPD1) is turned ON, the lift motor is rotated. After "Transmission → Shielding" is detected by the HP sensor, the motor is rotated further by the number of the specified pulses.

It is lifted to the standby position.

(4) Registration operation

Clutch response time: Registration is completed in the specified time.

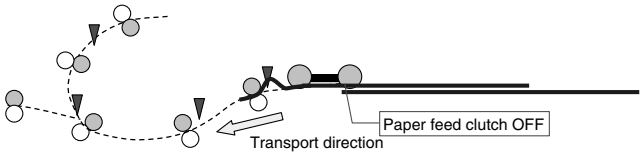


(5) Paper feed clutch (SPUC) stop timing

The PS clutch (SPPSC) is turned ON. When the paper feed roller feeds paper by the specified distance, the paper feed clutch (SPUC) is turned OFF. (When the document width is 78mm or above)

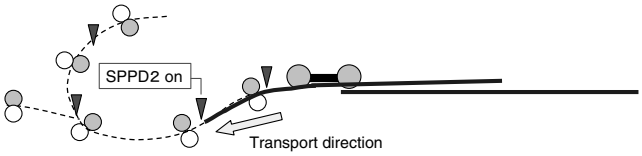
When paper is fed by the specified distance after turning ON the SPPD1, the paper feed clutch (SPUC) is turned OFF. (When the document width is 77m or less)

(The paper feed roller is stopped, and paper is fed by the paper feed rear roller.)



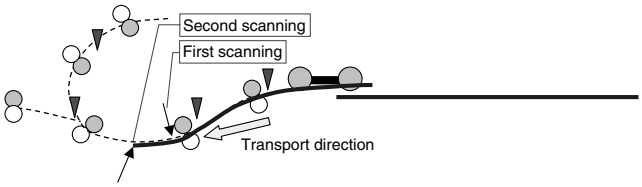
(6) Paper feed roller speed reduction timing

When the paper entry detection 2 sensor (SPPD2) is turned ON, the speed of the paper feed motor (SPUM) is reduced from the paper feed speed to the scanning speed.



(7) Scanning start

At the timing from turning ON the paper entry detection 2 sensor (SPPD2), when paper is transported from the scanning front roller to the first (second) scanning position, scanning is started.

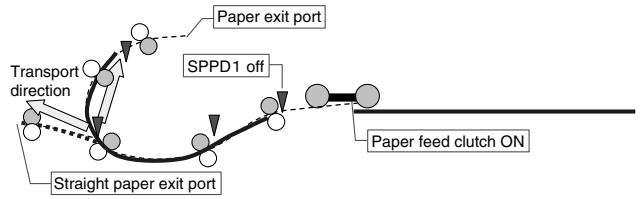


(8) Next paper feed start timing, paper feed motor (SPUM) accelerating timing

When the paper entry detection 1 sensor (SPPD1) is turned OFF, the paper feed motor (SPUM) is accelerated to the paper feed speed.

At the same time, the paper feed clutch (SPUC) is turned ON to start the next paper feed. (When the document is A4 long or above)

The next paper feed is started at the timing conforming to the A4 length interval. (When the document is less than A4 long.)

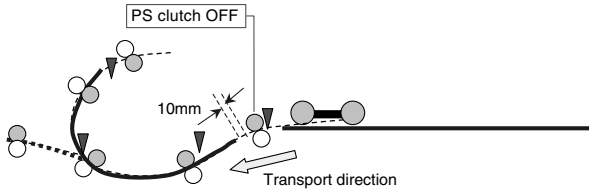


a. Lift motor (SLUM) descending timing (When the document width is 77mm or less)

When the paper entry detection 1 sensor (SPPD1) is turned OFF, the lift motor (SPUM) is rotated by the specified number of pulses to shift the pick roller to the descending position.

(9) PS clutch OFF timing

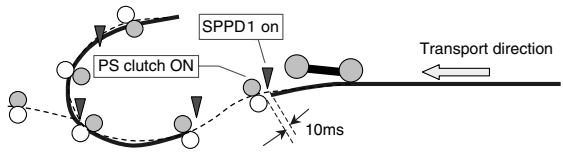
When the paper entry detection 1 sensor (SPPD1) is turned OFF, it triggers the following. When the document rear edge reaches the position 10mm downstream of the paper feed rear roller, the PS clutch (SPPSC) is turned OFF.



(10) Second sheet, PS clutch (SPPSC) ON

At the same timing with the first sheet

When the specified time has passed from turning ON the paper entry detection 1 sensor (SPPD1), the PS clutch (SPPSC) is turned ON.



a. Second sheet, Lift motor lifting (Limited to the document width 77mm or less)

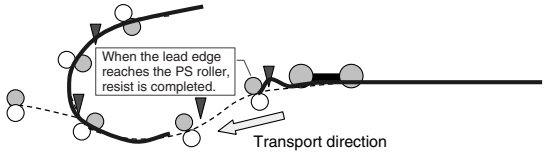
At the same timing with the first sheet

At the same time when the paper entry detection 1 sensor (SPPD1) is turned ON, the lift motor (SLUM) is rotated. After detecting "Transmission → Shielding", it is rotated further by the specified number of pulses.

It is lifted to the standby position.

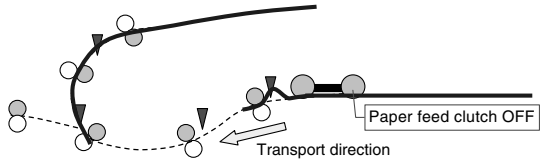
(11) Second sheet, registration operation

At the same timing with the first sheet



(12) Second sheet, Paper feed clutch (SPUC) stop timing

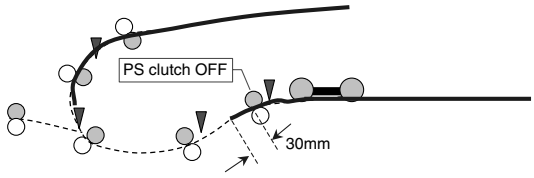
At the same timing with the first sheet



(13) Paper feed temporary stop position

When the paper lead edge on the upstream side reaches the position 30mm from the paper feed rear roller, if it is required to be stopped due to the controller conditions, the paper transport on the upstream side is stopped and the adjustment between sheets of paper is performed.

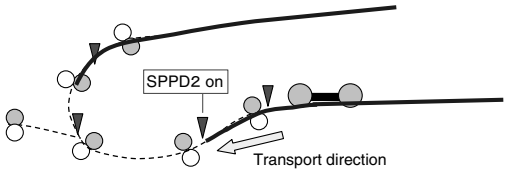
By permission from the controller, the PS clutch (SPPSC) is turned ON to resume transport.



(14) Second sheet, Paper feed motor decelerating timing

At the same timing with the first sheet

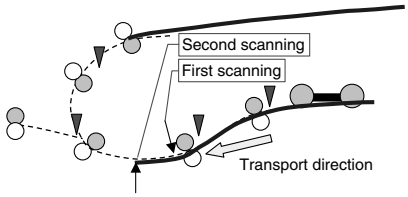
When the paper entry detection 2 sensor (SPPD2) is turned ON, the paper feed motor (SPUM) is decelerated from the paper feed speed to the scanning speed.



(15) Second sheet, scanning start

At the same timing with the first sheet

After turning ON the paper entry detection 2 sensor (SPPD2), when the paper is transported to the scanning front roller - the first (second) scanning position, scanning is started.

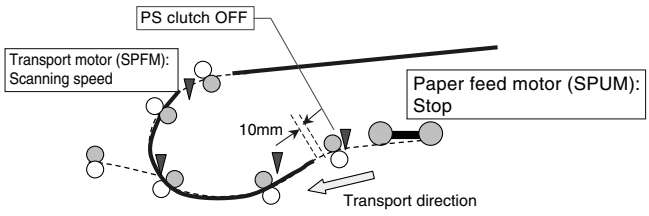


(16) Second sheet, PS clutch (SPPSC) OFF timing

At the same timing with the first sheet

When the paper entry detection 1 sensor (SPPD1) is turned OFF, it triggers the following. When the document rear edge reaches the position 10mm downstream of the paper feed rear roller, the PS clutch (SPPSC) is turned OFF.

Also at that time, the paper feed motor (SPUM) itself is stopped.



a. Second sheet, Lift motor descending timing (when the document width 77mm or less)

At the same timing with the first sheet

When the paper entry detection 1 sensor (SPPD1) is turned OFF, the lift motor is rotated by the specified number of pulses to shift the pick roller to the descending position.

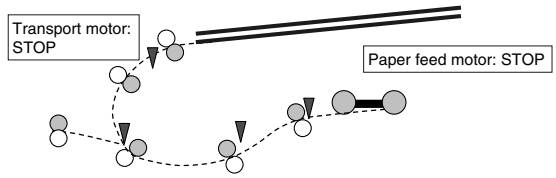
If, however, there is no document after confirming the document empty sensor (SPED), the operation (18) is performed.

(17) Paper exit completion (Second sheet)

When the document rear edge is transported by the specified time after passing the paper exit roller, the transport motor (SPFM) is stopped.

(Postcards and card-size paper are discharged to the straight paper exit port. After passing the straight paper exit roller, when it is transported by the specified distance, the motors (SPFM, SPUM) are stopped.)

(As the requirement for stop, paper empty on the document tray must be detected by the paper empty sensor.)



(18) Pickup roller lifting, paper exit gate returning at completion of a job

* Regardless of the state of the pickup HP sensor (transmission or shielding)

The pick lift motor (SLUM) is rotated clockwise at the specified speed. When the pick lift motor (SLUM) is rotated at the specified speed after detection of "Transmission → Shielding" by the pickup HP sensor, the motor is stopped to shift the pick roller to the lifting position.

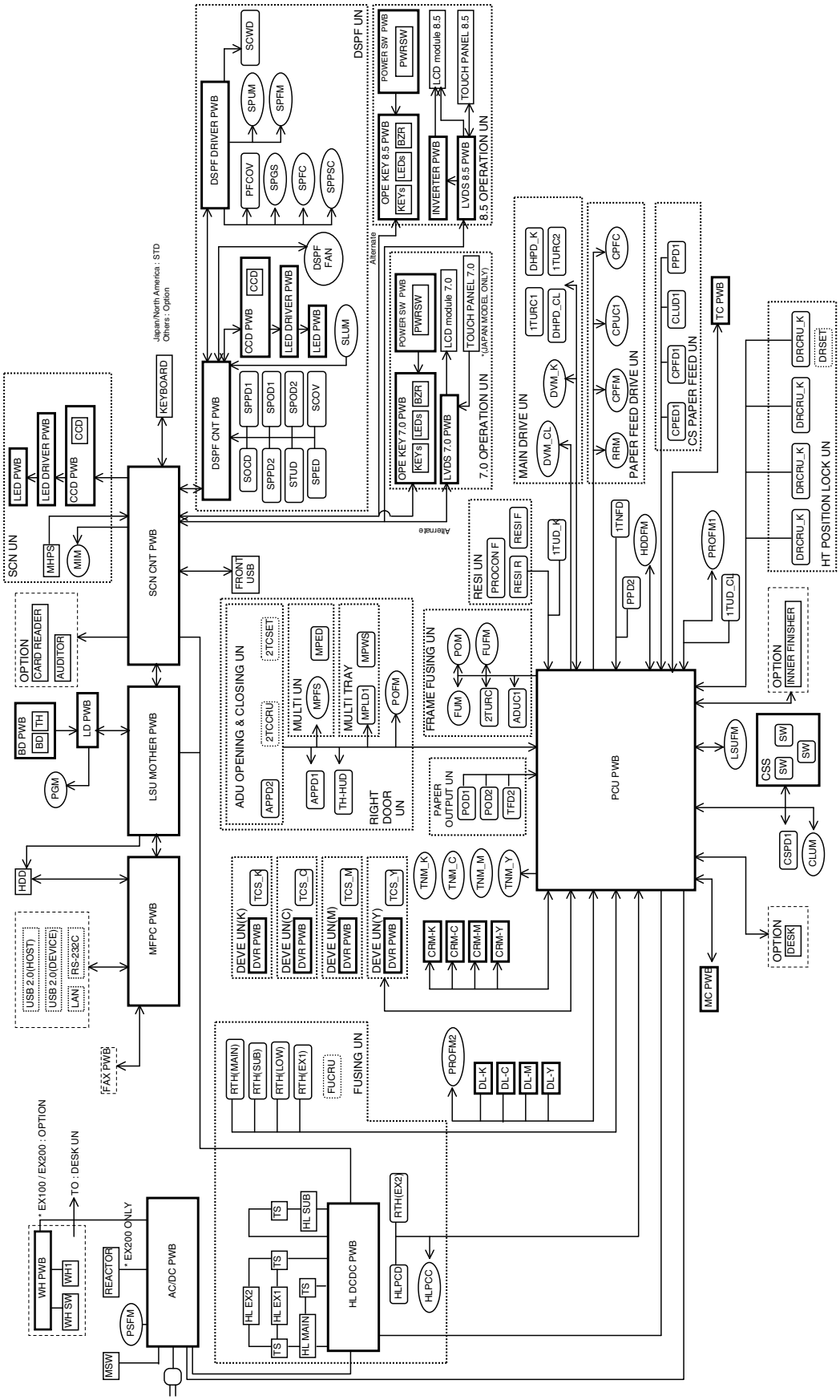
For straight paper exit, the paper exit gate solenoid (SPGS) is returned to return the gate to the U turn pass side.

15. Electrical section

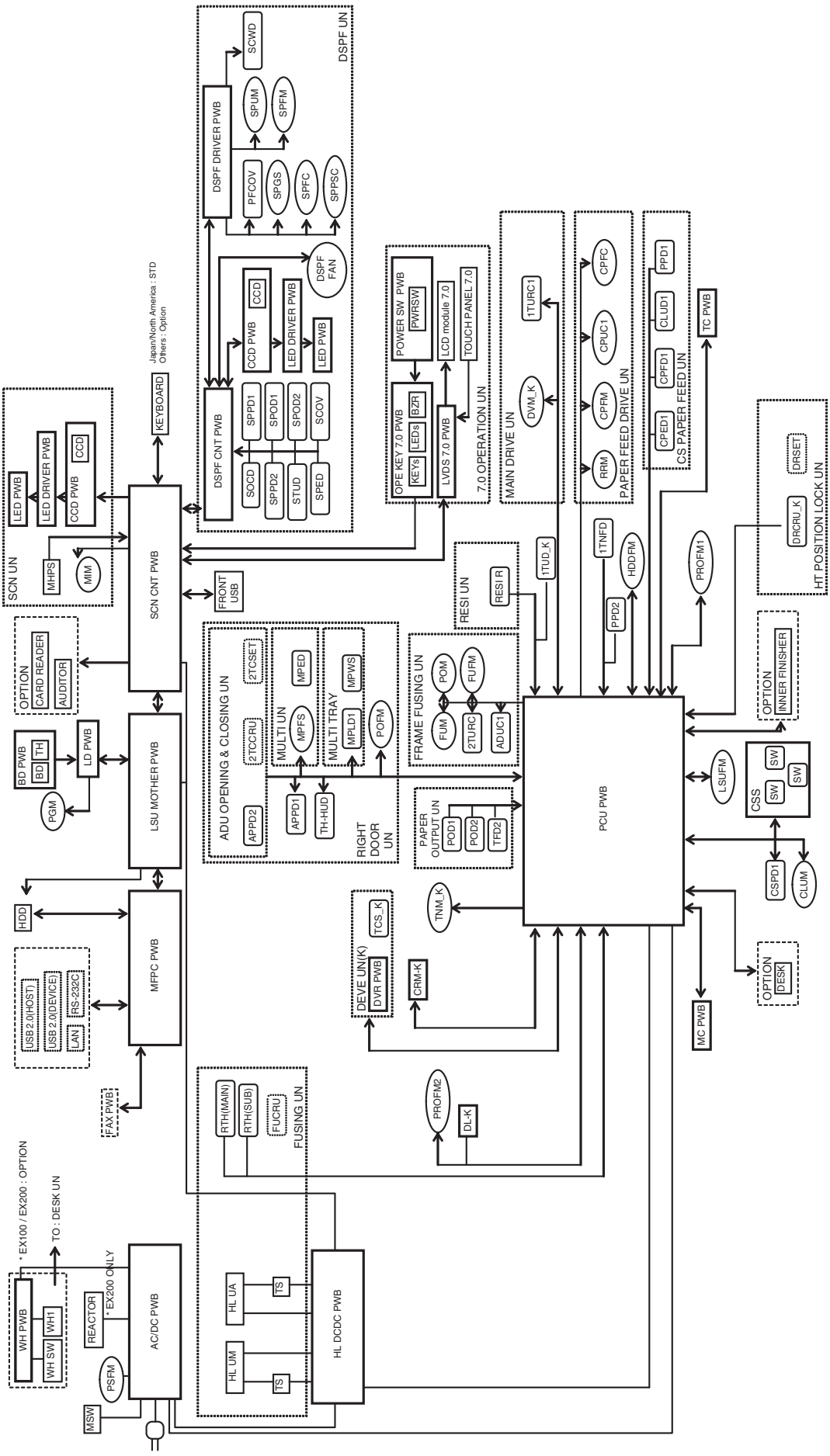
A. Overall block diagram

(1) System block diagram

a. MX-C402SC/C382SC

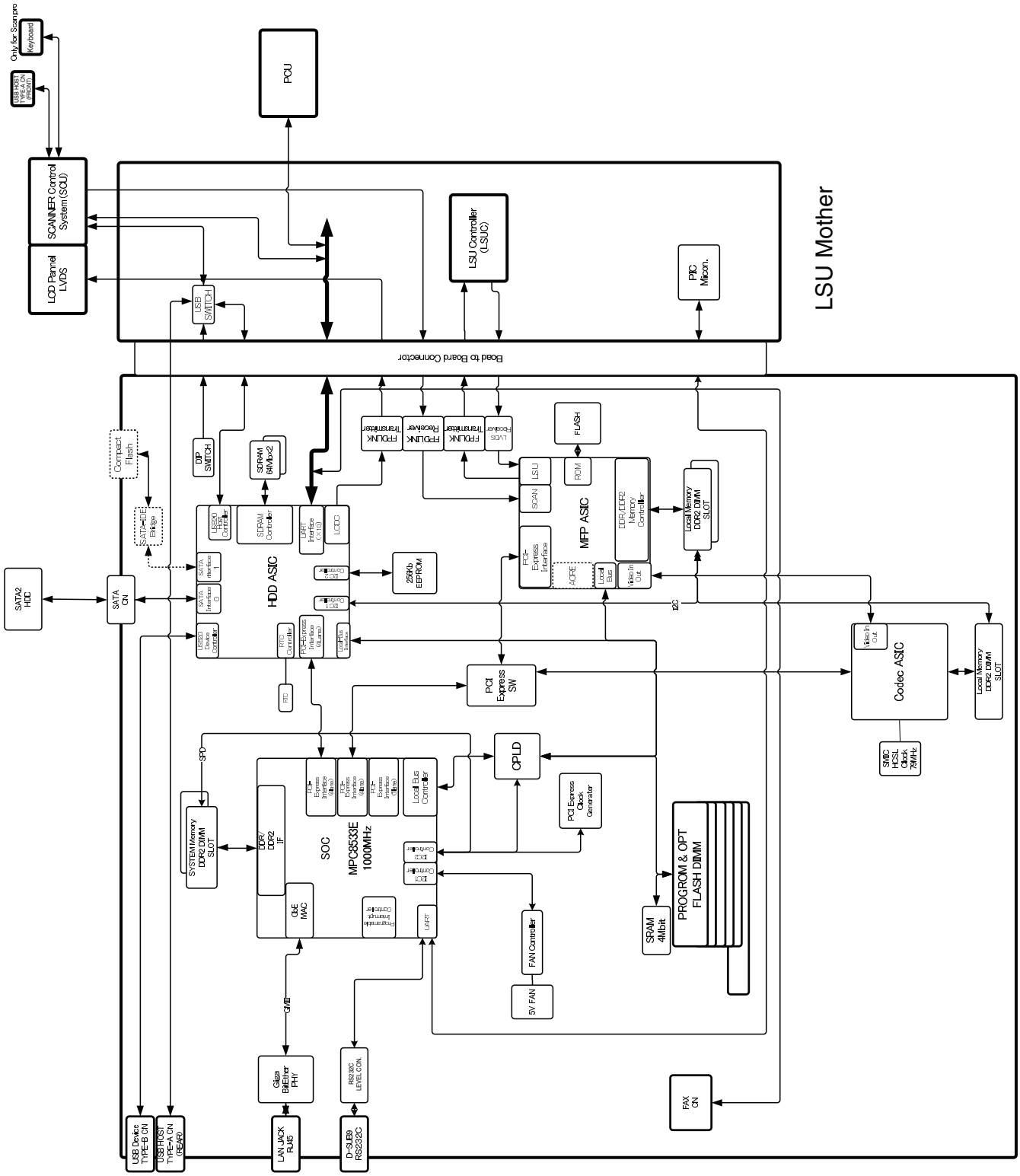


b. MX-B402SC/B382SC

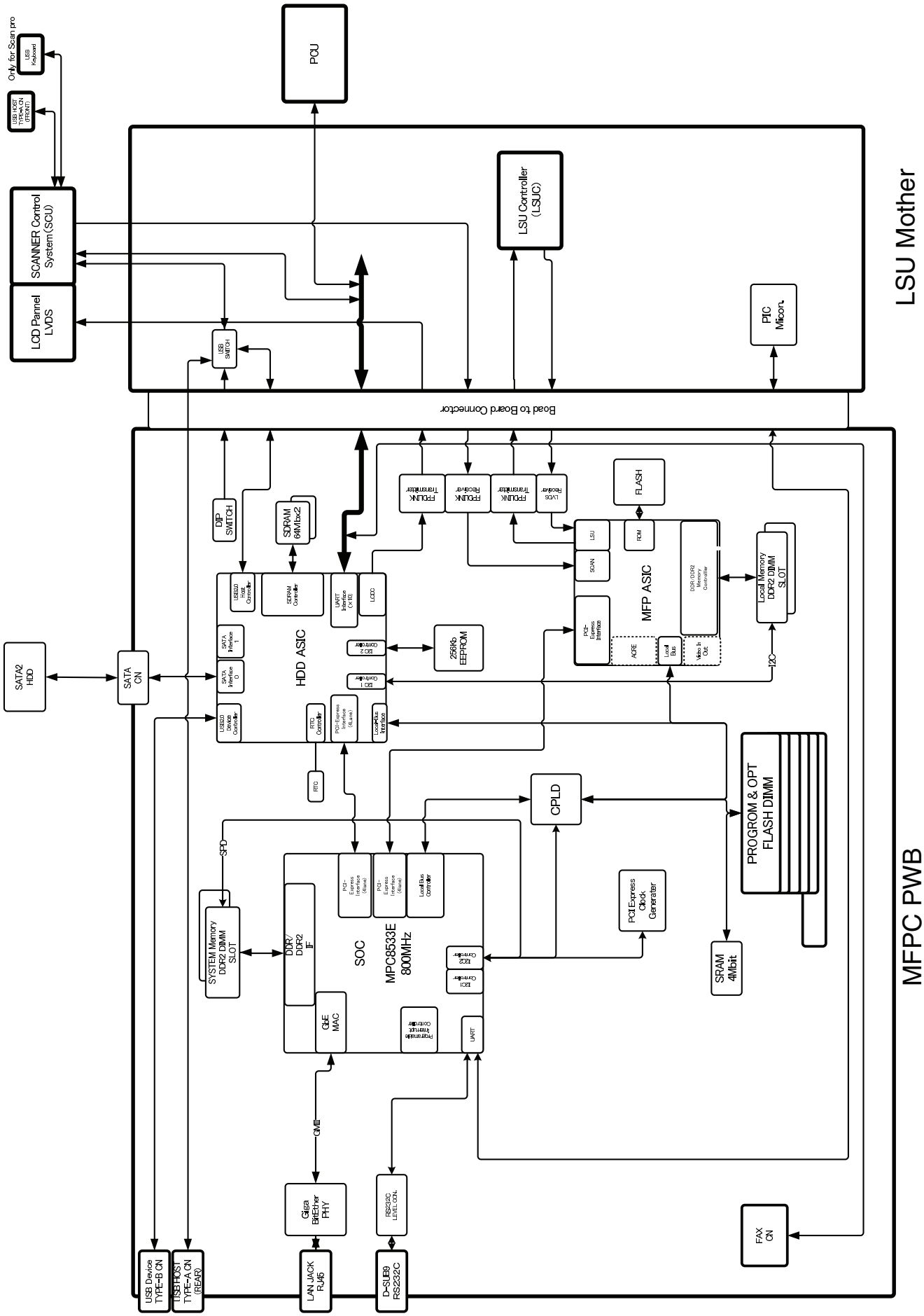


(2) MFPC PWB

a. MX-C402SC/C382SC

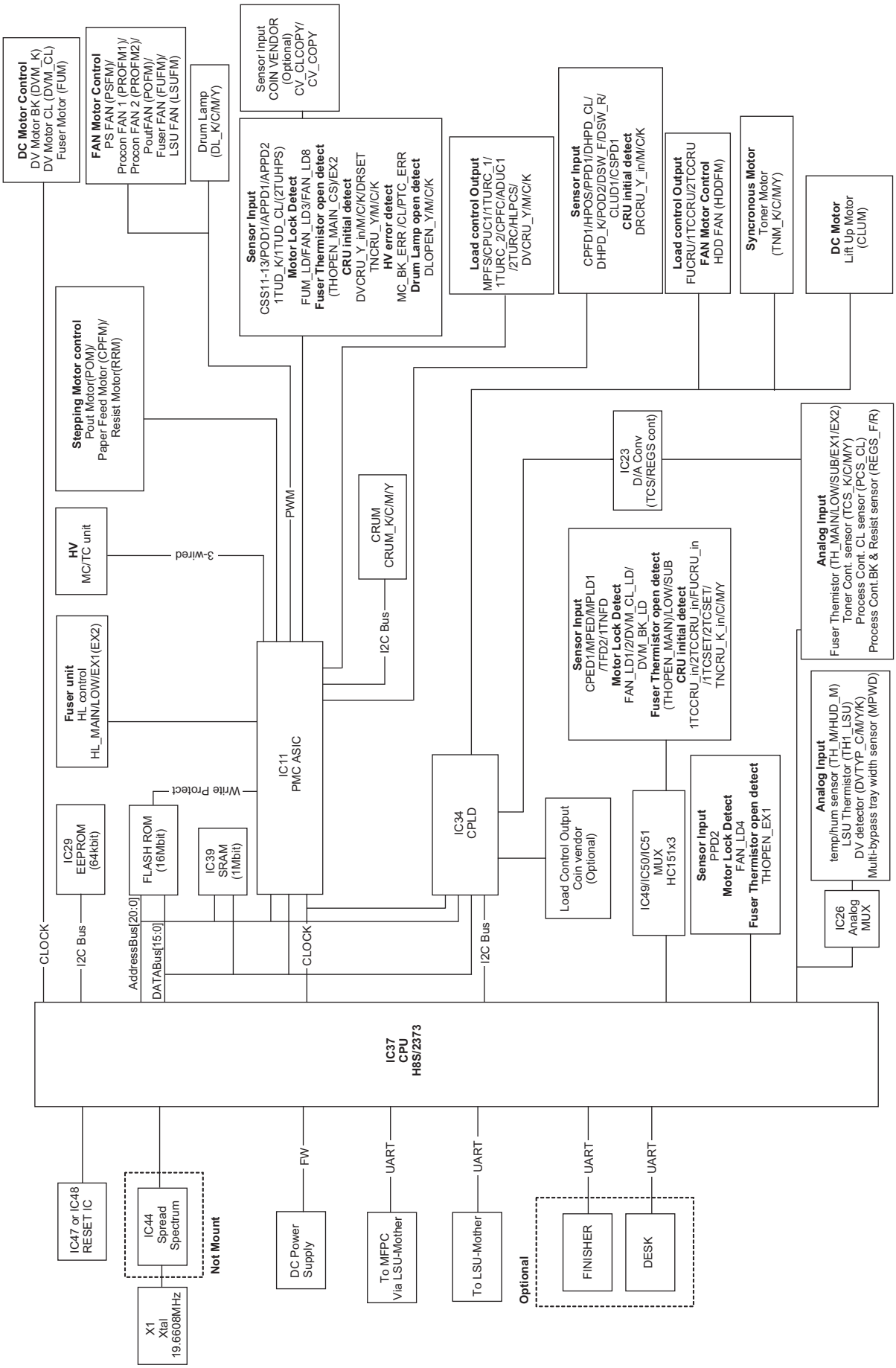


b. MX-B402SC/B382SC

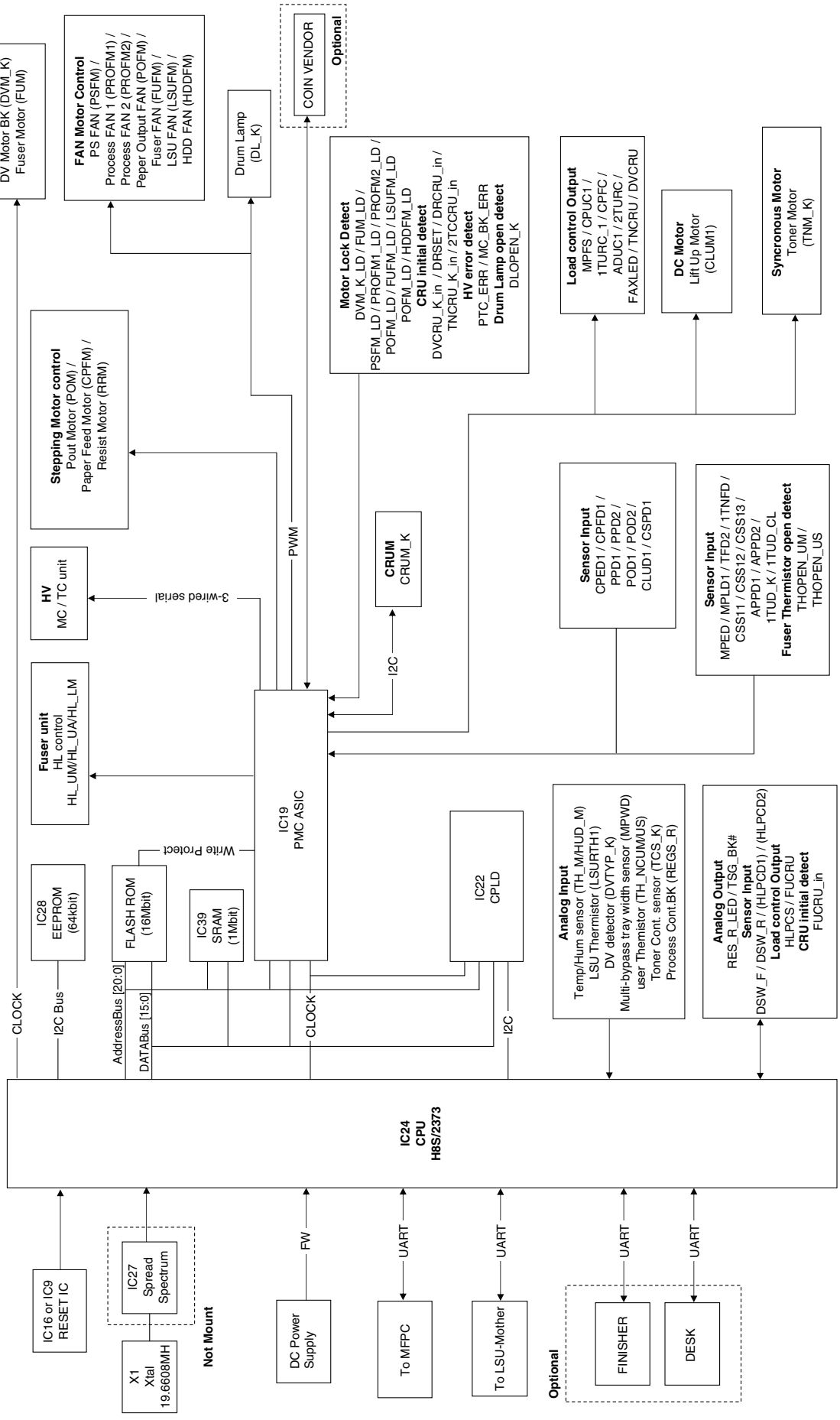


(3) PCU PWB

a. MX-C402SC/C382SC

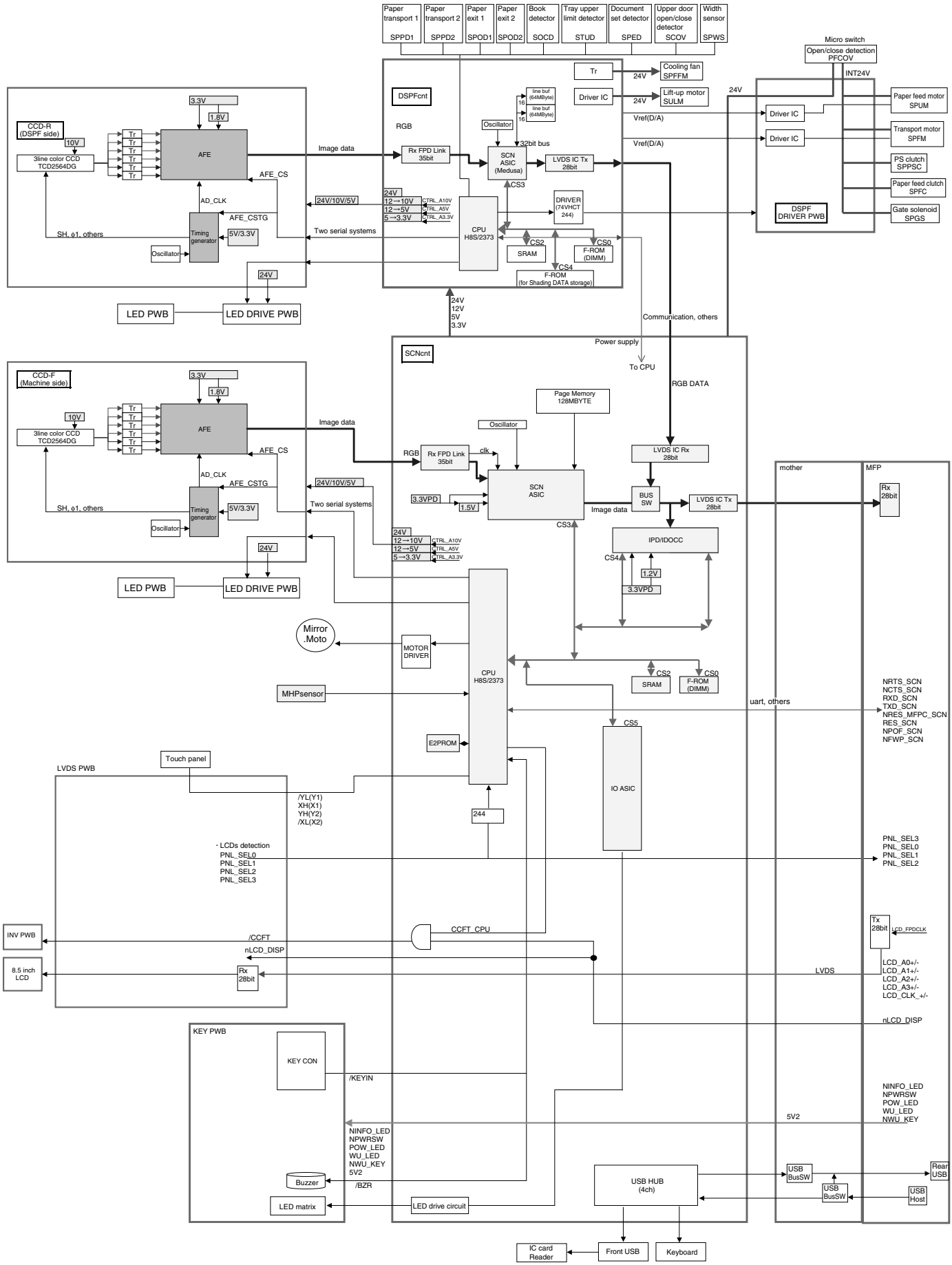


b. MX-B402SC/B382SC

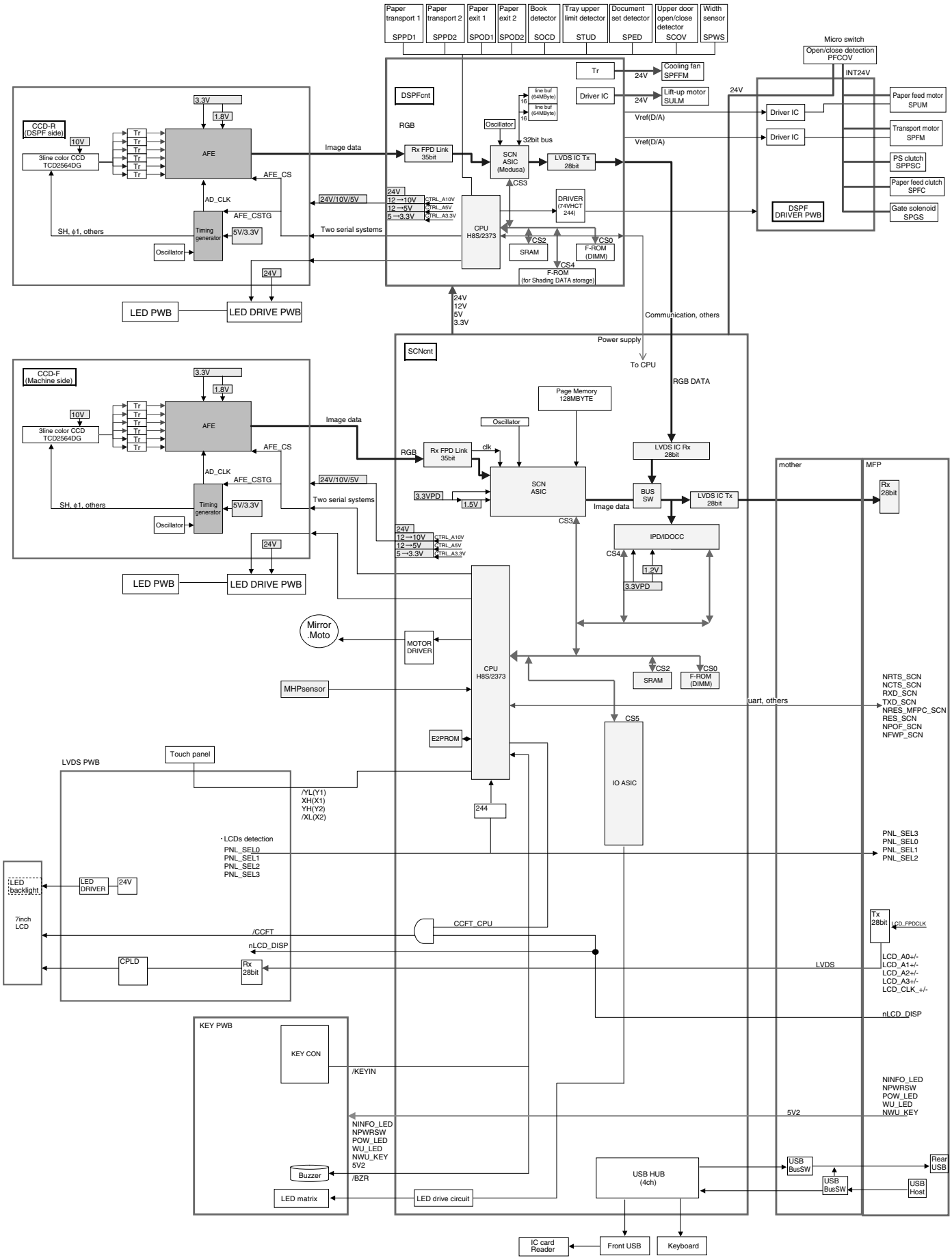


(4) Scanner control PWB

a. MX-C402SC/C382SC

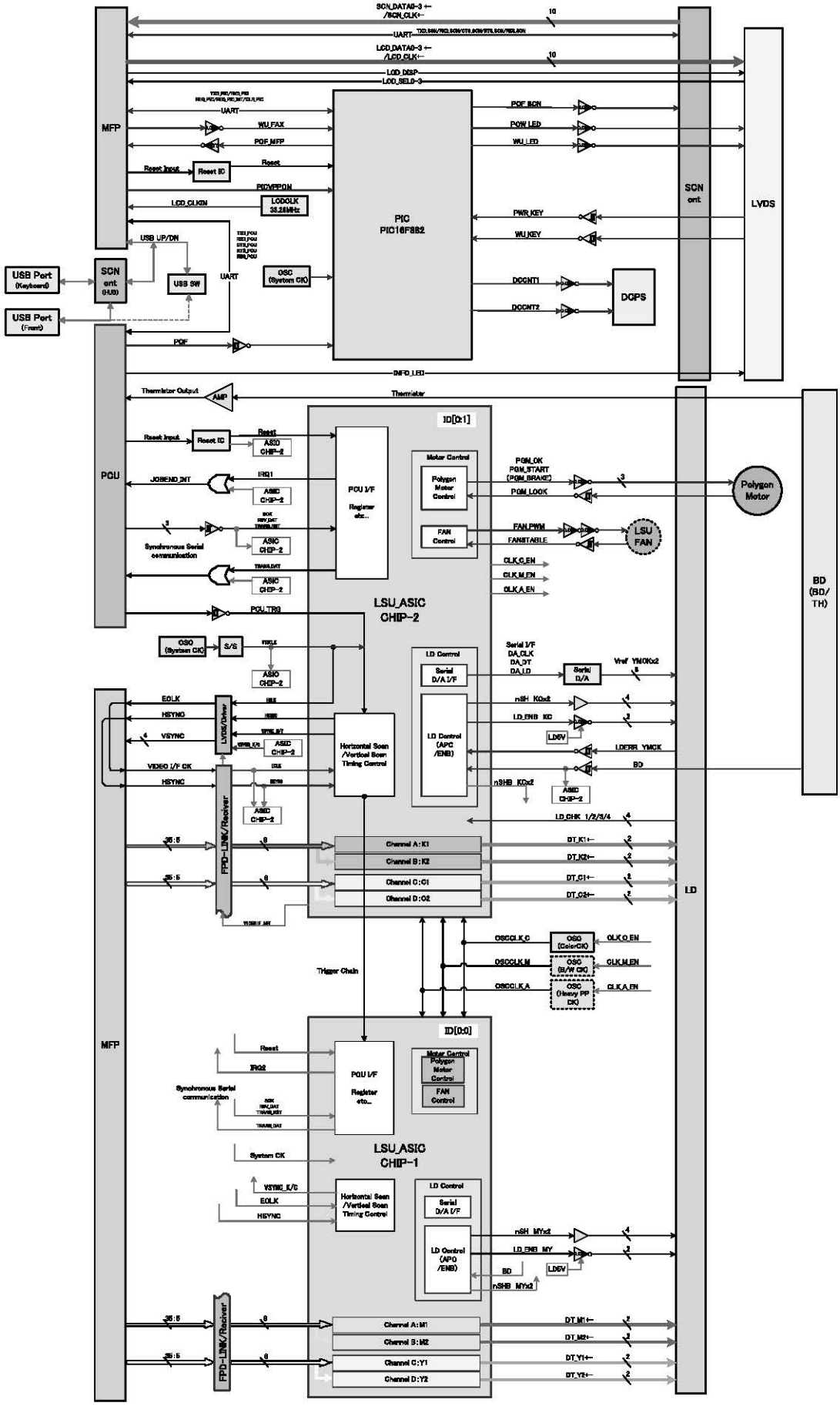


b. MX-B402SC/B382SC

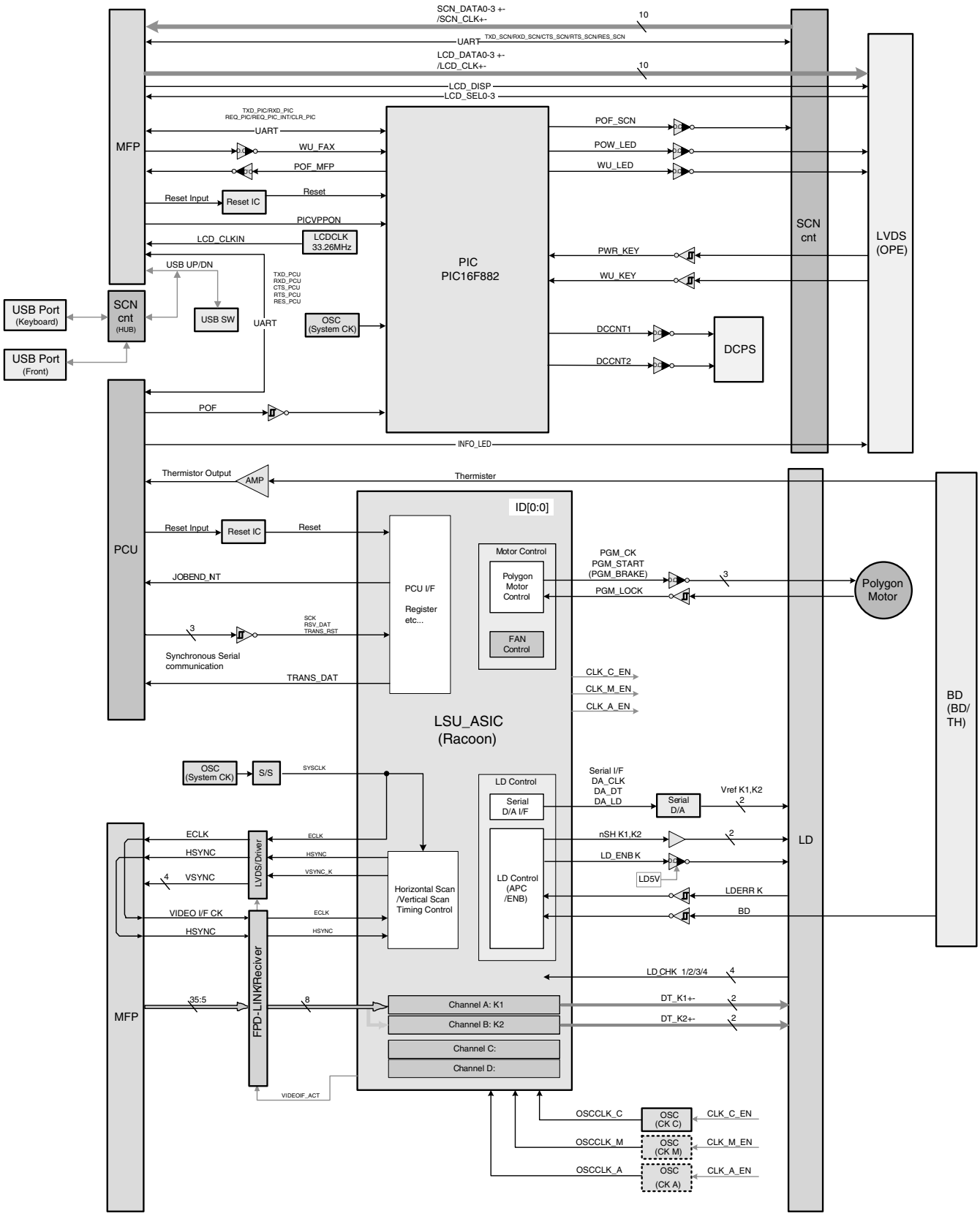


(5) LSU MOTHER PWB

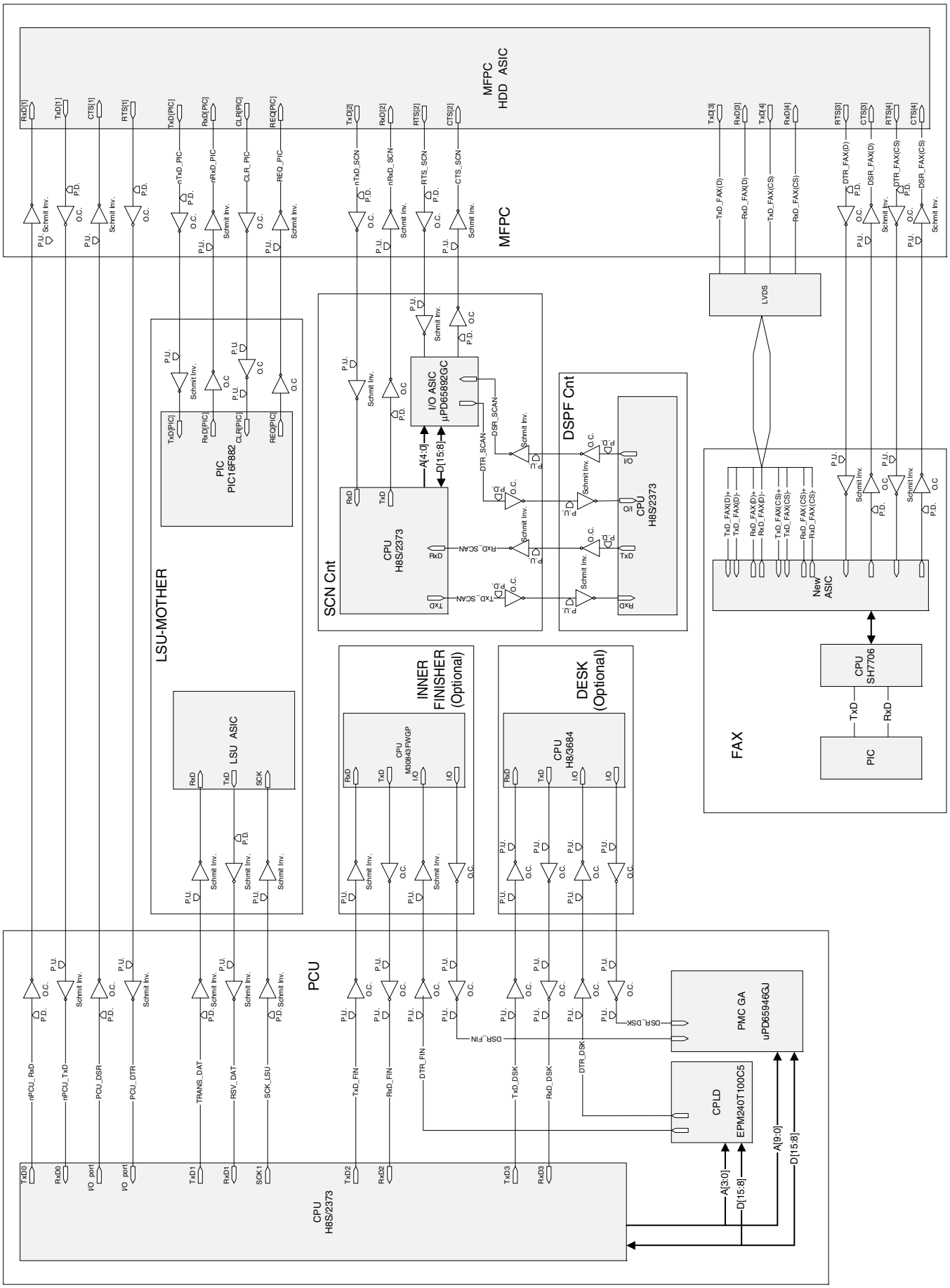
a. MX-C402SC/C382SC



b. MX-B402SC/B382SC

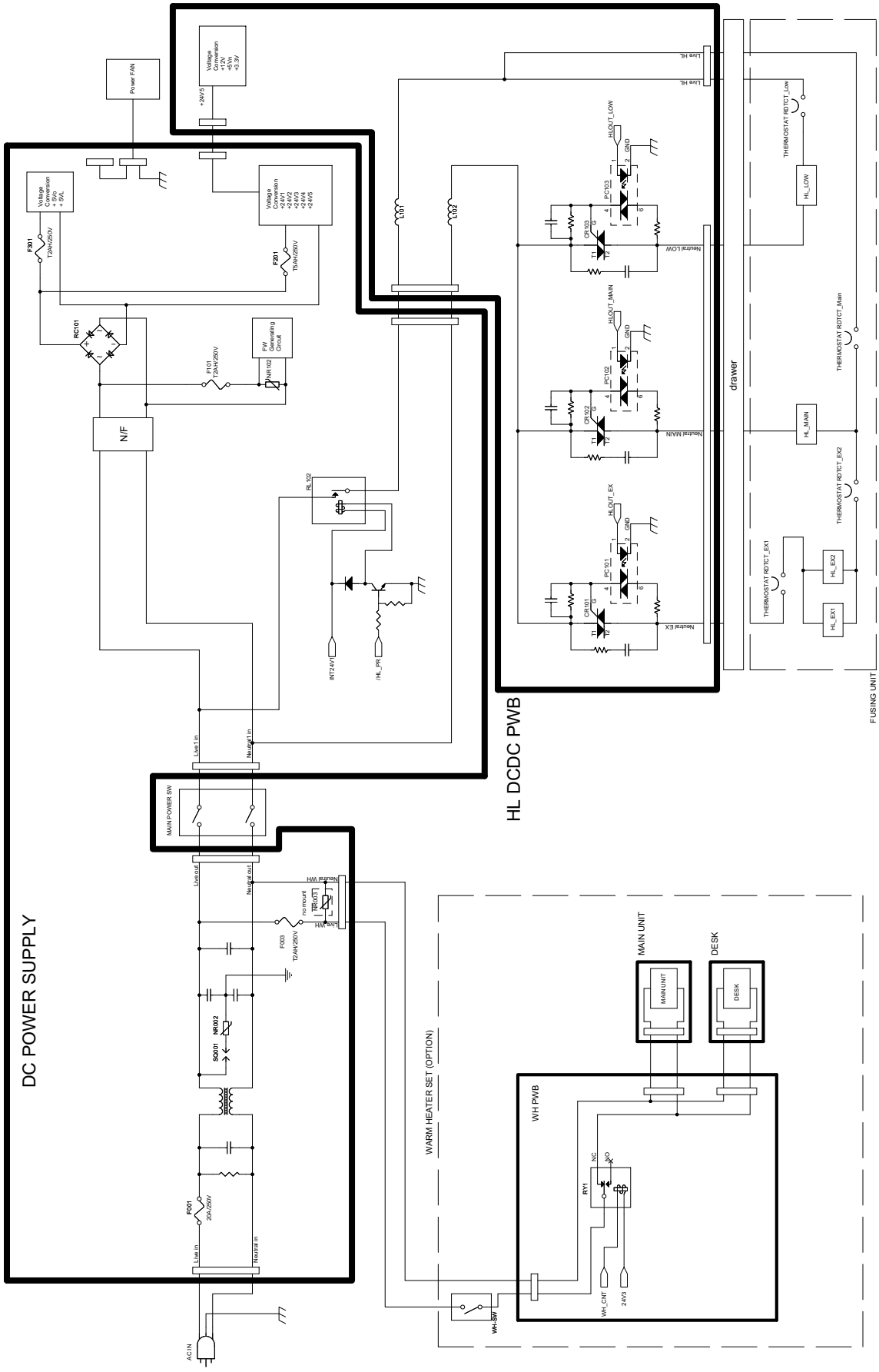


(6) Serial communication

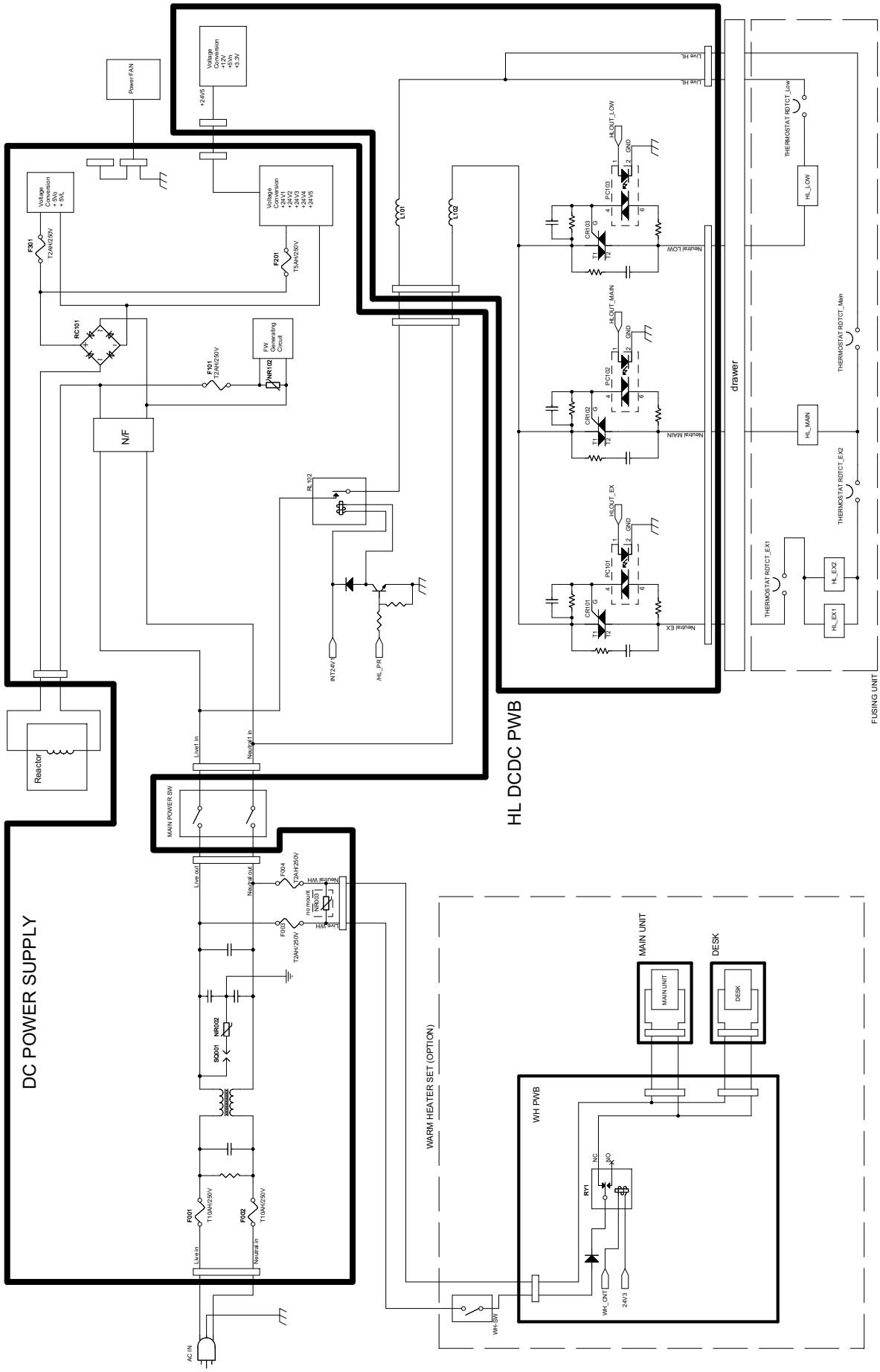


B. AC power line diagram (MX-C402SC/C382SC)

(1) AC power line diagram (120V, Taiwan)

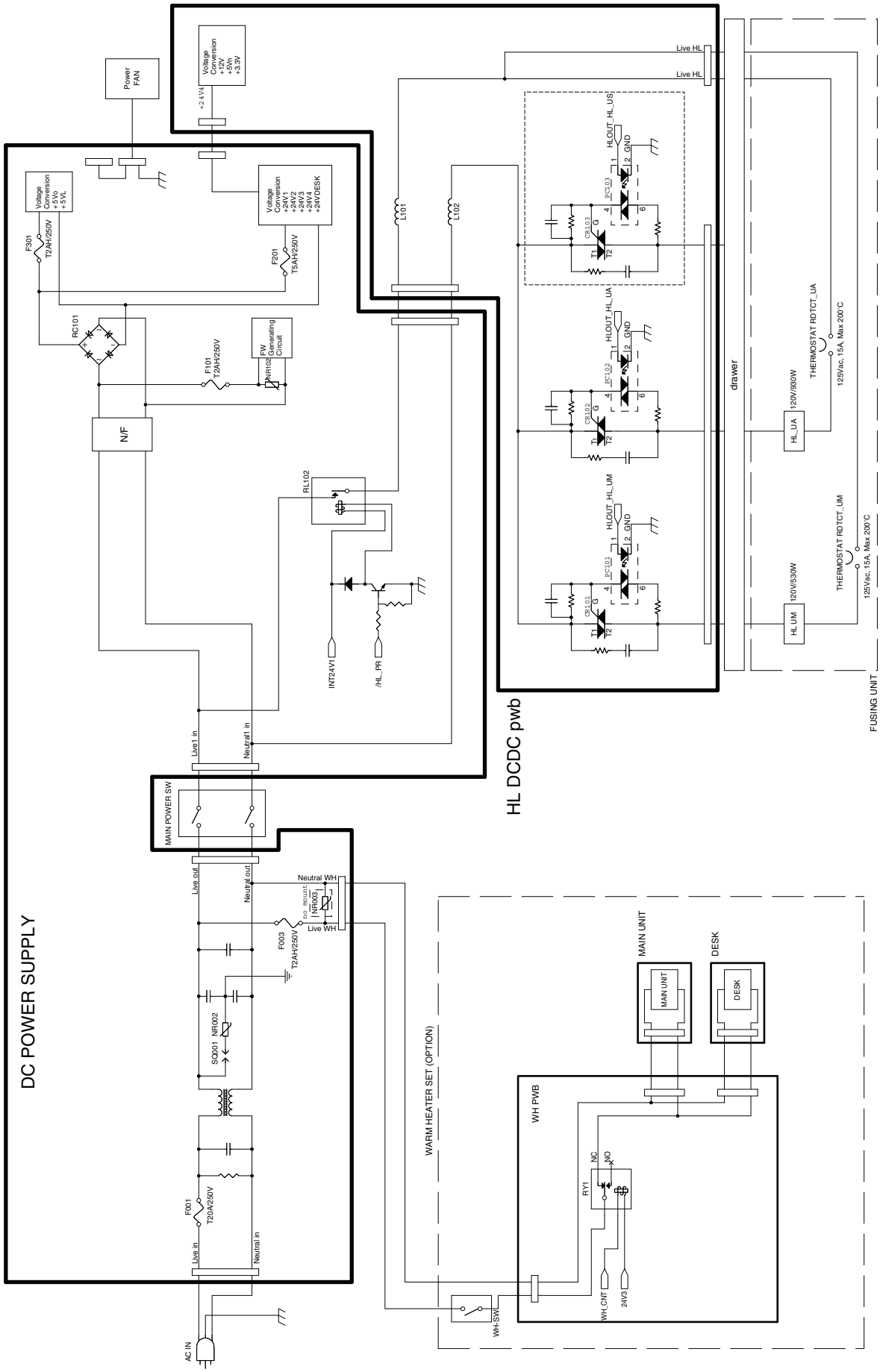


(2) AC power line diagram (200V)

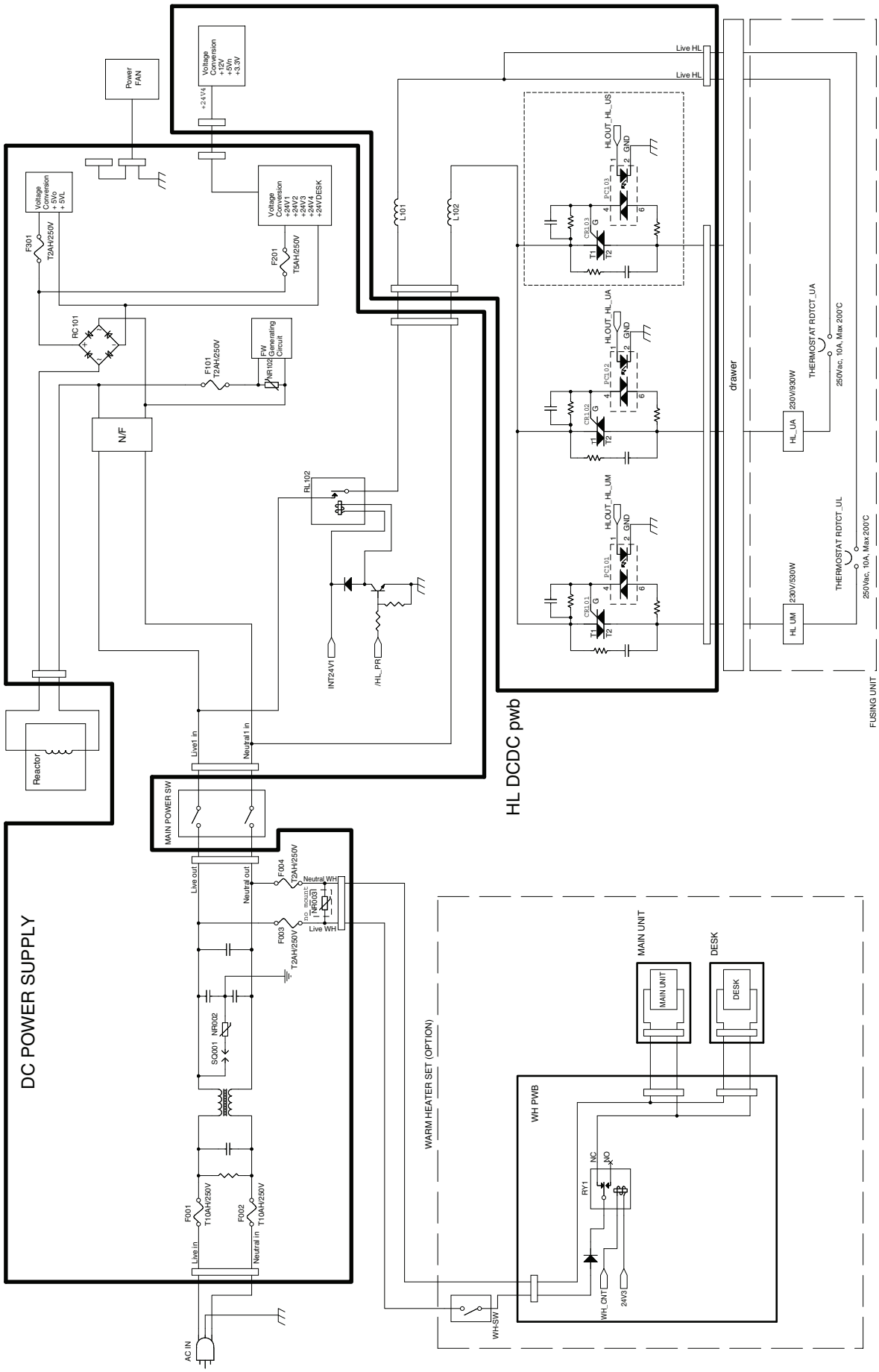


C. AC power line diagram (MX-B402SC/B382SC)

(1) AC power line diagram (120V)

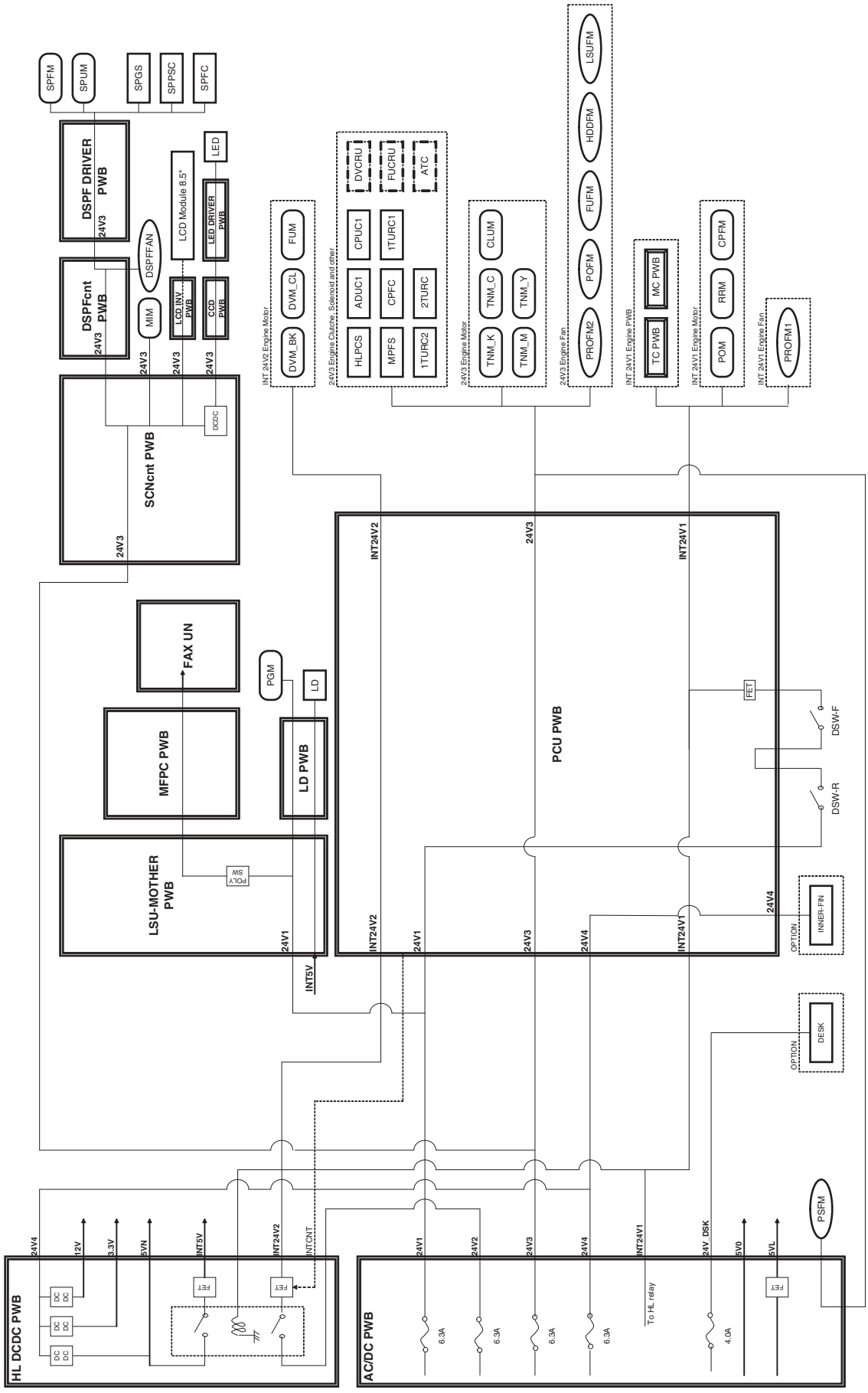


(2) AC power line diagram (200V)

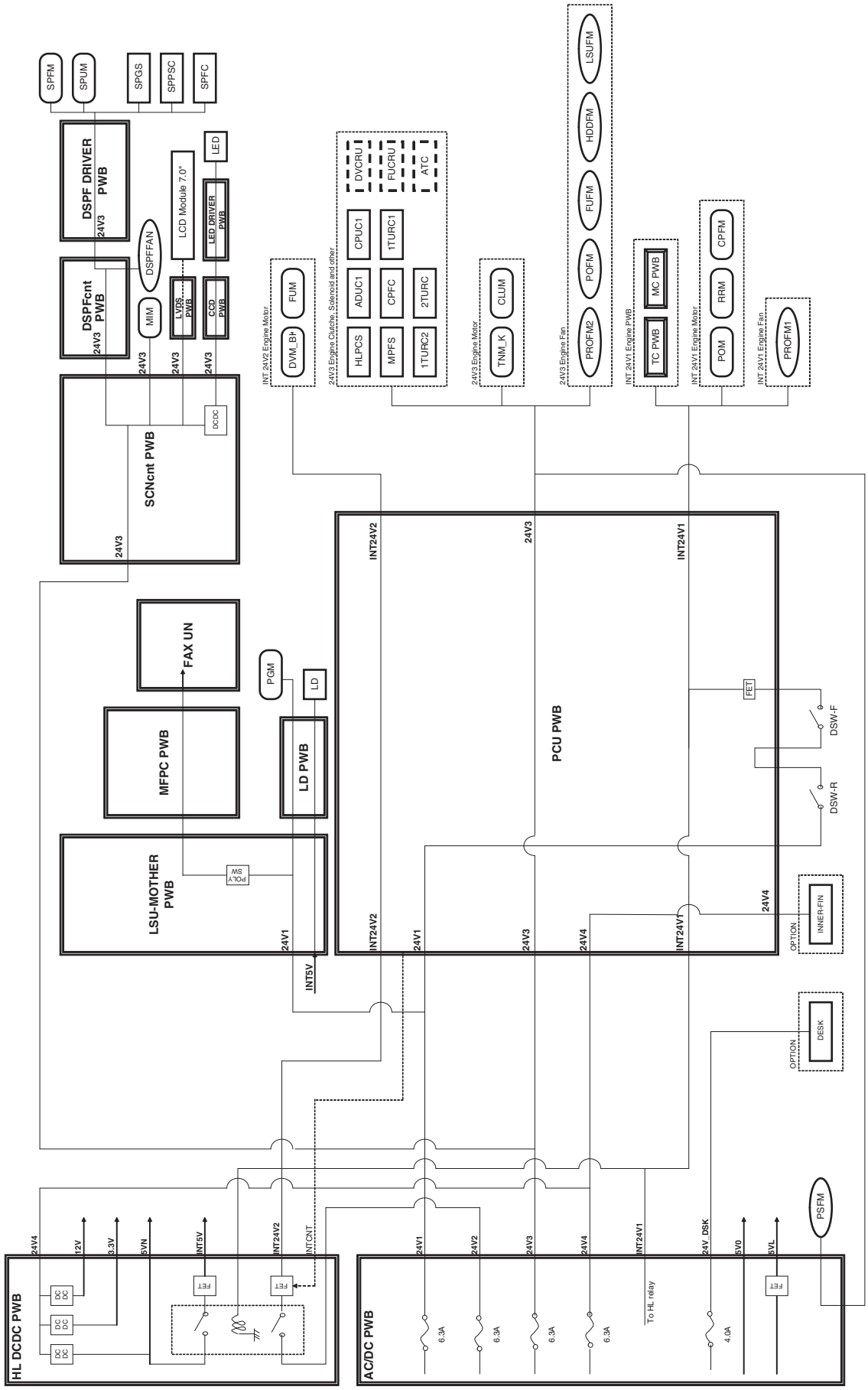


D. Interlock

(1) MX-C402SC/C382SC



(2) MX-B402SC/B382SC



[9] MAINTENANCE

1. Necessary work for maintenance

A. Counter reset (MX-C402SC/C382SC)

(1) MX-C402SC/C382SC

When the developer cartridge, the drum cartridge, the primary transfer unit, the secondary transfer unit, or the fusing unit is replaced with a new one, the initial detection function operates after turning ON the power to reset each counter automatically.

When the machine is initialized during warming up, or when the simulation is executed or the machine is turned OFF and the door is opened before the machine enters the print (copy) ready state, the initial detection function may not operate normally. Therefore, never execute the simulation or never operate the machine such as turning OFF the machine power and opening the door before the machine enters the print (copy) ready state after replacing one of the above parts and turning ON the power.

When the counter is not automatically reset, it must be reset manually.

Since the maintenance counter (total) and the maintenance counter (color) are not automatically reset, they must be cleared by executing SIM24-4.

(For details, refer to the page of "2. Maintenance timing display.")

(2) MX-B402SC/B382SC

When the drum cartridge, the primary transfer unit, the secondary transfer unit, or the fusing unit is replaced with a new one, the initial detection function operates after turning ON the power to reset each counter automatically.

When the machine is initialized during warming up, or when the simulation is executed or the machine is turned OFF and the door is opened before the machine enters the print (copy) ready state, the initial detection function may not operate normally. Therefore, never execute the simulation or never operate the machine such as turning OFF the machine power and opening the door before the machine enters the print (copy) ready state after replacing one of the above parts and turning ON the power.

When the counter is not automatically reset, it must be reset manually.

Since the maintenance counter (total) is not automatically reset, they must be cleared by executing SIM24-4.

(For details, refer to the page of "2. Maintenance timing display.")

B. Toner density initial setting

When the developer cartridge is replaced, the initial setting of the toner density is automatically executed.

If another simulation is executed or the machine power is turned OFF during execution of this simulation, the initial setting of the toner density cannot be executed normally. Therefore, never operate the machine until the initial setting of the toner density is completed (the machine enters the print (copy) ready state).

C. Auto color calibration (auto color balance adjustment) according to the guidance (MX-C402SC/C382SC)

This function is valid only when the setting of SIM26-55 is Enable. (To enable this function, set the other items than the fusing unit to Enable in the menu of SIM26-55.)

When one of the developer cartridge, the drum cartridge, the primary transfer unit, and the secondary transfer unit is replaced with a new one, the guidance for execution of the auto color calibration is displayed on the LCD. Follow the guidance to execute the auto color calibration.

D. Toner density reference control level setting (MX-B402SC/B382SC)

1) Insert the power plug into a power outlet. With the front cabinet open, turn ON the power switch of the machine and the power switch on the operation panel.
2) With the front cabinet open, enter SIM 25-2.

   WARNING: Do not install the toner cartridge before completing the Toner density reference control level setting (SIM 25-2).
3) Close the front cabinet.
4) After completion of the adjustment of the toner density control reference value, insert the toner cartridge.
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 3 minutes, and the average value of the toner density sensor detection level is set (saved) as the reference toner density control value.

   When the reference toner density control adjustment operation is completed, [EXECUTE] key returns to normal from highlight. This makes known about whether the adjustment operation is completed or not.
6) Press the CA key to exit the simulation.

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

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

   If [EE-EU] or [EE-EL] 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 67, or sensor control voltage level over 197
EE-EU	EU abnormality	Sensor output level over 154, or sensor control voltage level less than 49
EE-EC	EU abnormality	Sensor output level less than 95, or sensor control voltage level over 105

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

Only execute SIM 25-2 when replacing the Developer.

SIM 25-2 should only be run immediately after installing new DV material.

Toner Concentration Reference Control Level Setting will be incorrect if SIM 25-2 is performed at any other time.

When SIM25-2 is executed, the counter of the developer unit is reset.

E. Other

Perform the following items of check and work.

- Image skew adjustment (LSU (writing) unit) (SIM61-04)
- Image registration adjustment (SIM50-22)
- Image density sensor (Image registration sensor) adjustment (SIM44-13)
- CCD gamma adjustment (CCD calibration) (SIM63-03) (Execute according to the necessity.)
- Firmware version check (SIM22-05) (Execute according to the necessity.)
- Trouble counter and JAM counter reset (SIM24-01)
- Copy/printer color balance adjustment (SIM46-74) (When the auto color calibration (auto color balance adjustment) is not executed according to the guidance) (MX-C402SC/C382SC)
- Engine automatic adjustment (SIM46-74) (MX-B402SC/B382SC)

2. Maintenance timing display

A message of maintenance timing is displayed when each counter reaches the set value.
The relationship between the kinds of messages and the counters is shown below.

A. MX-C402SC/C382SC

(1) Maintenance counter

Display content	Display condition			Print job Enable/ Disable
	Sim26-38-A set value	Counter name	Counter value	
Maintenance required.Code: TA	0 (Print continue)	Maintenance counter (Total)	When the Sim21-1 set value is reached	Enable
	1 (Print stop)		When 90% of the Sim21-1 set value is reached	
Maintenance required. Code: TA	1 (Print stop)		When the Sim21-1 set value is reached	Disable
Maintenance required.Code: CA	0 (Print continue)	Maintenance counter (Color)	When the Sim21-1 set value is reached	Enable
	1 (Print stop)		When 90% of the Sim21-1 set value is reached	
Maintenance required. Code: CA	1 (Print stop)		When the Sim21-1 set value is reached	Disable
Maintenance required.Code: AA	0 (Print continue)	Maintenance counter (Total), Maintenance counter (Color)	When the Sim21-1 set value is reached	Enable
	1 (Print stop)		When 90% of the Sim21-1 set value is reached	
Maintenance required. Code: AA	1 (Print stop)		When the Sim21-1 set value is reached	Disable

- After execution of maintenance, execute SIM24-4 to clear the maintenance counter (total) and the maintenance counter (color).
- When the maintenance counter (total) and the maintenance counter (color) are cleared, the above display disappears.

(2) Primary transfer unit

Display content	Display condition			Print job Enable/ Disable
	Sim26-38-B set value	Counter name	Counter value	
Change the supplies. > Primary Transfer Belt Unit	0 (Print continue)	Primary transfer unit print counter	When 120K is reached	Enable
The supplies will be needed soon. > Primary Transfer Belt Unit	1 (Print stop)		When 90% of 120K is reached	Enable
Change the supplies. > Primary Transfer Belt Unit	1 (Print stop)		When 120K is reached	Disable

- When the primary transfer unit is replaced with a new one, the print counter, the accumulated traveling distance counter, and the usage day counter are automatically cleared. If SIM26-55 setting is set to ENABLE in that case, the guidance for execution of the auto color calibration is displayed.
- If SIM26-55 setting is set to DISABLE, SIM46-74 must be used to execute the automatic adjustment of the engine.
- If a sub part is used to execute the maintenance or if the above guidance does not disappear when the whole primary transfer unit is replaced, SIM24-4 must be executed to clear the print counter, the accumulated traveling distance counter, and the usage day counter of the primary transfer unit, and the auto color calibration must be executed by the simulation.
- The above display disappears by cleaning the counters.

(3) Secondary transfer unit

Display content	Display condition			Print job Enable/ Disable
	Sim26-38-C set value	Counter name	Counter value	
Change the supplies. > Secondary Transfer Roller Unit	0 (Print continue)	Secondary transfer unit print counter	When 60K is reached	Enable
The supplies will be needed soon. > Secondary Transfer Roller Unit	1 (Print stop)		When 90% of 60K is reached	Enable
Change the supplies. > Secondary Transfer Roller Unit	1 (Print stop)		When 60K is reached	Disable

- When the secondary transfer unit is replaced with a new one, the print counter, the accumulated traveling distance counter, and the usage day counter are automatically cleared, and the above display disappears.
- If SIM26-55 setting is set to ENABLE in that case, the guidance for execution of the auto color calibration is displayed.
- If the above guidance does not disappear though the secondary transfer unit is replaced, SIM24-4 must be executed to clear the print counter, the accumulated traveling distance counter, and the usage day counter.
- The above display disappears when the counters are cleared.

(4) Fusing unit

Display content	Display condition			Print job Enable/ Disable
	Sim26-38-D set value	Counter name	Counter value	
Change the supplies. > Fusing Unit	0 (Print continue)	Fusing unit print counter (Heat roller upper)	When 120K is reached	Enable
The supplies will be needed soon. > Fusing Unit	1 (Print stop)		When 90% of 120K is reached	Enable
Change the supplies. > Fusing Unit	1 (Print stop)		When 120K is reached	Disable
Change the supplies. > Fusing Unit	0 (Print continue)	Fusing unit print counter (Heat roller lower and external)	When 120K is reached	Enable
The supplies will be needed soon. > Fusing Unit	1 (Print stop)		When 90% of 120K is reached	Enable
Change the supplies. > Fusing Unit	1 (Print stop)		When 120K is reached	Disable

- When the fusing unit is replaced with a new one, the print counter (on the upper side of the heat roller), the usage day counter (on the upper side of the heat roller), the print counters (on the lower side and the outside of the heat roller), and the usage day counters (on the lower side and the outside of the heat roller) are automatically cleared, and the above display disappears.
- If SIM26-55 setting is set to ENABLE in that case, the guidance for execution of the auto color calibration is displayed.
  (Since there is no need to execute the auto color calibration when the fusing unit is replaced, it is recommendable to set the SIM26-55 setting to DISABLE (default).
- If a sub part is used to execute the maintenance or if the above guidance does not disappear when the whole fusing unit is replaced, SIM24-4 must be executed to clear the print counter (on the upper side of the heat roller), the usage day counter (on the upper side of the heat roller), the print counters (on the lower side and the outside of the heat roller), and the usage day counters (on the lower side and the outside of the heat roller).
- The above display disappears when the counters are cleared.

(5) Drum cartridge

For [K] [C] [Y] [M], only the life end cartridge code is displayed.

Display content	Display condition			Print job Enable/ Disable
	Sim26-38-E set value	Counter name	Counter value	
Change the supplies. > Drum Cartridge [K]	0 (Print continue)	Drum cartridge print counter (K)	When 60K is reached	Enable
		Drum cartridge accumulated rotation number (K)	When 550K rotations is reached	Enable
Change the supplies. > Drum Cartridge [C]	0 (Print continue)	Drum cartridge print counter (C)	When 30K is reached	Enable
		Drum cartridge accumulated rotation number (C)	When 550K rotations is reached	Enable
Change the supplies. > Drum Cartridge [M]	0 (Print continue)	Drum cartridge print counter (M)	When 30K is reached	Enable
		Drum cartridge accumulated rotation number (M)	When 550K rotations is reached	Enable
Change the supplies. > Drum Cartridge [Y]	0 (Print continue)	Drum cartridge print counter (Y)	When 30K is reached	Enable
		Drum cartridge accumulated rotation number (Y)	When 550K rotations is reached	Enable
The supplies will be needed soon. > Drum Cartridge [K] [C] [M] [Y] *1	1 (Print stop)	Drum cartridge print counter (K) Drum cartridge print counter (C) Drum cartridge print counter (M) Drum cartridge print counter (Y)	When 90% of 60K is reached by the K counter. When 90% of 30K is reached by the C, M, or Y counter.	Enable
		Drum cartridge accumulated rotation number (K) Drum cartridge accumulated rotation number (C) Drum cartridge accumulated rotation number (M) Drum cartridge accumulated rotation number (Y)	When 90% of 550K rotations is reached by either counter	Enable
Change the supplies. > Drum Cartridge [K]	1 (Print stop)	Drum cartridge print counter (K)	When 60K is reached	Disable
		Drum cartridge accumulated rotation number (K)	When 550K rotations is reached	Disable
Change the supplies. > Drum Cartridge [C] [M] [Y]	1 (Print stop)	Drum cartridge print counter (C) Drum cartridge print counter (M) Drum cartridge print counter (Y)	When 30K is reached by either counter	Enable for Black/White Disable for Color *2
		Drum cartridge accumulated rotation number (C) Drum cartridge accumulated rotation number (M) Drum cartridge accumulated rotation number (Y)	When 550K rotations is reached by either counter	Enable for Black/White Disable for Color *2

*1: Selection of Display/Not Display can be made with Sim26-69. (Default: Not Display)

*2: When the black drum cartridge does not reach the life end and only the color drum cartridge reaches the life end, black/white print can be performed but color print cannot be performed.

- When the drum cartridge is replaced with a new one, the print counter, the accumulated traveling distance counter, the accumulated rotation number counter, and the usage day counter are automatically cleared. If SIM26-55 setting is set to ENABLE in that case, the guidance for execution of the auto color calibration is displayed.
- If SIM26-55 setting is set to DISABLE, SIM46-74 must be used to execute the automatic adjustment of the engine.
- If the above guidance does not disappear when the drum cartridge is replaced, SIM24-7 must be executed to clear the print counter, the accumulated traveling distance counter, the accumulated rotation number counter, and the usage day counter, and the auto color calibration must be executed.
- The above display disappears when the counters are cleared.

(6) Developer cartridge

For K C Y M, only the life end cartridge code is displayed.

Display content	Display condition			Print job Enable/Disable
	Sim26-38-E set value	Counter name	Counter value	
Change the supplies. > Developer Cartridge K	0 (Print continue)	Developer cartridge print counter (K)	When 60K is reached	Enable
		Developer cartridge accumulated rotation number (K)	When 550K rotations is reached	Enable
Change the supplies. > Developer Cartridge C	0 (Print continue)	Developer cartridge print counter (C)	When 30K is reached	Enable
		Developer cartridge accumulated rotation number (C)	When 550K rotations is reached	Enable
Change the supplies. > Developer Cartridge M	0 (Print continue)	Developer cartridge print counter (M)	When 30K is reached	Enable
		Developer cartridge accumulated rotation number (M)	When 550K rotations is reached	Enable
Change the supplies. > Developer Cartridge Y	0 (Print continue)	Developer cartridge print counter (Y)	When 30K is reached	Enable
		Developer cartridge accumulated rotation number (Y)	When 550K rotations is reached	Enable
The supplies will be needed soon. > Developer Cartridge K *1	1 (Print stop)	Developer cartridge print counter (K) Developer cartridge print counter (C) Developer cartridge print counter (M) Developer cartridge print counter (Y)	When 90% of 60K is reached by the K counter. When 90% of 30K is reached by the C, M, or Y counter.	Enable
		Developer cartridge accumulated rotation number (K) Developer cartridge accumulated rotation number (C) Developer cartridge accumulated rotation number (M) Developer cartridge accumulated rotation number (Y)	When 90% of 550K rotations is reached by either counter	Enable
Change the supplies. > Developer Cartridge K	1 (Print stop)	Developer cartridge print counter (K)	When 60K is reached	Disable
		Developer cartridge accumulated rotation number (K)	When 550K rotations is reached	Disable
Change the supplies. > Developer Cartridge C M Y	1 (Print stop)	Developer cartridge print counter (C) Developer cartridge print counter (M) Developer cartridge print counter (Y)	When 30K is reached	Enable for Black/White Disable for Color *2
		Developer cartridge accumulated rotation number (C) Developer cartridge accumulated rotation number (M) Developer cartridge accumulated rotation number (Y)	When 550K rotations is reached	Enable for Black/White Disable for Color *2

*1: Selection of Display/Not Display can be made with Sim26-69. (Default: Not Display)

*2: When the black drum cartridge does not reach the life end and only the color drum cartridge reaches the life end, black/white print can be performed but color print cannot be performed.

- When the developer cartridge is replaced with a new one, the print counter, the accumulated traveling distance counter, the accumulated rotation number counter, and the usage day counter are automatically cleared, and the initial setting of the toner density is automatically executed.
- When SIM26-55 setting is set to ENABLE, the initial setting of the toner density is executed and the guidance for execution of the auto color calibration is displayed.
- When SIM26-55 setting is set to DISABLE, SIM46-74 must be used to execute the auto color calibration after completion of the initial setting of the toner density.
- If the above guidance does not disappear when the developer cartridge is replaced, the initial setting of the toner density must be executed with the simulation, and the auto color calibration must be executed.
- When the initial setting of the toner density is executed, the counters are cleared and the above display disappears.

(7) Toner cartridge

For K C Y M, only the life end cartridge code is displayed.

Display content	Display condition			Print job Enable/Disable
	Sim26-38-A set value	Remaining quantity display *1	Status	
The supplies will be needed soon. > Toner Cartridge K C M Y *2	0 (Print continue)	25-0%	Toner remaining quantity is 25% or less.	Enable
	1 (Print stop)			
The supplies will be needed soon. > Toner Cartridge K C M Y *2	0 (Print continue)	25-0%	Toner remaining quantity corresponds to output of XX sheets. *3	Enable
	1 (Print stop)			
Change the supplies. > Toner Cartridge K	0 (Print continue)	0%	When the black toner cartridge reaches toner end.	Disable
	1 (Print stop)			
Change the supplies. > Toner Cartridge C M Y	0 (Display)	0%	When the color toner cartridge reaches toner end.	Enable for Black/White Disable for Color *4
	1 (No display)			
No display	—	50-25%	Toner remaining quantity is 49 - 25%.	Enable
No display	—	75-50%	Toner remaining quantity is 74 - 50%.	Enable
No display	—	100-75%	Toner remaining quantity is 100-75%.	Enable
Install the toner cartridge.	—	No display	When no toner cartridges are installed. When a toner cartridge of a different color is installed.	Disable
Improper cartridge.	—	No display	When an incompatible toner cartridge is installed.	Disable
Cartridge error.	—	No display	CRUM trouble Toner cartridge connector contact trouble	Disable

*1: Detected by the toner motor rotation number and the pixel count (The value of larger life percentage is employed.)
Since the life of the toner cartridge which is packed when shipping from the factory is 2.5K, the remaining quantity of the toner cartridge, though it is a new one, is displayed as 25-0%.

*2: Selection of Display/Not Display can be made with Sim26-69. (Default: Not Display)

*3: Setting can be made with Sim26-69. (Default: 0 sheet)

*4: When the black toner cartridge does not reach the life end and only the color toner cartridge reaches the life end, black/white print can be performed but color print cannot be performed.

(8) Waste toner box

Display content	Display condition	Print job Enable/Disable
(The supplies will be needed soon. Toner Collection Container)	When the waste toner full detection switch is ON for 1sec or more.	Enable
[Change the supplies. Toner Collection Container]	When 500 count is reached from the above state. (1 count for 1 sheet output. When the process control is performed once, 10 counts are added.)	Disable

When the toner collection bottle is replaced, the display disappears.

B. MX-B402SC/B382SC

(1) Maintenance counter

Display content	Display condition			Print job Enable/ Disable
	Sim26-38-A set value	Counter name	Counter value	
Maintenance required. Code: TA	0 (Print continue)	Maintenance counter (Total)	When the Sim21-1 set value is reached	Enable
	1 (Print stop)		When 90% of the Sim21-1 set value is reached	
Maintenance required. Code: TA	1 (Print stop)		When the Sim21-1 set value is reached	Disable

- After execution of maintenance, execute SIM24-4 to clear the maintenance counter (total).
- When the maintenance counter (total) is cleared, the above display disappears.

(2) Primary transfer unit

Display content	Display condition			Print job Enable/ Disable
	Sim26-38-B set value	Counter name	Counter value	
Change the supplies. > Primary Transfer Belt Unit	0 (Print continue)	Primary transfer unit print counter	When 120K is reached	Enable
The supplies will be needed soon. > Primary Transfer Belt Unit	1 (Print stop)		When 90% of 120K is reached	Enable
Change the supplies. > Primary Transfer Belt Unit	1 (Print stop)		When 120K is reached	Disable

- When the primary transfer unit is replaced with a new one, the print counter, the accumulated traveling distance counter, and the usage day counter are automatically cleared. If SIM26-55 setting is set to ENABLE in that case, the guidance for execution of the automatic adjustment of the engine is displayed.
- If SIM26-55 setting is set to DISABLE, SIM46-74 must be used to execute the automatic adjustment of the engine.
- If the above guidance does not disappear when the whole primary transfer unit is replaced, SIM24-4 must be executed to clear the print counter, the accumulated traveling distance counter, and the usage day counter of the primary transfer unit, and the engine automatic adjustment must be executed by the simulation.
- The above display disappears by cleaning the counters.

(3) Secondary transfer unit

Display content	Display condition			Print job Enable/ Disable
	Sim26-38-C set value	Counter name	Counter value	
Change the supplies. > Secondary Transfer Roller Unit	0 (Print continue)	Secondary transfer unit print counter	When 60K is reached	Enable
The supplies will be needed soon. > Secondary Transfer Roller Unit	1 (Print stop)		When 90% of 60K is reached	Enable
Change the supplies. > Secondary Transfer Roller Unit	1 (Print stop)		When 60K is reached	Disable

- When the secondary transfer unit is replaced with a new one, the print counter, the accumulated traveling distance counter, and the usage day counter are automatically cleared, and the above display disappears.
- If SIM26-55 setting is set to ENABLE in that case, the guidance for execution of the automatic adjustment of the engine is displayed.
- If the above guidance does not disappear though the secondary transfer unit is replaced, SIM24-4 must be executed to clear the print counter, the accumulated traveling distance counter, and the usage day counter.
- The above display disappears when the counters are cleared.

(4) Fusing unit

Display content	Display condition			Print job Enable/ Disable
	Sim26-38-D set value	Counter name	Counter value	
Change the supplies. > Fusing Unit	0 (Print continue)	Fusing unit print counter (Heat roller upper)	When 120K is reached	Enable
The supplies will be needed soon. > Fusing Unit	1 (Print stop)		When 90% of 120K is reached	Enable
Change the supplies. > Fusing Unit	1 (Print stop)		When 120K is reached	Disable
Change the supplies. > Fusing Unit	0 (Print continue)	Fusing unit print counter (Heat roller lower and external)	When 120K is reached	Enable
The supplies will be needed soon. > Fusing Unit	1 (Print stop)		When 90% of 120K is reached	Enable
Change the supplies. > Fusing Unit	1 (Print stop)		When 120K is reached	Disable

- When the fusing unit is replaced with a new one, the print counter (on the upper side of the heat roller), the usage day counter (on the upper side of the heat roller), the print counters (on the lower side and the outside of the heat roller), and the usage day counters (on the lower side and the outside of the heat roller) are automatically cleared, and the above display disappears.
- If SIM26-55 setting is set to ENABLE in that case, the guidance for execution of the automatic adjustment of the engine is displayed. (Since there is no need to execute the automatic adjustment of the engine when the fusing unit is replaced, it is recommendable to set the SIM26-55 setting to DISABLE (default).)
- If the above guidance does not disappear when the whole fusing unit is replaced, SIM24-4 must be executed to clear the print counter (on the upper side of the heat roller), the usage day counter (on the upper side of the heat roller), the print counters (on the lower side and the outside of the heat roller), and the usage day counters (on the lower side and the outside of the heat roller).
- The above display disappears when the counters are cleared.

(5) Drum cartridge

Display content	Display condition			Print job Enable/ Disable
	Sim26-38-E set value	Counter name	Counter value	
Change the supplies. > Drum Cartridge	0 (Print continue)	Drum cartridge print counter	When 72K is reached	Enable
		Drum cartridge accumulated rotation number	When 550K rotations is reached	Enable
The supplies will be needed soon. > Drum Cartridge *1	1 (Print stop)	Drum cartridge print counter	When 90% of 72K is reached by the counter	Enable
		Drum cartridge accumulated rotation number	When 90% of 550K rotation is reached by the counter	Enable
Change the supplies. > Drum Cartridge	1 (Print stop)	Drum cartridge print counter	When 72K is reached	Enable
			When 72K + 1K is reached	Disable
		Drum cartridge accumulated rotation number	When 550K rotations is reached	Enable
			When 550K rotation + 430Kmm is reached	Disable

*1: Selection of Display/Not Display can be made with Sim26-69. (Default: Not Display)

- When the drum cartridge is replaced with a new one, the print counter, the accumulated traveling distance counter, the accumulated rotation number counter, and the usage day counter are automatically cleared. If SIM26-55 setting is set to ENABLE in that case, the guidance for execution of the automatic adjustment of the engine is displayed.
- If SIM26-55 setting is set to DISABLE, SIM46-74 must be used to execute the automatic adjustment of the engine.
- If the above guidance does not disappear when the drum cartridge is replaced, SIM24-7 must be executed to clear the print counter, the accumulated traveling distance counter, the accumulated rotation number counter, and the usage day counter, and the engine automatic adjustment must be executed.
- The above display disappears when the counters are cleared.

(6) Developer section

Counter name	End conditions	Message when end over	
		Sim.26-38A "0" Print Enable	Sim.26-38A "1" Print Stop
Developer print counter (K)	72,000 [sheets]	Message (9)	Message (9)
Developer accumulated rotation number (K)	550K rotations	Message (9)	Message (9)

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
(9)	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.

(7) Toner cartridge

Display content	Display condition		Print job Enable/ Disable
	Remaining quantity display *1	Status	
The supplies will be needed soon. > Toner Cartridge *2	25-0%	Toner remaining quantity is 25% or less.	Enable
	25-0%	Toner remaining quantity corresponds to output of XX sheets. *3	Enable
Change the supplies. > Toner Cartridge	0%	When the toner cartridge reaches toner end.	Disable
No display	50-25%	Toner remaining quantity is 49 - 25%.	Enable
No display	75-50%	Toner remaining quantity is 74 - 50%.	Enable
No display	100-75%	Toner remaining quantity is 100 -75%.	Enable
Install the toner cartridge.	No display	When no toner cartridges are installed.	Disable
Improper cartridge.	No display	When an incompatible toner cartridge is installed.	Disable
Cartridge error.	No display	CRUM trouble Toner cartridge connector contact trouble	Disable

*1: Detected by the toner motor rotation number and the pixel count (The value of larger life percentage is employed.)
*2: Selection of Display/Not Display can be made with Sim26-69. (Default: Not Display)
*3: Setting can be made with Sim26-69. (Default: 0 sheet)

(8) Waste toner box

Display content	Display condition	Print job Enable/Disable
The supplies will be needed soon. > Toner Collection Container	When the waste toner full detection switch is ON for 1sec or more.	Enable
Change the supplies. > Toner Collection Container	When 500 count is reached from the above state. (1 count for 1 sheet output. When the process control is performed once, 10 counts are added.)	Disable

When the toner collection bottle is replaced, the display disappears.

3. Maintenance list

A. MX-C402SC/C382SC

×: Check ○: Clean ▲: Replace △: Adjust ☆: Lubricate

Section	Part name		30 K	60 K	90 K	120 K	150 K	180 K	210 K	240 K	270 K	300 K	Remark
Drum cartridge	Drum cartridge (Black)	Supply		▲		▲		▲		▲		▲	
	Drum cartridge (Cyan)	Supply	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
	Drum cartridge (Magenta)	Supply	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
	Drum cartridge (Yellow)	Supply	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
Developer cartridge	Developer cartridge (Black)	Supply		▲		▲		▲		▲		▲	
	Developer cartridge (Cyan)	Supply	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
	Developer cartridge (Magenta)	Supply	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
	Developer cartridge (Yellow)	Supply	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
Toner cartridge	Toner cartridge (Black)	Supply	Replace at every toner empty.										Replacement is made by the user.
	Toner cartridge (Cyan)	Supply											
	Toner cartridge (Magenta)	Supply											
	Toner cartridge (Yellow)	Supply											
Waste toner	Toner collection box	2	Replace at every full detection.										Replacement is made by the user.
Secondary transfer	Secondary transfer roller unit	1		▲		▲		▲		▲			

Section	Part name		30 K	60 K	90 K	120 K	150 K	180 K	210 K	240 K	270 K	300 K	Remark
Primary transfer	Intermediate transfer belt	1				▲				▲			
	Primary transfer roller	4				▲				▲			
	Cleaning blade	1				▲				▲			
	PTC wire	1				▲				▲			
	PTC cleaner	1				▲				▲			
	PTC cleaner B	1				▲				▲			
	Primary transfer drive coupling	1				▲				▲			
	Transfer drive roller					×				×			
	Transfer follower roller					×				×			
	Transfer tension roller					×				×			
	Backup shaft					×				×			
	Registration backup shaft					×				×			
Fusing	Upper heat roller unit	1				▲				▲			
	Lower heat roller unit	1				▲				▲			
	External heating unit	1				▲				▲			
	Separation pawl lower	2				▲				▲			
	Separation pawl lower spring	2				▲				▲			
	Thermistor retainer	1				▲				▲			
	External heat roller contact thermistor 1 (RTH_EX1) External heat roller contact thermistor 2 (RTH_EX2) Upper heat roller non-contact thermistor (RTH_Main) Upper heat roller contact thermistor (RTH_Sub)	1				▲				▲			Part with four thermistors integrated in it
	Lower heat roller contact thermistor (RTH_Low)	1				▲				▲			
Filter	Ozone filter	1				▲				▲			
Roller	Paper pickup roller (Tray 1)	1		×		×		×		×		×	Replace as needed. Reference: About 100K or 1 year of use.
	Paper feed roller	1		×		×		×		×		×	
	Separation roller	1		×		×		×		×		×	
	Paper feed roller (Manual paper feed tray)	1		×		×		×		×		×	
	Manual paper feed separation pad unit	1		×		×		×		×		×	
DSPF	Pickup roller	1		×		×		×		×		×	Replace as needed. Reference: About 100K of use.
	Paper feed/separation roller	2		×		×		×		×		×	
	Transport rollers			×		×		×		×		×	
	Discharge brush			×		×		×		×		×	
	Torque limiter (for separation)			×		×		×		×		×	
	Scanning glass, scanning white plate section			○		○		○		○		○	
	Mirror			×		×		×		×		×	
	Lens/CCD			×		×		×		×		×	
	Scanner lamp (LED)/Reflector			×		×		×		×		×	
	OC mat			○		○		○		○		○	
	Gears			×		×		×		×		×	
	Belts			×		×		×		×		×	
Scanner section	Mirror/Lens/Reflector/CCD			×		×		×		×		×	Replace as needed. Reference: About 100K of use.
	Table glass/SPF glass			○		○		○		○		○	
	Scanner lamp (LED)			×		×		×		×		×	
	Rails, Shaft			×		☆		×		☆		×	
	Drive belt/Pulley			×		×		×		×		×	

B. MX-B402SC/B382SC

×: Check ○: Clean ▲: Replace △: Adjust ☆: Lubricate

Section	Part name		60 K	72 K	120 K	144 K	180 K	216 K	240 K	288 K	300 K	Remark
Drum cartridge	Drum cartridge	1		▲		▲		▲		▲		
Developer section	Developer	1		▲		▲		▲		▲		
	DV blade	1		▲		▲		▲		▲		
	DV side seal F/R	1		×		×		×		×		
	Toner filter	2		×		×		×		×		
	Bias terminal/Connector	1		×		×		×		×		
Toner cartridge	Toner cartridge	1	Replace at every toner empty.									Replacement is made by the user.
	Toner collection box	2	Replace at every full detection.									Replacement is made by the user.
Secondary transfer section	Secondary transfer roller unit		▲		▲		▲		▲			
Primary transfer section	Intermediate transfer belt	1			▲				▲			
	Primary transfer roller	1			▲				▲			
	Cleaning blade	1			▲				▲			
	PTC wire	1			▲				▲			
	PTC cleaner	1			▲				▲			
	PTC cleaner B	1			▲				▲			
	Primary transfer drive coupling	1			▲				▲			
	Transfer drive roller				×				×			
	Transfer follower roller				×				×			
	Transfer tension roller				×				×			
	Backup shaft				×				×			
	Registration backup shaft				×				×			
Fusing	Upper heat roller assembly	1			▲				▲			
	Lower pressure roller	1			▲				▲			
	Lower roller bearing	2			▲				▲			
	Separation pawl lower/ Separation pawl lower spring	2			▲				▲			
	Upper thermistor	1			▲				▲			
	Thermistor retainer	1			▲				▲			
	Separation plate assembly	1			▲				▲			
	Separation spring	2			▲				▲			
	Oil roller	1			▲				▲			
	Oil roller bearing	4			▲				▲			
	Oil roller spring	4			▲				▲			
	Cleaning roller	1			▲				▲			
	Lower pressure roller, Cleaning roller	1			▲				▲			
Filter section	Ozone filter	1			▲				▲			
Roller section	Paper pickup roller (Tray 1)	1	×		×		×		×		×	
	Paper feed roller	1	×		×		×		×		×	
	Separation roller	1	×		×		×		×		×	
	Paper feed roller (Manual paper feed tray)	1	×		×		×		×		×	
	Manual paper feed separation pad unit	1	×		×		×		×		×	
DSPF section	Pickup roller	1	×		×		×		×		×	Replace as needed. Reference: About 100K of use.
	Paper feed/separation roller	2	×		×		×		×		×	
	Transport rollers		×		×		×		×		×	
	Discharge brush		×		×		×		×		×	
	Torque limiter (for separation)		×		×		×		×		×	
	Scanning glass, scanning white plate section		○		○		○		○		○	
	Mirror		×		×		×		×		×	
	Lens/CCD		×		×		×		×		×	
	Scanner lamp (LED)/Reflector		×		×		×		×		×	
	OC mat		○		○		○		○		○	
	Gears		×		×		×		×		×	
	Belts		×		×		×		×		×	
Scanner section	Mirror/Lens/Reflector/CCD		×		×		×		×		×	Replace as needed. Reference: About 100K of use.
	Table glass/SPF glass		○		○		○		○		○	
	Scanner lamp (LED)		×		×		×		×		×	
	Rails, Shaft		×		☆		×		☆		×	
	Drive belt/Pulley		×		×		×		×		×	

C. Drum cartridge

(1) MX-C402SC/C382SC

×: Check ○: Clean ▲: Replace △: Adjust ☆: Lubricate

No.	Part name	30K	60K	90K	120K	150K	180K	210K	240K	270K	300K	Remark
1	Drum cartridge (Black)		▲		▲		▲		▲		▲	
2	Drum cartridge (Cyan)	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
3	Drum cartridge (Magenta)	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
4	Drum cartridge (Yellow)	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	

NOTE: When handling the drum cartridge, be careful not to put fingerprints, oil, grease, or other foreign material on the OPC drum surface.

NOTE: When fingerprints or foreign materials are attached to the OPC drum surface, the cleaning blade may be reversed and defective images may be generated. In this case, use dry cloth to clean the drum. If foreign materials cannot be removed by cleaning, replace the drum with a new one.

NOTE: Avoid exposing the OPC drum surface to strong lights (sunlight, fluorescent lamp lights, incandescent lamp lights).

Remove the black protection sheet which covers the OPC drum before installing the drum cartridge to the machine.

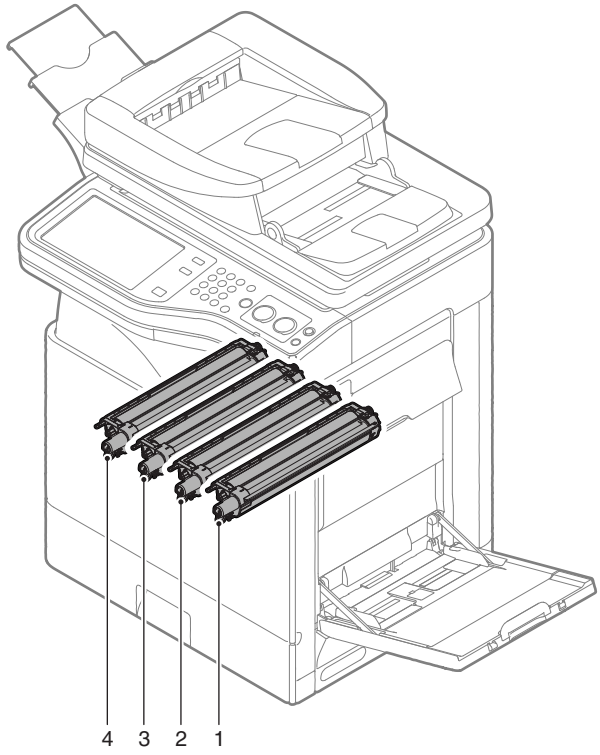
NOTE: When putting the drum cartridge outside the machine, cover the OPC drum with light-blocking material. (When using paper, use about 10 sheets of paper to cover.)

NOTE: When the drum cartridge is replaced with a new one, the print counter, the accumulated traveling distance counter, the accumulated rotation number counter, and the usage day counter are automatically cleared.

NOTE: If the machine power is turned OFF or the door is opened during warming up and initializing (until the machine enters the print (copy) ready state), the initial detection function may not operate normally.

Never operate the machine such as execution of the simulation, turning OFF the machine power, or opening the door during the period after turning ON the power before the machine enters the print (copy) ready state.

If the counters are not automatically reset, SIM24-7 must be used to reset the counters manually.



(2) MX-B402SC/B382SC

×: Check ○: Clean ▲: Replace △: Adjust ☆: Lubricate

No.	Part name	60K	72K	120K	144K	180K	216K	240K	288K	300K	Remark
1	Drum cartridge		▲		▲		▲		▲		

NOTE: When handling the drum cartridge, be careful not to put fingerprints, oil, grease, or other foreign material on the OPC drum surface.

NOTE: When fingerprints or foreign materials are attached to the OPC drum surface, the cleaning blade may be reversed and defective images may be generated. In this case, use dry cloth to clean the drum. If foreign materials cannot be removed by cleaning, replace the drum with a new one.

NOTE: Avoid exposing the OPC drum surface to strong lights (sunlight, fluorescent lamp lights, incandescent lamp lights).

Remove the black protection sheet which covers the OPC drum before installing the drum cartridge to the machine.

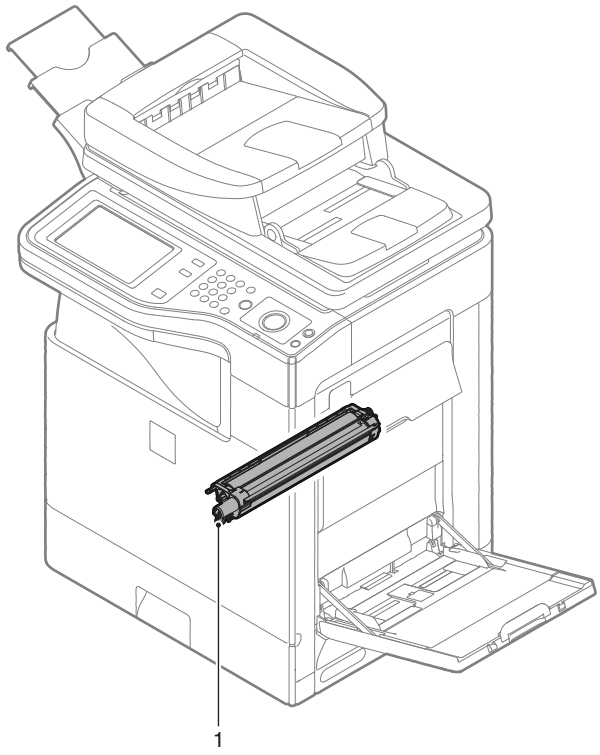
NOTE: When putting the drum cartridge outside the machine, cover the OPC drum with light-blocking material. (When using paper, use about 10 sheets of paper to cover.)

NOTE: When the drum cartridge is replaced with a new one, the print counter, the accumulated traveling distance counter, the accumulated rotation number counter, and the usage day counter are automatically cleared.

If the machine power is turned OFF or the door is opened during warming up and initializing (until the machine enters the print (copy) ready state), the initial detection function may not operate normally.

Never operate the machine such as execution of the simulation, turning OFF the machine power, or opening the door during the period after turning ON the power before the machine enters the print (copy) ready state.

If the counters are not automatically reset, SIM24-7 must be used to reset the counters manually.



D. Developer cartridge (MX-C402SC/C382SC)

×: Check ○: Clean ▲: Replace △: Adjust ☆: Lubricate

No.	Part name	30K	60K	90K	120K	150K	180K	210K	240K	270K	300K	Remark
1	Developer cartridge (Black)		▲		▲		▲		▲		▲	
2	Developer cartridge (Cyan)	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
3	Developer cartridge (Magenta)	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
4	Developer cartridge (Yellow)	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	

NOTE: When the developer cartridge is replaced with a new one, the print counter, the accumulated traveling distance counter, the accumulated rotation number counter, and the usage day counter are automatically reset, and the initial setting of the toner density is automatically executed.

If the machine power is turned OFF or the door is opened during warming up and initializing (until the machine enters the print (copy) ready state), the initial detection function may not operate normally.

Never operate the machine such as execution of the simulation, turning OFF the machine power, or opening the door during the period after turning ON the power before the machine enters the print (copy) ready state.

If the counters are not automatically reset, use SIM24-4 to reset the counters manually.

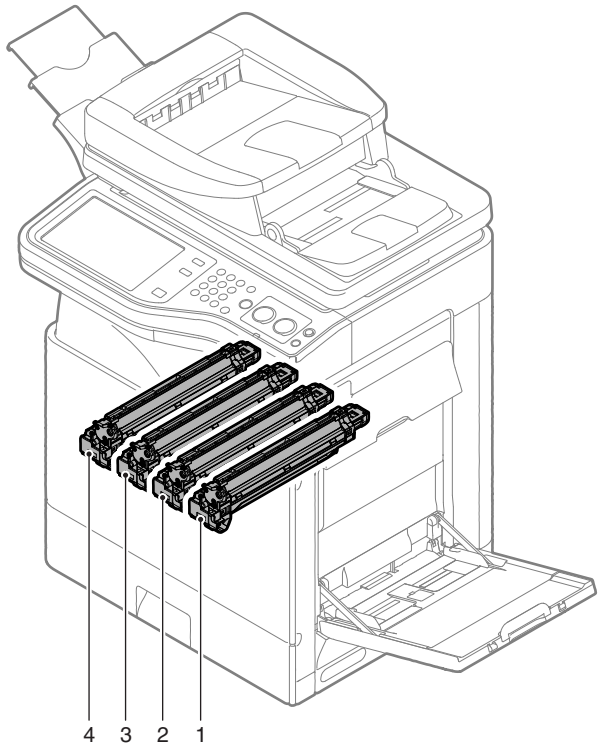
NOTE: When installing a new developer cartridge, be sure to install the toner cartridge in advance. If a new developer cartridge is installed without installing the toner cartridge, the initial setting of the toner density is not executed.

NOTE: If the initial setting of the toner density is not automatically executed when the developer cartridge is replaced, SIM25-2 must be used to execute the initial setting of the toner density.

NOTE: When handling the developer cartridge, be careful not to put fingerprints, oil, grease, or other foreign material on the developer roller surface.

NOTE: When fingerprints or foreign materials are attached to the developer roller surface, defective images may be generated. In this case, use dry cloth and alcohol to clean the roller. If foreign materials cannot be removed by cleaning, replace the developer cartridge with a new one.

If developer or toner is attached to the developer roller surface, never use alcohol.



E. Developer section (MX-B402SC/B382SC)

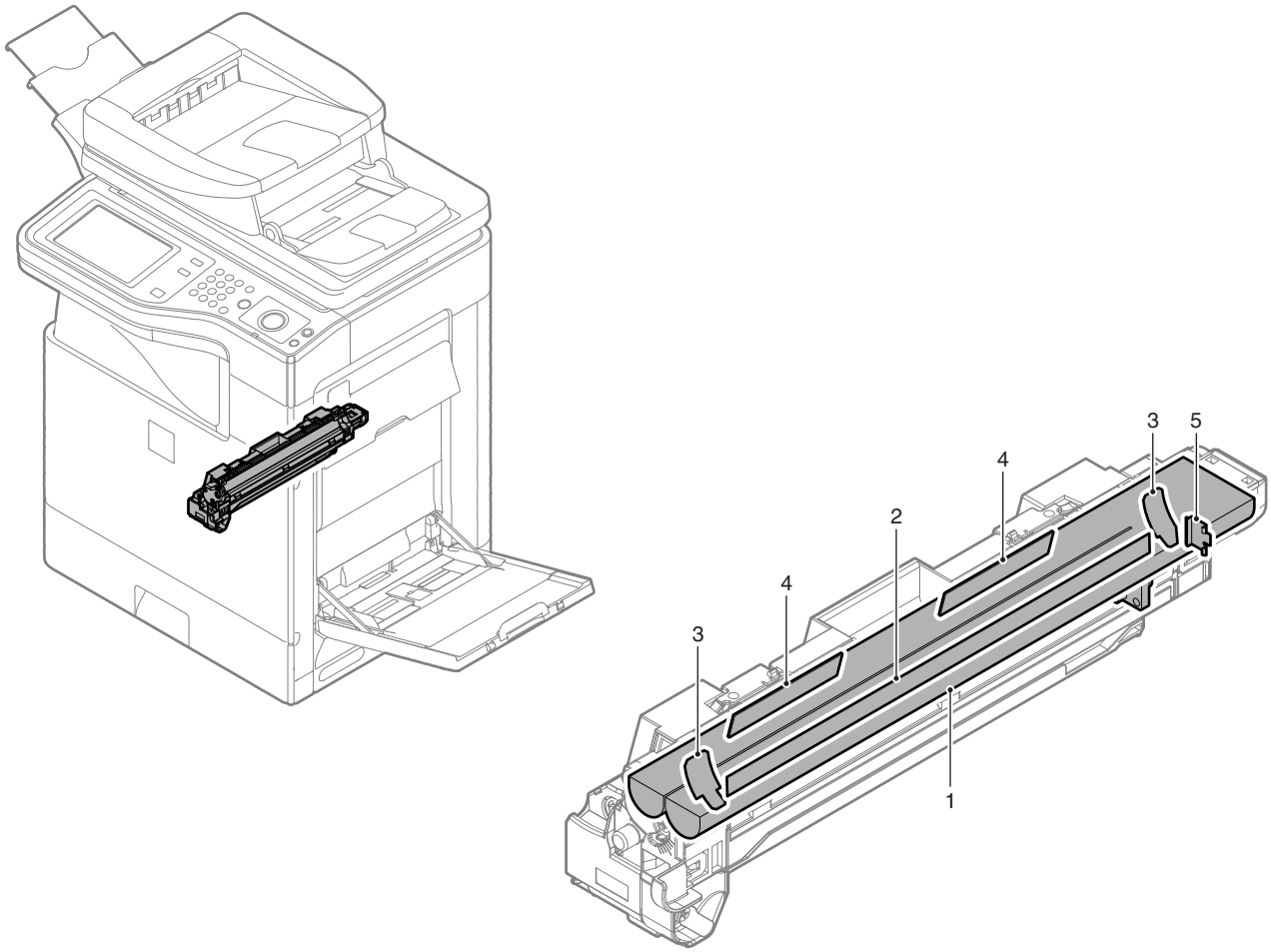
×: Check ○: Clean ▲: Replace △: Adjust ☆: Lubricate

No.	Part name	60K	72K	120K	144K	180K	216K	240K	288K	300K	Remark
1	Developer		▲		▲		▲		▲		
2	DV blade		▲		▲		▲		▲		
3	DV side seal F/R		×		×		×		×		
4	Toner filter		×		×		×		×		
5	Bias terminal/Connector		×		×		×		×		

NOTE: When handling the developing unit, be careful not to put fingerprints, oil, grease, or other foreign material on the developer roller surface.

NOTE: When fingerprints or foreign materials are attached to the developer roller surface, defective images may be generated. In this case, use dry cloth and alcohol to clean the roller.

If developer or toner is attached to the developer roller surface, never use alcohol.



F. Toner cartridge

(1) MX-C402SC/C382SC

×: Check ○: Clean ▲: Replace △: Adjust ☆: Lubricate

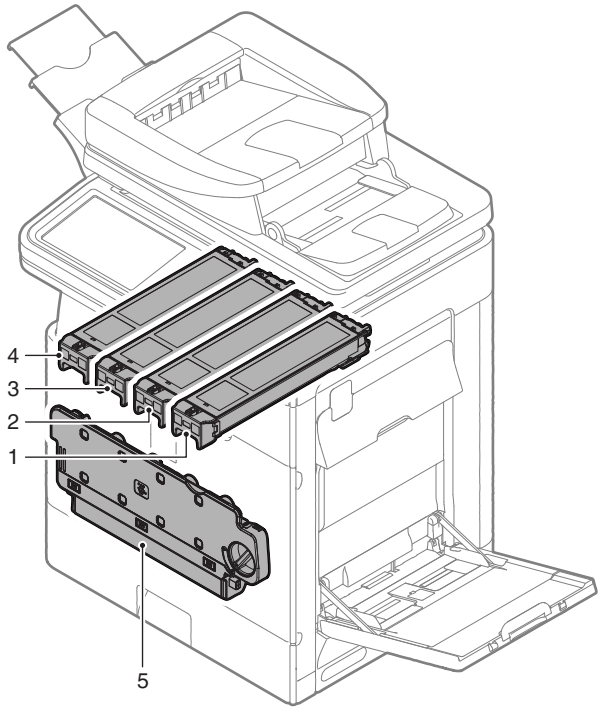
No.	Part name	30K	60K	90K	120K	150K	180K	210K	240K	270K	300K	Remark
1	Toner cartridge (Black)	Replace at every toner empty.										Replacement is made by the user.
2	Toner cartridge (Cyan)											
3	Toner cartridge (Magenta)											
4	Toner cartridge (Yellow)											
5	Toner collection box	Replace at every full detection.										Replacement is made by the user.

(2) MX-B402SC/B382SC

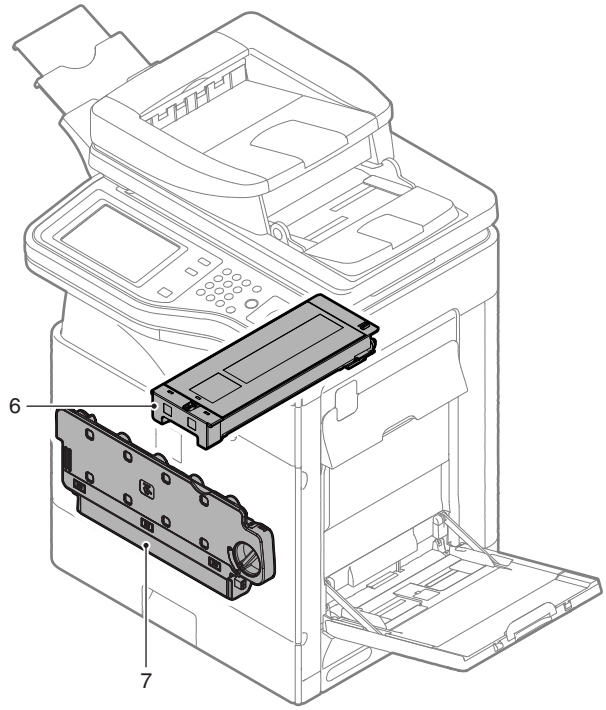
×: Check ○: Clean ▲: Replace △: Adjust ☆: Lubricate

No.	Part name	60K	72K	120K	144K	180K	216K	240K	288K	300K	Remark
6	Toner cartridge	Replace at every toner empty.									Replacement is made by the user.
7	Toner collection box	Replace at every full detection.									Replacement is made by the user.

MX-C402SC/C382SC



MX-B402SC/B382SC



G. Secondary transfer section

(1) MX-C402SC/C382SC

×: Check ○: Clean ▲: Replace △: Adjust ☆: Lubricate

No.	Part name	30K	60K	90K	120K	150K	180K	210K	240K	270K	300K	Remark
1	Secondary transfer roller unit		▲		▲		▲		▲			

NOTE: When the secondary transfer unit is replaced with a new one, the print counter, the accumulated traveling distance counter, and the usage day counter are automatically reset.

If a simulation is executed or the machine power is turned OFF or the door is opened during warming up and initializing (until the machine enters the print (copy) ready state), the initial detection function may not operate normally.

Never operate the machine such as execution of the simulation, turning OFF the machine power, or opening the door during the period after turning ON the power before the machine enters the print (copy) ready state.

If the counters are not automatically reset, use SIM24-4 to reset the counters manually.

NOTE: When handling the secondary transfer unit, be careful not to put fingerprints, oil, grease, or other foreign material on the secondary transfer roller surface.

(2) MX-B402SC/B382SC

No.	Part name	60K	72K	120K	144K	180K	216K	240K	288K	300K	Remark
1	Secondary transfer roller unit	▲		▲		▲		▲			

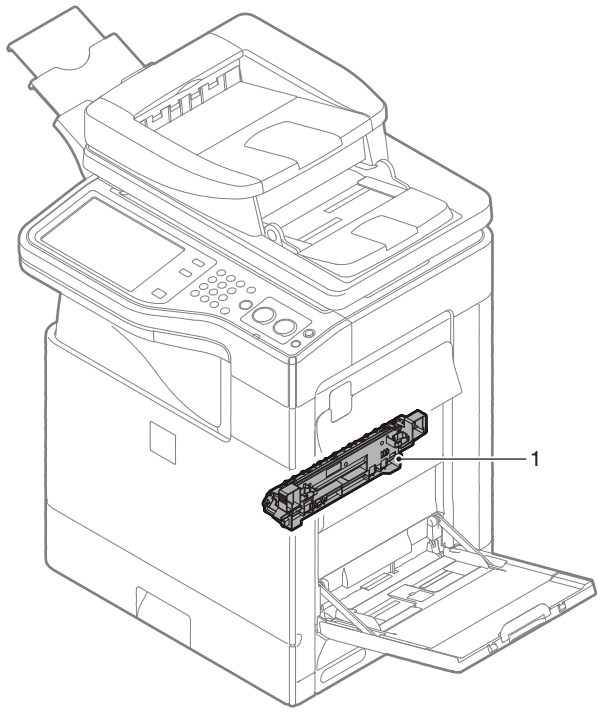
NOTE: When the secondary transfer unit is replaced with a new one, the print counter, the accumulated traveling distance counter, and the usage day counter are automatically reset.

If a simulation is executed or the machine power is turned OFF or the door is opened during warming up and initializing (until the machine enters the print (copy) ready state), the initial detection function may not operate normally.

Never operate the machine such as execution of the simulation, turning OFF the machine power, or opening the door during the period after turning ON the power before the machine enters the print (copy) ready state.

If the counters are not automatically reset, use SIM24-4 to reset the counters manually.

NOTE: When handling the secondary transfer unit, be careful not to put fingerprints, oil, grease, or other foreign material on the secondary transfer roller surface.



H. Primary transfer section

(1) MX-C402SC/C382SC

×: Check ○: Clean ▲: Replace △: Adjust ☆: Lubricate

No.	Part name	30K	60K	90K	120K	150K	180K	210K	240K	270K	300K	Remark
1	Intermediate transfer belt				▲				▲			
2	Primary transfer roller				▲				▲			
3	Cleaning blade				▲				▲			
4	PTC wire				▲				▲			
5	PTC cleaner				▲				▲			
6	PTC cleaner B				▲				▲			
7	Primary transfer drive coupling				▲				▲			
8	Transfer drive roller				×				×			
9	Transfer follower roller				×				×			
10	Transfer tension roller				×				×			
11	Backup shaft				×				×			
12	Registration backup shaft				×				×			

NOTE: When the primary transfer unit is replaced with a new one, the print counter, the accumulated traveling distance counter, and the usage day counter are automatically reset.

If the machine power is turned OFF or the door is opened during warming up and initializing (until the machine enters the print (copy) ready state), the initial detection function may not operate normally.

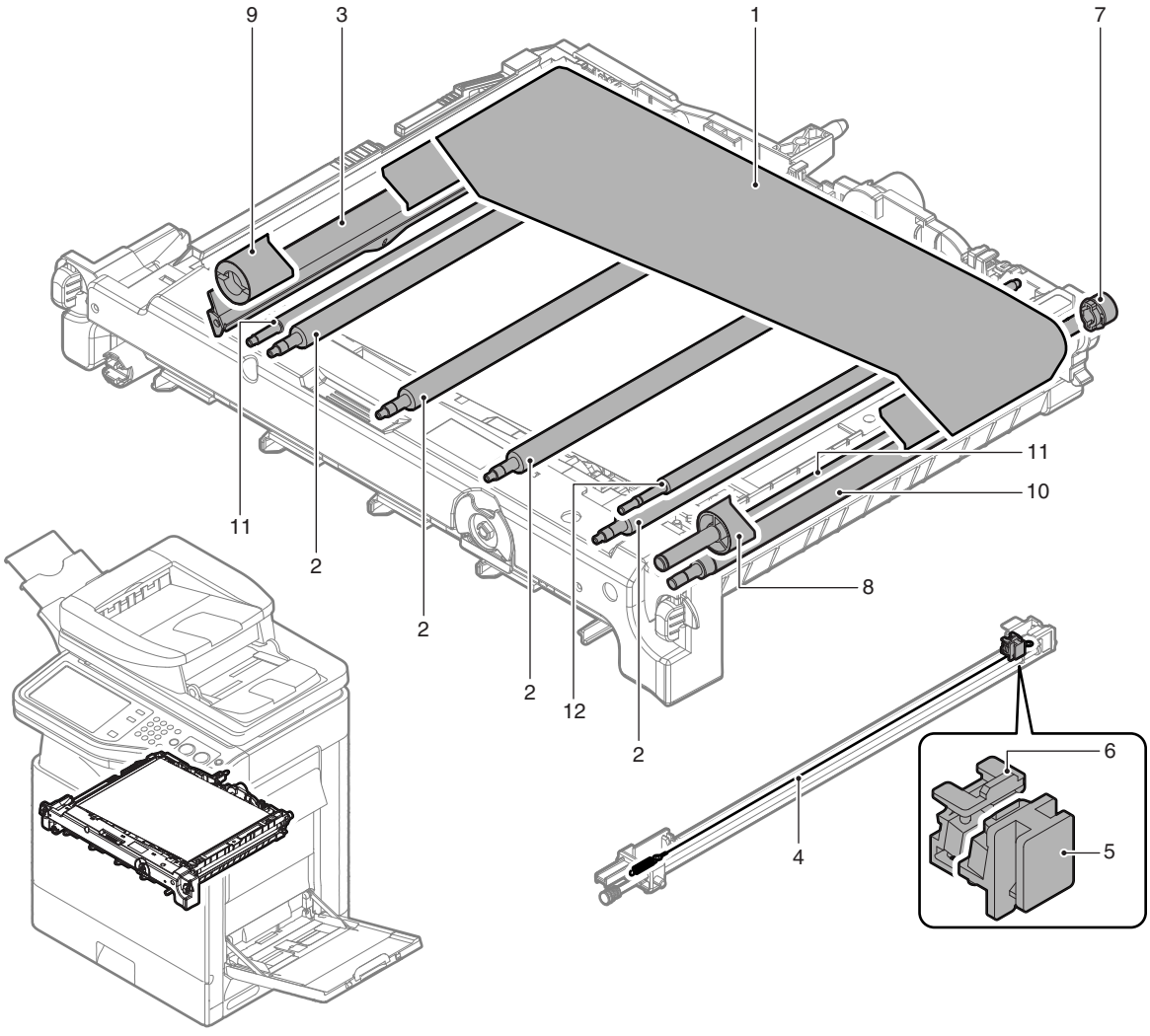
Never operate the machine such as execution of the simulation, turning OFF the machine power, or opening the door during the period after turning ON the power before the machine enters the print (copy) ready state.

If the counters are not automatically reset, use SIM24-4 to reset the counters manually.

NOTE: When a sub part is used to execute the maintenance, SIM24-4 must be used to reset the counters manually.

When handling the primary transfer unit, be careful not to put fingerprints, oil, grease, or other foreign material on the transfer belt surface.

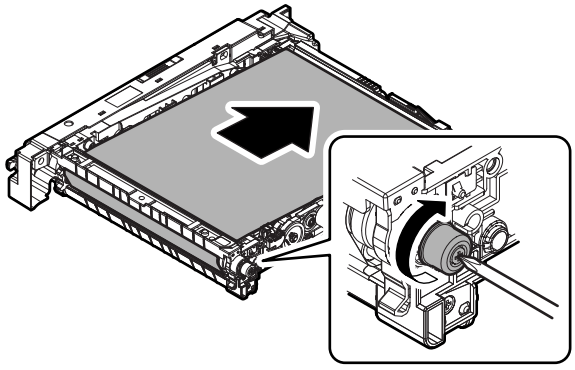
When fingerprints or foreign materials are attached to the transfer belt surface, defective images may be generated. In this case, use dry cloth and alcohol to clean the belt. When alcohol is used, wipe with dry cloth carefully.



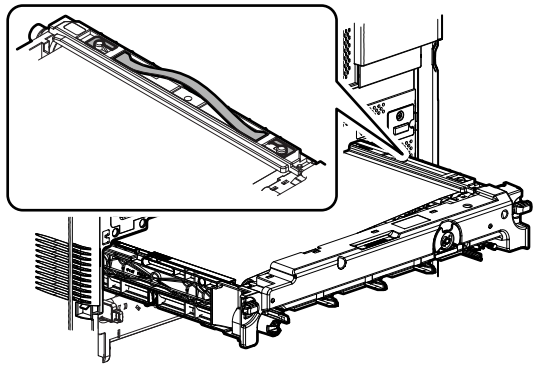
NOTE: Be careful not to put fingerprints or oily dirt on the transfer belt surface. (Do not put the transfer belt on a place where there is oily dirt or dust.)

NOTE: When replacing the transfer belt, hold the edge section (within 8mm from the edge) of the transfer belt.

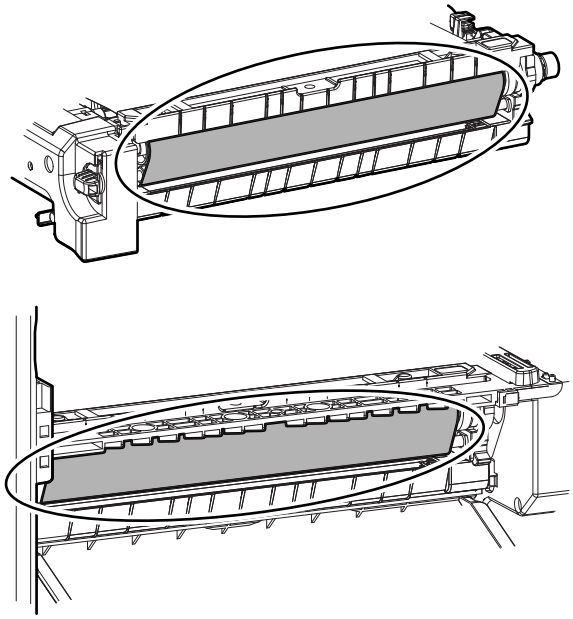
NOTE: When rotating the transfer belt manually, use a screwdriver to rotate the drive gear section.



NOTE: To install or remove the primary transfer unit, hold the grip.



NOTE: When installing or removing the primary transfer unit, be careful not to touch the section marked with a red circle in the figure below. When opening the right door, be careful not to touch the exposed section of the transfer belt.



Procedures when the primary transfer belt is touched mistakenly

1) Clean and remove oily dirt from the transfer belt surface with alcohol.
2) Wipe off the alcohol with a clean cloth. (If not, alcohol stain may be printed on a copy image.)
3) To prevent against reversing of the cleaning blade, apply KYNAR to the primary transfer belt.
4) Make three continuous multi-print copies of half tone images on the whole surface of A4R (8.5" x 11"R), and check to confirm that there are no fingerprints or alcohol taint on the copy images. If there are fingerprints or alcohol taint, repeat the procedure again.

(2) MX-B402SC/B382SC

No.	Part name	60K	72K	120K	144K	180K	216K	240K	288K	300K	Remark
1	Intermediate transfer belt			▲				▲			
2	Primary transfer roller			▲				▲			
3	Cleaning blade			▲				▲			
4	PTC wire			▲				▲			
5	PTC cleaner			▲				▲			
6	PTC cleaner B			▲				▲			
7	Primary transfer drive coupling			▲				▲			
8	Transfer drive roller			×				×			
9	Transfer follower roller			×				×			
10	Transfer tension roller			×				×			
11	Backup shaft			×				×			
12	Registration backup shaft			×				×			

NOTE: When the primary transfer unit is replaced with a new one, the print counter, the accumulated traveling distance counter, and the usage day counter are automatically reset.

If the machine power is turned OFF or the door is opened during warming up and initializing (until the machine enters the print (copy) ready state), the initial detection function may not operate normally.

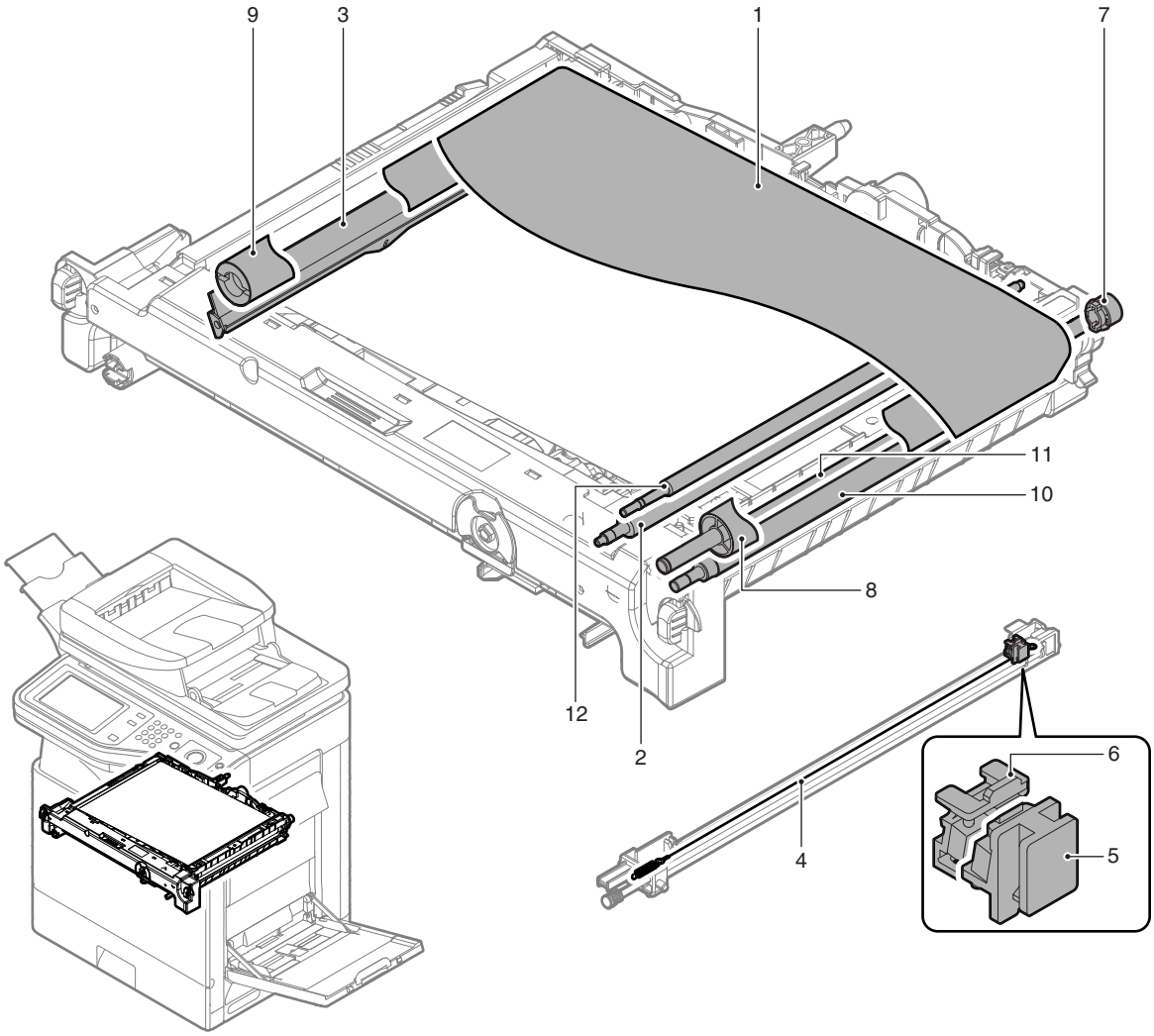
Never operate the machine such as execution of the simulation, turning OFF the machine power, or opening the door during the period after turning ON the power before the machine enters the print (copy) ready state.

If the counters are not automatically reset, use SIM24-4 to reset the counters manually.

NOTE: When a sub part is used to execute the maintenance, SIM24-4 must be used to reset the counters manually.

NOTE: When handling the primary transfer unit, be careful not to put fingerprints, oil, grease, or other foreign material on the transfer belt surface.

NOTE: When fingerprints or foreign materials are attached to the transfer belt surface, defective images may be generated. In this case, use dry cloth and alcohol to clean the belt. When alcohol is used, wipe with dry cloth carefully.



I. Fusing section

(1) MX-C402SC/C382SC

×: Check ○: Clean ▲: Replace △: Adjust ☆: Lubricate

No.	Part name	30K	60K	90K	120K	150K	180K	210K	240K	270K	300K	Remark
1	Upper heat roller unit				▲				▲			
2	Lower heat roller unit				▲				▲			
3	External heating unit				▲				▲			
4	Separation pawl lower				▲				▲			
5	Separation pawl lower spring				▲				▲			
6	Thermistor retainer				▲				▲			
7	External heat roller contact thermistor 1 (RTH_EX1) External heat roller contact thermistor 2 (RTH_EX2) Upper heat roller non-contact thermistor (RTH_Main) Upper heat roller contact thermistor (RTH_Sub)				▲				▲			Part with four thermistors integrated in it
8	Lower heat roller contact thermistor (RTH_Low)				▲				▲			

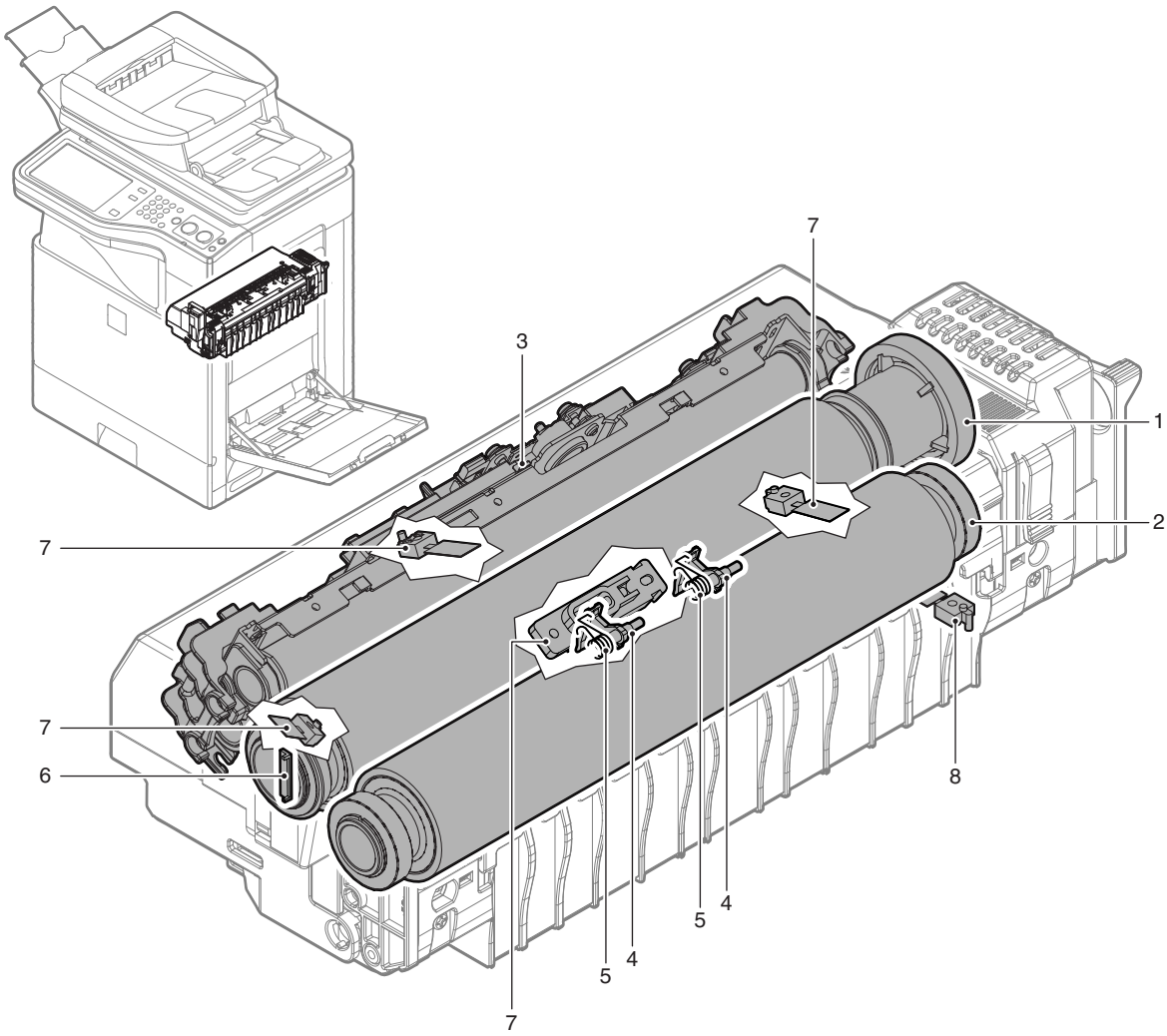
NOTE: When the fusing unit is replaced with a new one, the print counter (on the upper side of the heat roller), the usage day counter (on the upper side of the heat roller), the print counters (on the lower side and the outside of the heat roller), and the usage day counters (on the lower side and the outside of the heat roller) are automatically reset.

If the machine power is turned OFF or the door is opened during warming up and initializing (until the machine enters the print (copy) ready state), the initial detection function may not operate normally.

Never operate the machine such as execution of the simulation, turning OFF the machine power, or opening the door during the period after turning ON the power before the machine enters the print (copy) ready state.

If the counters are not automatically reset, SIM24-4 must be used to reset the counters manually.

NOTE: When a sub part is used to execute the maintenance, SIM24-4 must be used to reset the counters manually.



(2) MX-B402SC/B382SC

×: Check ○: Clean ▲: Replace △: Adjust ☆: Lubricate

No.	Part name	60K	72K	120K	144K	180K	216K	240K	288K	300K	Remark
1	Upper heat roller assembly			▲				▲			
2	Lower pressure roller			▲				▲			
3	Lower roller bearing			▲				▲			
4	Separation pawl lower/Separation pawl lower spring			▲				▲			
5	Upper thermistor			▲				▲			
6	Thermistor retainer			▲				▲			
7	Separation plate assembly			▲				▲			
8	Separation spring			▲				▲			
9	Oil roller			▲				▲			
10	Oil roller bearing			▲				▲			
11	Oil roller spring			▲				▲			
12	Cleaning roller			▲				▲			
13	Lower pressure roller, Cleaning roller			▲				▲			

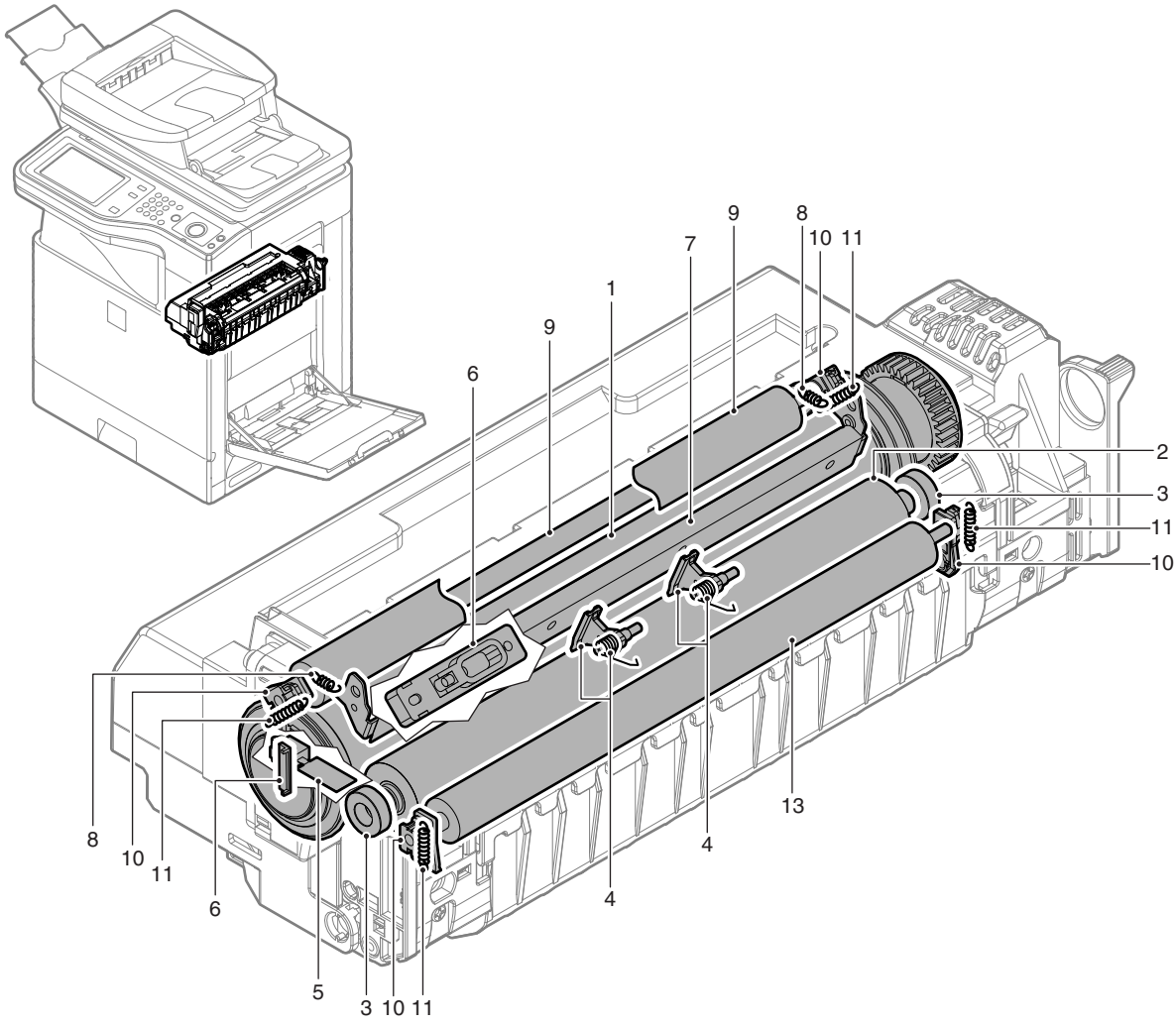
NOTE: When the fusing unit is replaced with a new one, the print counter (on the upper side of the heat roller), the usage day counter (on the upper side of the heat roller), the print counters (on the lower side and the outside of the heat roller), and the usage day counters (on the lower side and the outside of the heat roller) are automatically reset.

If the machine power is turned OFF or the door is opened during warming up and initializing (until the machine enters the print (copy) ready state), the initial detection function may not operate normally.

Never operate the machine such as execution of the simulation, turning OFF the machine power, or opening the door during the period after turning ON the power before the machine enters the print (copy) ready state.

If the counters are not automatically reset, SIM24-4 must be used to reset the counters manually.

NOTE: When a sub part is used to execute the maintenance, SIM24-4 must be used to reset the counters manually.



J. Filter section

(1) MX-C402SC/C382SC

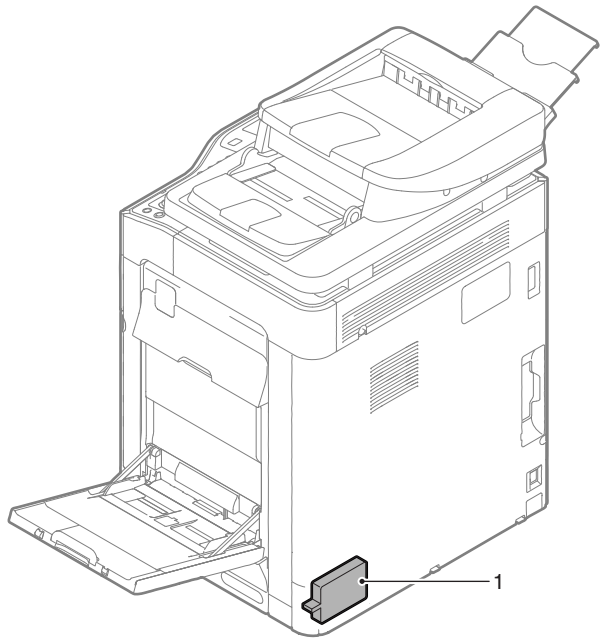
×: Check ○: Clean ▲: Replace △: Adjust ☆: Lubricate

No.	Part name	30K	60K	90K	120K	150K	180K	210K	240K	270K	300K	Remark
1	Ozone filter				▲				▲			

(2) MX-B402SC/B382SC

×: Check ○: Clean ▲: Replace △: Adjust ☆: Lubricate

No.	Part name	60K	72K	120K	144K	180K	216K	240K	288K	300K	Remark
1	Ozone filter			▲				▲			



K. Roller section

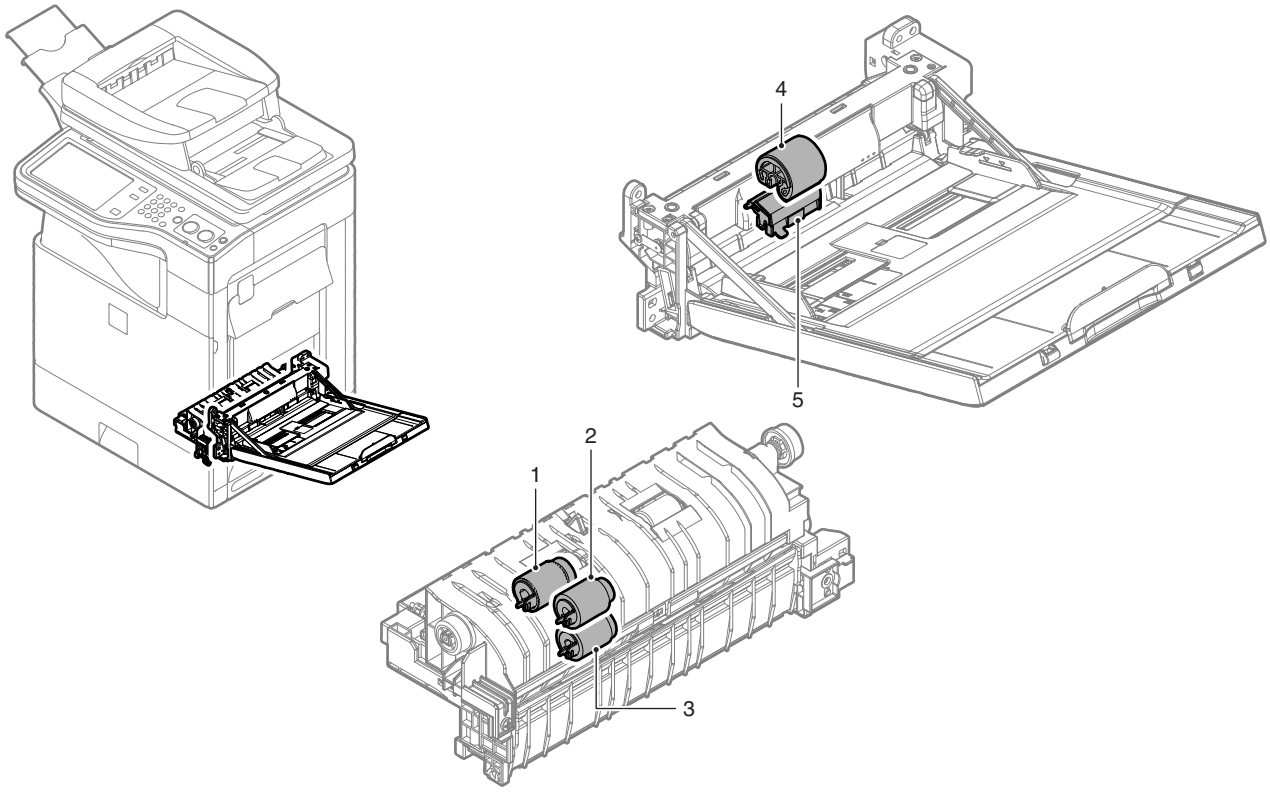
(1) MX-C402SC/C382SC

×: Check ○: Clean ▲: Replace △: Adjust ☆: Lubricate

No.	Part name	30K	60K	90K	120K	150K	180K	210K	240K	270K	300K	Remark
1	Paper pickup roller (Tray 1)		×		×		×		×		×	Replace as needed. Reference: About 100K or 1 year of use.
2	Paper feed roller		×		×		×		×		×	
3	Separation roller		×		×		×		×		×	
4	Paper feed roller (Manual paper feed tray)		×		×		×		×		×	
5	Manual paper feed separation pad unit		×		×		×		×		×	

(2) MX-B402SC/B382SC

No.	Part name	60K	72K	120K	144K	180K	216K	240K	288K	300K	Remark
1	Paper pickup roller (Tray 1)	×		×		×		×		×	Replace as needed. Reference: About 100K or 1 year of use.
2	Paper feed roller	×		×		×		×		×	
3	Separation roller	×		×		×		×		×	
4	Paper feed roller (Manual paper feed tray)	×		×		×		×		×	
5	Manual paper feed separation pad unit	×		×		×		×		×	



L. DSPF section

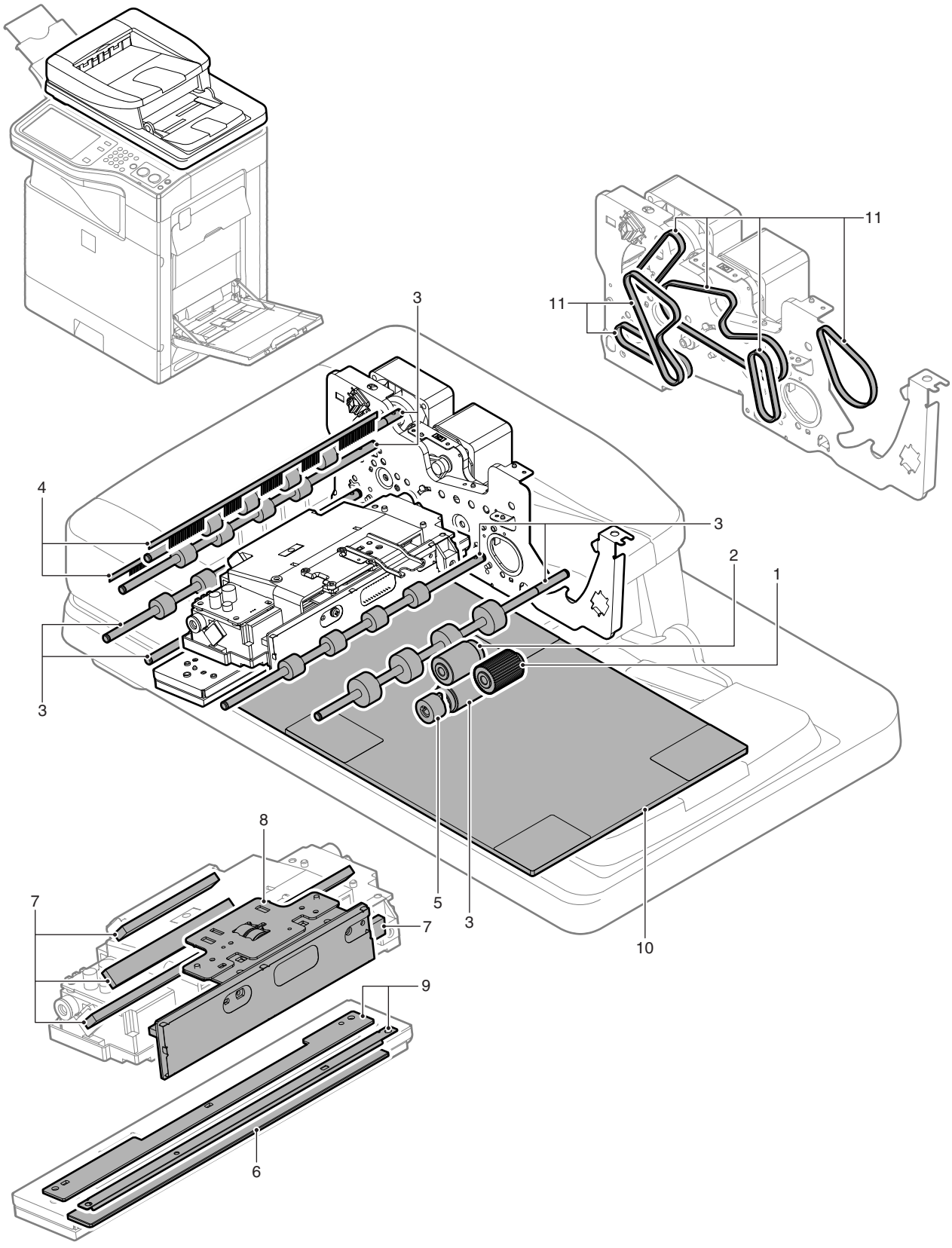
(1) MX-C402SC/C382SC

×: Check ○: Clean ▲: Replace △: Adjust ☆: Lubricate

No.	Part name	30K	60K	90K	120K	150K	180K	210K	240K	270K	300K	Remark
1	Pickup roller		×		×		×		×		×	Replace as needed. Reference: About 100K of use.
2	Paper feed/separation roller		×		×		×		×		×	
3	Transport rollers		×		×		×		×		×	
4	Discharge brush		×		×		×		×		×	
5	Torque limiter (for separation)		×		×		×		×		×	
6	Scanning glass, scanning white plate section		○		○		○		○		○	
7	Mirror		×		×		×		×		×	
8	Lens/CCD		×		×		×		×		×	
9	Scanner lamp (LED)/Reflector		×		×		×		×		×	
10	OC mat		○		○		○		○		○	
11	Belts		×		×		×		×		×	

(2) MX-B402SC/B382SC

No.	Part name	60K	72K	120K	144K	180K	216K	240K	288K	300K	Remark
1	Pickup roller	×		×		×		×		×	Replace as needed. Reference: About 100K of use.
2	Paper feed/separation roller	×		×		×		×		×	
3	Transport rollers	×		×		×		×		×	
4	Discharge brush	×		×		×		×		×	
5	Torque limiter (for separation)	×		×		×		×		×	
6	Scanning glass, scanning white plate section	○		○		○		○		○	
7	Mirror	×		×		×		×		×	
8	Lens/CCD	×		×		×		×		×	
9	Scanner lamp (LED)/Reflector	×		×		×		×		×	
10	OC mat	○		○		○		○		○	
11	Belts	×		×		×		×		×	


11
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M. Scanner section

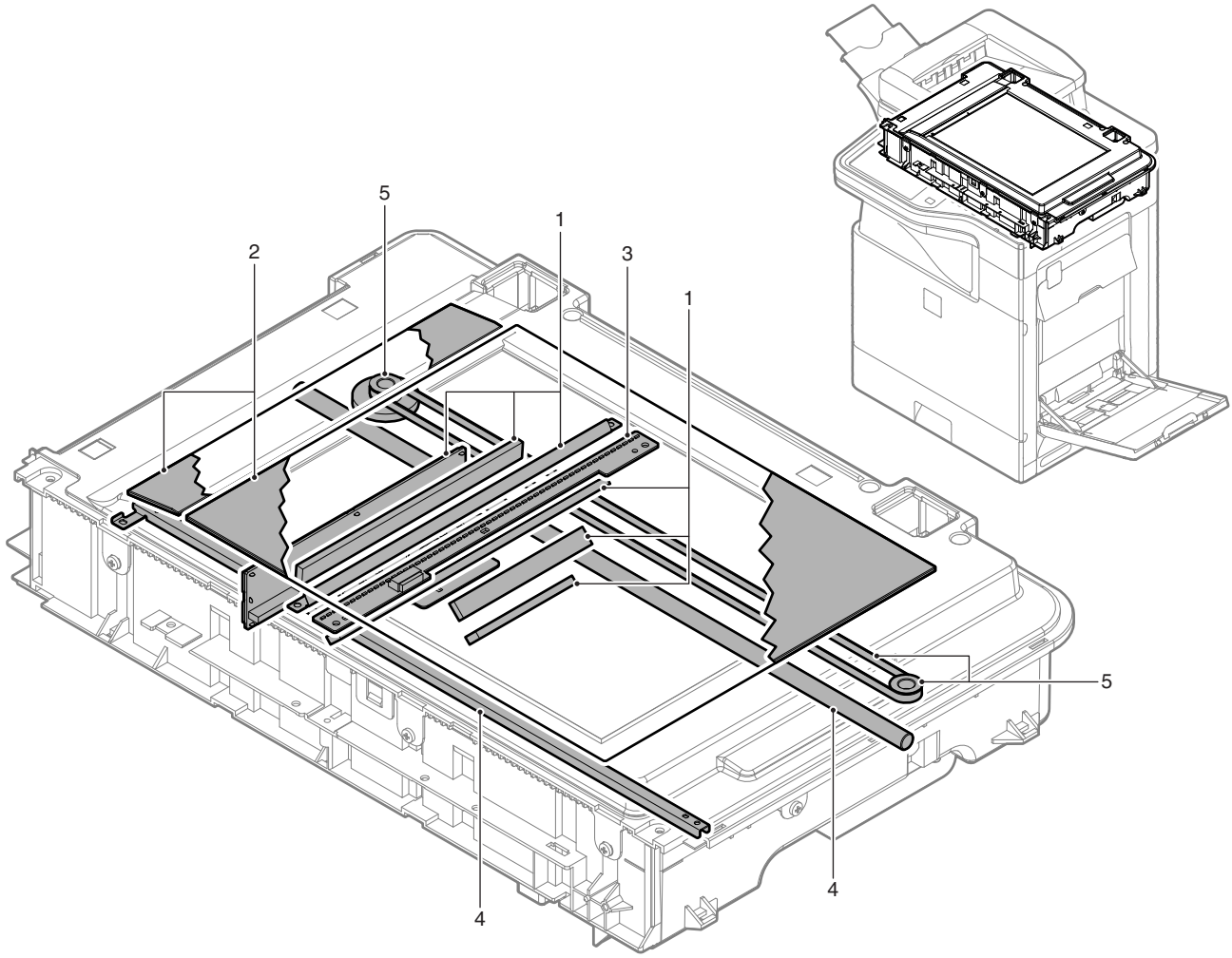
(1) MX-C402SC/C382SC

×: Check ○: Clean ▲: Replace △: Adjust ☆: Lubricate

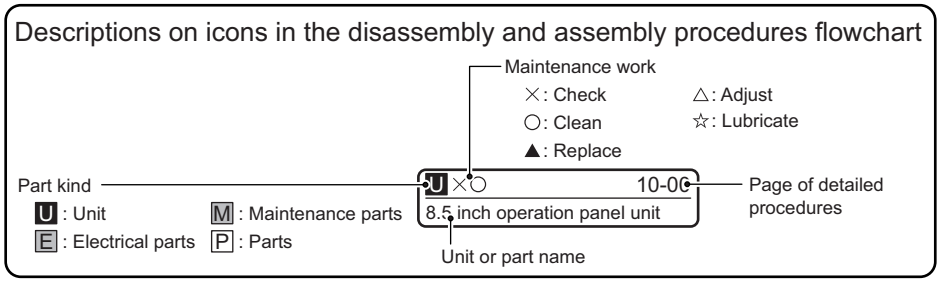
No.	Part name	30K	60K	90K	120K	150K	180K	210K	240K	270K	300K	Remark
1	Mirror/Lens/Reflector/CCD		×		×		×		×		×	Replace as needed. Reference: About 100K of use.
2	Table glass/SPF glass		○		○		○		○		○	
3	Scanner lamp (LED)		×		×		×		×		×	
4	Rails, Shaft		×		☆		×		☆		×	
5	Drive belt/Pulley		×		×		×		×		×	

(2) MX-B402SC/B382SC

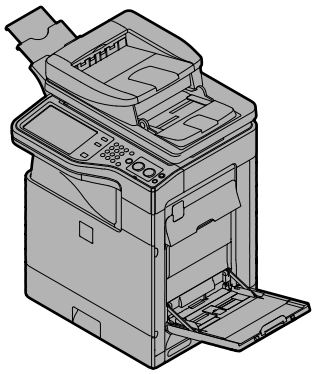
No.	Part name	60K	72K	120K	144K	180K	216K	240K	288K	300K	Remark
1	Mirror/Lens/Reflector/CCD	×		×		×		×		×	Replace as needed. Reference: About 100K of use.
2	Table glass/SPF glass	○		○		○		○		○	
3	Scanner lamp (LED)	×		×		×		×		×	
4	Rails, Shaft	×		☆		×		☆		×	
5	Drive belt/Pulley	×		×		×		×		×	

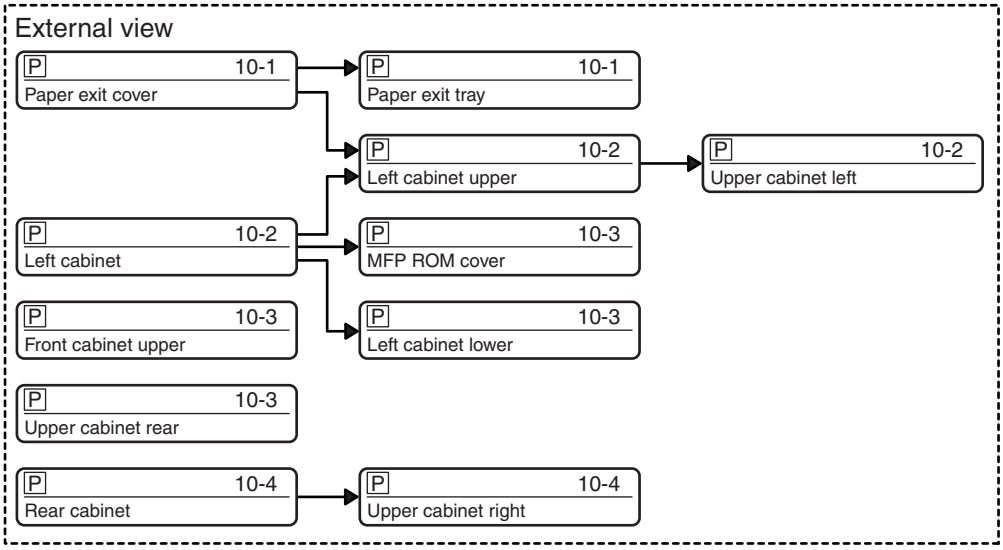


[10] DISASSEMBLY AND ASSEMBLY



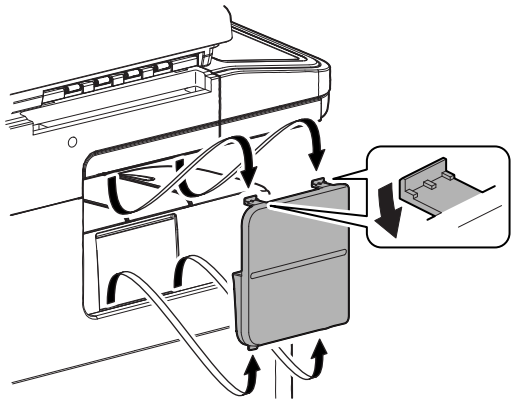
1. External view





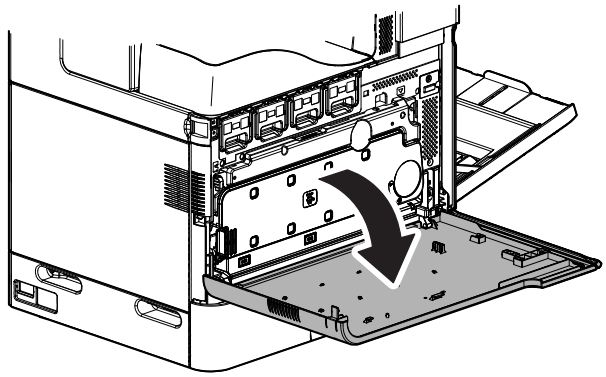
A. Paper exit cover

1) Disengage the pawl, and remove the paper exit cover.

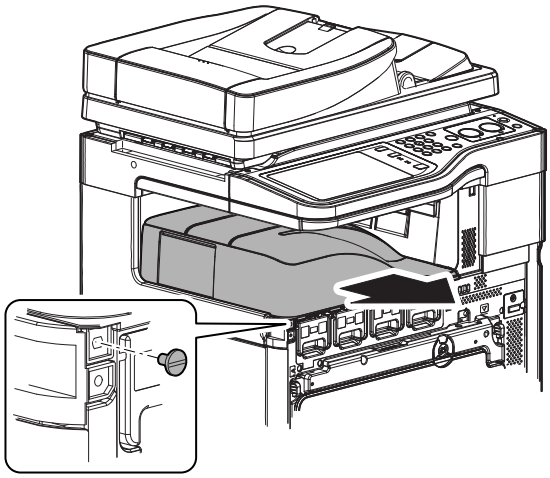


B. Paper exit tray

1) Open the front cover.

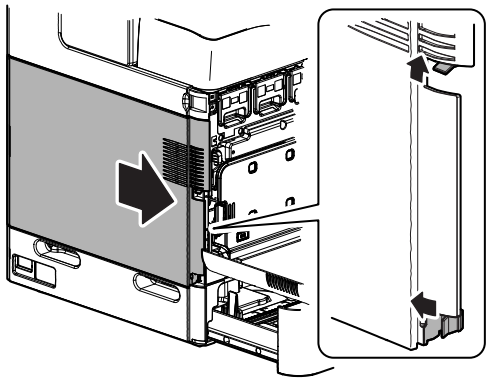


2) Remove the coin screw, and remove the paper exit tray.



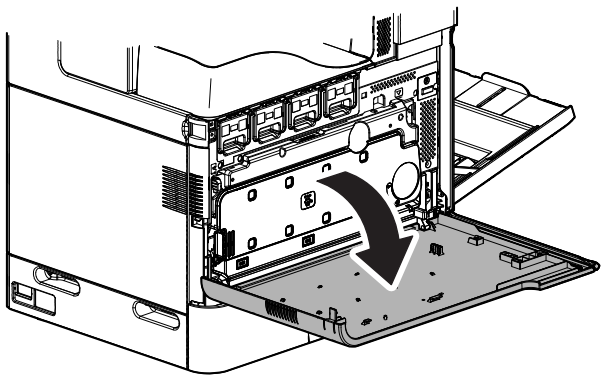
C. Left cabinet

1) Remove the stopper. Slide the left cabinet to the front side to remove.

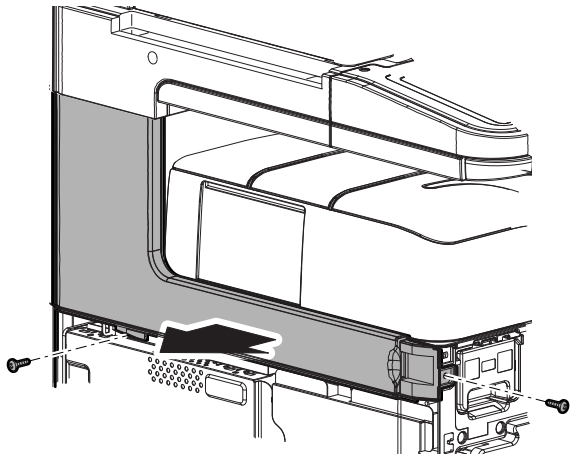


D. Left cabinet upper

1) Open the front cover.

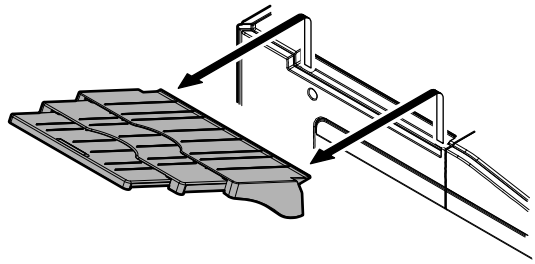


2) Remove the screw, and remove the left cabinet upper.

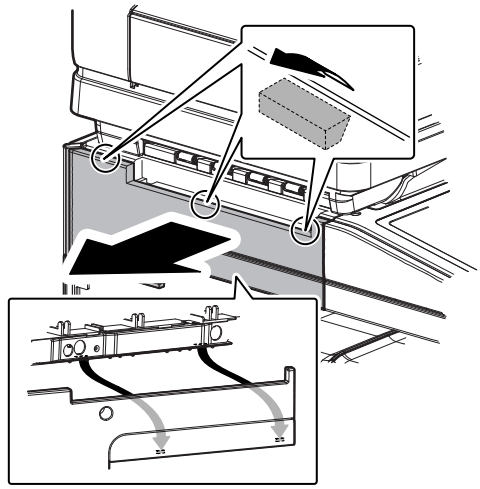


E. Upper cabinet left

1) Remove the left paper exit tray.

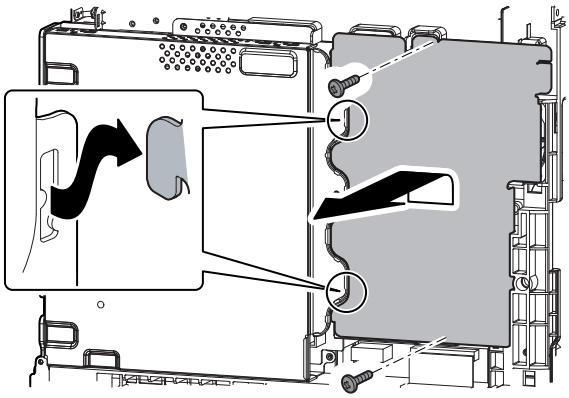


2) Disengage the pawl, and remove upper cabinet left.



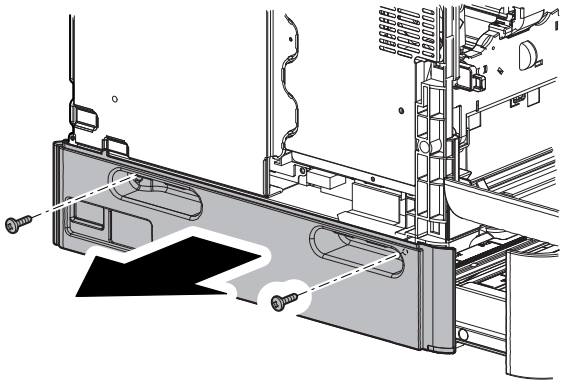
F. MFP ROM cover

1) Remove the screw, and remove the MFP ROM cover.



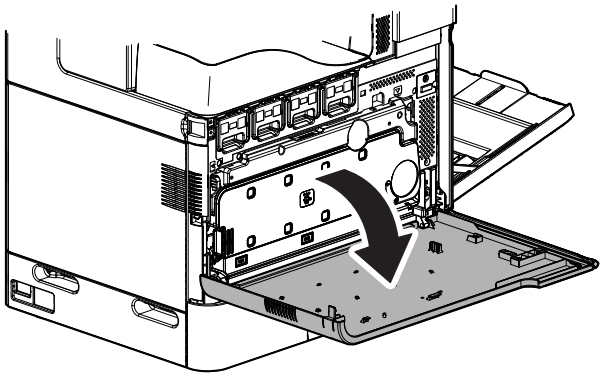
G. Left cabinet lower

1) Remove the screw, and remove the left cabinet lower.

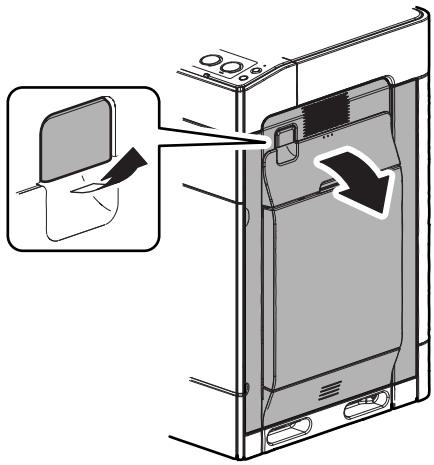


H. Front cabinet upper

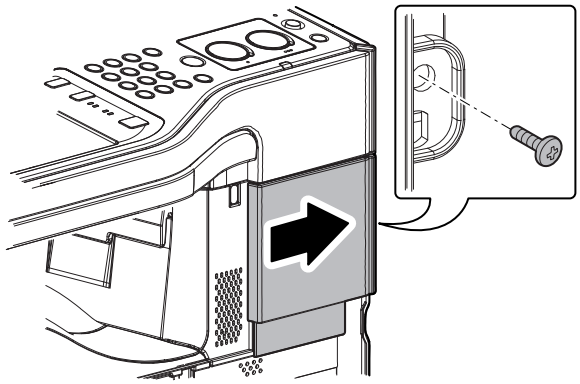
1) Open the front cover.



2) Pull the lever to release the lock, and open the right door.

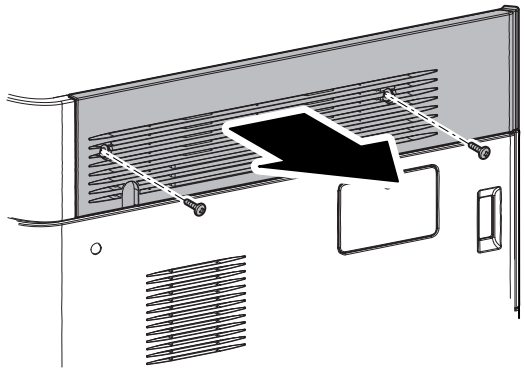


3) Remove the screw, and slide the front cabinet upper to the right to remove.



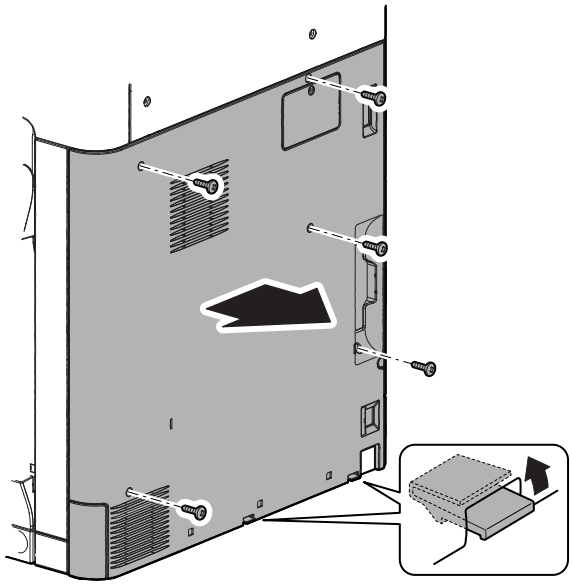
I. Upper cabinet rear

1) Remove the screw, and remove the upper cabinet rear.



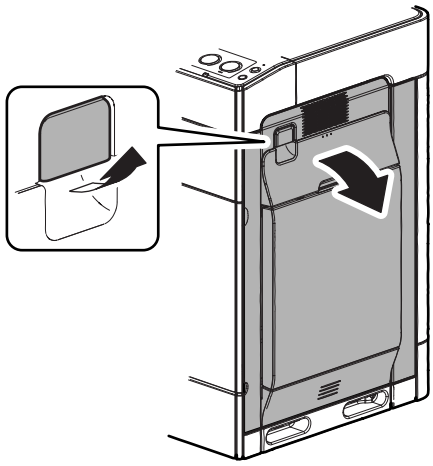
J. Rear cabinet

1) Remove the screw. Disengage the pawl, and remove the rear cabinet.

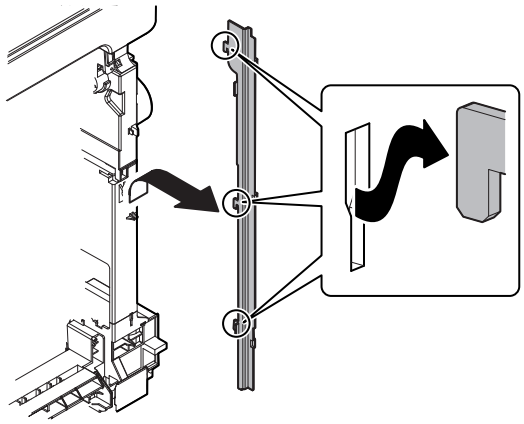


K. Upper cabinet right

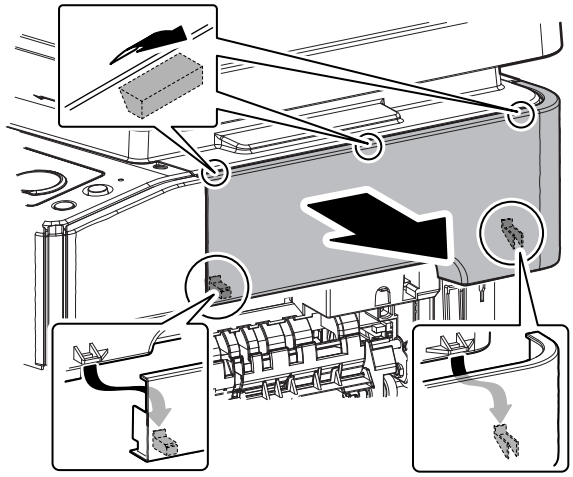
1) Pull the lever to release the lock, and open the right door.



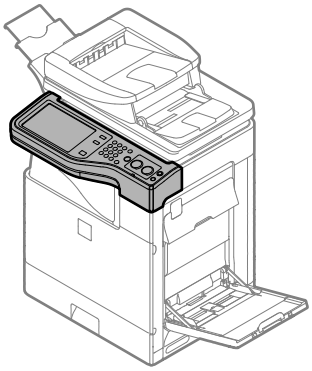
2) Slide the right cabinet center to the upper side to remove.



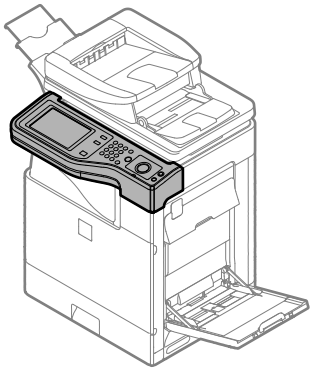
3) Disengage the pawl, and remove the upper cabinet right.



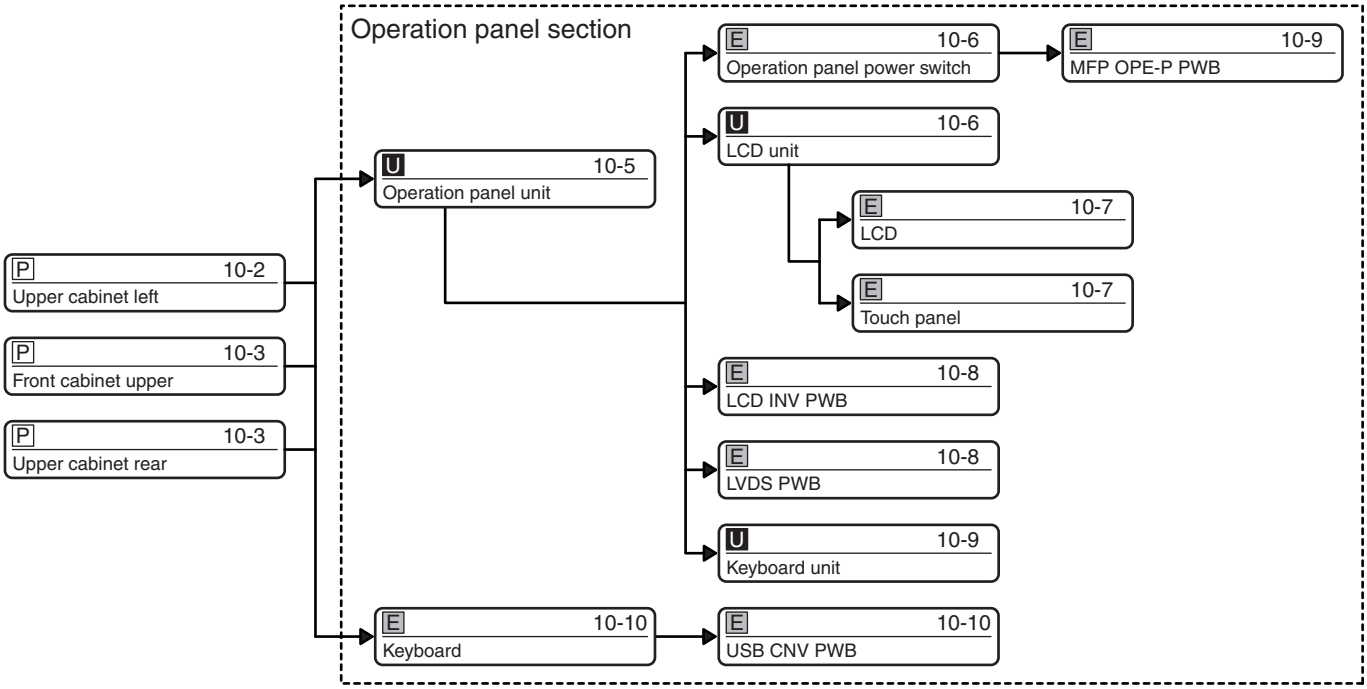
2. Operation panel section



MX-C402SC/C382SC

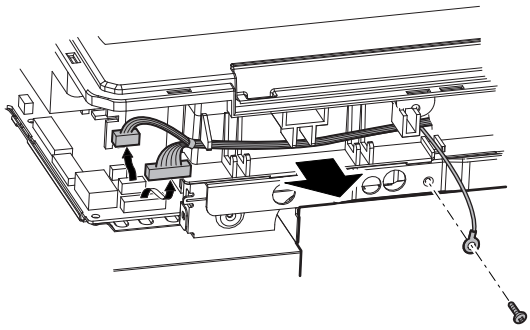


MX-B402SC/B382SC

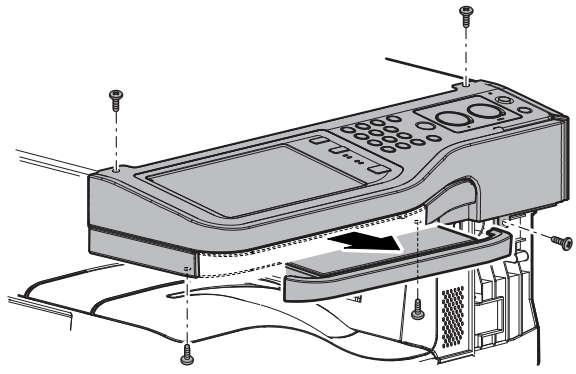


A. Operation panel unit

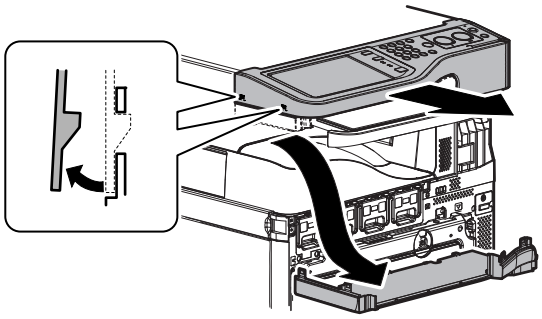
1) Disconnect the connector. Remove the screw, and remove the earth wire.



2) Remove the screw. Pull out the keyboard.

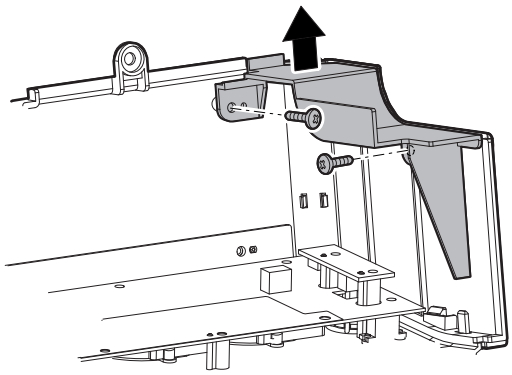


3) Disengage the pawl, and remove the operation panel unit. Remove the operation panel base plate.

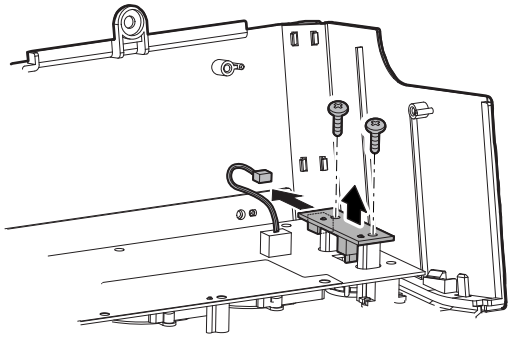


(1) Operation panel power switch

1) Remove the screw, and remove the cover.



2) Disconnect the connector. Remove the screw, and remove the operation panel power switch.



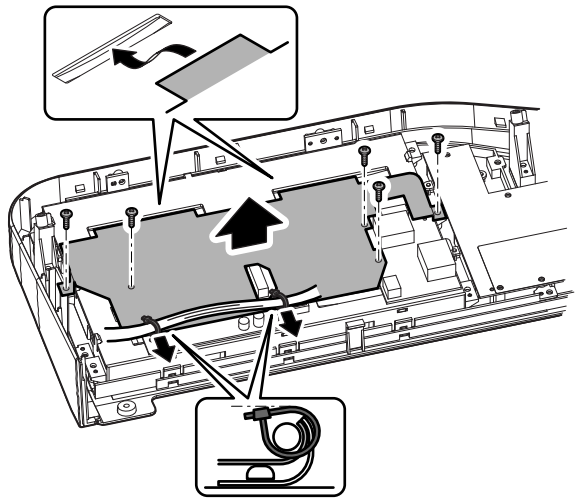
(2) LCD unit

a. 8.5 inch

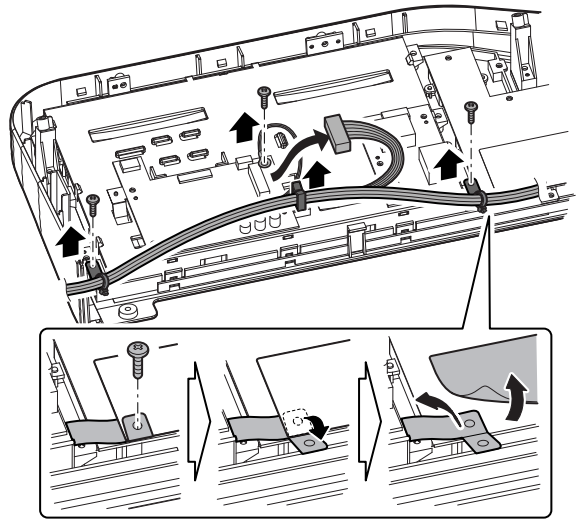
1) Remove the screw, cut out the binding band, and remove the Mylar.

NOTE: When attaching the Mylar, insert it into the slit in the LCD holder.

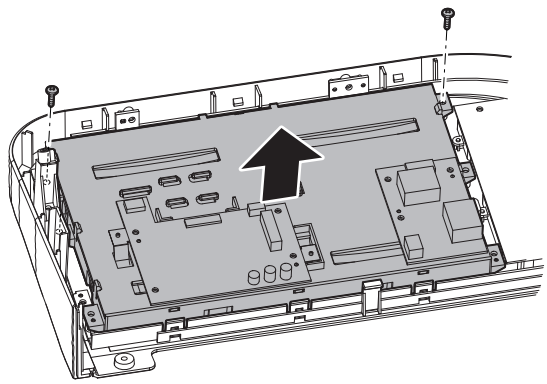
NOTE: When assembling, use care to prevent the harness from covering over the capacitor. Also use care to set the fixing position of the binding band below the horizontal line.



2) Remove the screw, and remove the earth wire, the clamp, the Mylar, and the panel earth sheet.

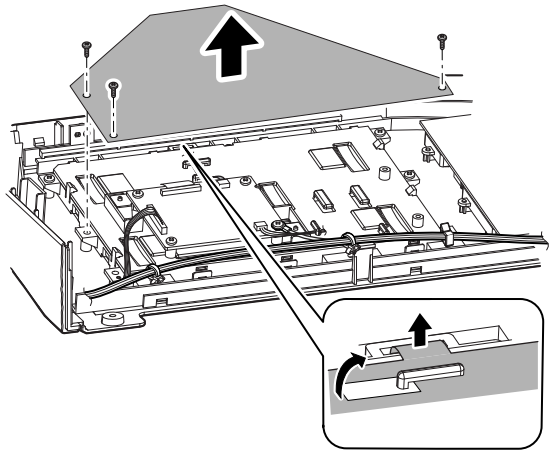


3) Remove the screw, and remove the LCU unit.

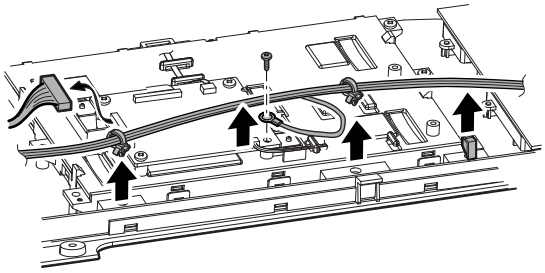


b. 7.0 inch

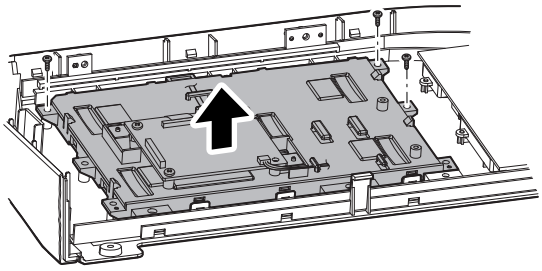
1) Remove the screw, and remove the Mylar.



2) Disconnect the connector from the LVDS PWB. Remove the screw, and remove the earth wire. Remove the snap band, and remove the harness from the clamp.



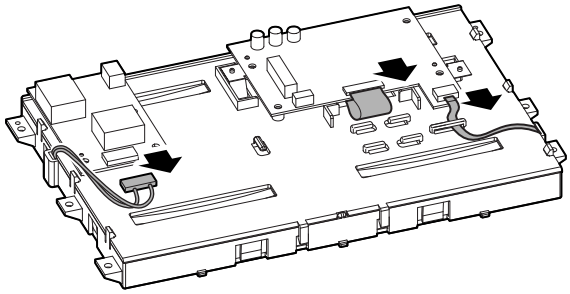
3) Remove the screw, and remove the LCD unit.



(3) LCD

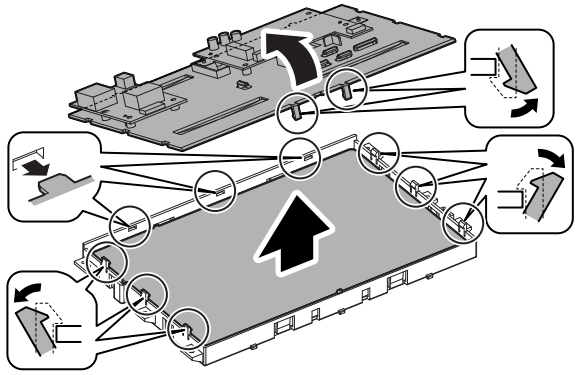
a. 8.5 inch

1) Disconnect the connector.



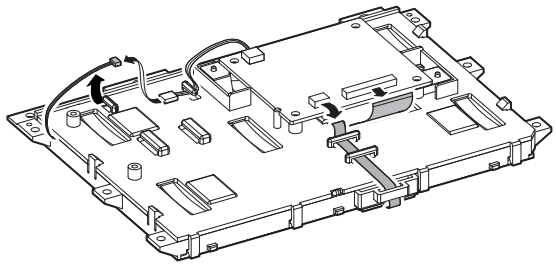
2) Disengage the pawl, and remove the holder. Remove the LCD.

NOTE: Be careful not to put fingerprints on the LCD surface.



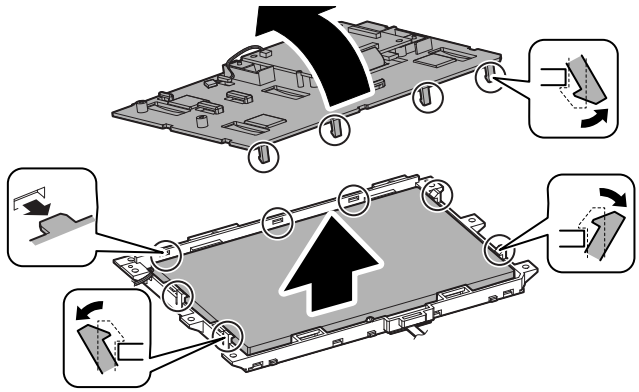
b. 7.0 inch

1) Disconnect the connector of the interface harness. Remove the flat cable.



2) Disengage the pawl, and remove the holder. Remove the LCD.

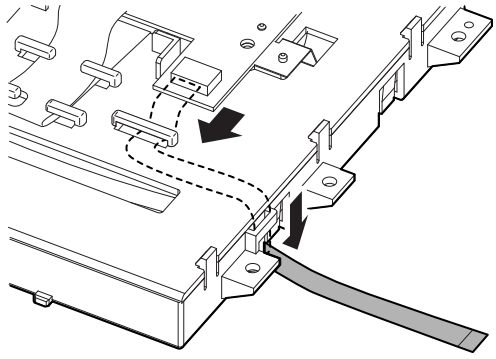
NOTE: Be careful not to put fingerprints on the LCD surface.



(4) Touch panel

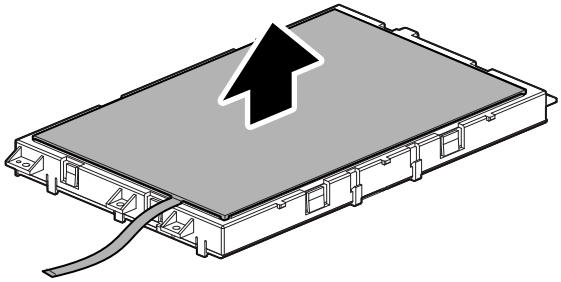
a. 8.5 inch

1) Disconnect the connector, and remove the flat cable from the holder.



2) Remove the touch panel.

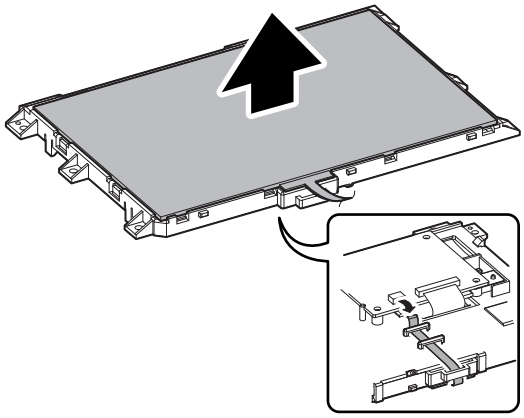
NOTE: Be careful not to put fingerprints, dirt, or foreign materials on the touch panel surface.



b. 7.0 inch

1) Disconnect the connector. Remove the flat cable from the holder. Remove the touch panel.

NOTE: Be careful not to put fingerprints, dirt, or foreign materials on the touch panel surface.

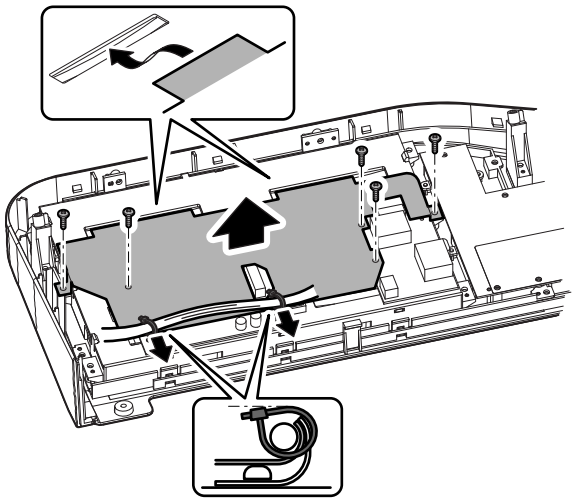


(5) LCD INV PWB

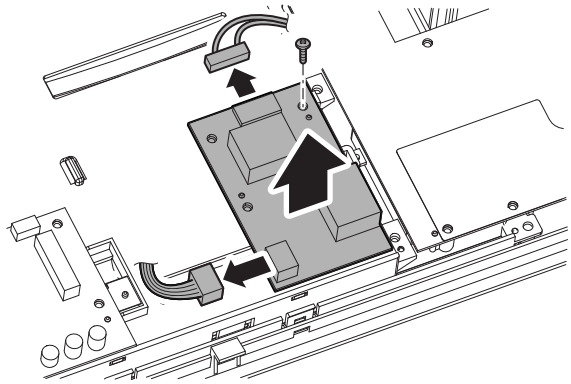
1) Remove the screw, cut out the binding band, and remove the Mylar.

NOTE: When attaching the Mylar, insert it into the slit in the LCD holder.

NOTE: When assembling, use care to prevent the harness from covering over the capacitor. Also use care to set the fixing position of the binding band below the horizontal line.



2) Disconnect the connector. Remove the screw, and remove the LCD INV PWB.



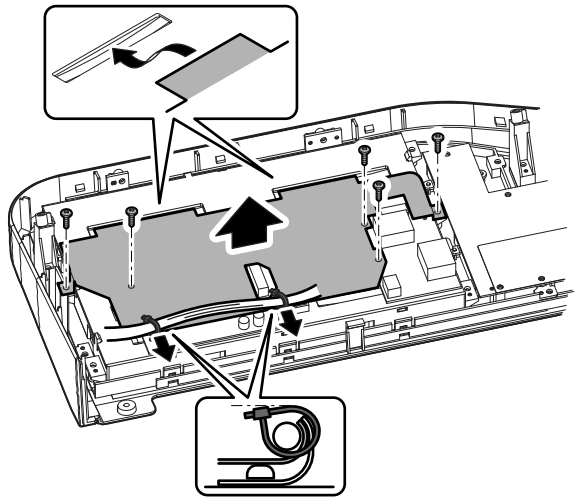
(6) LVDS PWB

a. 8.5 inch

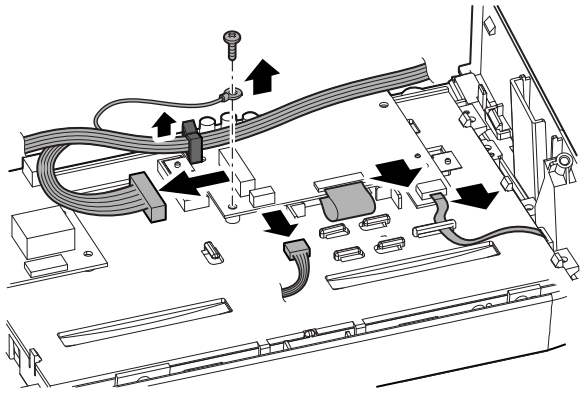
1) Remove the screw, cut out the binding band, and remove the Mylar.

NOTE: When attaching the Mylar, insert it into the slit in the LCD holder.

NOTE: When assembling, use care to prevent the harness from covering over the capacitor. Also use care to set the fixing position of the binding band below the horizontal line.

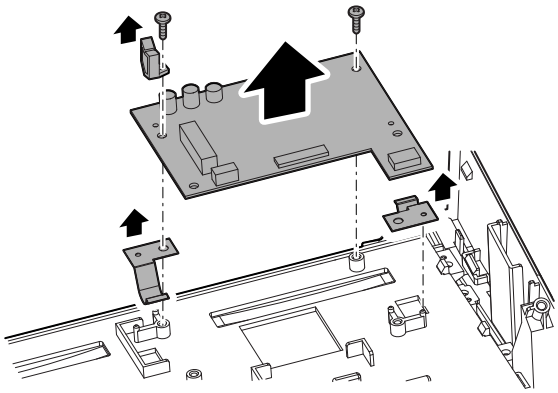


2) Remove the screw, and remove the earth wire. Disconnect the connector, and remove the harness from the wire saddle.



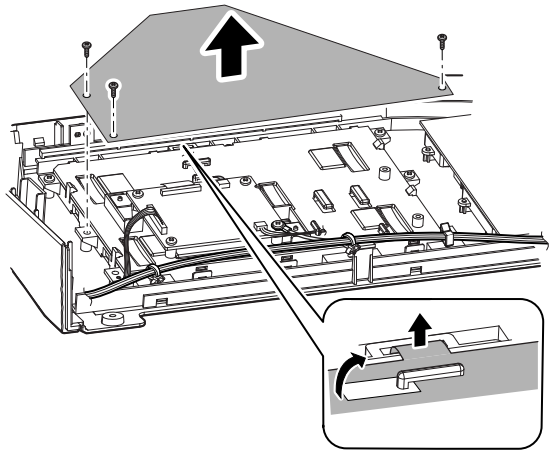
3) Remove the screw, and remove the wire saddle and the LVDS PWB.

NOTE: When the LVDS PWB is removed, the earth plate is also removed. Be sure to install it together when installing.

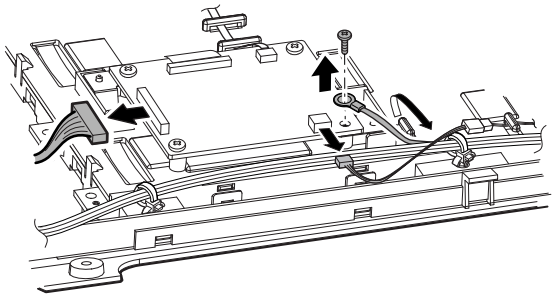


b. 7.0 inch

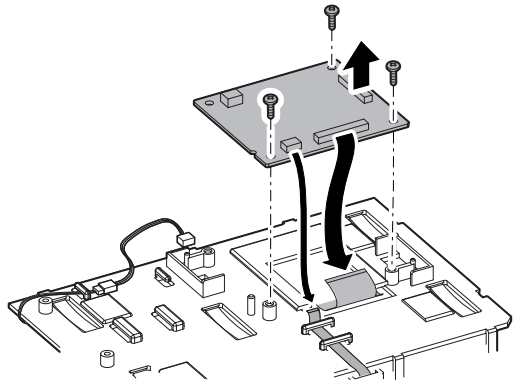
1) Remove the screw, and remove the Mylar.



2) Disconnect the connector from the LVDS PWB. Remove the screw, and remove the earth wire.

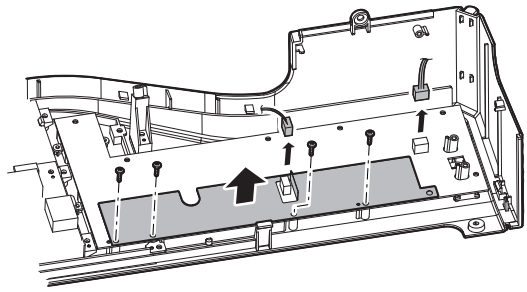


3) Remove the flat cable. Remove the screw, and remove the LVDS PWB.

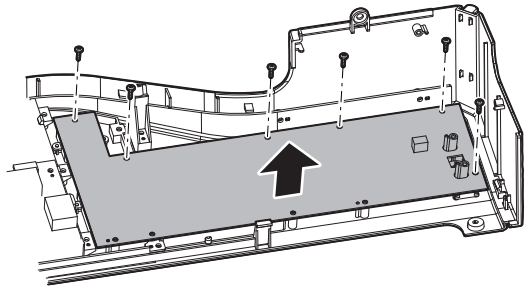


(7) MFP OPE-P PWB

1) Disconnect the connector. Remove the screw, and remove the Mylar.

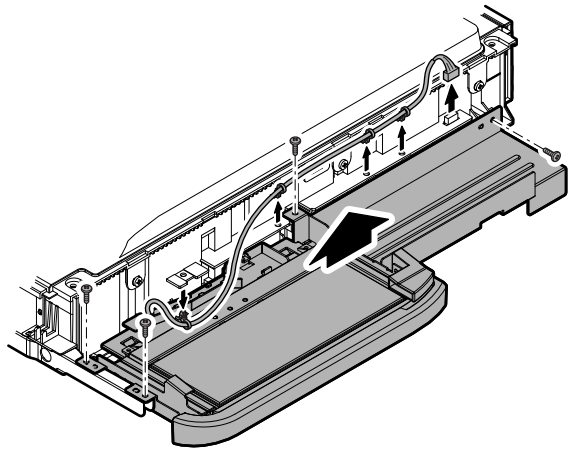


2) Remove the screw, and remove the MFP OPE-P PWB.



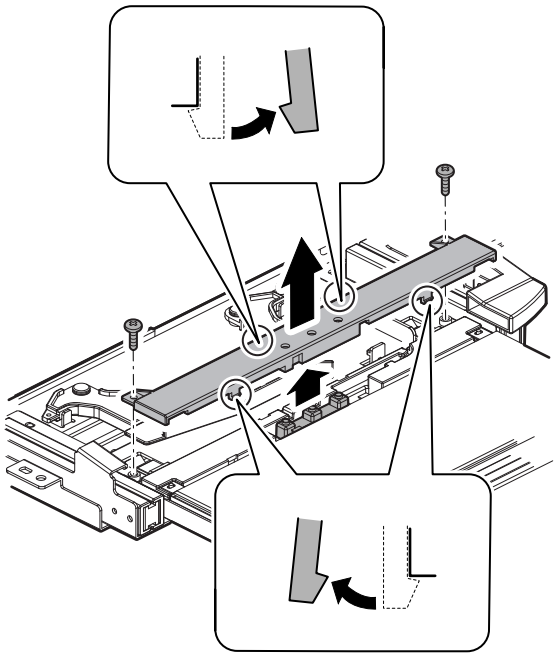
B. Keyboard unit

1) Disconnect the connector. Remove the snap band. Remove the screw, and remove the keyboard unit.

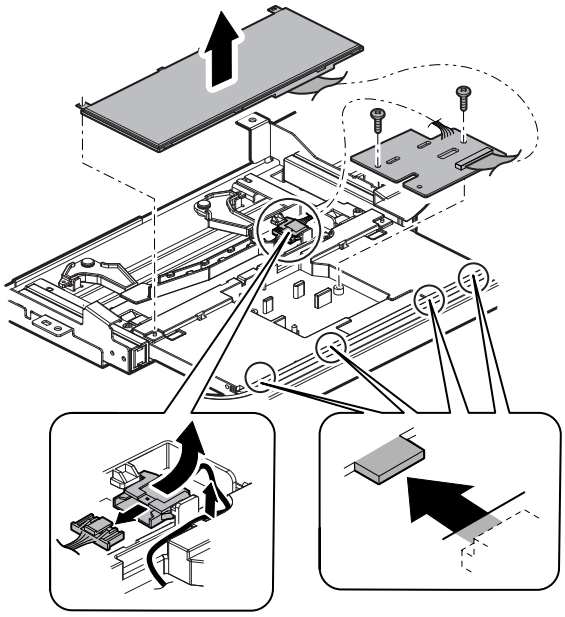


C. Keyboard/USB CNV PWB

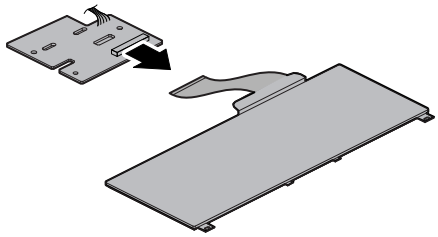
1) Remove the screw. Disengage the pawl, and remove the cover. Remove the LED cover.



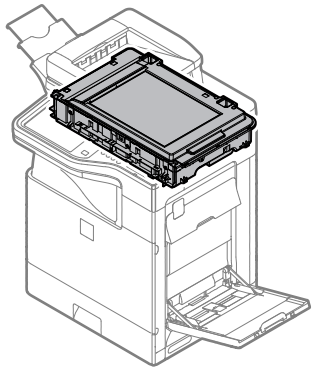
2) Remove the keyboard. Disconnect the connector. Remove the screw, and remove the USB CNV PWB.

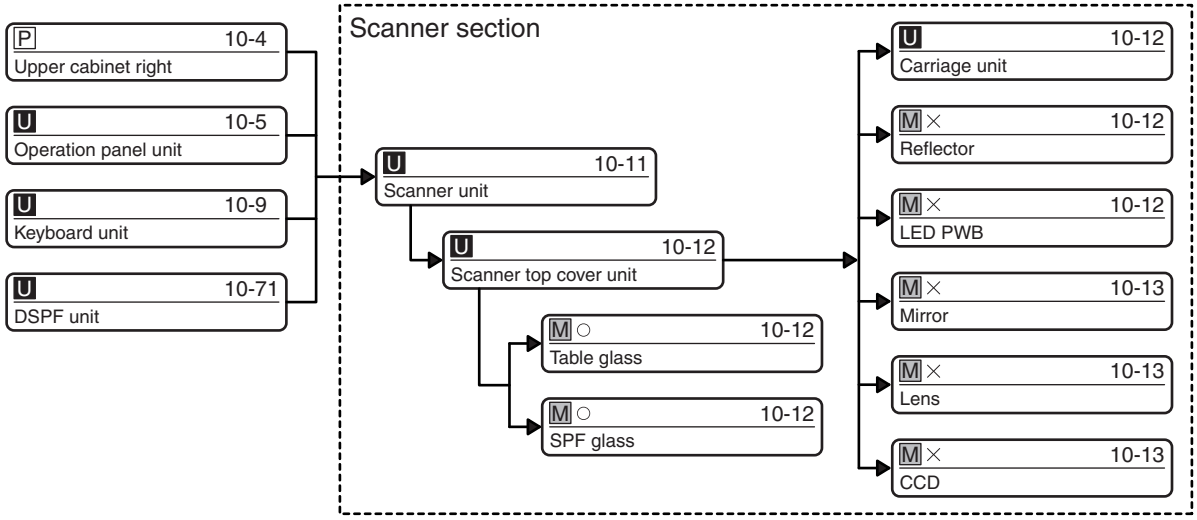


3) Remove the flat cable of the keyboard from the USB CNV PWB.



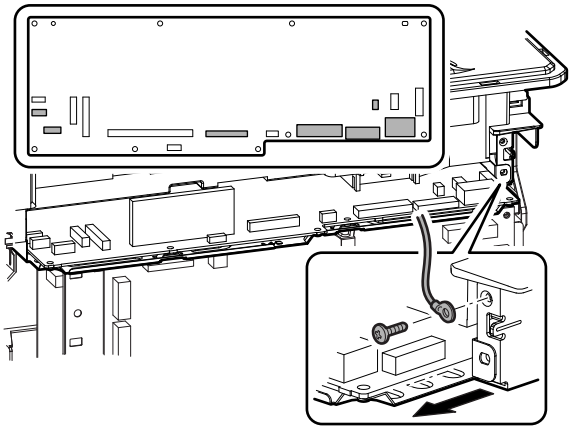
3. Scanner section



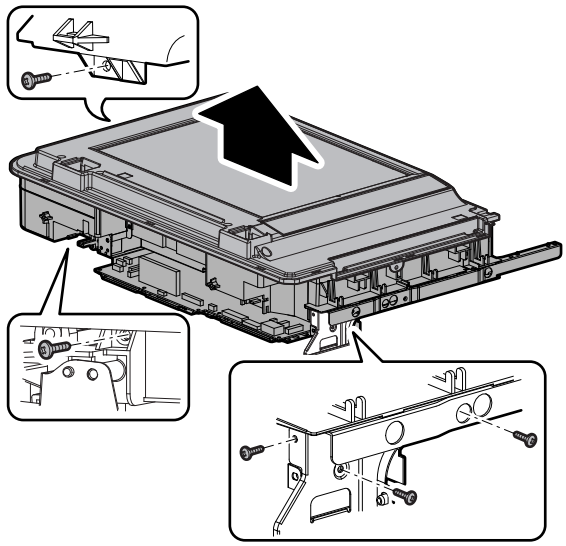


A. Scanner unit

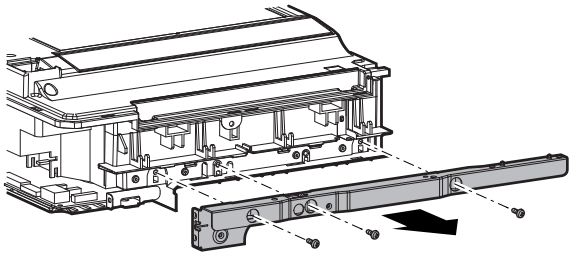
1) Disconnect the connector. Remove the screw, and remove the earth wire.



2) Remove the screw, and remove the scanner unit.

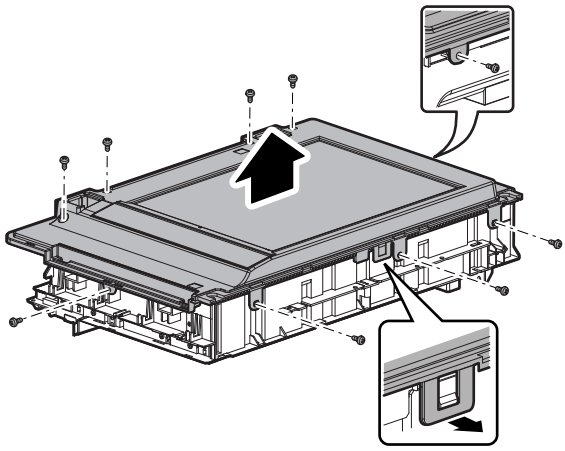


3) Remove the screw from the scanner unit, and remove the frame.



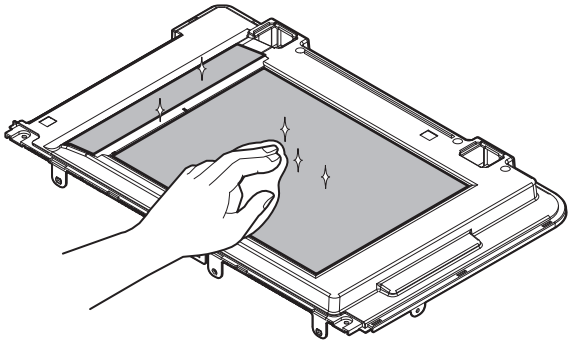
(1) Scanner top cover unit

1) Remove the screw. Disengage the pawl, and remove the scanner top cover unit.



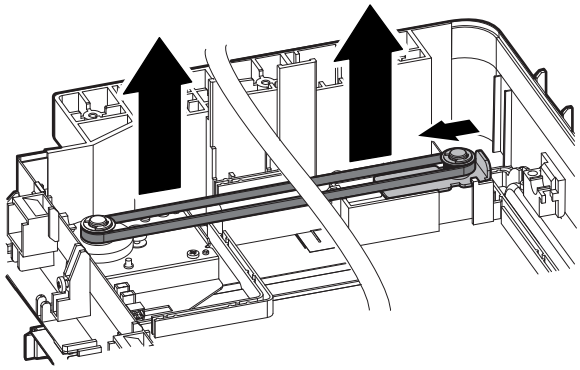
(2) Table glass/SPF glass

1) Clean the table glass and the SPF glass.

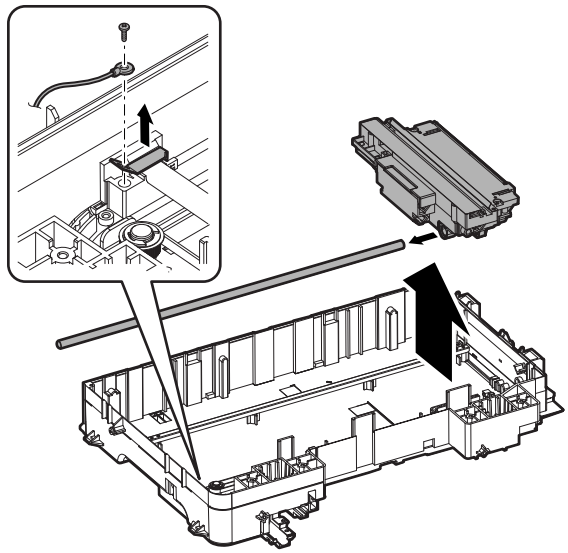


(3) Carriage unit

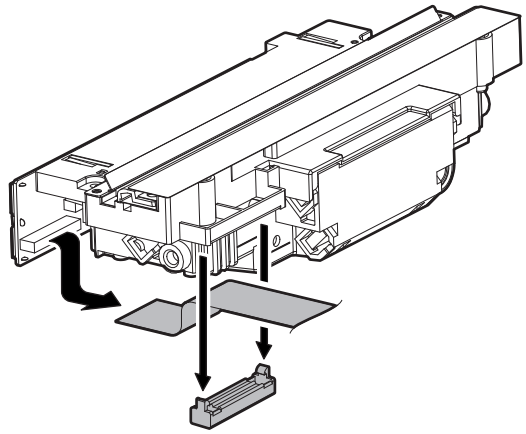
1) Slide the pulley on the right side of the belt, and remove the belt.



2) Remove the screw, and remove the earth wire and the fixing plate. Lift the carriage unit and remove the shaft.

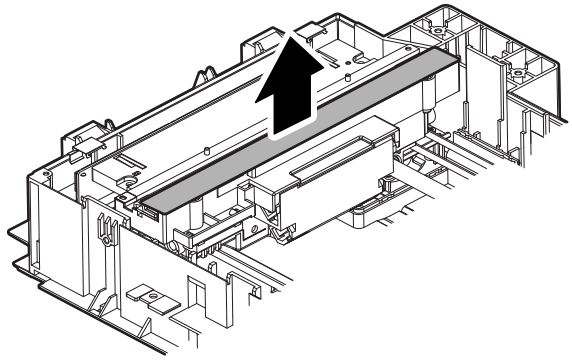


3) Remove the harness holder from the carriage unit, and remove the flat cable.

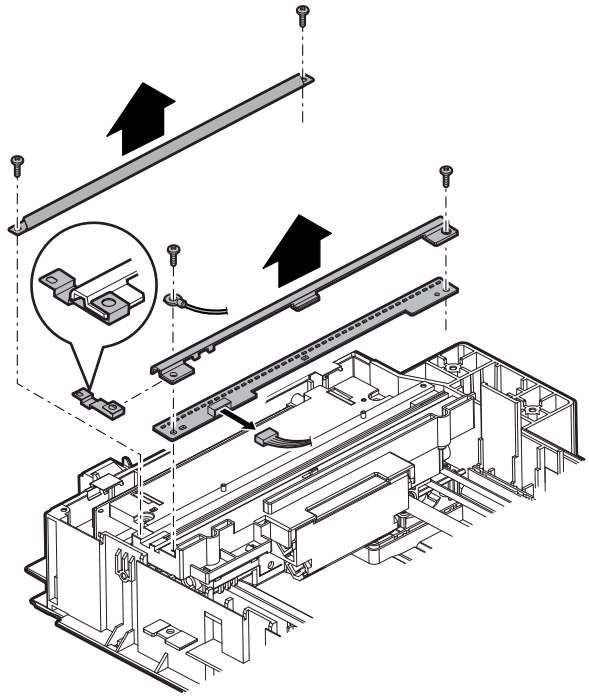


(4) Reflector/LED PWB

1) Remove the stray light shielding sheet.

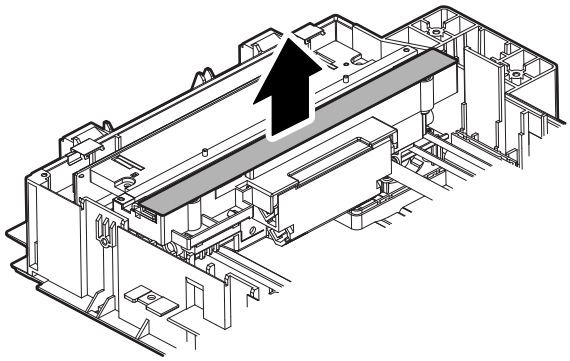


2) Remove the screw, and remove the reflector, the backlight, and the LED PWB. Disconnect the connector from the LED PWB.

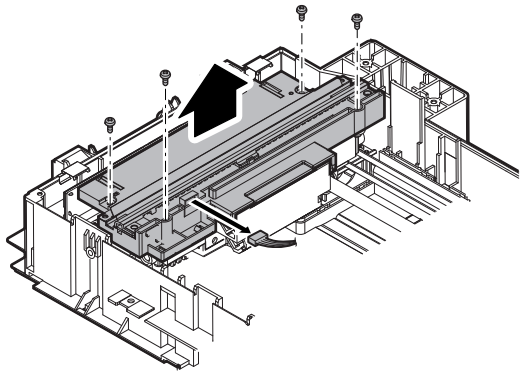


(5) Mirror/Lens/CCD

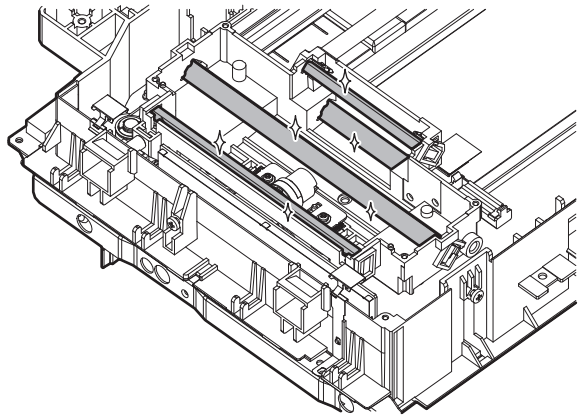
1) Remove the stray light shielding sheet.



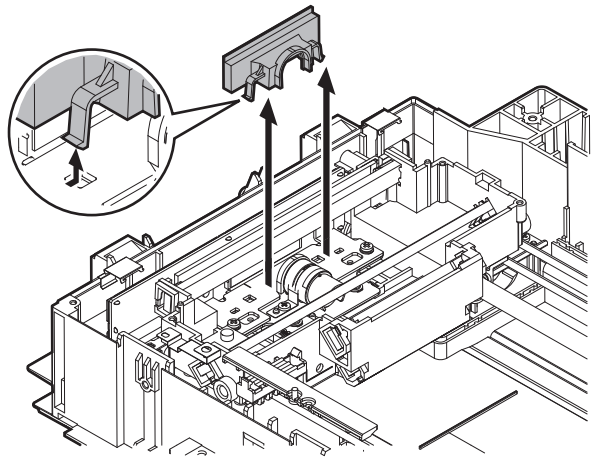
2) Disconnect the connector. Remove the screw, and remove the cover.



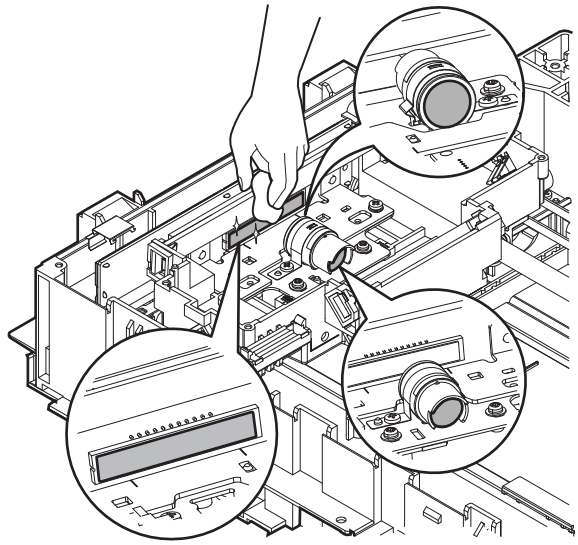
3) Clean the mirror.



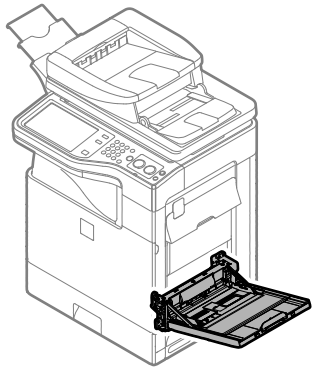
4) Disengage the pawl, and remove the cover.

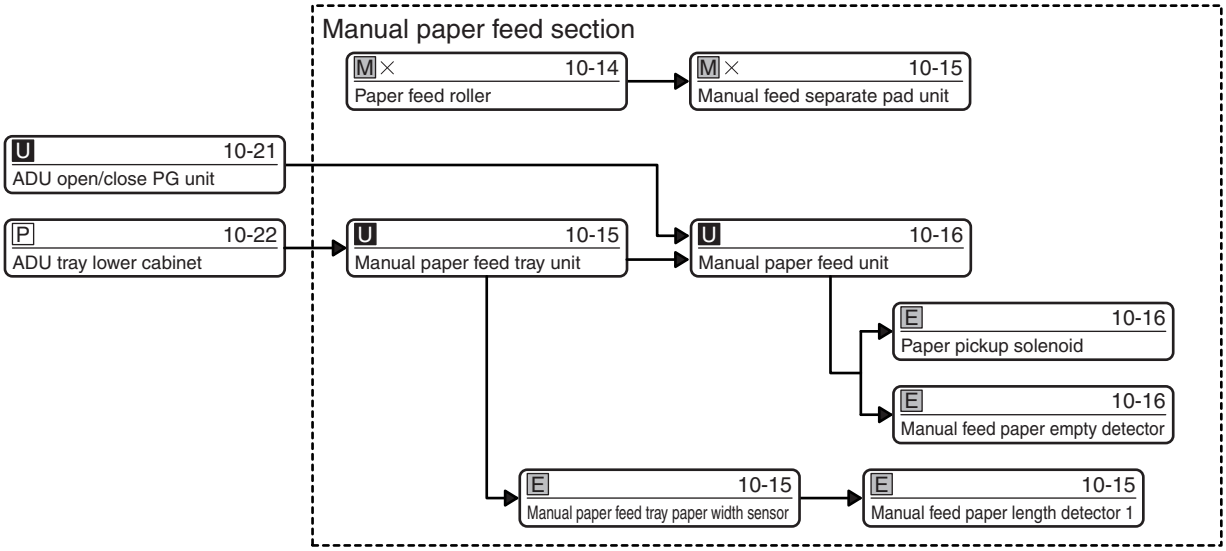


5) Clean the lens and the CCD.



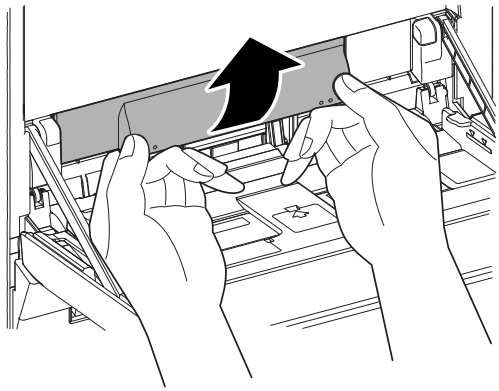
4. Manual paper feed section



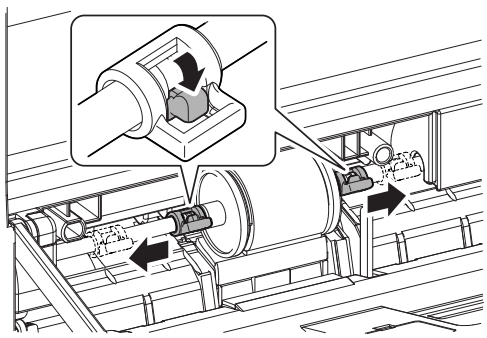


A. Paper feed roller

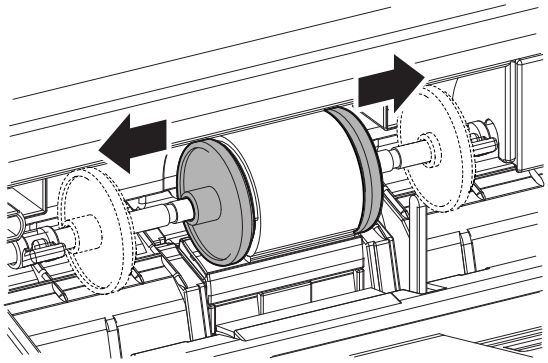
1) Remove the cover.



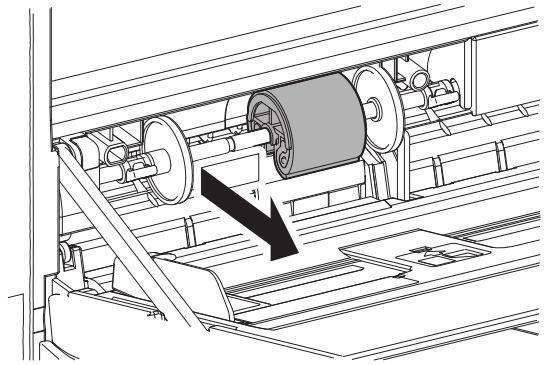
2) Disengage the pawl, and slide the roller stopper to the front side and the rear side.



3) Slide the collar to the front side and the rear side.

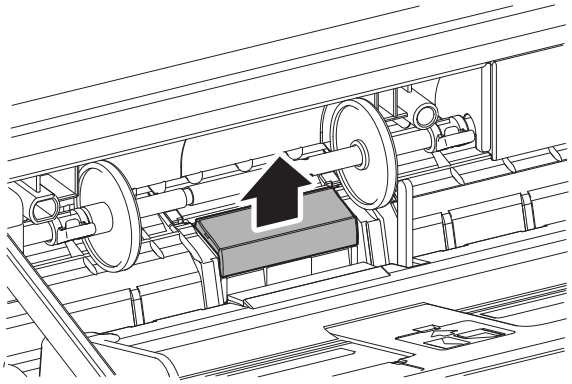


4) Slide the paper feed roller to the front side to remove.



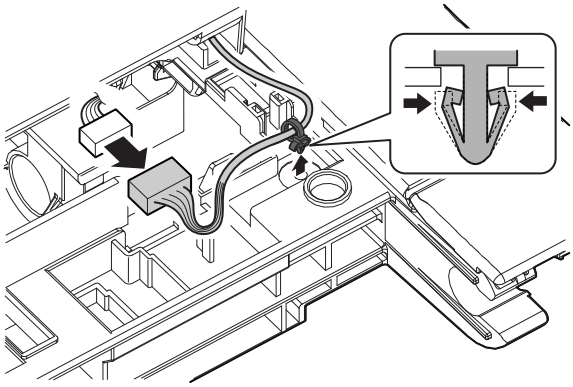
B. Manual feed separate pad unit

1) Remove the manual feed separate pad unit.

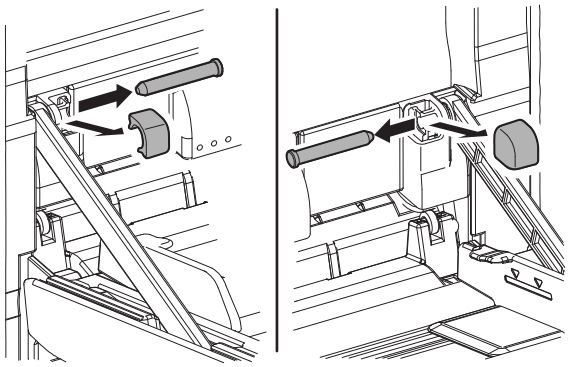


C. Manual paper feed tray unit

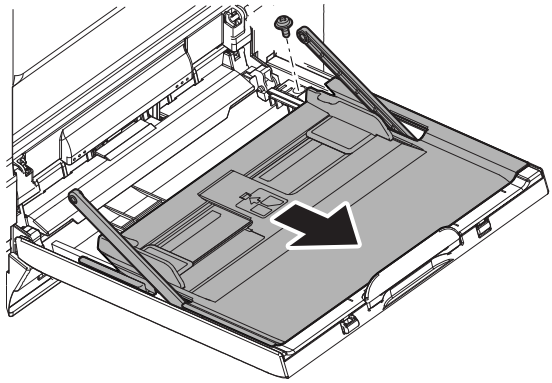
1) Disconnect the connector, and remove the snap band.



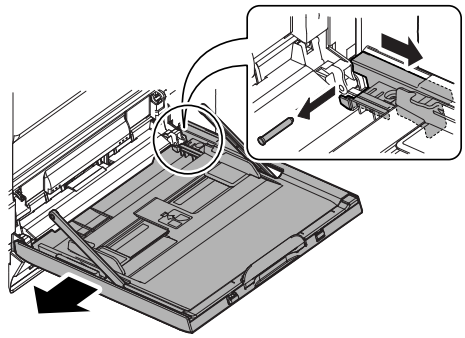
2) Remove the cover, and remove the shaft.



3) Slide the tray, and remove the screw.

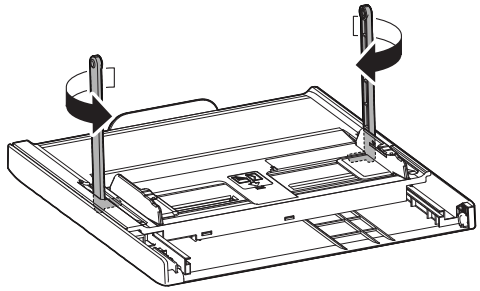


4) Slide the cover, and remove the shaft. Then remove the manual paper feed tray unit.

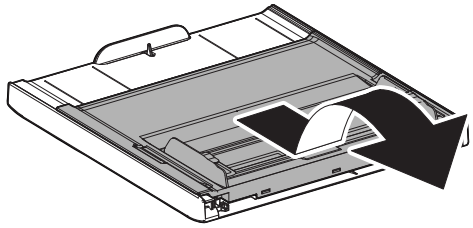


(1) Manual paper feed tray paper width sensor

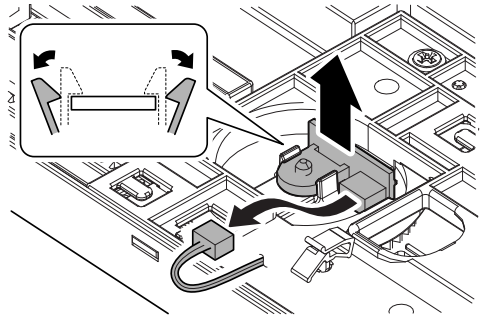
1) Remove the arm.



2) Slide the tray and turn it back.

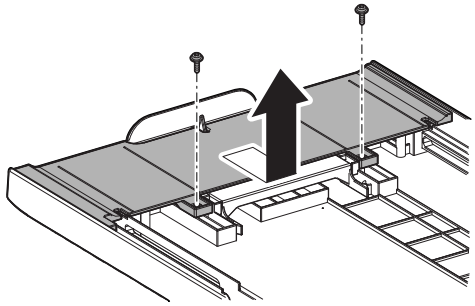


3) Disconnect the connector. Disengage the pawl, and remove the manual paper feed tray paper width sensor.

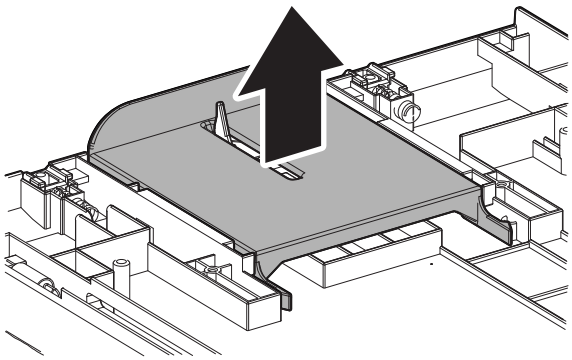


(2) Manual feed paper length detector 1

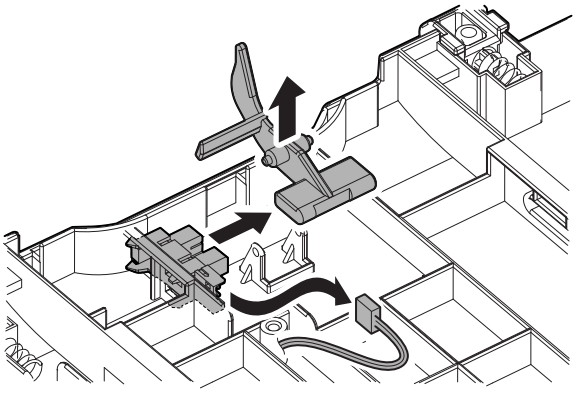
1) Remove the screw, and remove the cover.



2) Set the extension tray in the storage state, and remove it.

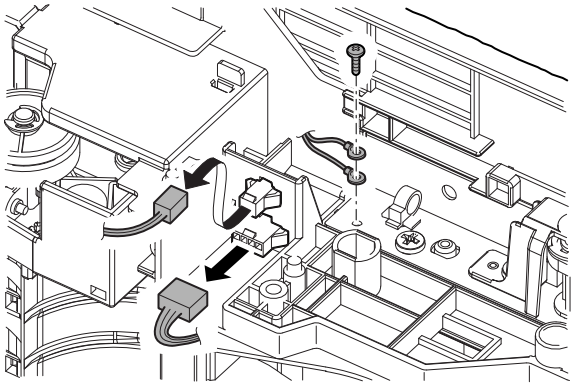


3) Remove the actuator. Disconnect the connector, and remove the manual feed paper length detector 1.

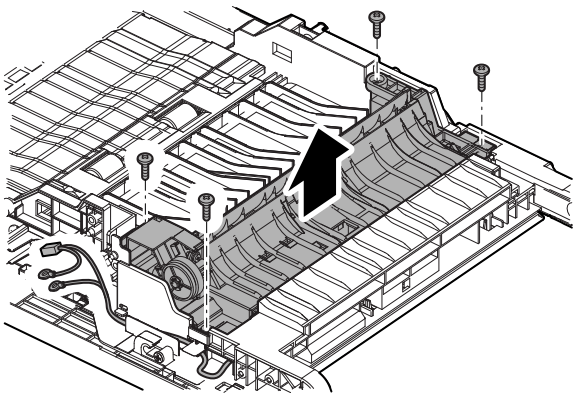


D. Manual paper feed unit

1) Remove the screw, and remove the earth wire. Disconnect the connector.

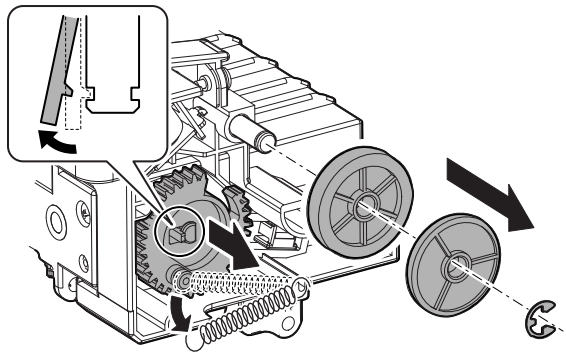


2) Remove the screw, and remove the manual paper feed unit, and pull out the harness.

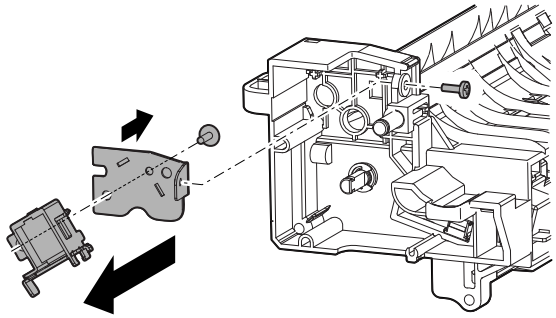


(1) Paper pickup solenoid

1) Remove the E-ring, and remove the collar and the gear. Remove the spring. Disengage the pawl, and remove the gear.

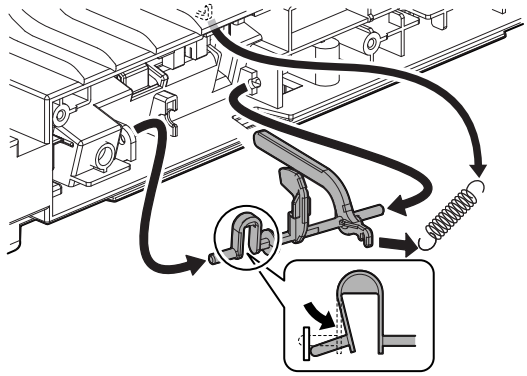


2) Remove the screw, and remove the paper pickup solenoid. Remove the screw from the paper pickup solenoid, and remove the fixing plate.

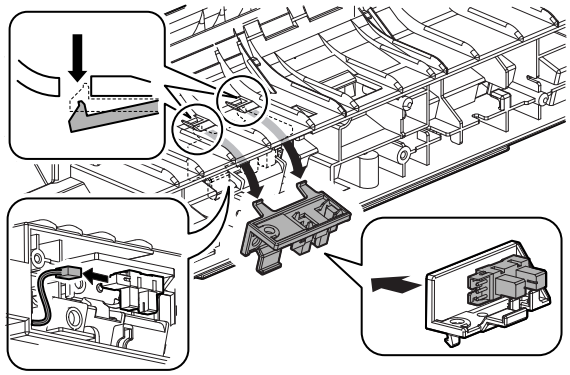


(2) Manual feed paper empty detector

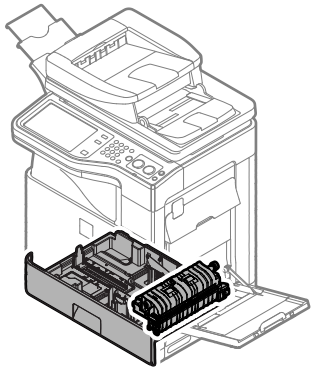
1) Remove the spring, and deflect the actuator to remove.

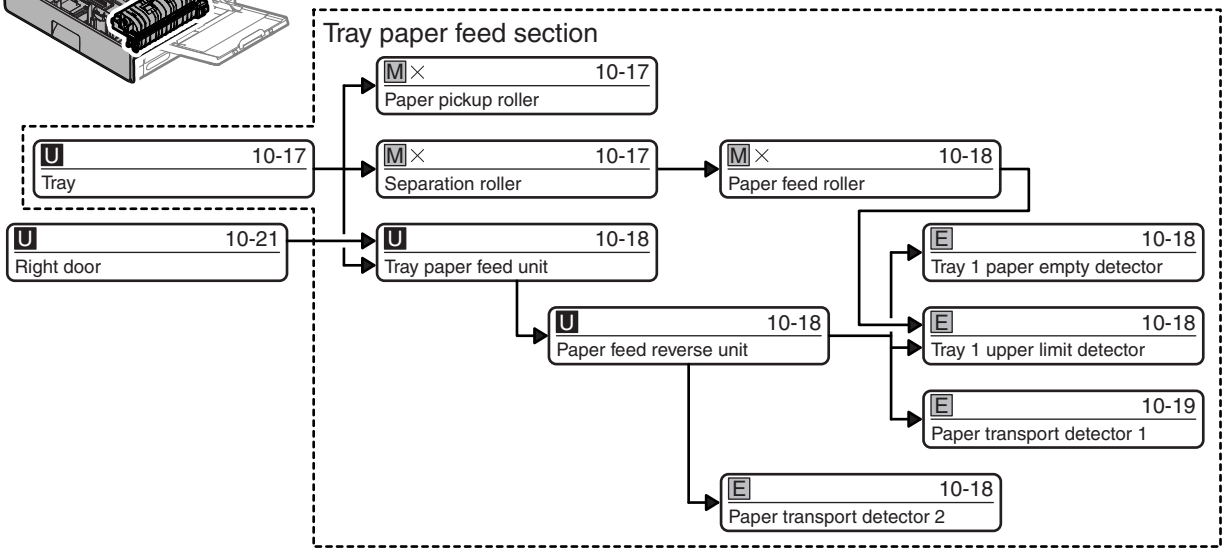


2) Disconnect the connector, and disengage the pawl. Remove the manual feed paper empty detector. Remove the holder from the manual feed paper empty detector.



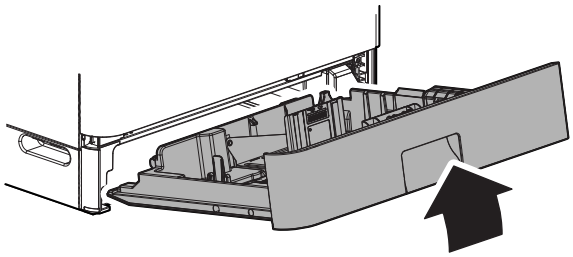
5. Tray paper feed section





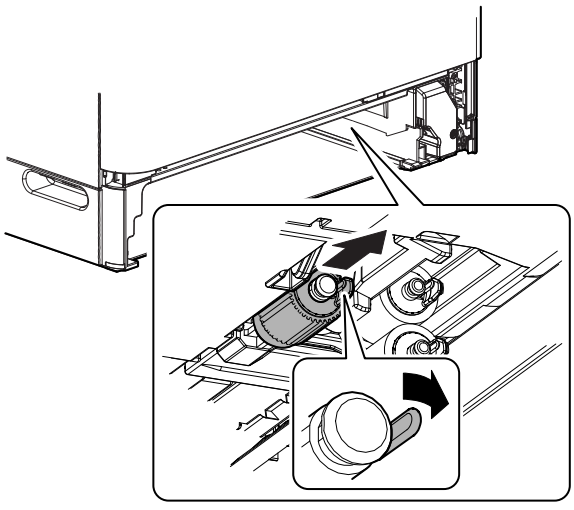
A. Tray

1) Pull out the tray, and lift and remove it.



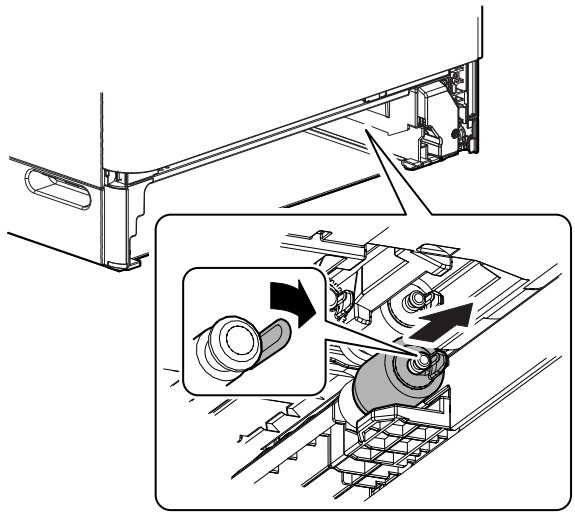
B. Paper pickup roller

1) Disengage the pawl, and remove the paper pickup roller.



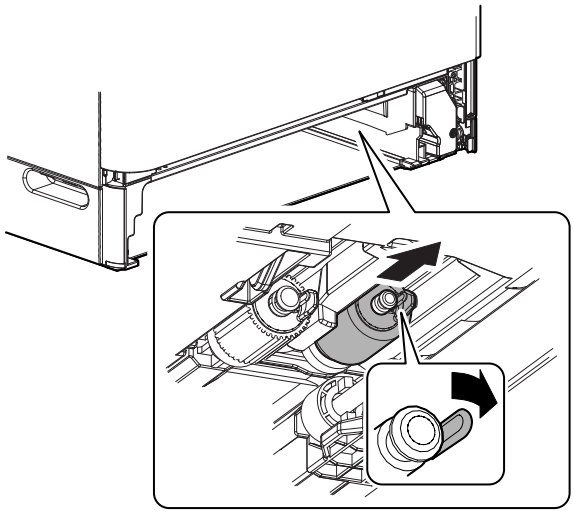
C. Separation roller

1) While disengaging the pawl, remove the separation roller.



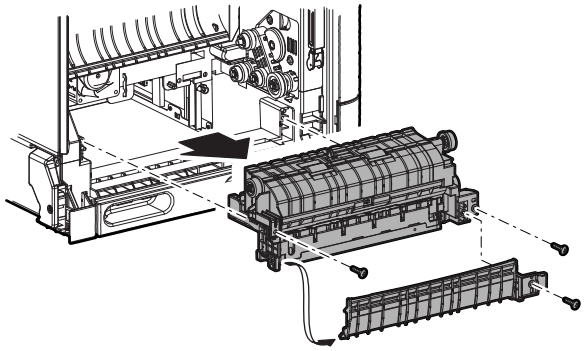
D. Paper feed roller

1) While disengaging the pawl, remove the paper feed roller.



E. Tray paper feed unit

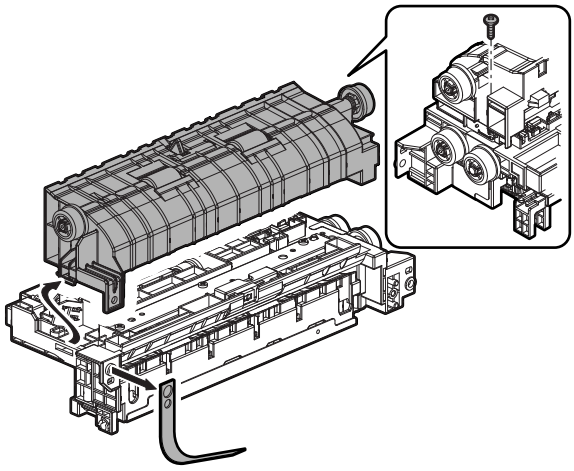
1) Remove the screw, and remove the paper guide. Remove the screw, and remove the tray paper feed unit.



(1) Paper feed reverse unit

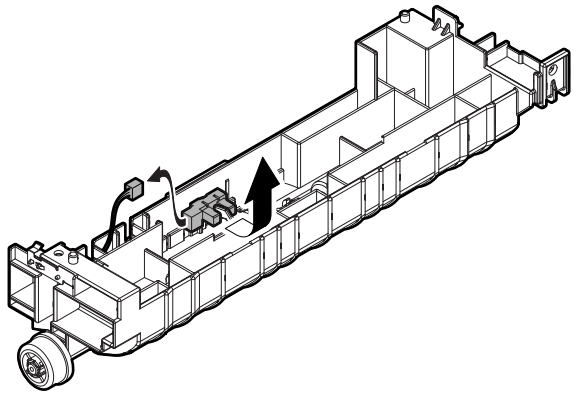
1) Disconnect the connector. Remove the screw, and remove the paper feed reverse unit.

NOTE: When installing, pinch the band with the paper feed reverse unit and install.



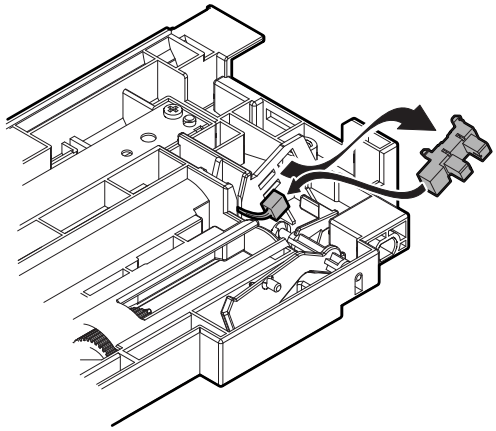
a. Paper transport detector 2

1) Disconnect the connector, and remove the paper transport detector 2.



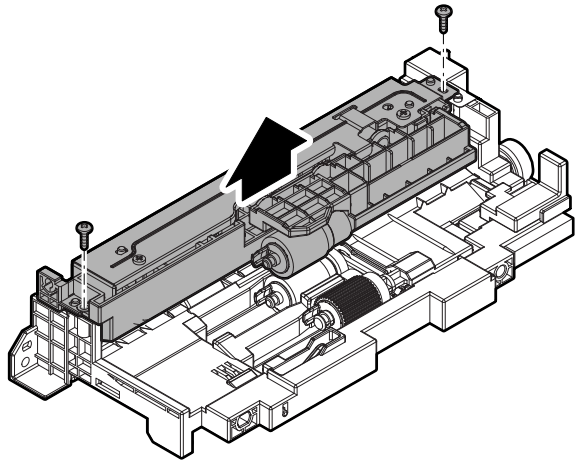
(2) Tray 1 paper empty detector

1) Remove the tray 1 paper empty detector. Disconnect the connector.

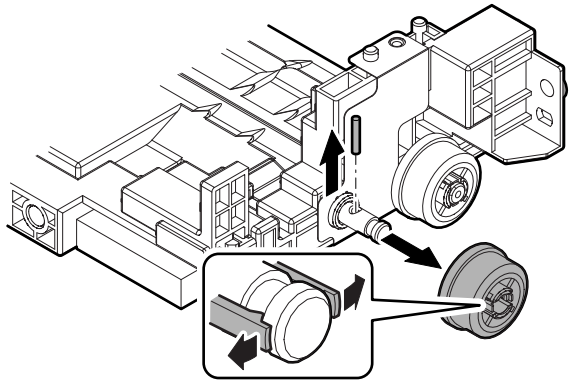


(3) Tray 1 upper limit detector

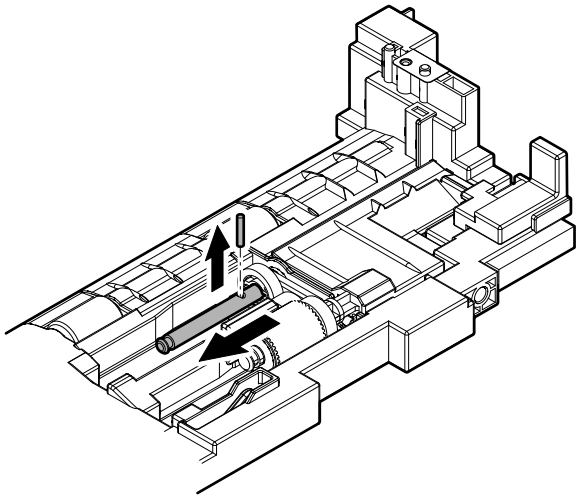
1) Remove the screw, and remove the paper feed lower unit.



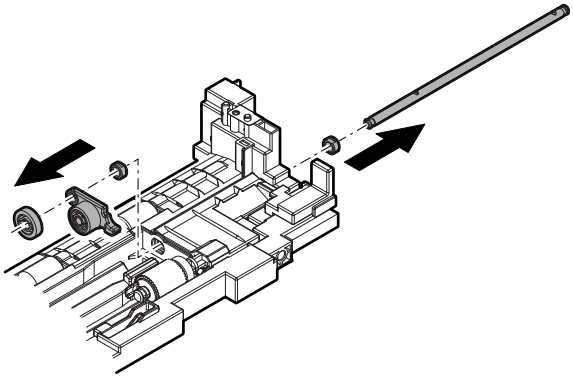
2) Disengage the pawl, and remove the gear. Remove the parallel pin.



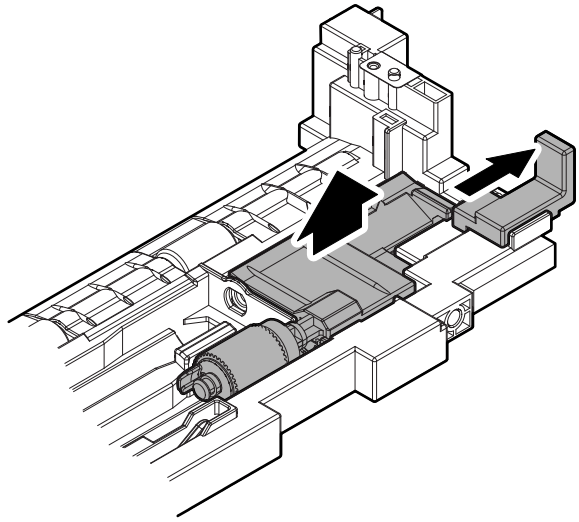
3) Slide the shaft, and remove the parallel pin.



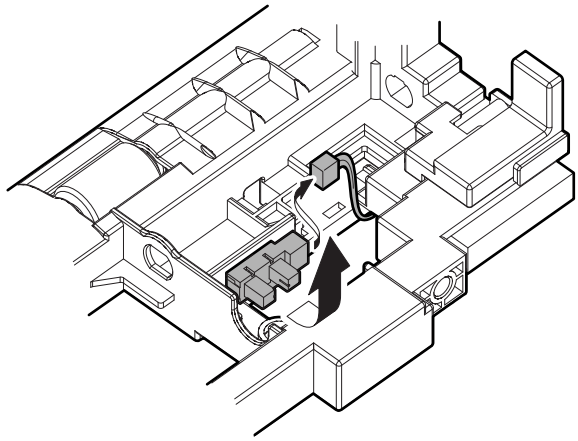
4) Remove the shaft. Remove the gear, the holder, and the bearing.



5) While pulling the lever, remove the holder.

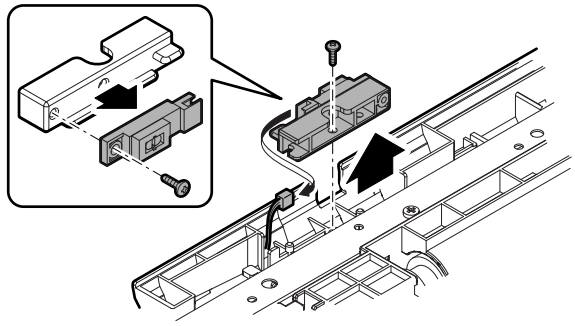


6) Disconnect the connector, and remove the tray 1 upper limit detector.

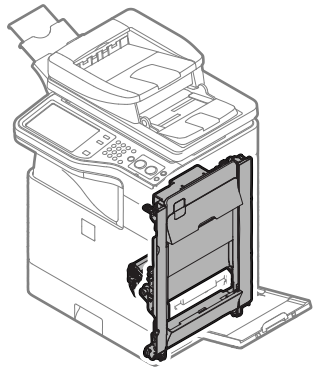


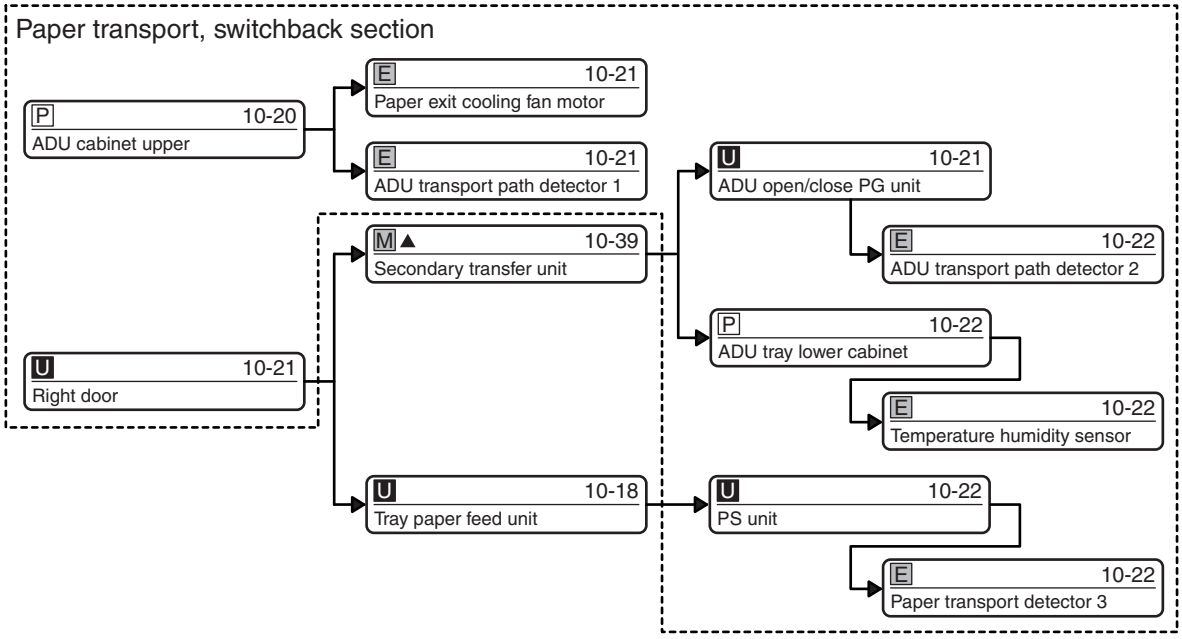
(4) Paper transport detector 1

1) Remove the screw, and remove the holder. Disconnect the connect. Remove the screw from the holder, and remove the paper transport detector 1.



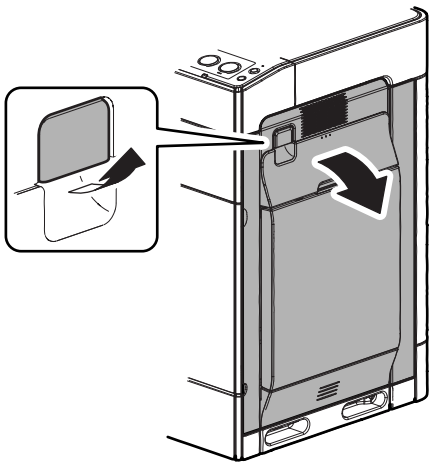
6. Paper transport, switchback section



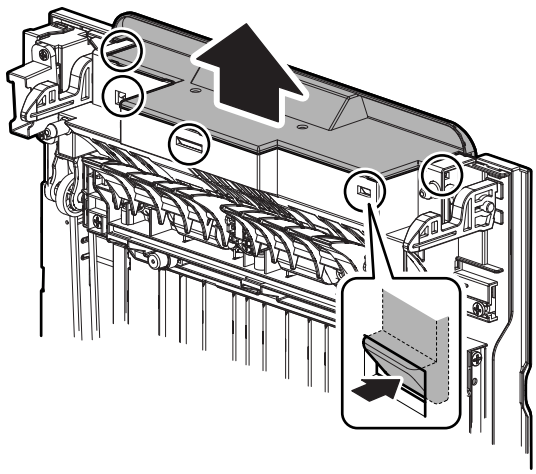


A. ADU cabinet upper

1) Pull the lever, and release the lock, and open the right door.



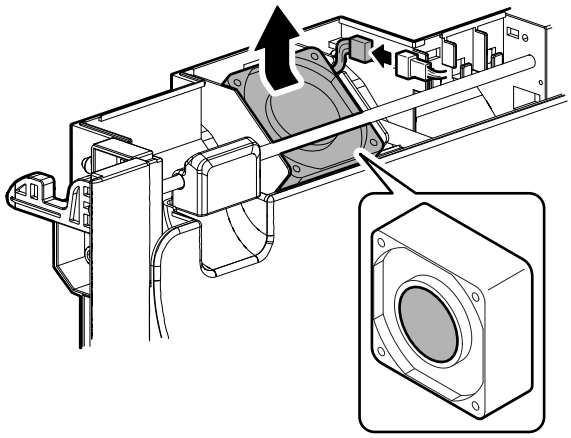
2) Disengage the pawl, and remove the ADU cabinet upper.



B. Paper exit cooling fan motor

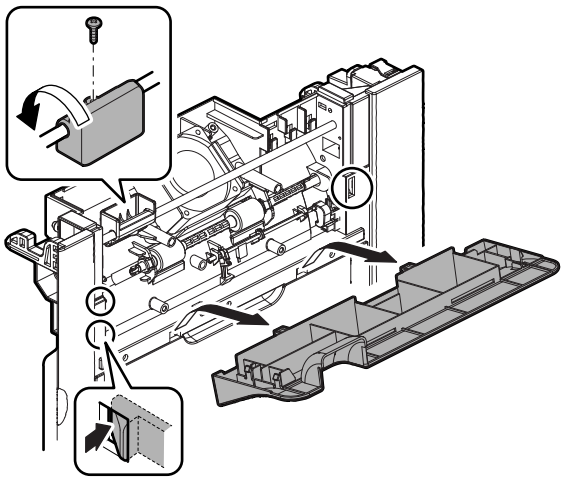
1) Remove the paper exit cooling fan motor, and disconnect the connector.

NOTE: When installing, install so that the fan label faces down.

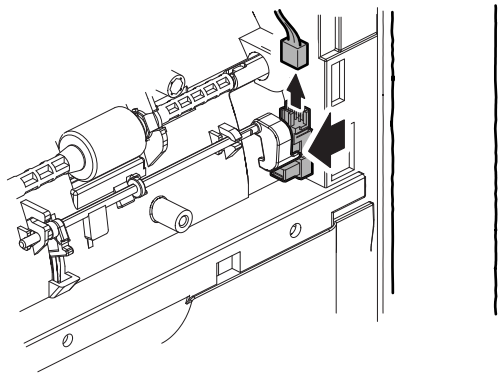


C. ADU transport path detector 1

1) Remove the screw, and turn the lever. Disengage the pawl, and remove the cover.

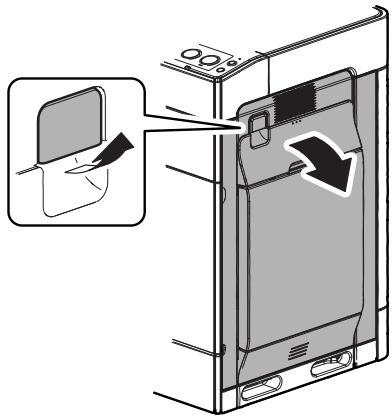


2) Disconnect the connector, and remove the ADU transport path detector 1.

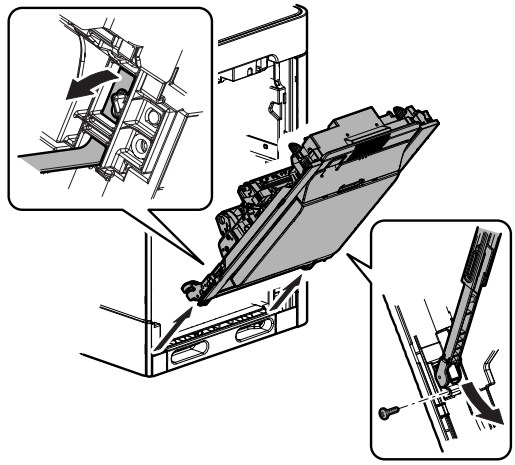


D. Right door

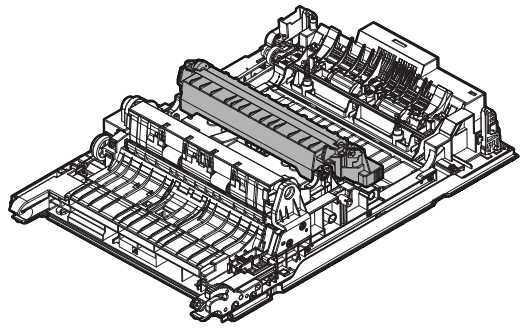
1) Pull the lever to release the lock, and open the right door.



2) Remove the screw on the rear side, and remove the arm from the right door. Remove the band on the front side, and remove the the right door.

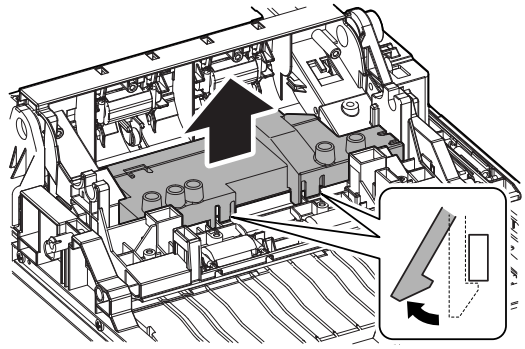


NOTE: When placing the right door, place so that the secondary transfer unit faces up.

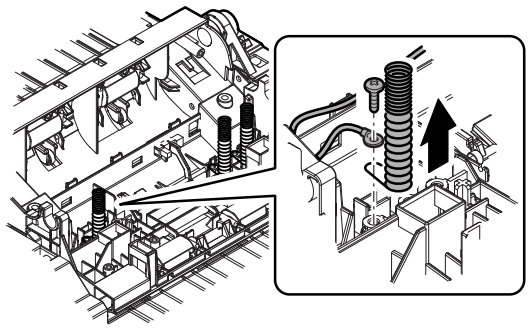


(1) ADU open/close PG unit

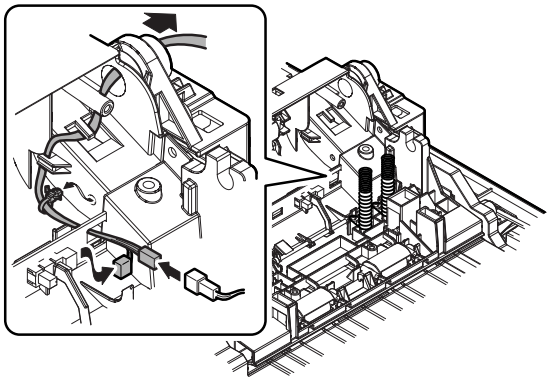
1) Disengage the pawl, and remove the cover.



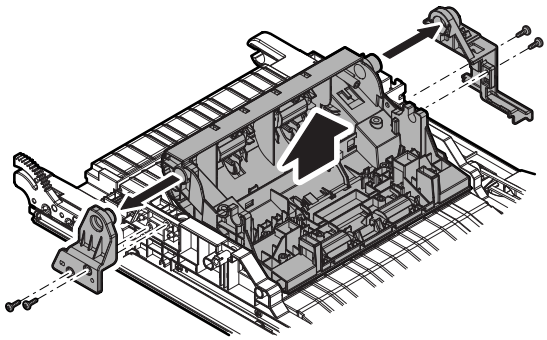
2) Remove the screw, and remove the earth wire and the spring.



3) Disconnect the connector, and remove the snap band, and pull out the harness.

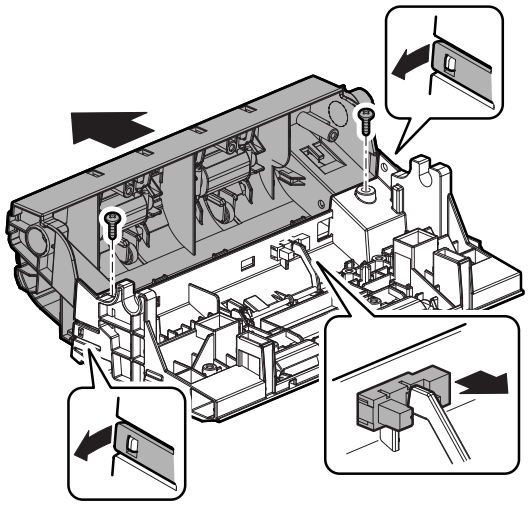


4) Remove the screw, and remove the holder and remove the ADU open/close PG unit.



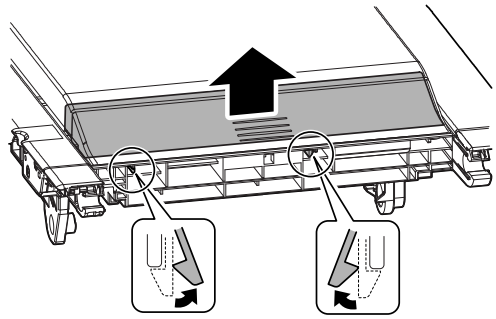
a. ADU transport path detector 2

1) Remove the screw. Disengage the pawl, and remove the paper guide. Remove the ADU transport path detector 2.



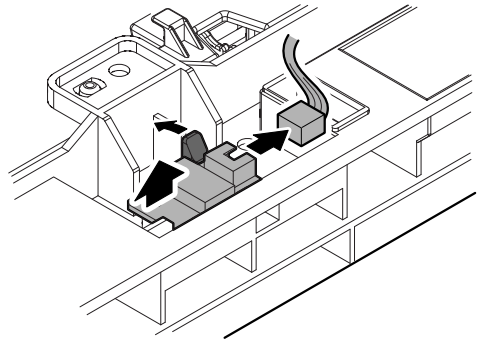
(2) ADU tray lower cabinet

1) Disengage the pawl, and remove the ADU tray lower cabinet.



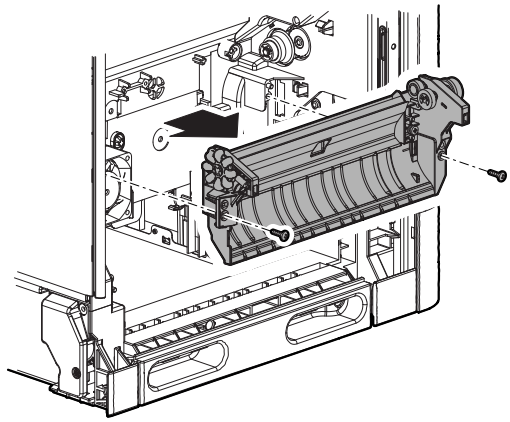
(3) Temperature humidity sensor

1) Disengage the pawl, and remove the temperature humidity sensor, and disconnect the connector.



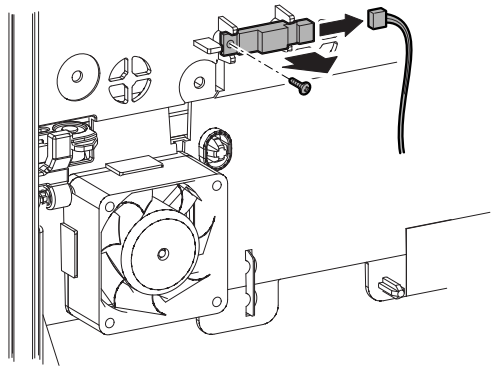
E. PS unit

1) Remove the screw, and remove the PS unit.

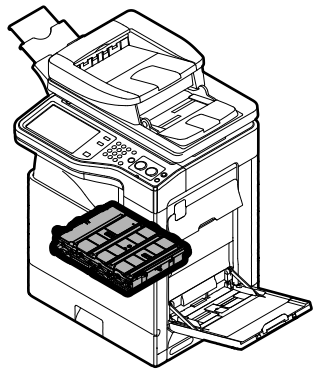


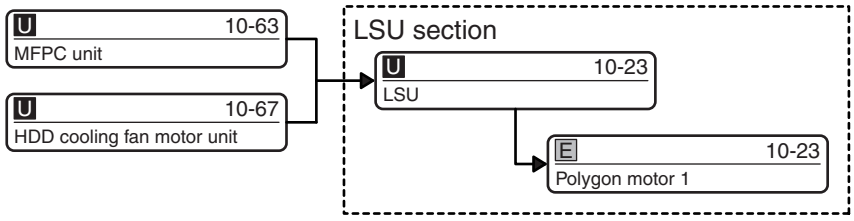
F. Paper transport detector 3

1) Disconnect the connector. Remove the screw, and remove the paper transport detector 3.



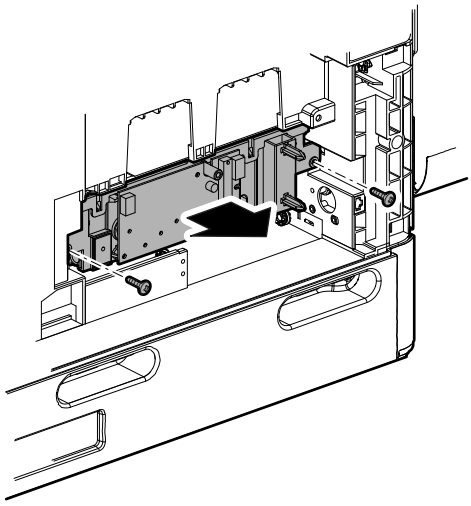
7. LSU section





A. LSU

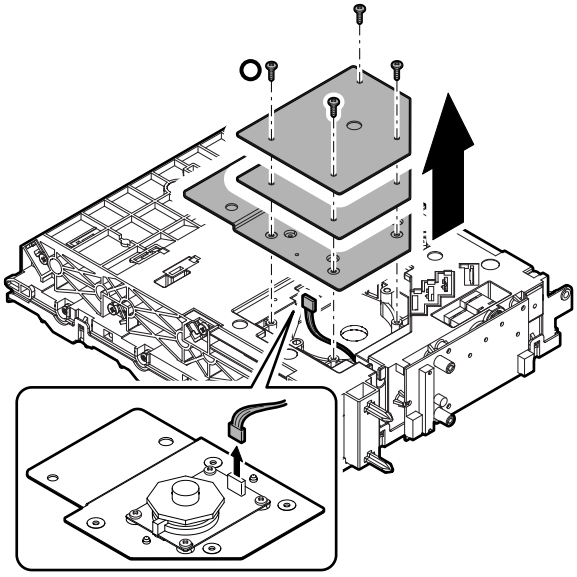
1) Remove the screw, and remove the LSU.



(1) Polygon motor 1

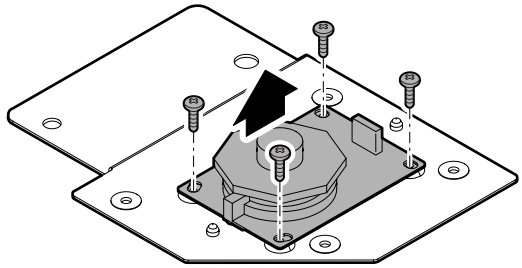
1) Remove the screw from the bottom of the LSU, and remove the weight plate and the mounting plate, and disconnect the connector.

NOTE: When installing, tighten the screw which is marked with a circle (○) first.

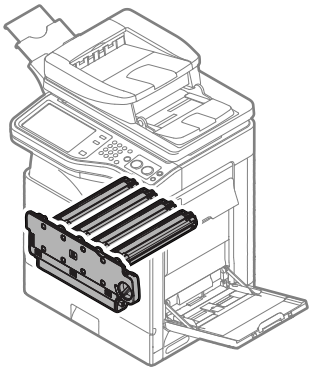


2) Remove the screw, and remove the polygon motor 1.

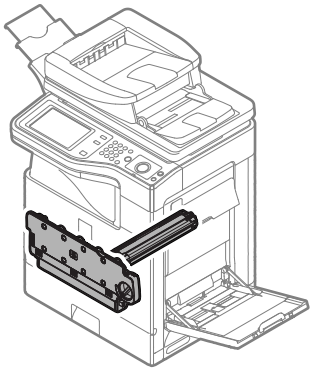
NOTE: Be careful not to scratch or dirt the mirror section of the polygon motor. Do not touch the movable section and the mirror surface of the polygon motor



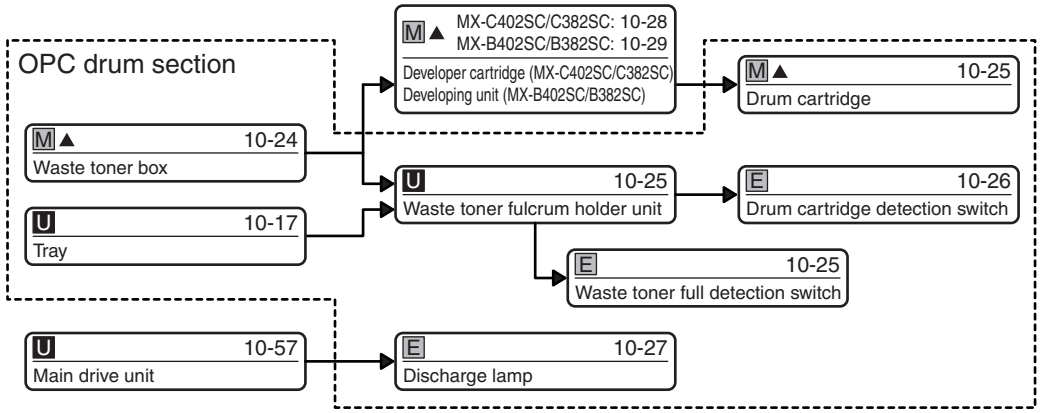
8. OPC drum section



MX-C402SC/C382SC

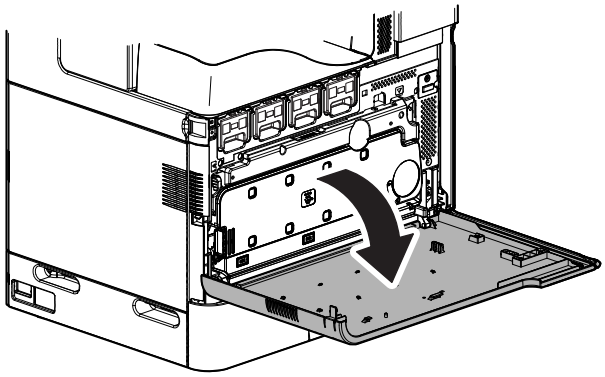


MX-B402SC/B382SC



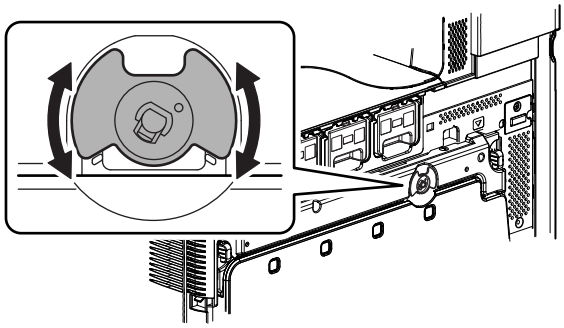
A. Waste toner box

1) Open the front cover.



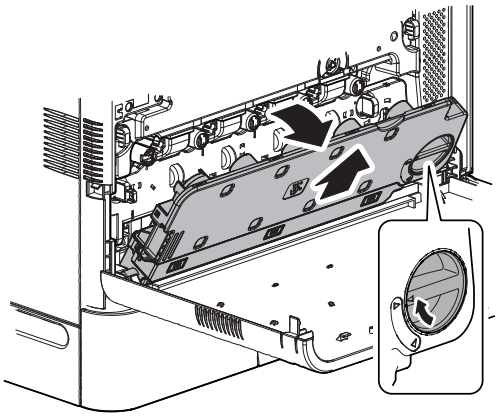
2) Check to confirm that the belt tension of the primary transfer unit is released (the separation lever of the primary transfer unit is under the state shown in the figure).

   If the belt tension is not released, turn the separation lever to the state shown in the figure.

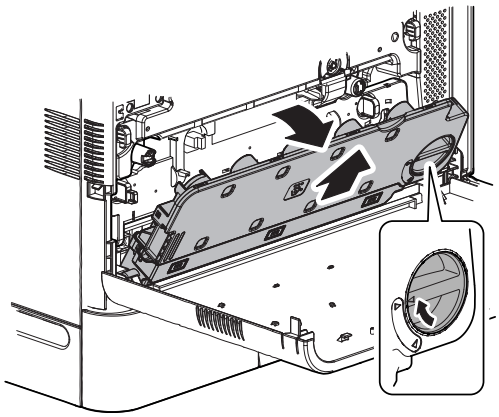


3) Turn the lock lever until it stops to release the lock, and remove the waste toner box.

   • **MX-C402SC/C382SC**

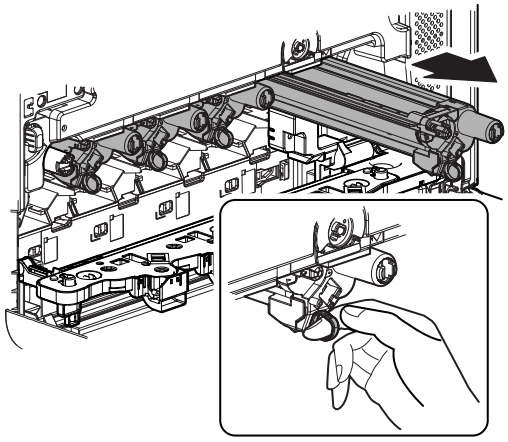


   • **MX-B402SC/B382SC**

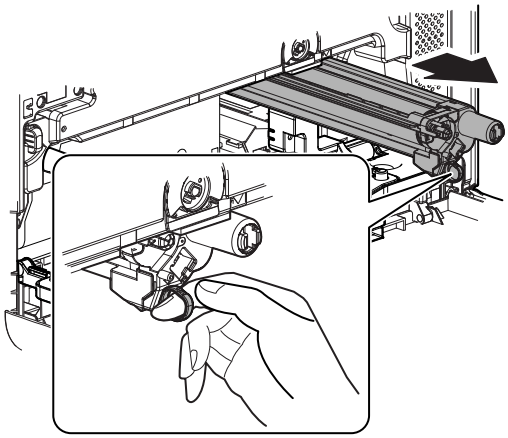


B. Drum cartridge

1) Put your finger on the drum cartridge lever, and pull it out straight and horizontally.
   - **MX-C402SC/C382SC**

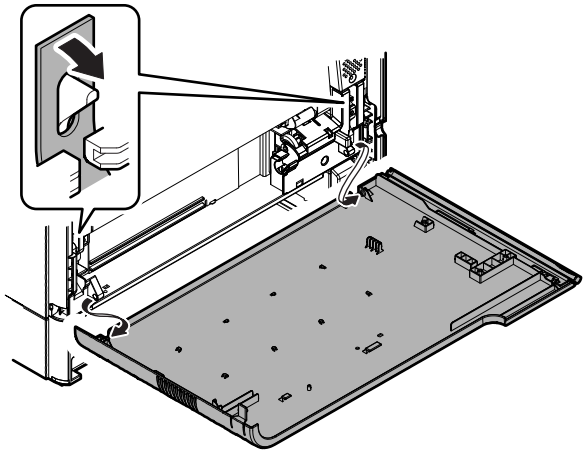


   - **MX-B402SC/B382SC**

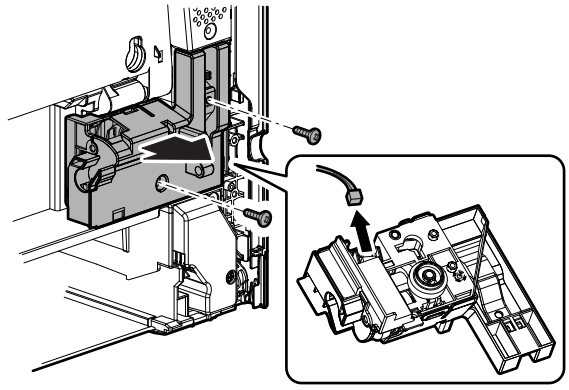


C. Waste toner fulcrum holder unit

1) Remove the band, and remove the front cover.

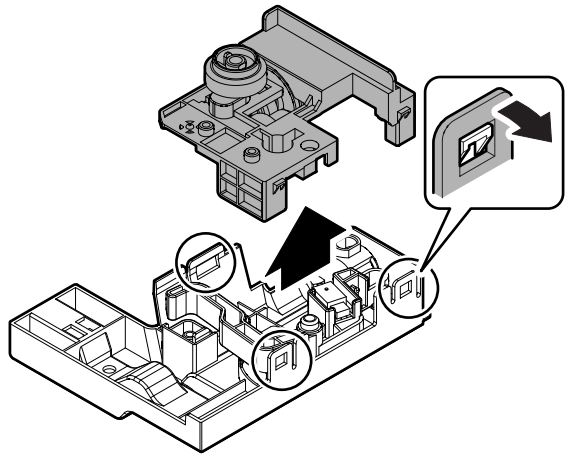


2) Remove the screw, and remove the waste toner fulcrum holder unit, and disconnect the connector.

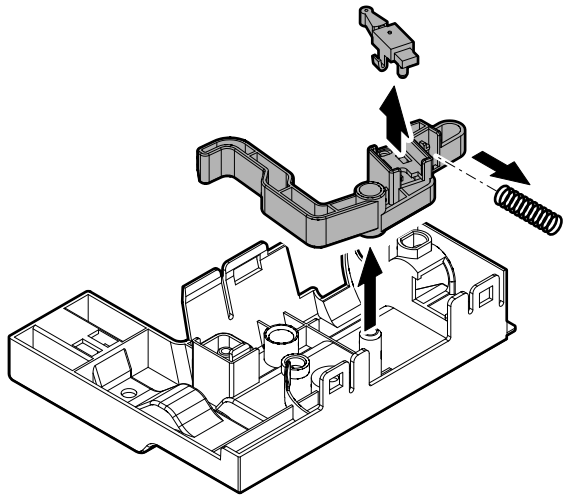


(1) Waste toner full detection switch

1) Disengage the pawl, and remove the waste toner drive holder.

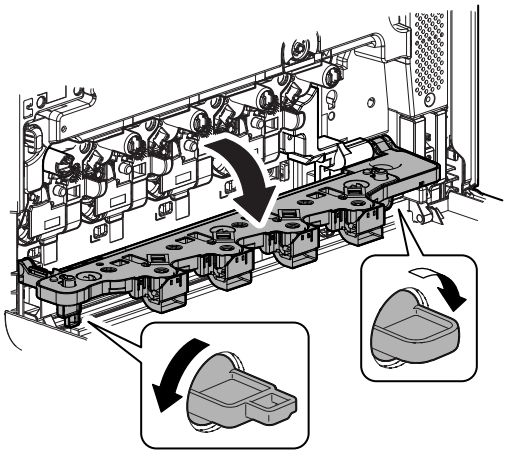


2) Remove the spring and the lever. Remove the waste toner full detection switch from the lever.

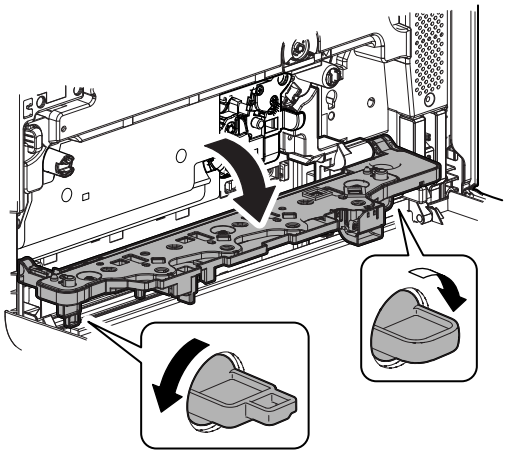


D. Drum cartridge detection switch

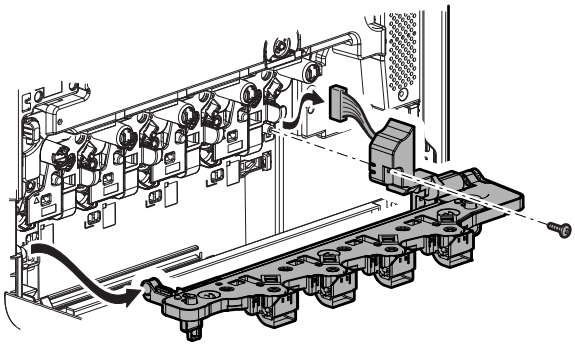
1) Put the lock lever horizontally, release the lock, and open the drum positioning plate unit.
   - **MX-C402SC/C382SC**



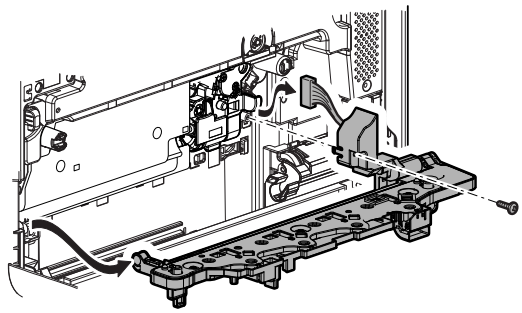
   - **MX-B402SC/B382SC**



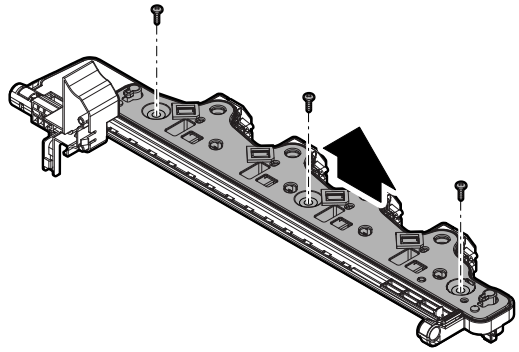
2) Remove the screw, and remove the drum positioning plate unit, and disconnect the connector.
   - **MX-C402SC/C382SC**



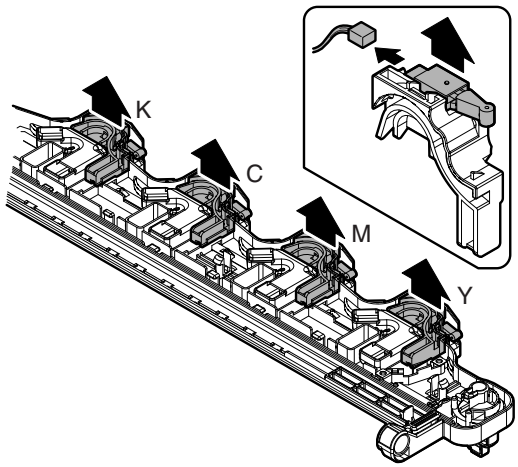
   - **MX-B402SC/B382SC**



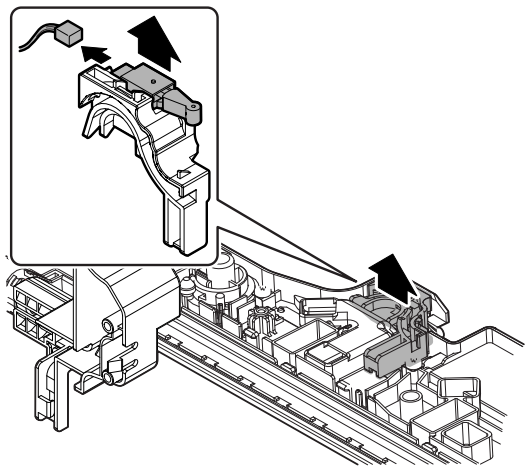
3) Remove the screw, and remove the plate.



4) Remove the holder. Disconnect the connector, and remove the drum cartridge detection switch.
   - **MX-C402SC/C382SC**



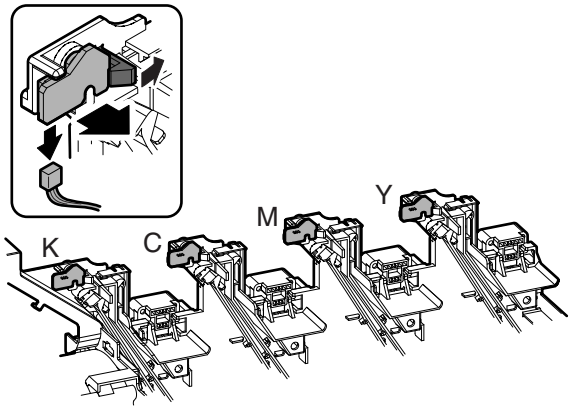
   - **MX-B402SC/B382SC**



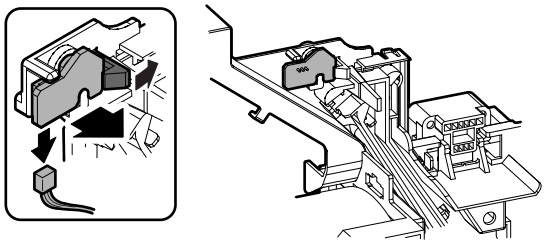
E. Discharge lamp

1) Disengage the pawl, and remove the discharge lamp, and disconnect the connector.

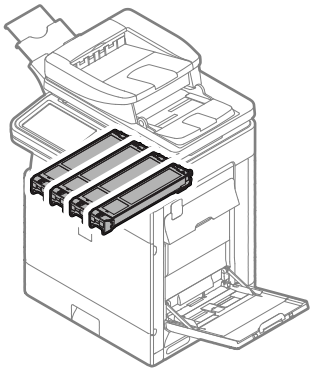
- **MX-C402SC/C382SC**



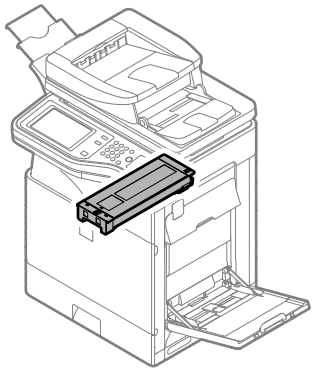
- **MX-B402SC/B382SC**



9. Toner supply section



MX-C402SC/C382SC



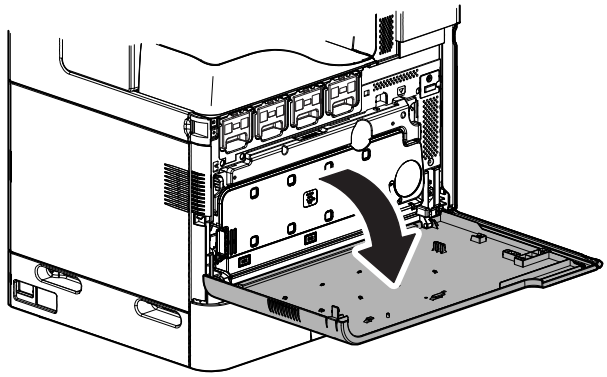
MX-B402SC/B382SC

Toner supply section

M ▲	10-27
Toner cartridge	

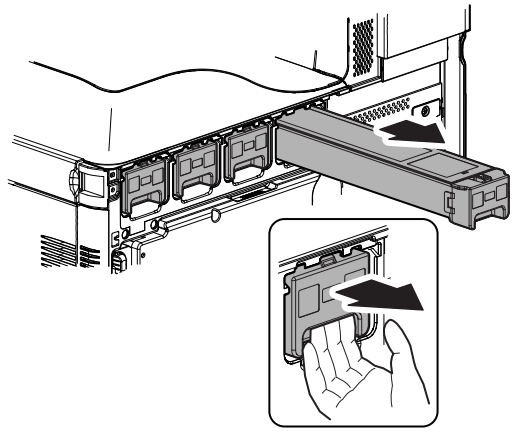
A. Toner cartridge

1) Open the front cover.



2) Hold the handle of the toner cartridge, and pull it out straight.

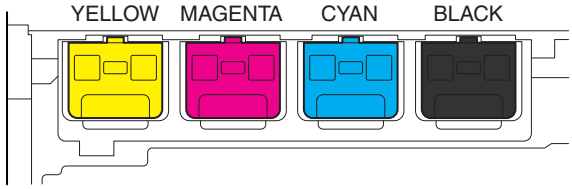
- **MX-C402SC/C382SC**



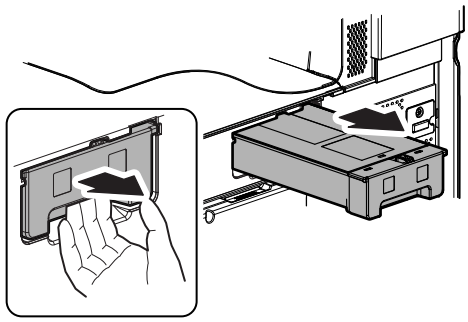
NOTE: Do not install a toner cartridge of a different color. Be sure to install a toner cartridge of the same color.

NOTE: When installing, do not insert with great force. Put your hand until it is completely inserted.

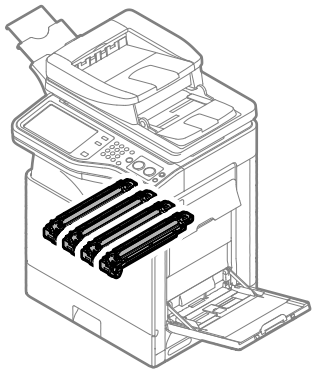
[Arrangement of toner cartridge colors]

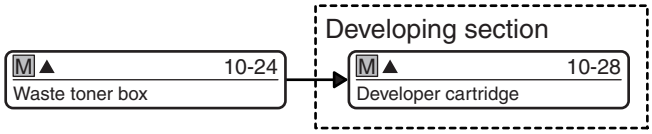


- **MX-B402SC/B382SC**



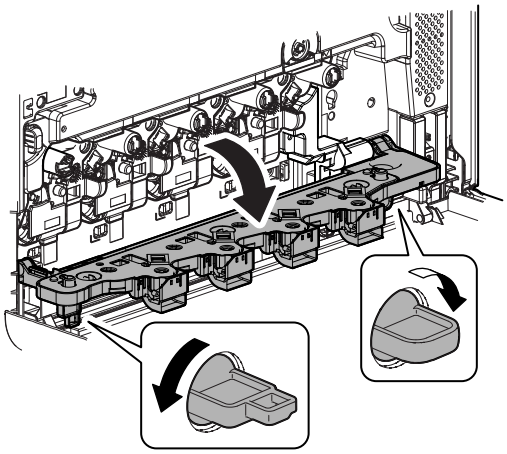
10. Developing section (MX-C402SC/ C382SC)



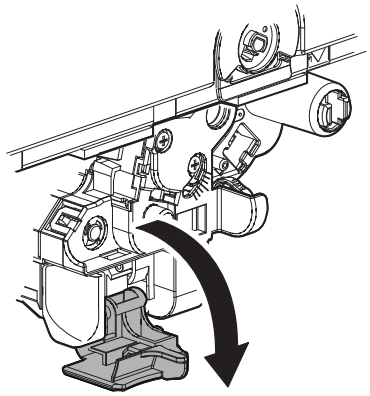


A. Developer cartridge

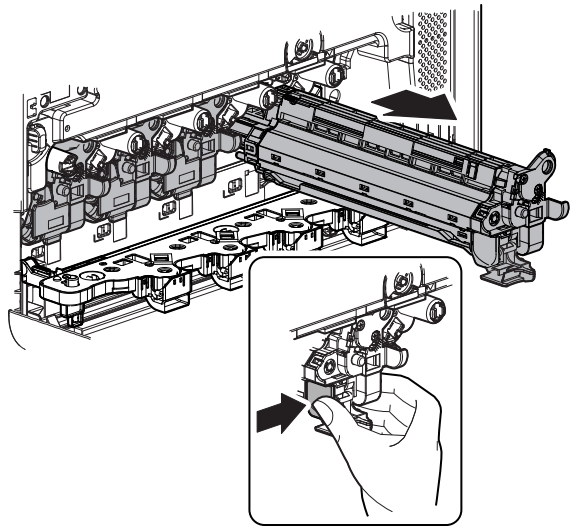
1) Put the lock lever horizontally, release the lock, and open the drum positioning plate unit.



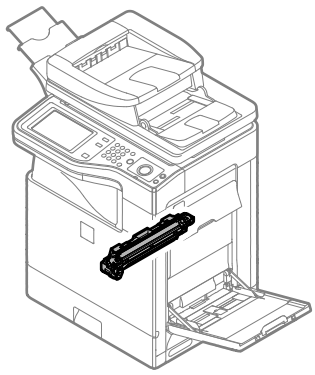
2) Open the lock cover of the developer cartridge.

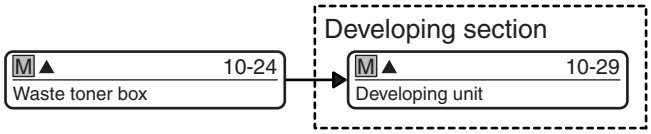


3) Hold the handle of the developer cartridge, and pull it out straight.



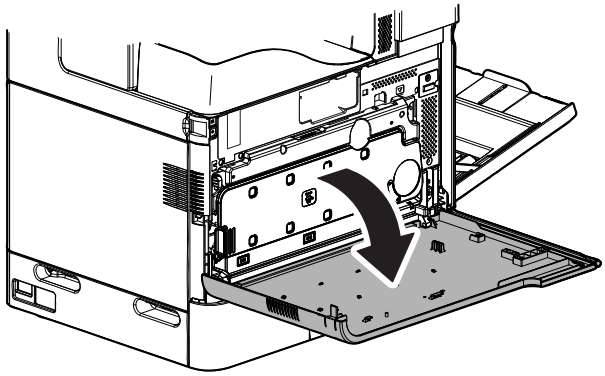
11. Developing section (MX-B402SC/ B382SC)



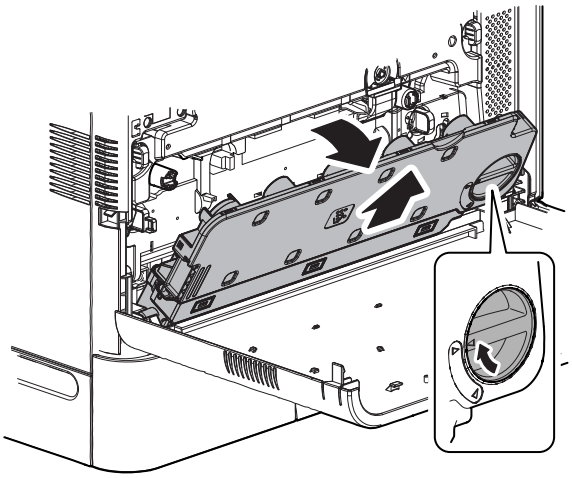


A. Developing unit

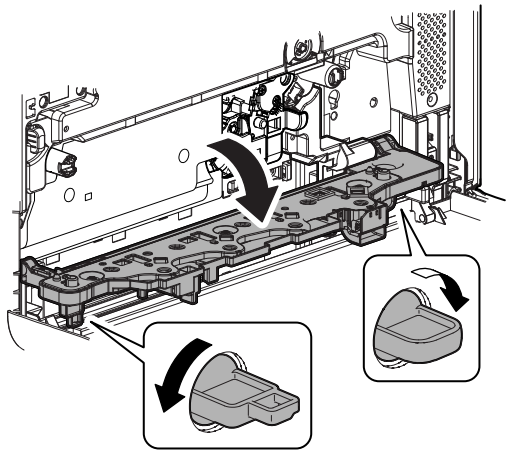
1) Open the front cover.



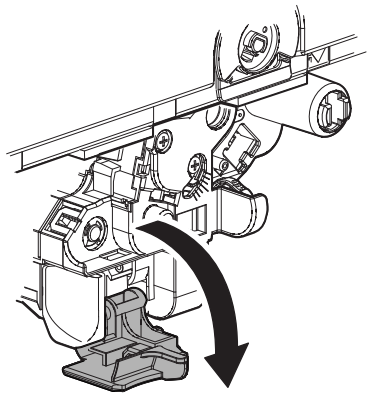
2) Turn the lock lever until it stops to release the lock, and remove the waste toner box.



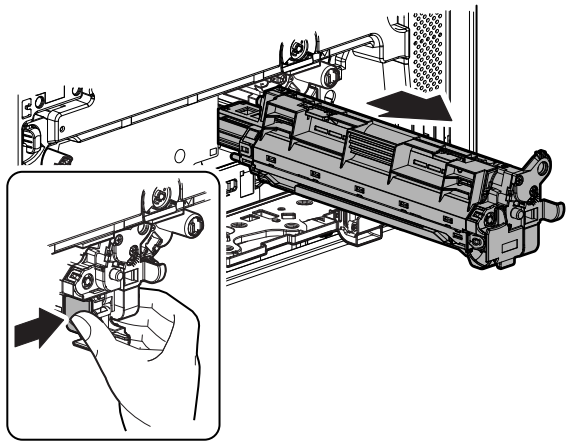
3) Turn the lock lever to the horizontal position to release the lock, and open the drum positioning plate unit.



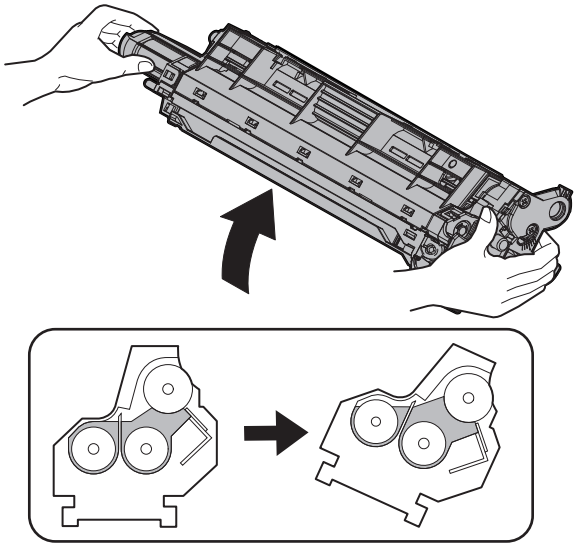
4) Open the lock cover of the developing unit.



5) Hold the handle of the developer unit and straight.
   * Be careful not to put fingerprints or oil dirt on the roller surface.
     Do not hold the case adjacent to the DV roller strongly.



* Tilt the developer unit so as not to disperse developer when removing the cover.

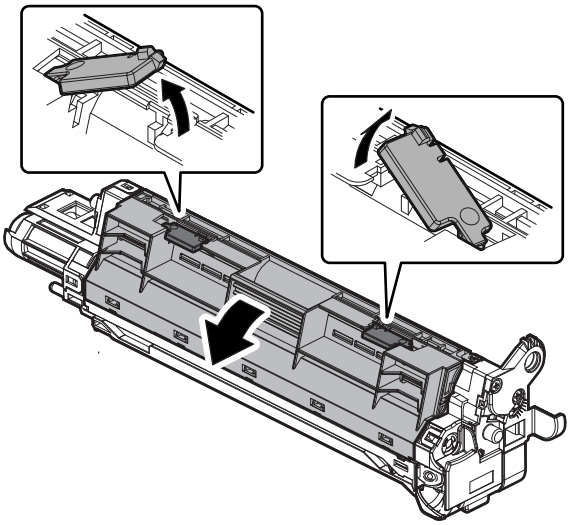


6) Remove the DV cover.

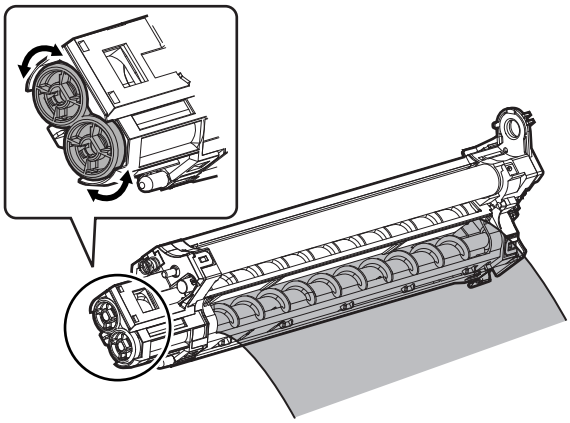
Raise the two levers. Hold the knob, and remove the cover.

* Tilt the developing unit until this procedure so as not to splash developer.
* Use enough care not to splash developer when removing the DV upper cover as well as replacing developer.

  Never put dispersed developer in the developing unit, because foreign materials may intrude.



7) Turning the gear, take out the old developer.



Since developer may remain in the front and the back sections, tilt the developing unit to remove all.

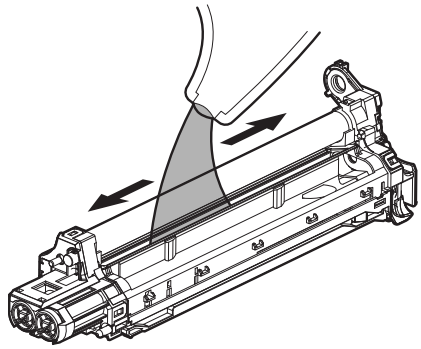
Be careful not to smear the MG roller surface with oil or foreign materials.

* Use a special care not to spill developer on the drive section (marked with ○).
* [IMPORTANT] (Note for cleaning the developing unit)

  If the developing unit is cleaned by a vacuum cleaner or an air blower with much developer remaining in the unit, static electricity may be charged in the unit. Therefore, observe the following cautions.

  * When transporting developer from the MG roller and removing foreign materials, if the MG roller surface is brought into contact with metal, etc, developer may adhere to the roller surface, causing a trouble. Be careful of that when handling the MG roller.
  * Discharge developer in the developing unit as well as that attached to the MG roller naturally as far as possible.

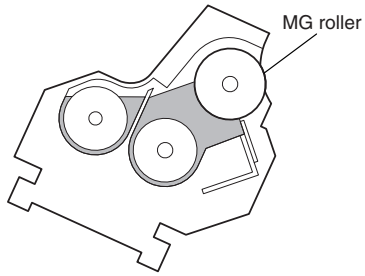
8) Insert the new developer.



* When supplying developer, be careful not to disperse developer.

  Never put dispersed developer in the developing unit, because foreign materials may intrude.

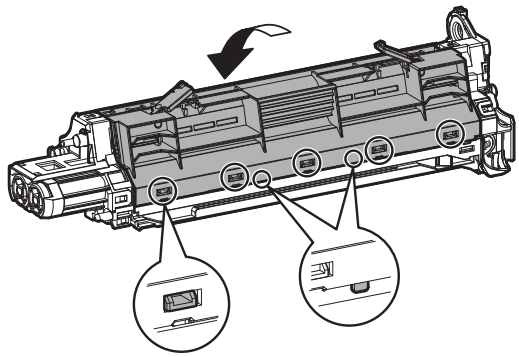
  It is advisable to tilt the developing unit and put much developer to the MG roller side for preventing dispersion of developer.



9) Attach the DV cover to the unit.

* Hang on the two projections under the cover, rotate the cover and attach it.

  Check to confirm that the five pawls are securely engaged.



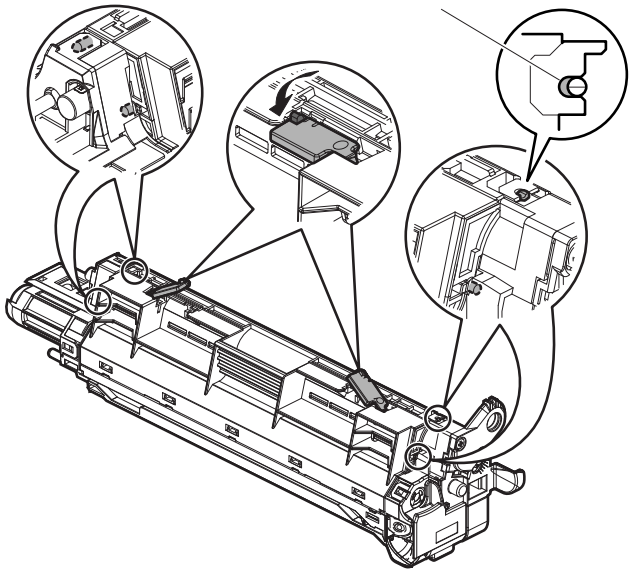
10) Lower the two levers and lock the cover.

* Since there is some resistance from the sealing material, push the cover onto the developing unit and lower the lever simultaneously.

Check to confirm that the two bosses are securely inserted on the front side and the two bosses on the rear side.

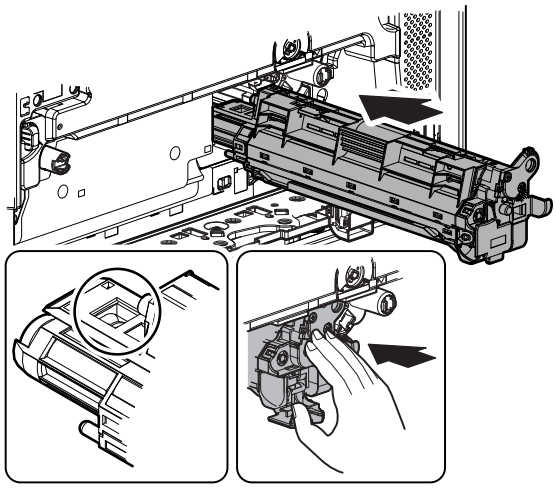
Check to confirm that the lock section of the lever is locked.

* Though the lever is completely locked, there is some clearance here.

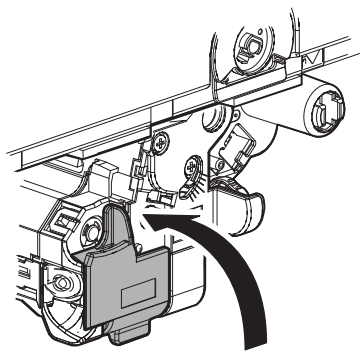


11) Shake the developing unit 5 - 6 times horizontally, and insert the developing unit straight and horizontally until it locks.

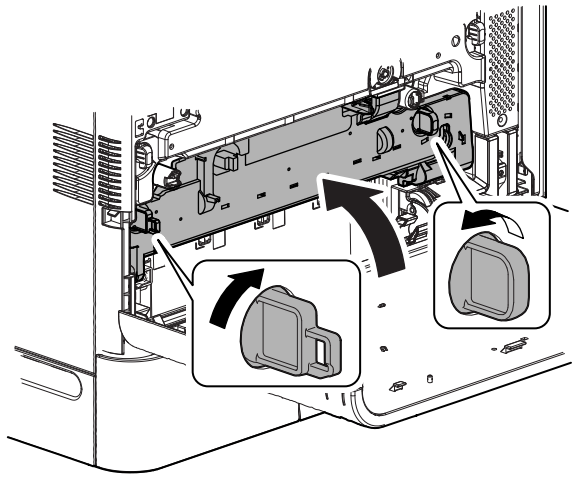
NOTE: When handling the developing unit, do not touch the magnet roller section and the shutter section.



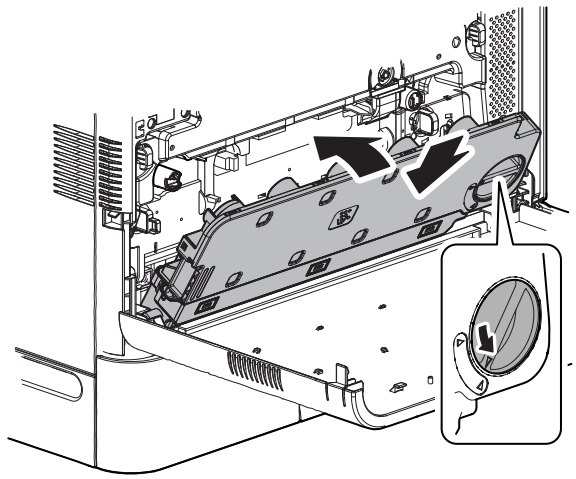
12) Close the lock cover of the developing unit.



13) Close the drum positioning plate unit, and put the lock lever upright to lock.



14) Install the waste toner box, and turn the lock lever to the left until it stops to lock the waste toner box.



15) Close the front cover.

B. Toner density reference control level setting

1) Insert the power plug into a power outlet. With the front cabinet open, turn ON the power switch of the machine and the power switch on the operation panel.
2) With the front cabinet open, enter SIM 25-2.

   WARNING: Do not install the toner cartridge before completing the Toner density reference control level setting (SIM 25-2).
3) Close the front cover.
4) After completion of the adjustment of the toner density control reference value, insert the toner cartridge.
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 3 minutes, and the average value of the toner density sensor detection level is set (saved) as the reference toner density control value.

   When the reference toner density control adjustment operation is completed, [EXECUTE] key returns to normal from highlight. This makes known about whether the adjustment operation is completed or not.

6) Press the CA key to exit the simulation.

NOTE:

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

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

If [EE-EU] or [EE-EL] 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 67, or sensor control voltage level over 197
EE-EU	EU abnormality	Sensor output level over 154, or sensor control voltage level less than 49
EE-EC	EU abnormality	Sensor output level less than 95, or sensor control voltage level over 105

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

Only execute SIM 25-2 when replacing the Developer.

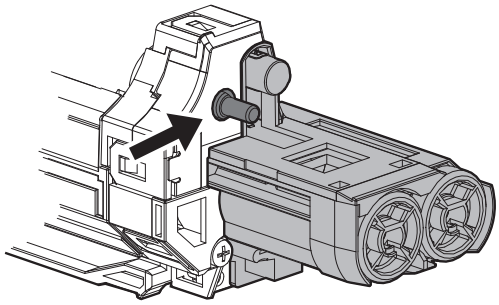
SIM 25-2 should only be run immediately after installing new DV material.

Toner Concentration Reference Control Level Setting will be incorrect if SIM 25-2 is performed at any other time.

(When cleaning inside of the developing unit with an air duct)

Before cleaning with an air duct, discharge developer in the unit as far as possible. Ground the core section (arrow mark section) at the side edge on the rear side of the MG roller, and clean with an air duct. (Since the core section may be easily damaged, do not pinch the grounding wire with nippers, etc.)

When handling the developing unit, do not apply a great force to the shaded area in the figure.

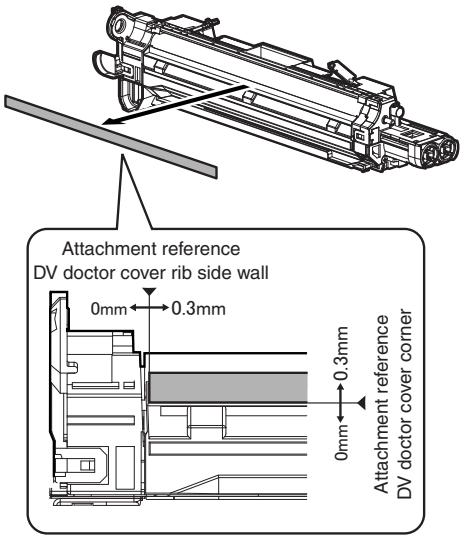


1) Replace the DV blade.

- Maintenance

DV blade: Replace at every 72K.

Side seal, Toner filter: Replace as needed.



2) Check the side seals F and R and the toner filter, and clean or replace as needed.

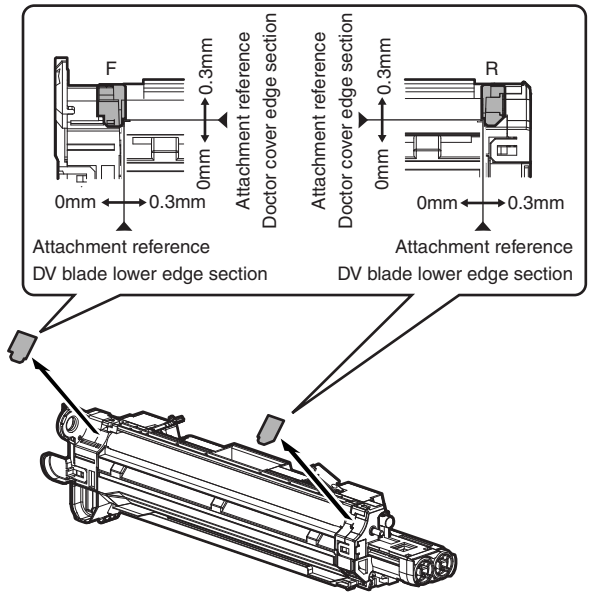
Remove adhesive completely when removing a seal.

When attaching, clean the attachment surface with alcohol to remove oil and fit with the reference.

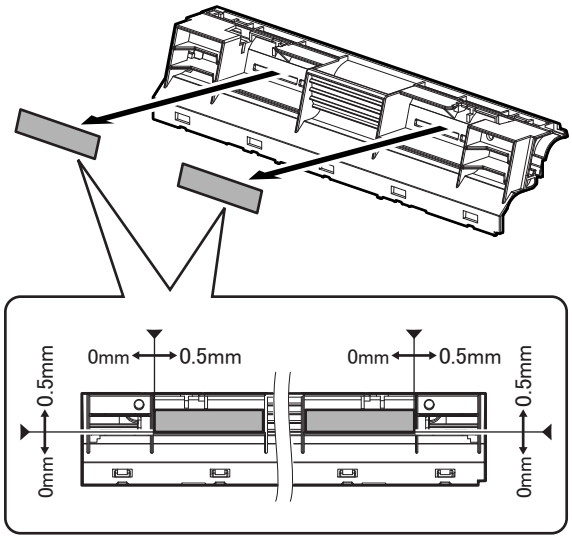
Attach the seal so that the clearance is 0 - 0.3mm from the edge, and press to secure attachment.

Before attaching the DV side seal F, check to confirm that the DV-BOX molt is not broken. If it is broken, replace it.

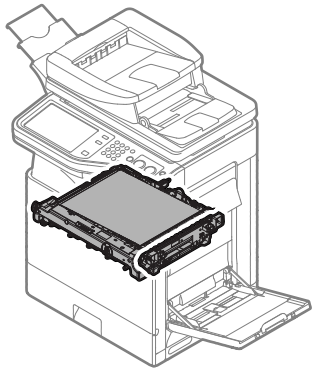
- DV side seals F/R attachment

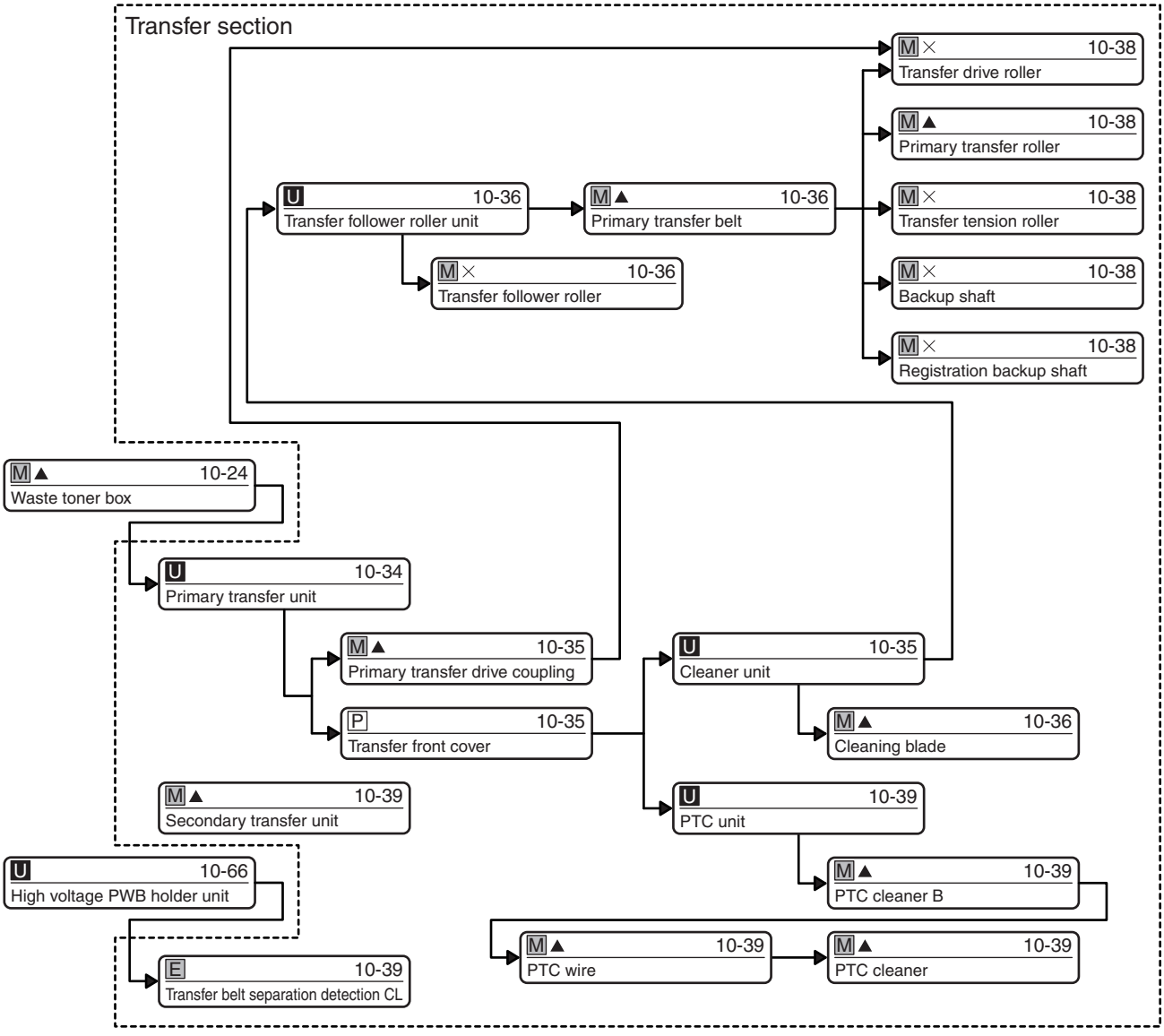


- Toner filter attachment



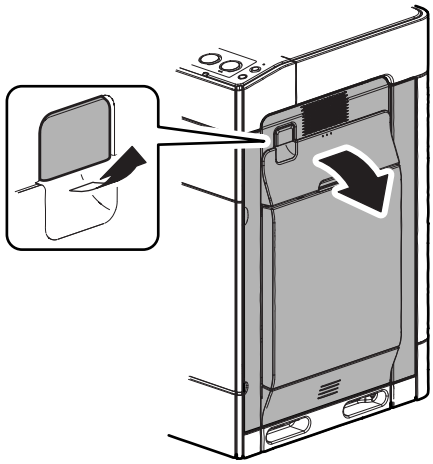
12. Transfer section



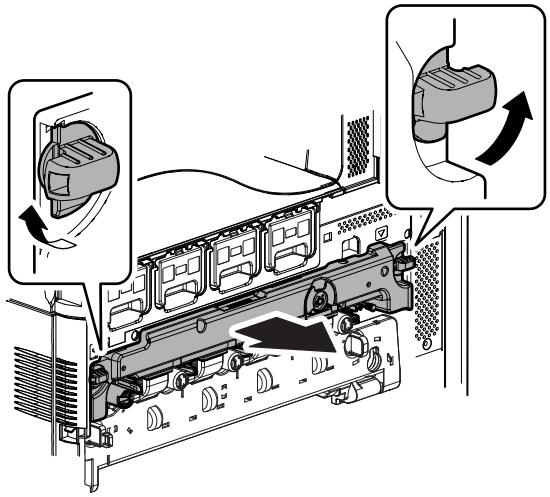


A. Primary transfer unit

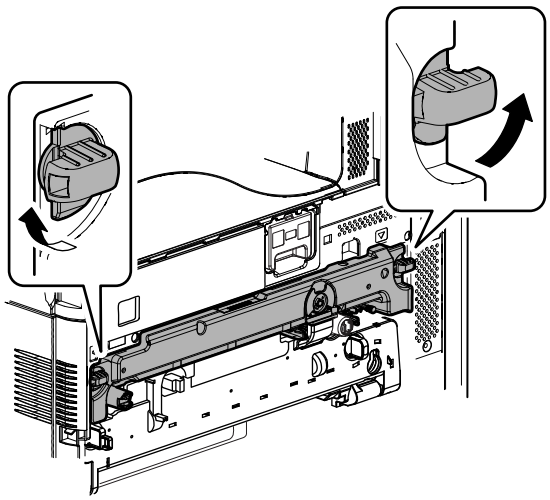
1) Pull the lever to release the lock, and open the right door.



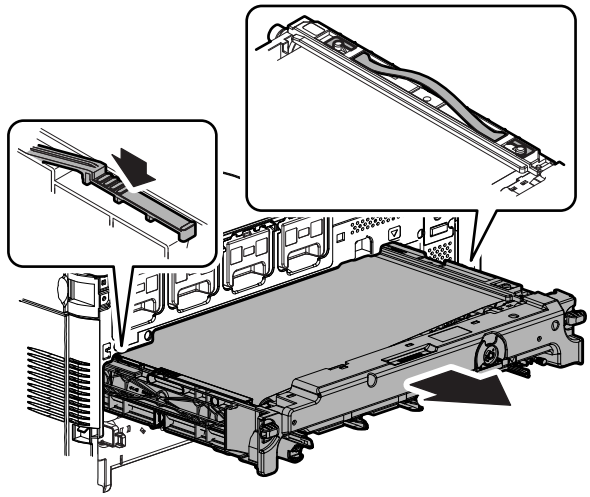
2) Put the lock lever horizontally, release the lock, and pull out the primary transfer unit until it stops.
   - **MX-C402SC/C382SC**



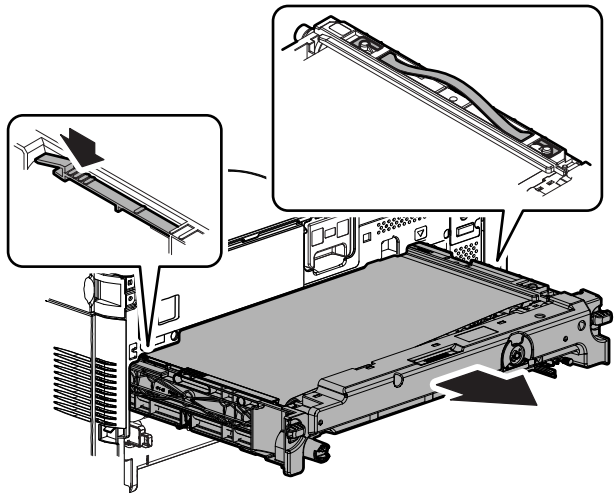
   - **MX-B402SC/B382SC**



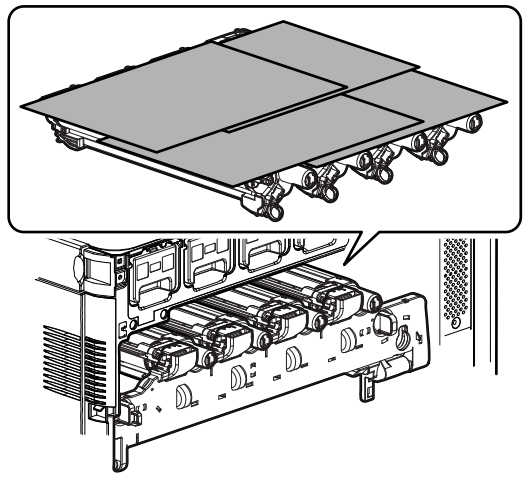
3) Hold the handle, push the lock on the left side of the primary transfer unit and remove the primary transfer unit.
   - **MX-C402SC/C382SC**



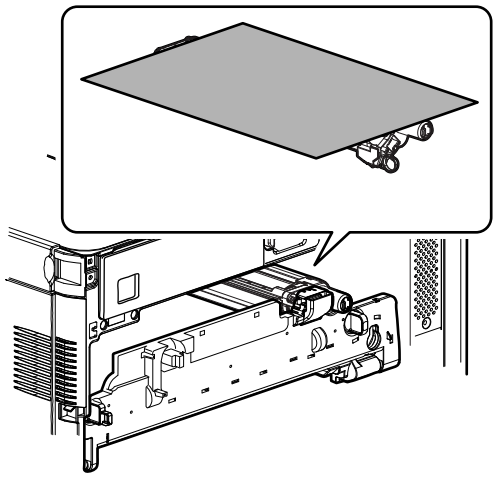
   - **MX-B402SC/B382SC**



NOTE: When the primary transfer unit is removed, place several sheets of paper on the drum cartridge in order to protect the drum from being exposed.
   - **MX-C402SC/C382SC**

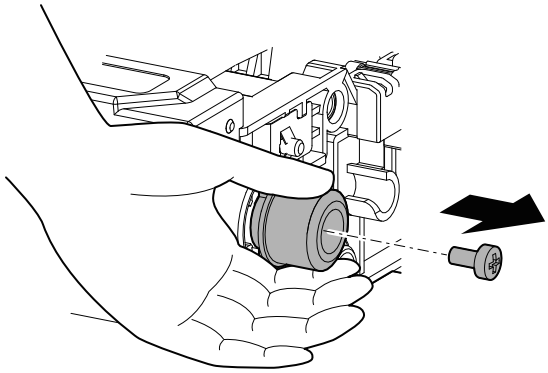


• **MX-B402SC/B382SC**

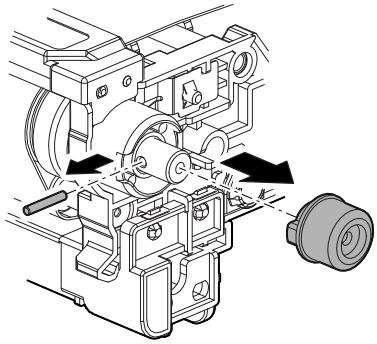


(1) Primary transfer drive coupling

1) Press the primary transfer drive coupling, and remove the screw.

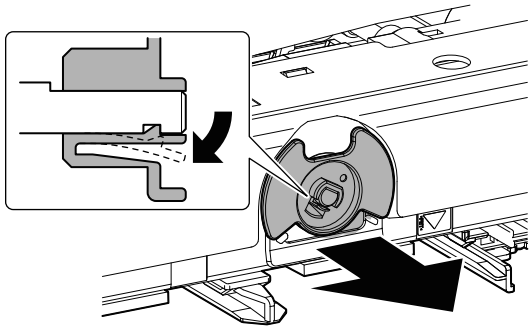


2) Remove the primary transfer drive coupling, and remove the parallel pin.

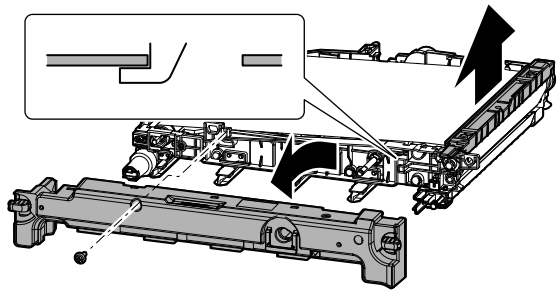


(2) Transfer front cover

1) Disengage the pawl, and remove the separation lever.



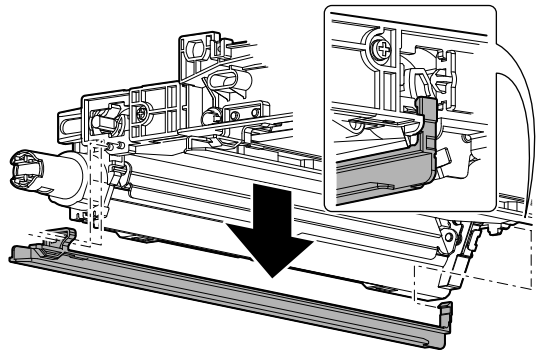
2) Remove the blue screw. Slide the transfer front cover to the left to remove. Remove the handle.



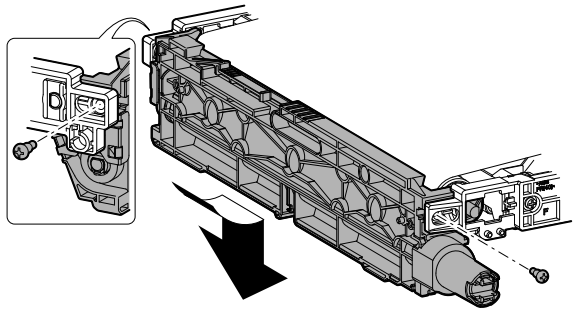
(3) Cleaner unit

MX-C402SC/C382SC

1) Disengage the pawl, and remove the guide.

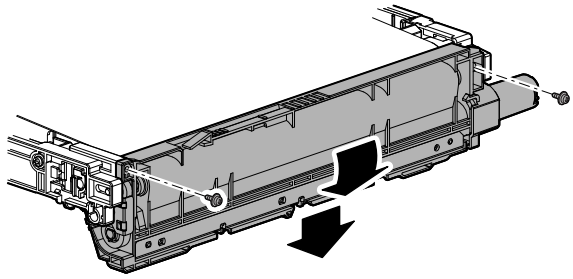


2) Remove the blue screw. Turn the cleaner unit downward to remove.



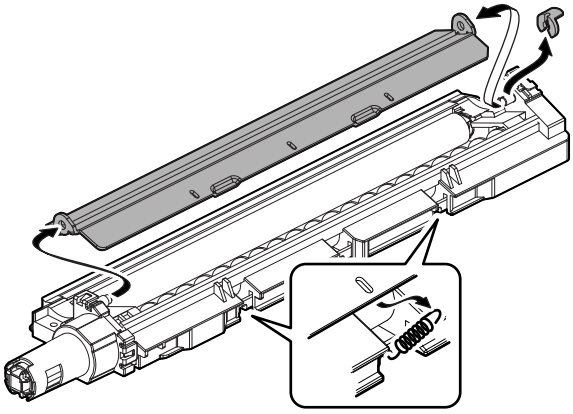
MX-B402SC/B382SC

1) Remove the blue screw. Turn the cleaner unit downward to remove.



a. Cleaning blade

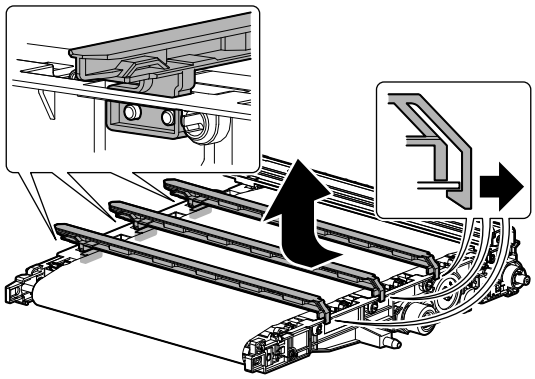
1) Remove the spring. Remove the resin E-ring, and remove the cleaning blade.



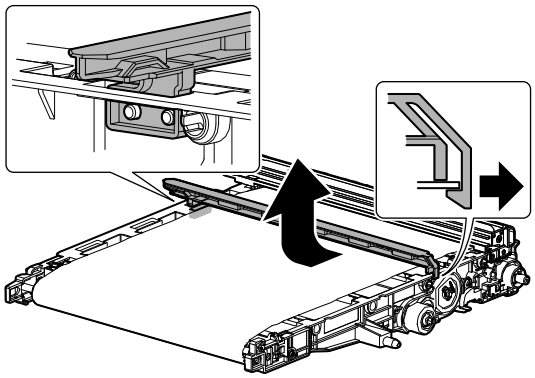
(4) Transfer follower roller unit

1) Disengage the pawl, and remove the guide.

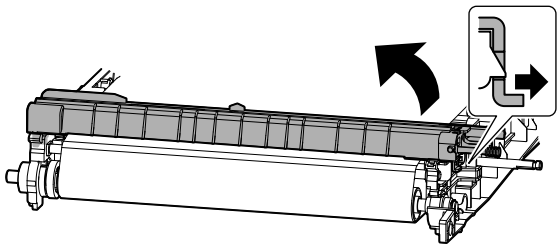
- **MX-C402SC/C382SC**



- **MX-B402SC/B382SC**

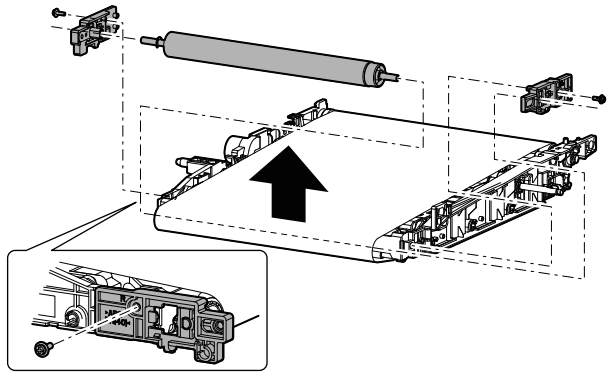


2) Disengage the pawl, and remove the frame.

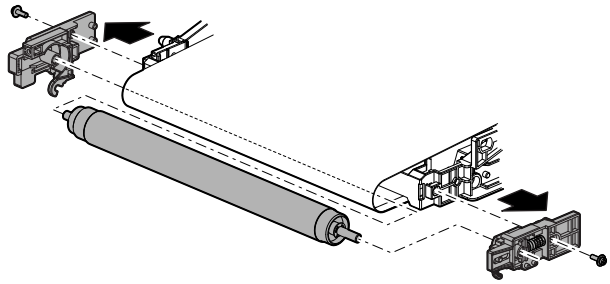


3) Remove the blue screw. Remove the holder and remove the transfer follower roller unit.

- **MX-C402SC/C382SC**

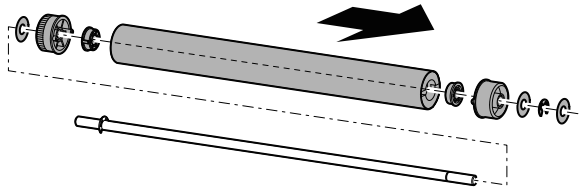


- **MX-B402SC/B382SC**



a. Transfer follower roller

1) Remove the polyslider, the E-ring, the collar, and the bearing. Remove the transfer follower roller.

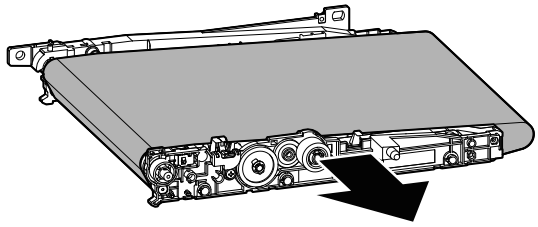


(5) Primary transfer belt

1) Remove the primary transfer belt from the frame.

NOTE: Use enough care not to scratch, bend, or smear the primary transfer belt.

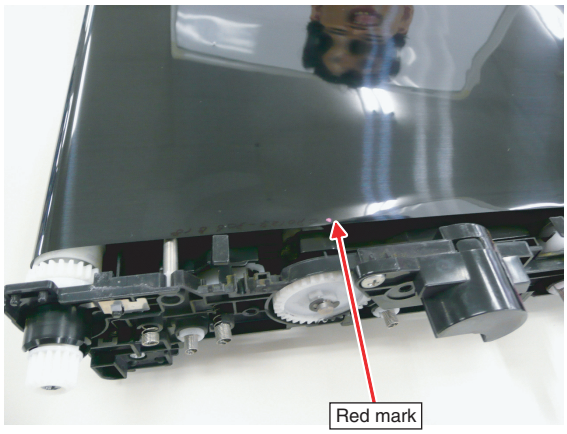
NOTE: When handling the primary transfer belt, use gloves not to put fingerprints or oil on its surface.



When replacing the transfer belt, perform the following procedures and observe the note in order to prevent reversion or meandering of the cleaning blade, or any trouble.

a. Transfer belt direction

When installing the transfer belt, arrange so that the red mark at the edge of the transfer belt is on the rear frame side. If it is installed in the wrong direction, the cleaning blade may be reversed or another trouble may occur.



NOTE: * Use enough care not to scratch or bend the transfer belt.
* Use enough care not to put fingerprints or foreign materials on the transfer belt surface. (Be sure to use gloves.)

b. Application of setting powder (UKOG-0123FCZZ)

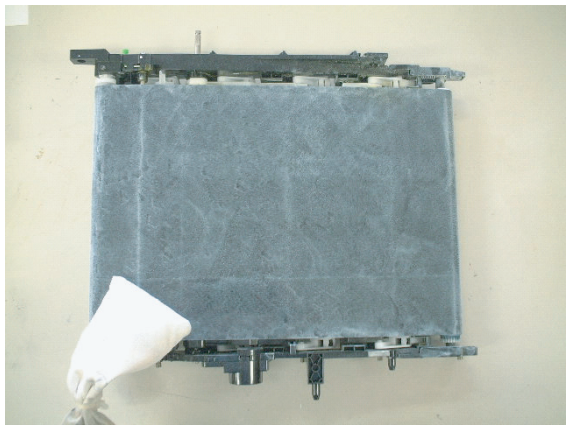
When the transfer belt is replaced, apply setting powder (UKOG-0123FCZZ) according to the following procedures.

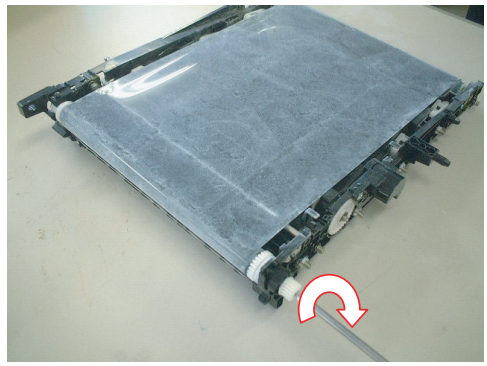
1) Place the transfer unit with the transfer cleaner unit removed on a flat surface. Shake the bag of setting powder slightly, and apply setting powder evenly to the whole surface of the transfer belt.

   Use a screwdriver to rotate the transfer belt drive gear in the transfer unit slowly in the arrow direction, changing the application position so that setting powder is applied evenly to the whole surface of the transfer belt.

   (Key points for applying setting powder)

   * Apply setting powder by using the weight of the setting powder bag so that setting powder is evenly applied to the surface.
   * Use care to apply evenly to the edge of the transfer belt so that it is evenly applied in the F/R direction.

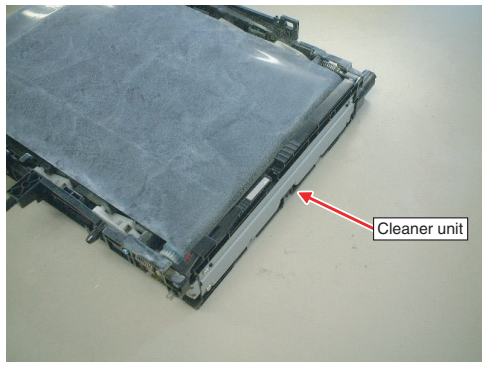




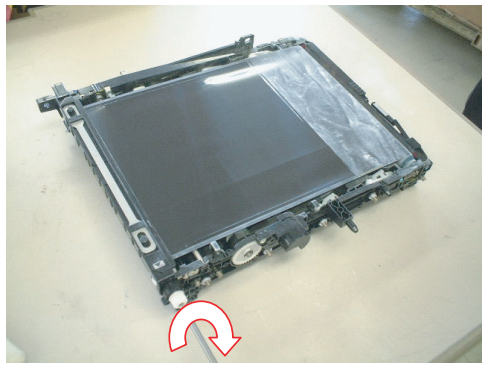
NOTE: * Use enough care not to scratch the transfer belt.
* The procedure to rotate the transfer belt must be executed on a flat surface. If not, the transfer belt may meander.
* When starting rotation of the transfer belt, carefully and slowly rotate in order not to apply a sudden great load to the cleaner blade.

2) Install the transfer cleaner unit.

   At that time, check to confirm that setting powder is applied to the contact section between the cleaner blade and the transfer belt.



3) Use a screwdriver to rotate the transfer belt drive gear slowly in the arrow direction until setting powder is cleaned and removed from the transfer belt by the cleaner.



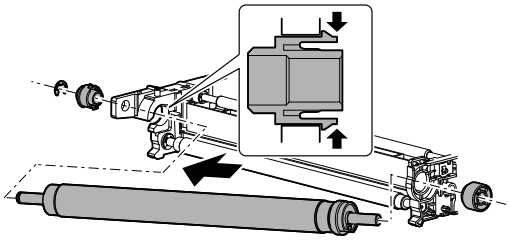
NOTE: * The procedure to rotate the transfer belt must be executed on a flat surface. If not, the transfer belt may meander.
* When starting rotation of the transfer belt, carefully and slowly rotate in order not to apply a sudden great load to the cleaner blade.
* When setting powder is completely removed, stop rotation of the belt. Do not rotate it unnecessarily.
* Do not rotate reversely with the blade installed.

4) After installing the transfer unit, make three prints of half-tone or black background on A4 (11 x 8.5) paper, and check to confirm that there is no scratch or dirt on the transfer belt.

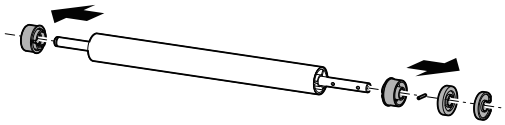
(6) Transfer drive roller

1) Remove the E-ring. Remove the bearing. Remove the transfer drive roller unit.

NOTE: When installing the transfer drive unit, fit the collar slit with the frame rib.



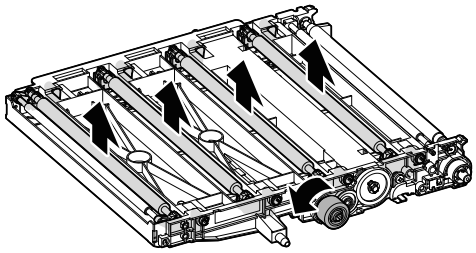
2) Remove the collar, the gear, and parallel pin, and the collar from the transfer drive roller.



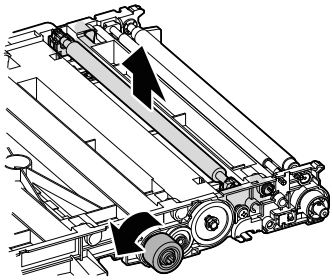
(7) Primary transfer roller

1) Turn back the primary transfer unit. Turn the gear to lift the primary transfer roller.

- **MX-C402SC/C382SC**



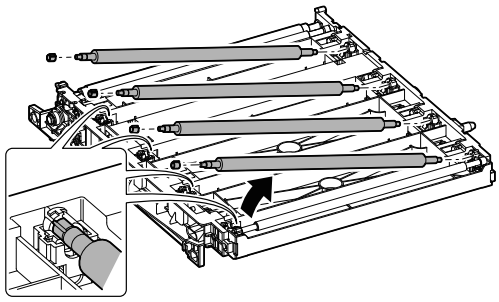
- **MX-B402SC/B382SC**



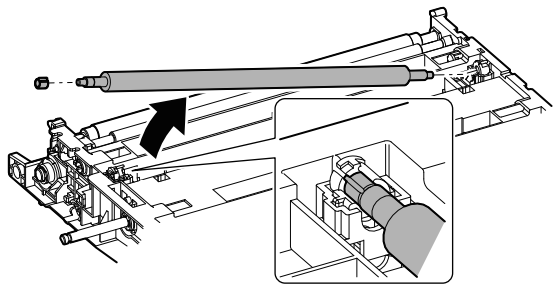
2) Remove the bearing side of the primary transfer roller, and remove the primary transfer roller. Remove the bearing from the primary transfer roller.

NOTE: When installing the primary transfer roller, be careful of the direction of the concave section of the bearing.

- **MX-C402SC/C382SC**

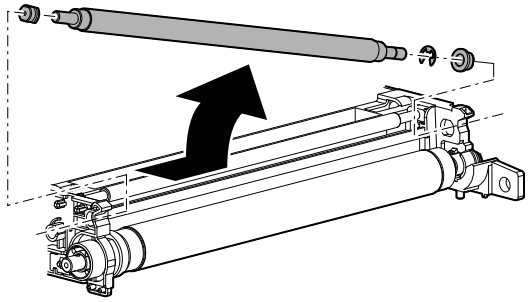


- **MX-B402SC/B382SC**



(8) Transfer tension roller

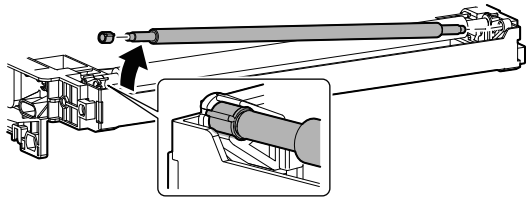
1) Turn back the primary transfer unit. Remove the E-ring. Slide the transfer tension roller to the front side to remove. Remove the bearing from the transfer tension roller.



(9) Backup shaft

1) Turn back the primary transfer unit. Remove the bearing side of the backup shaft, and remove the backup shaft. Remove the bearing from the backup shaft.

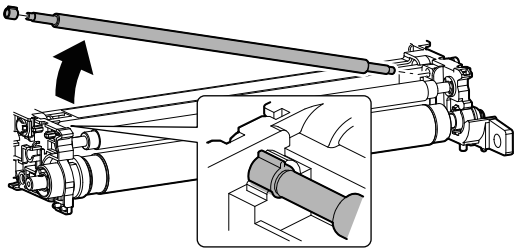
NOTE: When installing the backup shaft, be careful of the direction of the concave section of the bearing.



(10) Registration backup shaft

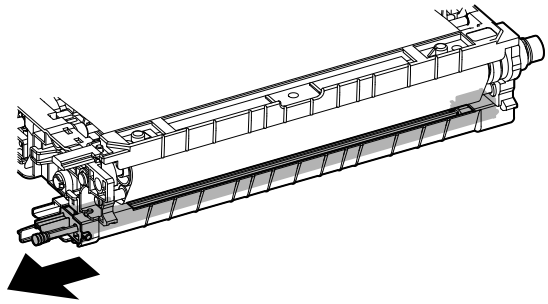
1) Turn back the primary transfer unit. Remove the bearing side of the registration backup shaft. Remove the bearing from the registration backup shaft.

NOTE: When installing the backup shaft, be careful of the direction of the concave section of the bearing.



(11) PTC unit

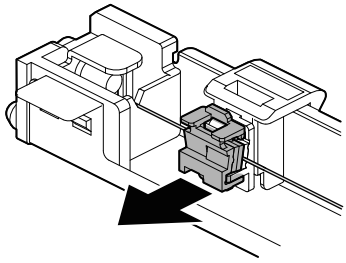
1) Pull out the PTC unit from the frame and remove it.



a. PTC cleaner B

1) Remove the PTC cleaner B.

NOTE: When installing, pinch the PTC wire and install it.

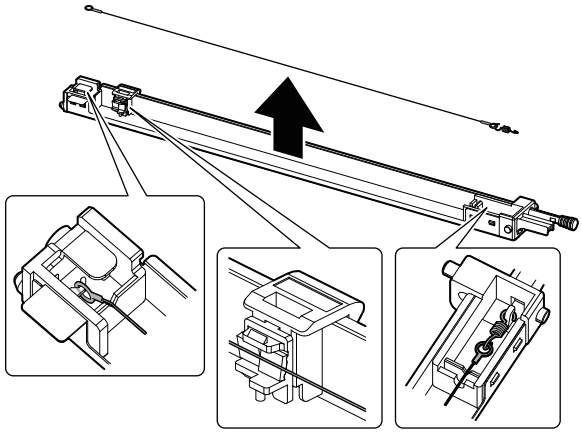


b. PTC wire

1) Remove the spring on the front side of the PTC wire. Remove the rear side and remove the PTC wire.

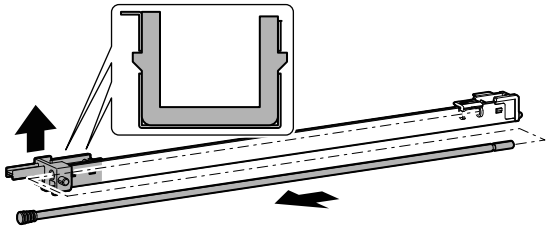
NOTE: Do not touch the wire section of the PTC wire with a bare hand.

NOTE: When installing, arrange so that the PTC wire is on the PTC cleaner.

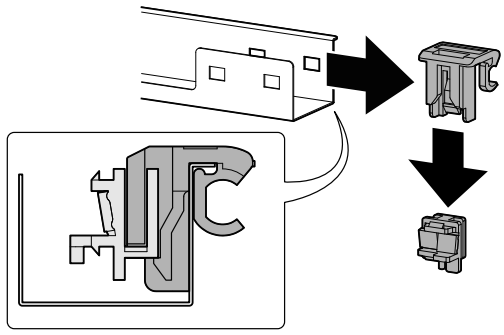


c. PTC cleaner

1) Remove the cleaner rod. Disengage the pawl, and remove the holder.

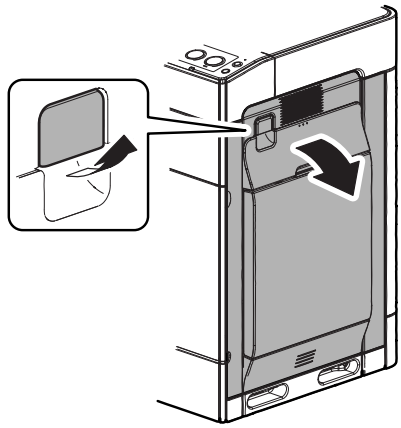


2) Slide the cleaner holder to the front side to remove. Remove the PTC cleaner from the cleaner holder.

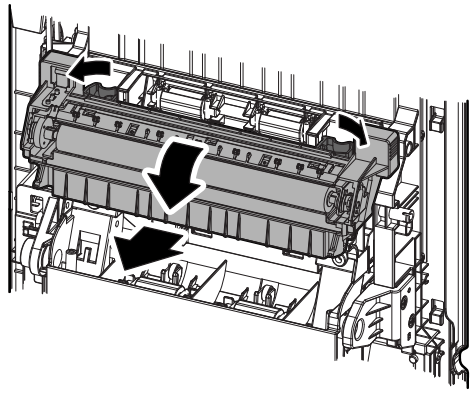


B. Secondary transfer unit

1) Pull the lever to release the lock, and open the right door.

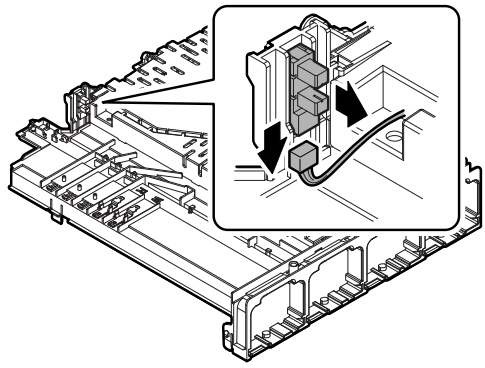


2) Release the lock, and remove the secondary transfer unit.

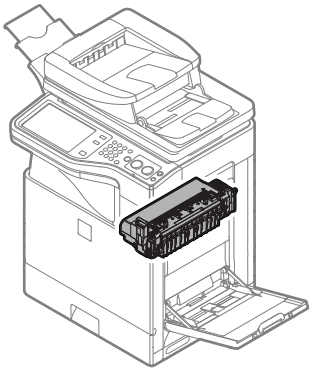


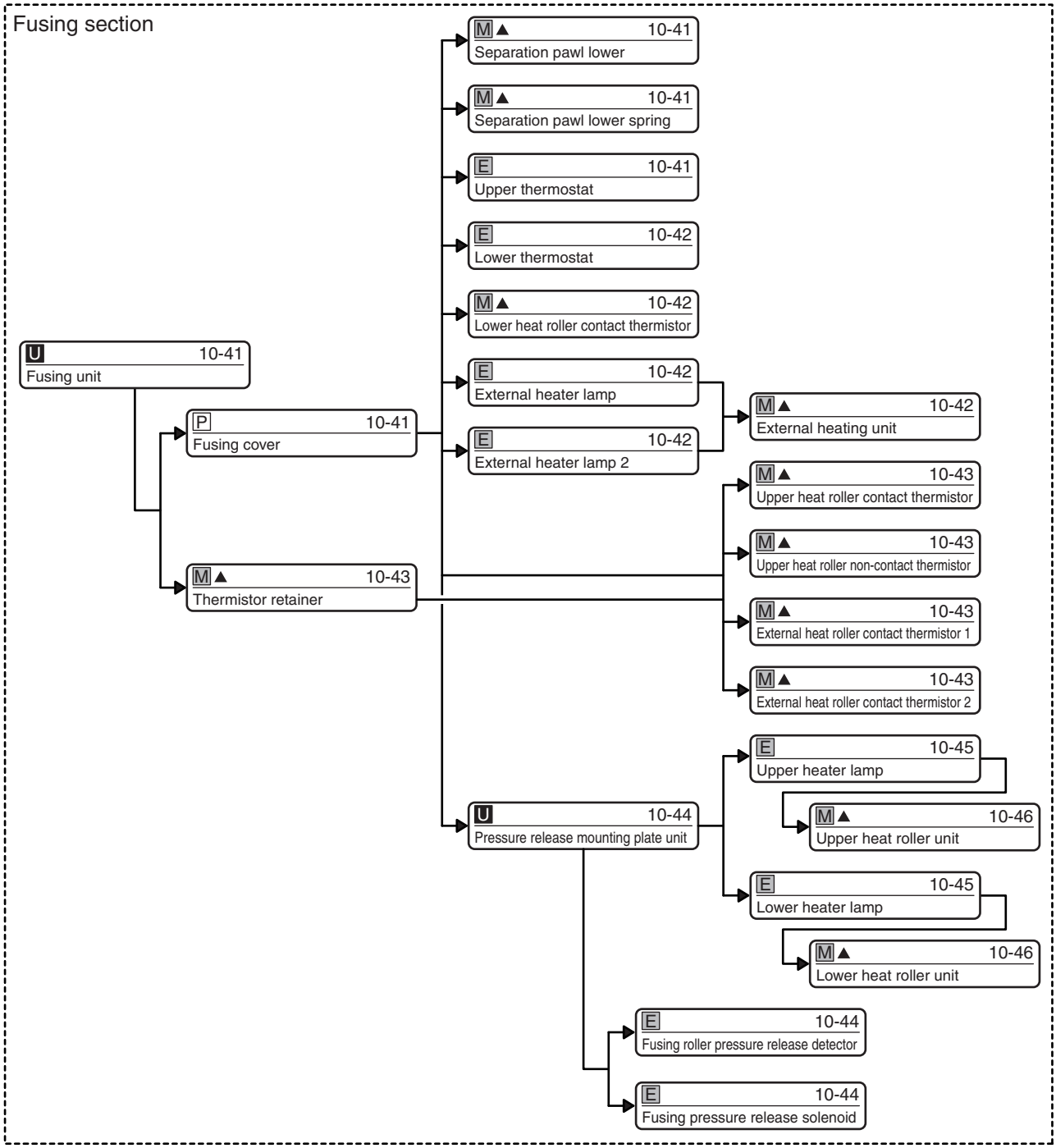
C. Transfer belt separation detection CL

1) Disconnect the connector, and remove the transfer belt separation detector CL.



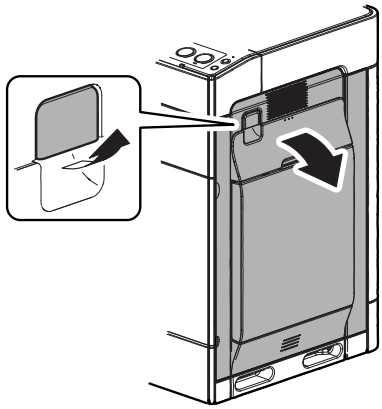
13. Fusing section (MX-C402SC/C382SC)



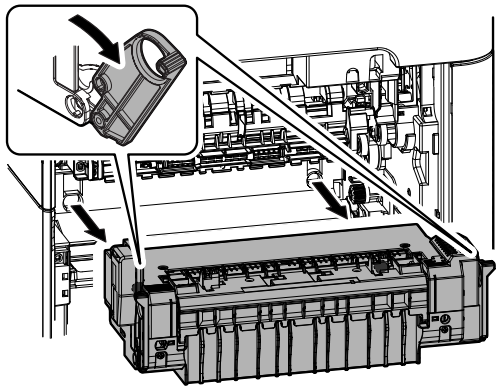


A. Fusing unit

1) Pull the lever to release the lock, and open the right door.

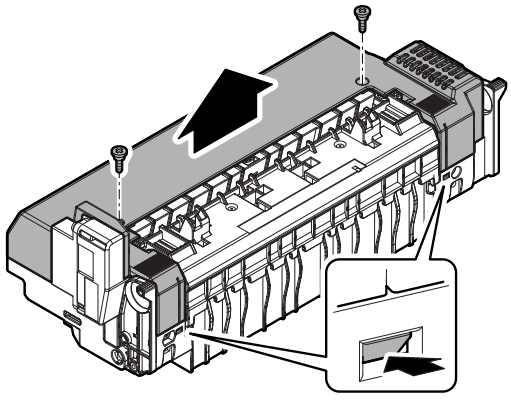


2) Pull the lever and remove the fusing unit.

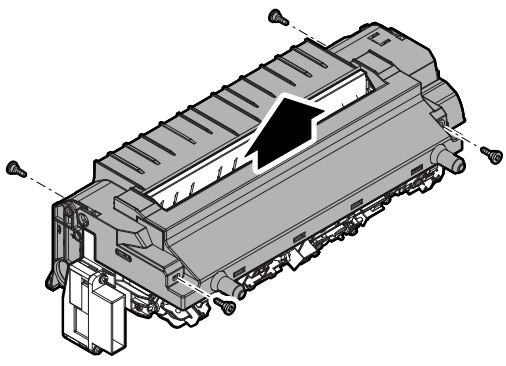


(1) Fusing cover

1) Remove the screw, disengage the pawl, and remove the fusing upper cover.

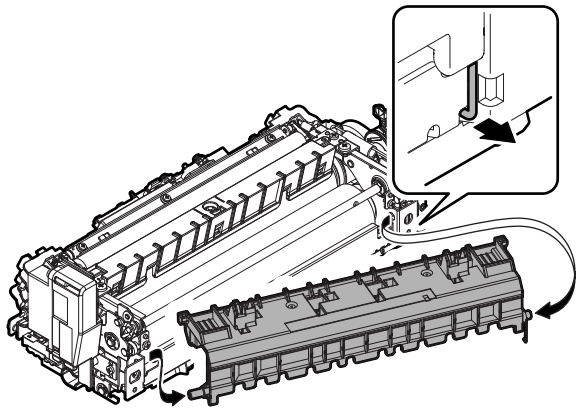


2) Remove the screw, and remove the fusing lower cover.



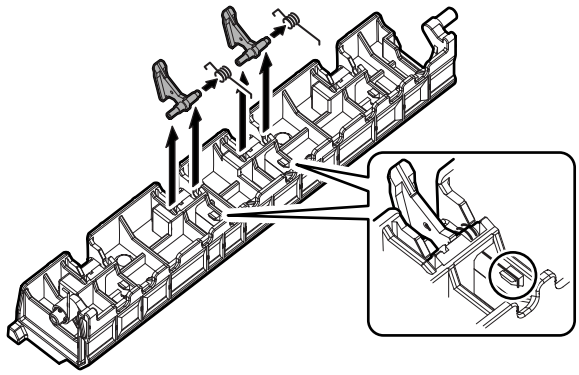
(2) Separation pawl lower / Separation pawl lower spring

1) Disengage the hook of the spring. Slide the paper guide to the front side and remove it.



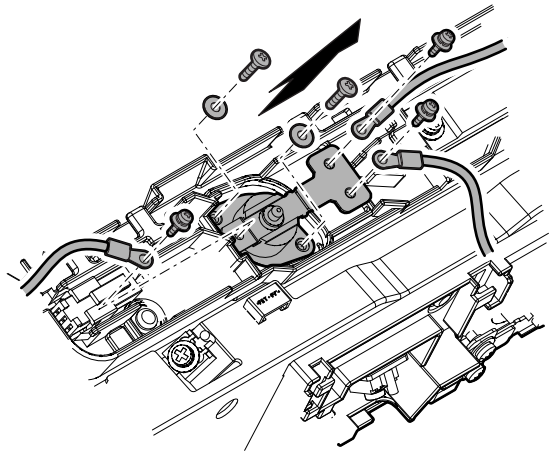
2) Disengage the hook of the separation pawl lower spring, and remove the separation pawl lower. Remove the separation pawl lower spring from the separation pawl lower.

NOTE: When installing, be sure to engage the hook of the separation pawl lower spring with the paper guide rib.



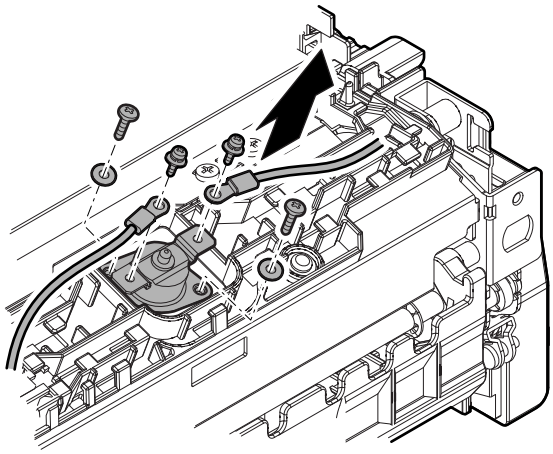
(3) Upper thermostat

1) Remove the screw, and remove the terminal. Remove the screw and the washer, and remove the upper thermostat.



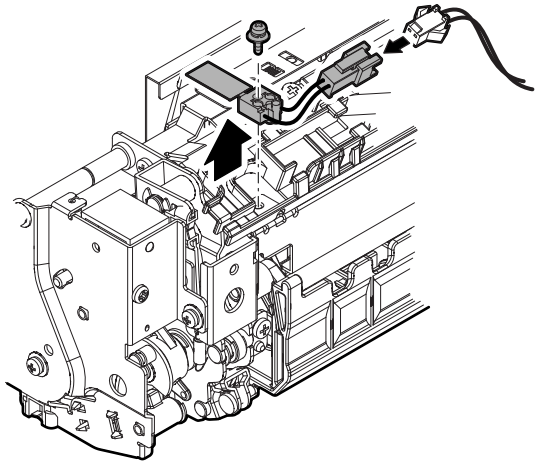
(4) Lower thermostat

1) Remove the screw, and remove the terminal. Remove the screw and the washer, and remove the lower thermostat.



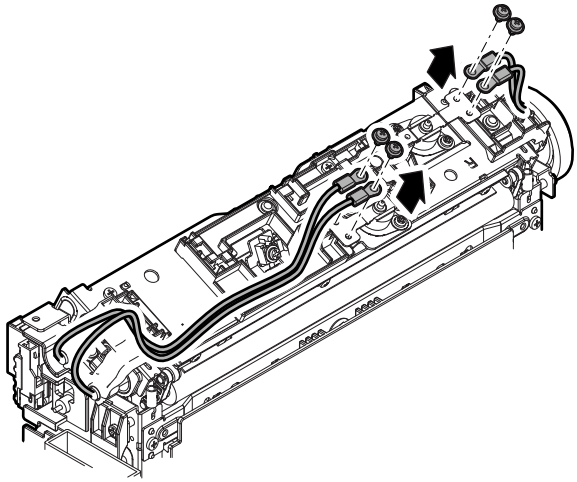
(5) Lower heat roller contact thermistor

1) Disconnect the connector. Remove the screw, and remove the lower heat roller contact thermistor.



(6) External heater lamp / External heater lamp 2

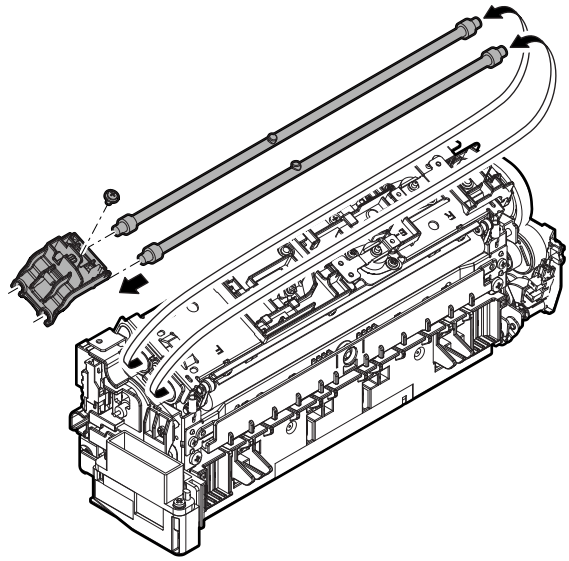
1) Remove the screw, and remove the terminal. Remove the harness.



2) Remove the screw of the holder on the front side, and remove the holder. Remove the external heater lamp and the external heater lamp 2.

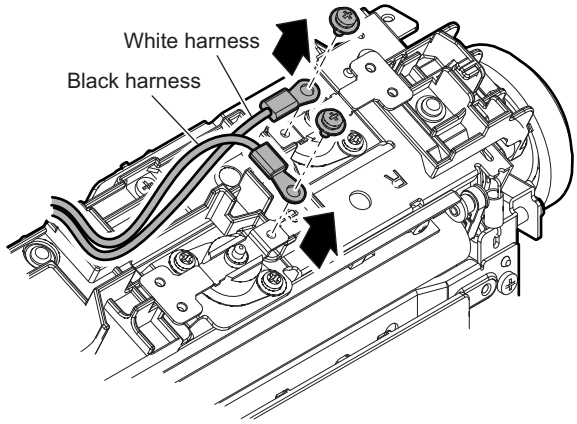
NOTE: Do not touch the glass section of the heater lamp with a bare hand.

NOTE: When installing, arrange so that the white harness of the heater lamp comes on the front side.

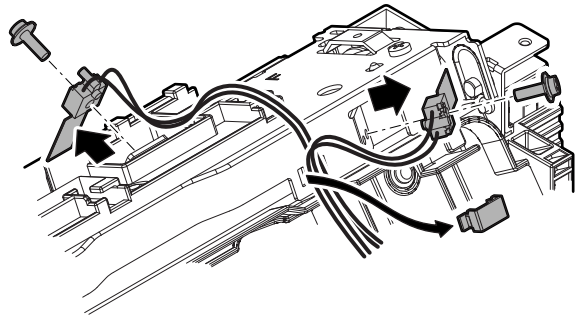


(7) External heating unit

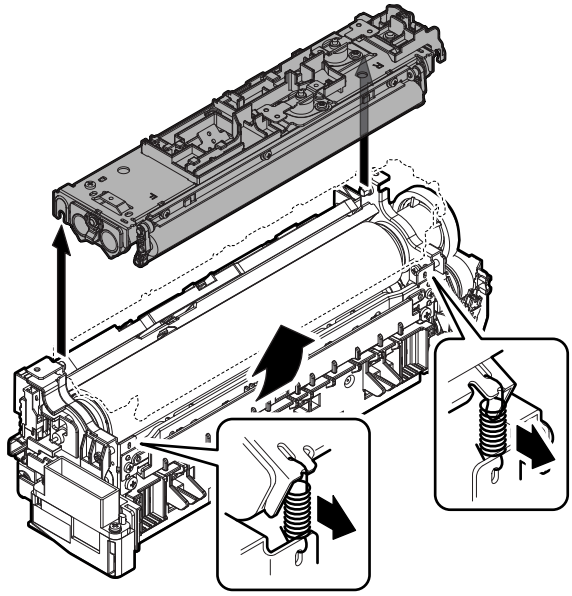
1) Remove the screw, and disconnect the terminal. Remove the harness.



2) Remove the clip. Remove the screw, and remove the external heat roller contact thermistor 1 and the external heat roller contact thermistor 2.



3) Remove the spring. Lift the external heating unit slightly and remove it.

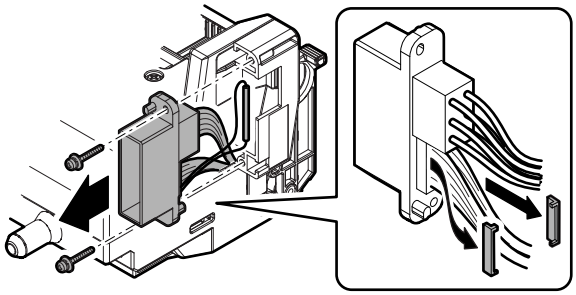


(8) Thermistor retainer

1) Remove the screw, and remove the drawer. Remove the thermistor retainer.

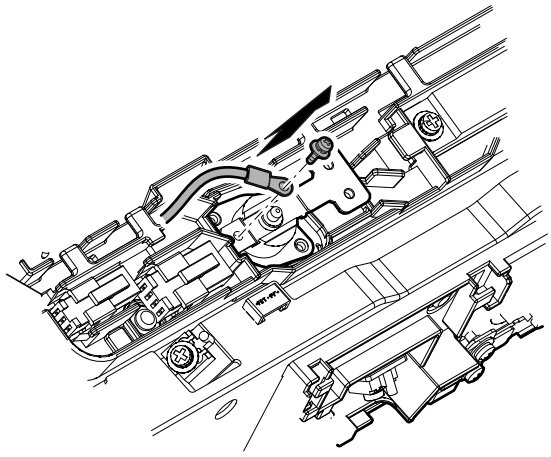
NOTE: When installing the thermistor retainer, push it until it clicks.

NOTE: When installing the drawer, push the harness with a tube first, then install the drawer so that the harness is not pinched.

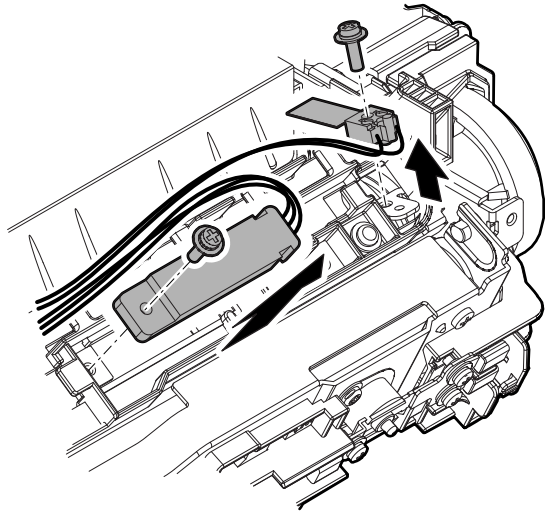


(9) Upper heat roller contact thermistor / Upper heat roller non-contact thermistor / External heat roller contact thermistor 1 / External heat roller contact thermistor 2

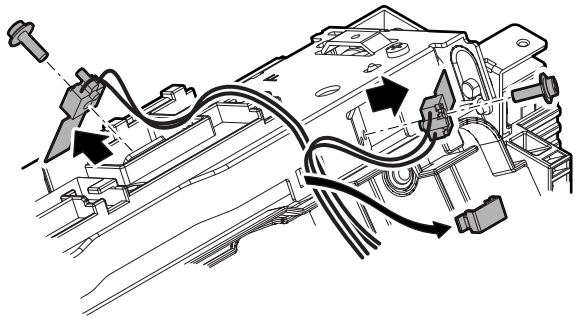
1) Remove the screw from the upper thermostat, and remove the terminal.



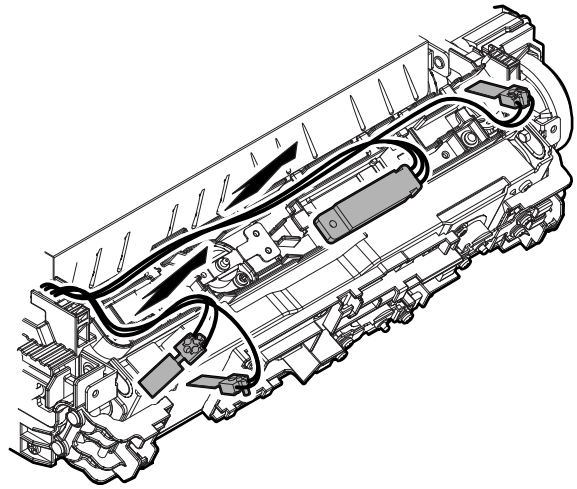
2) Remove the screw, and remove the upper heat roller contact thermistor and the upper heat roller non-contact thermistor.



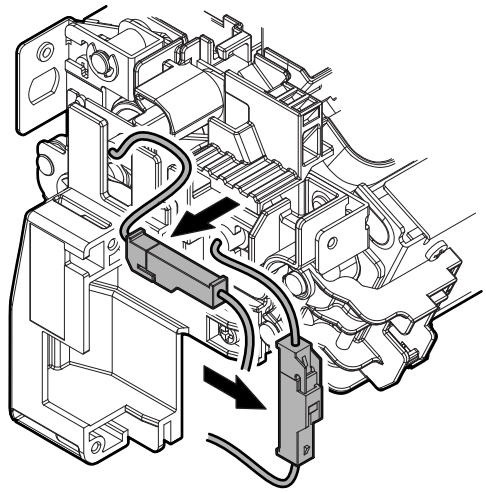
3) Remove the clip. Remove the screw, and remove the external heat roller contact thermistor 1 and the external heat roller contact thermistor 2.



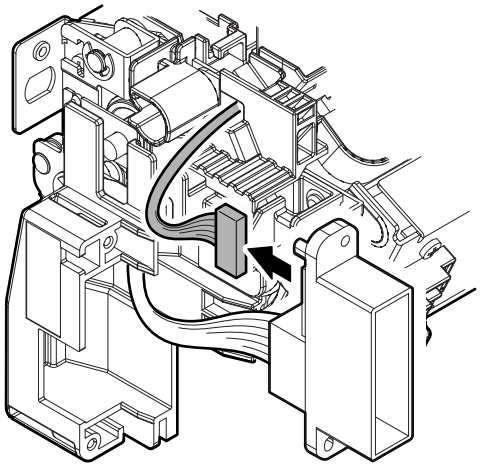
4) Remove the harness of the upper heat roller contact thermistor, the upper heat roller non-contact thermistor, the external heat roller contact thermistor 1, the external heat roller contact thermistor 2.



5) Remove the harness of the upper heater lamp and the lower heater lamp.

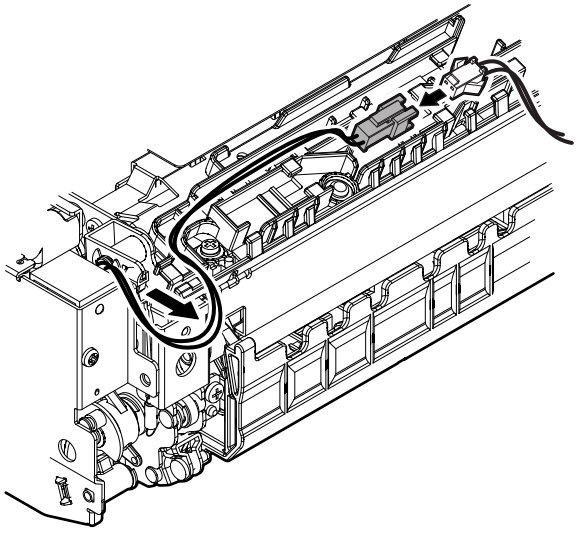


6) Remove the harness of the upper heat roller contact thermistor, the upper heat roller non-contact thermistor, the external heat roller contact thermistor 1, the external heat roller contact thermistor 2, and disconnect the connector from the drawer.

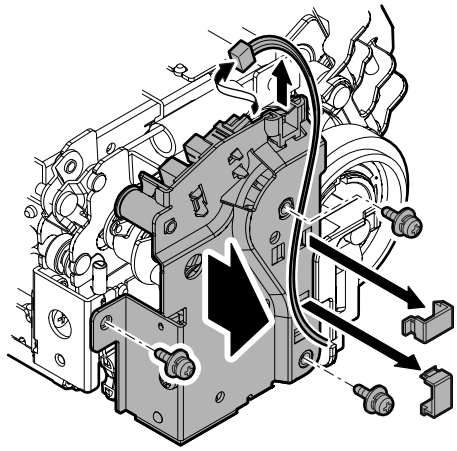


(10) Pressure release mounting plate unit

1) Disconnect the connector of the fusing pressure release solenoid, and remove the harness from the wire saddle.

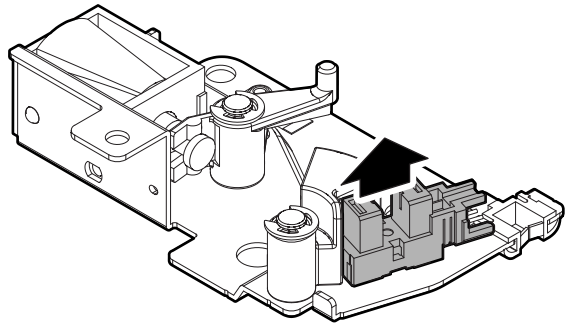


2) Disconnect the connector of the fusing roller pressure release detector, and remove the clip. Remove the screw, and remove the pressure release mounting plate unit.



a. Fusing roller pressure release detector

1) Remove the fusing roller pressure release detector.

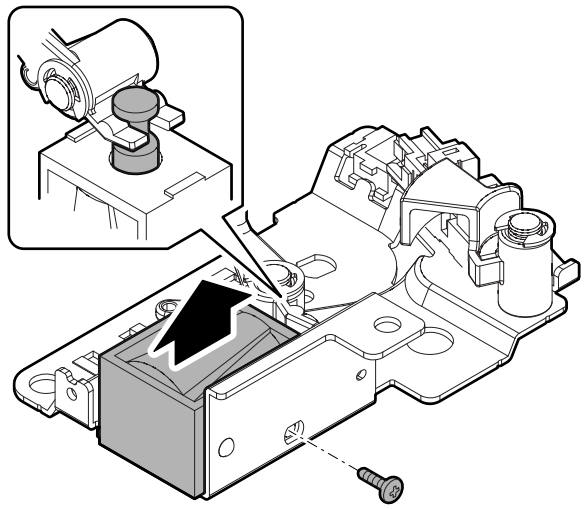


NOTE: When removing the fusing roller pressure release detector once, and then installing it again, apply screw lock (UKOG-0003CSZZ) to the pawl section.

b. Fusing pressure release solenoid

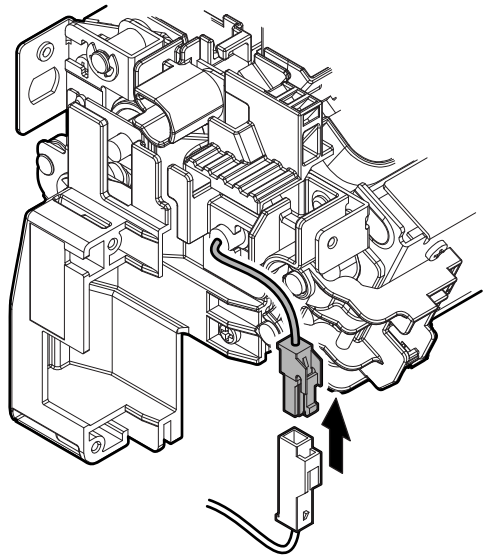
1) Remove the screw, and remove the fusing pressure release solenoid.

NOTE: When installing the fusing pressure release solenoid, engage the solenoid plunger with the groove in the lever.

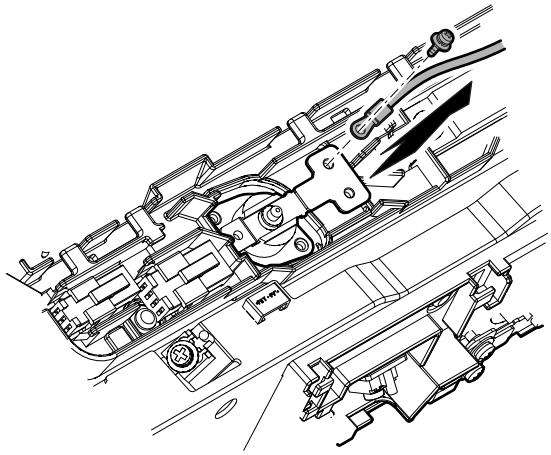


(11) Upper heater lamp

1) Disconnect the connector on the front side of the upper heater lamp.



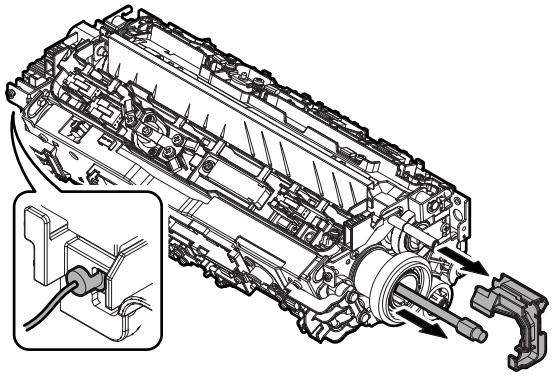
2) Remove the screw of the upper thermostat, and remove the terminal. Remove the harness.



3) Remove the holder, and remove the upper heater lamp.

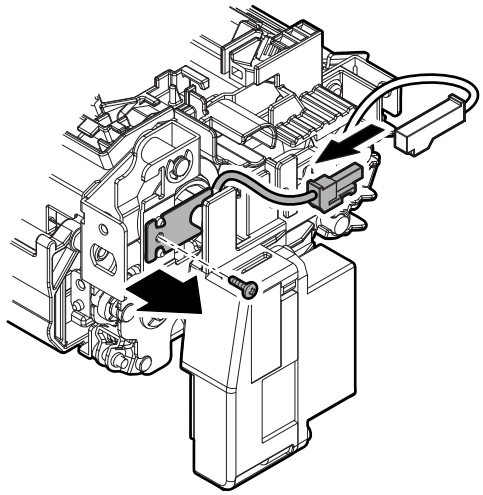
NOTE: Do not touch the glass section of the heater lamp with a bare hand.

NOTE: When installing, arrange so that the white harness of the heater lamp comes on the front side.

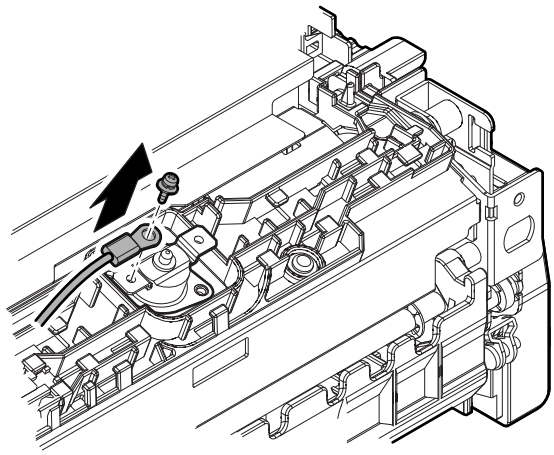


(12) Lower heater lamp

1) Disconnect the connector on the front side of the upper heater lamp. Remove the screw, and remove the fixing plate.



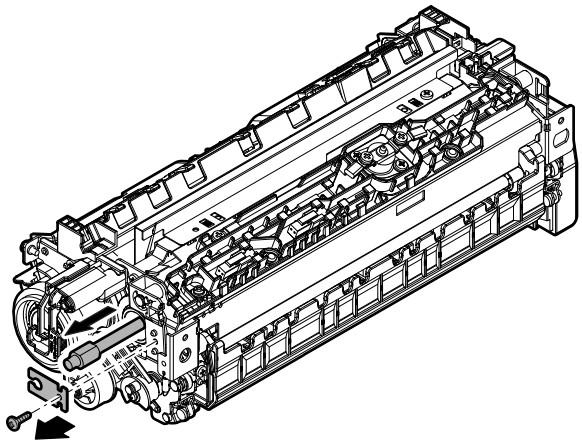
2) Remove the screw of the lower thermostat, and remove the terminal. Remove the harness.



3) Remove the screw, and remove the fixing plate. Remove the lower heater lamp.

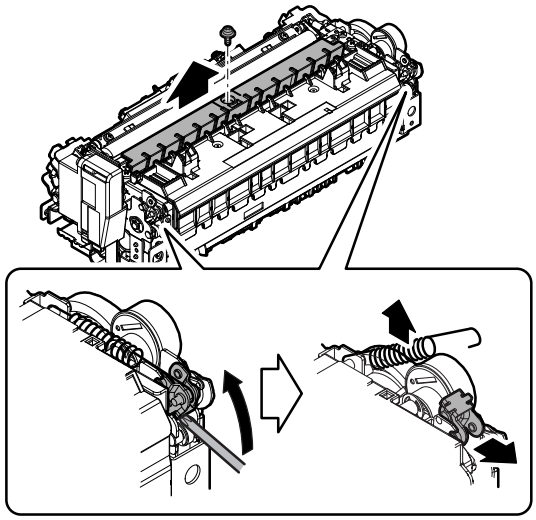
NOTE: Do not touch the glass section of the heater lamp with a bare hand.

NOTE: When installing, arrange so that the white harness of the heater lamp comes on the front side.

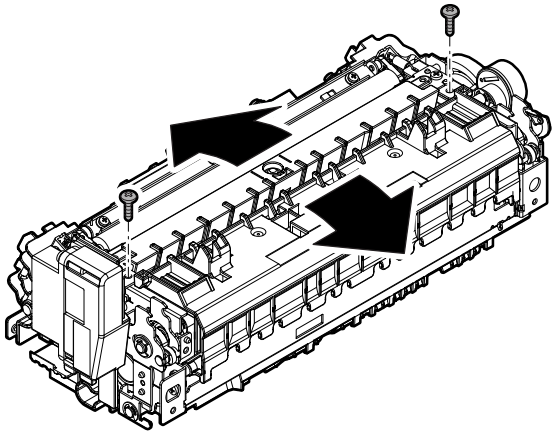


(13) Upper heat roller unit

1) Remove the screw, and remove the paper guide. Release the pressure, and remove the fulcrum plate and the spring.



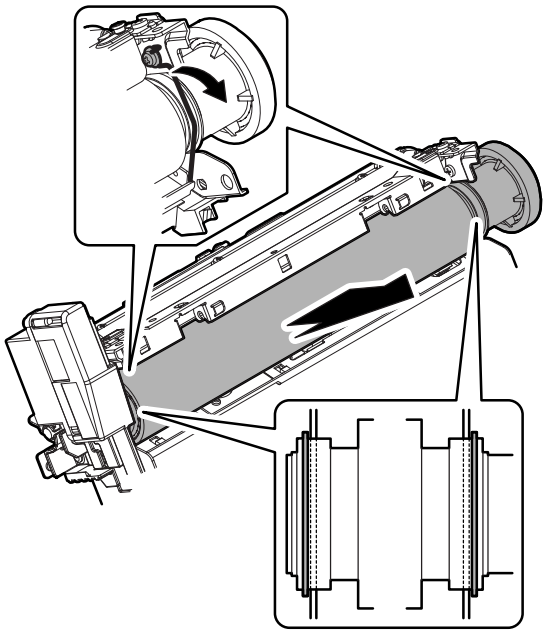
2) Remove the screw, and open the fusing unit.



3) Remove the stopper from the step screw, and remove the upper heat roller unit.

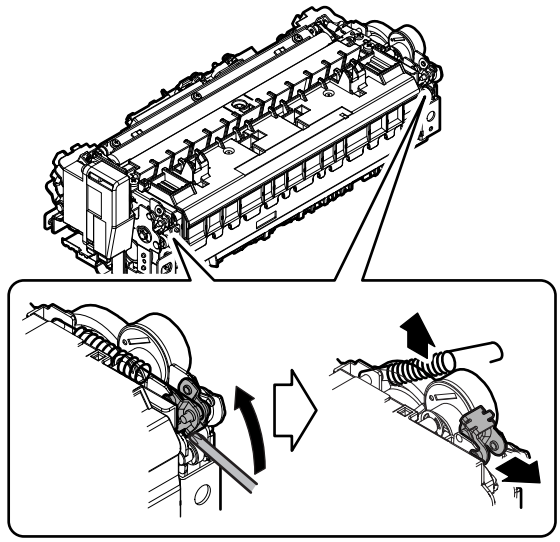
NOTE: Be careful not to scratch or put dirt on the heat roller.

NOTE: When installing the upper heat roller unit, check to confirm that the bearing ring is outside of the frame.

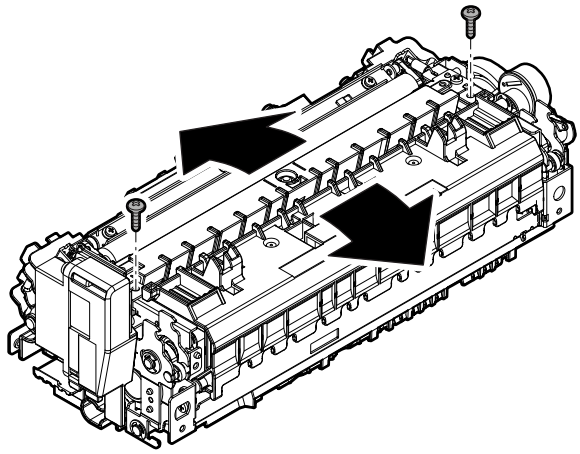


(14) Lower heat roller unit

1) Release the pressure, and remove the fulcrum plate and the spring.

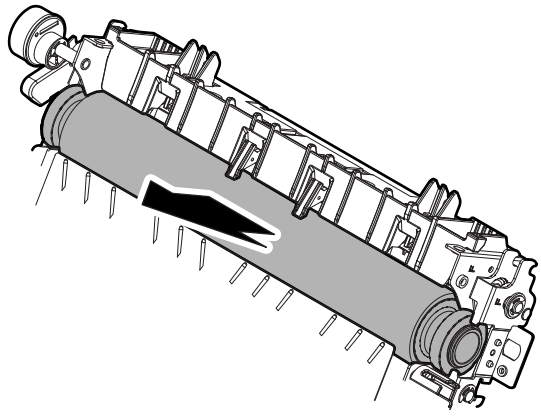


2) Remove the screw, and open the fusing unit.

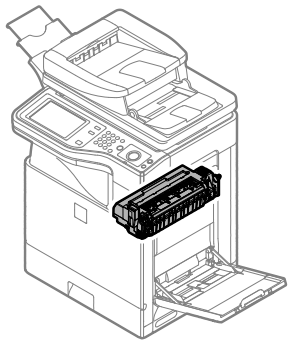


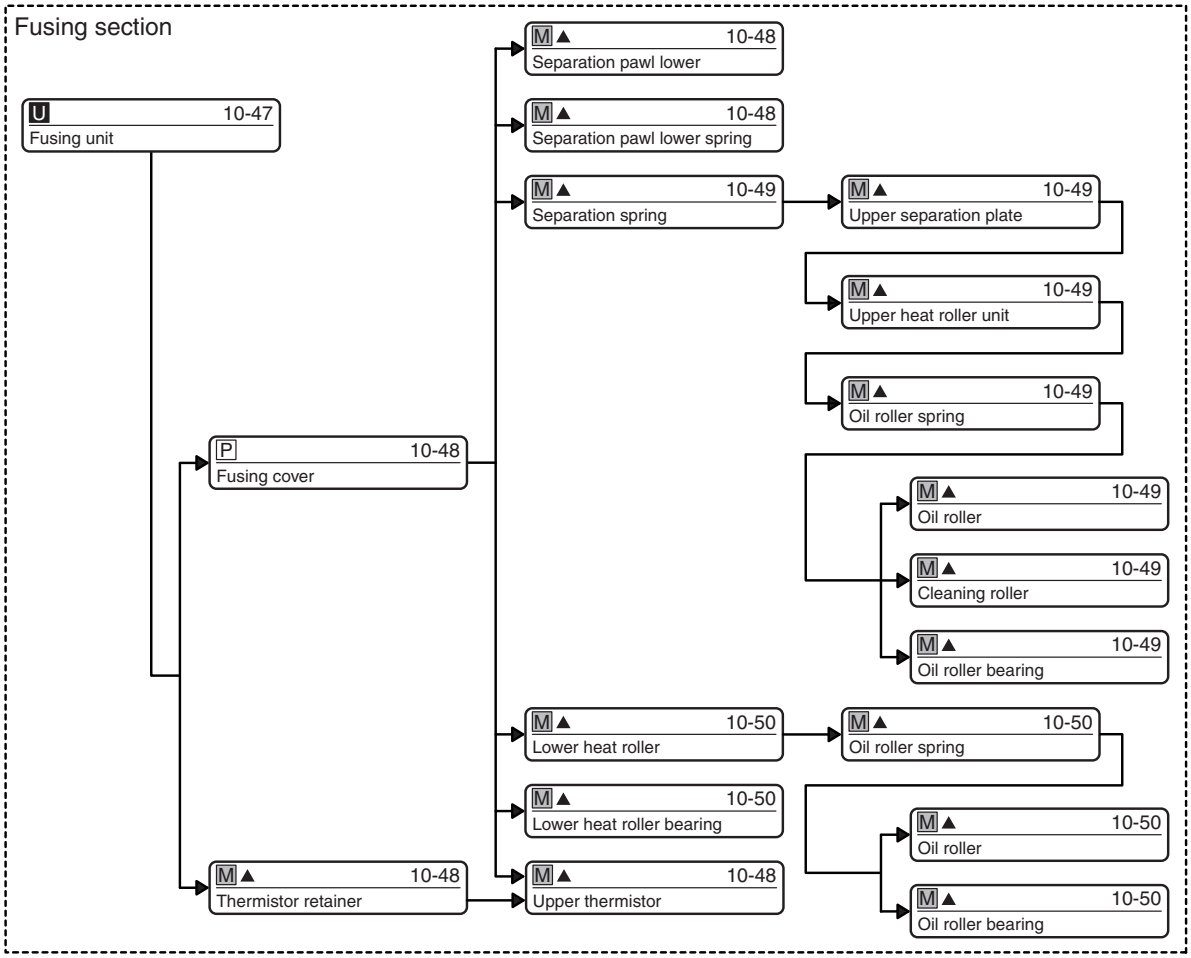
3) Remove the lower heat roller unit.

NOTE: Be careful not to scratch or put dirt on the heat roller.



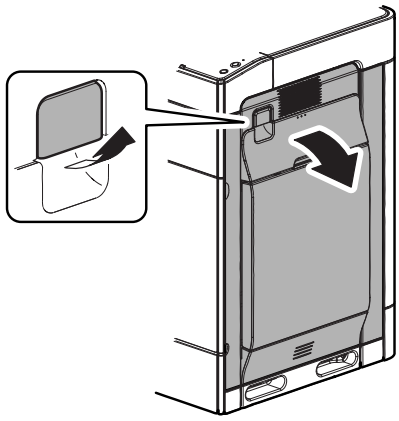
14. Fusing section (MX-B402SC/B382SC)



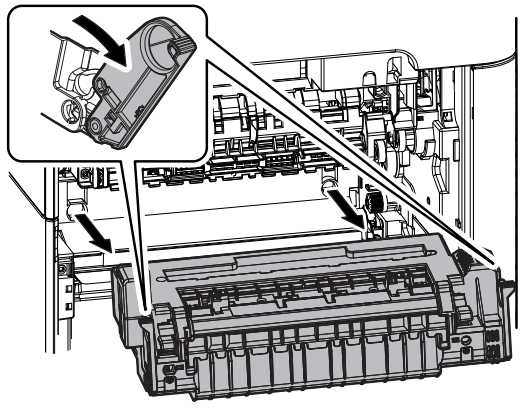


A. Fusing unit

1) Pull the lever to release the lock, and open the right door.

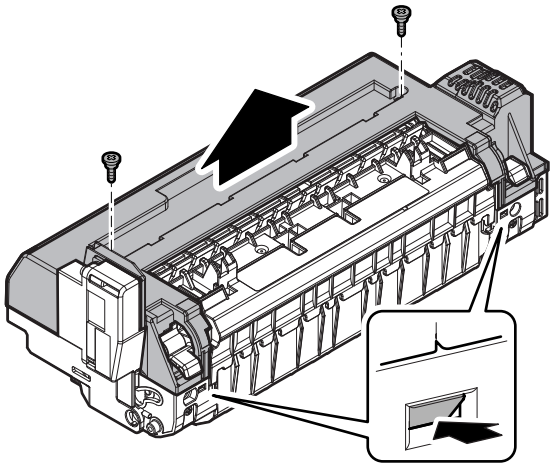


2) Pull the lever and remove the fusing unit.

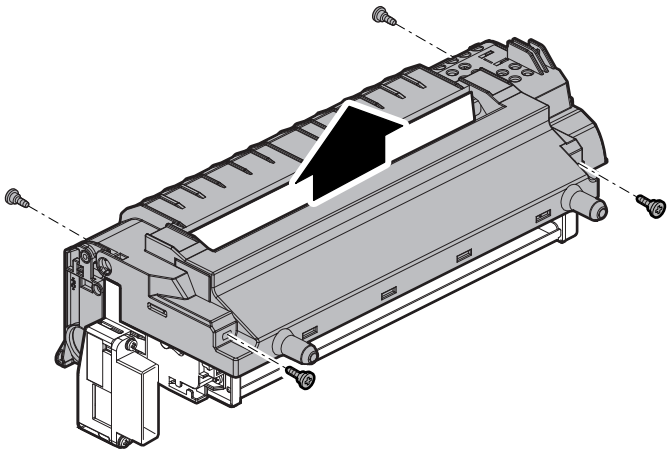


(1) Fusing cover

1) Remove the screw, disengage the pawl, and remove the fusing upper cover.

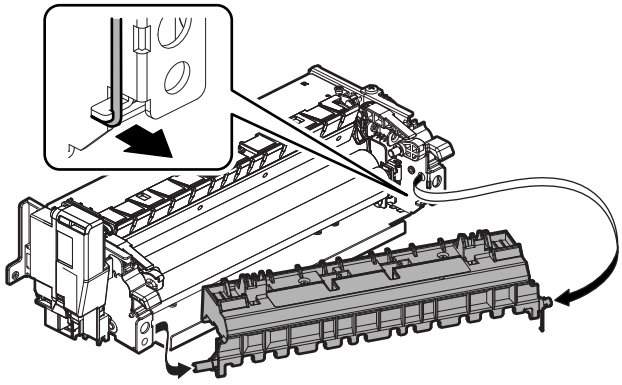


2) Remove the screw, and remove the fusing lower cover.



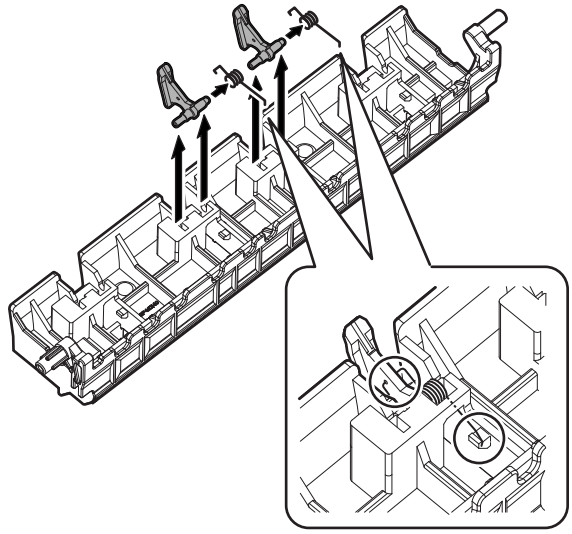
(2) Separation pawl lower / Separation pawl lower spring

1) Disengage the hook of the spring. Slide the paper guide to the front side and remove it.



2) Disengage the hook of the separation pawl lower spring, and remove the separation pawl lower. Remove the separation pawl lower spring from the separation pawl lower.

NOTE: When installing, be sure to engage the hook of the separation pawl lower spring with the paper guide rib.

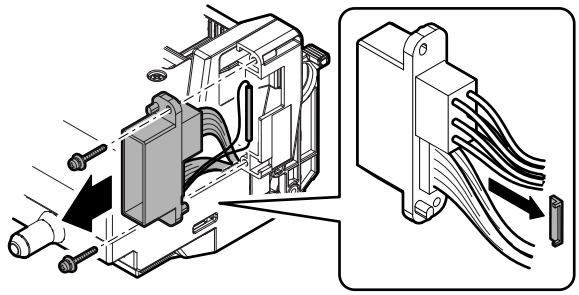


(3) Thermistor retainer

1) Remove the screw, and remove the drawer.
   Remove the thermistor retainer (red only).

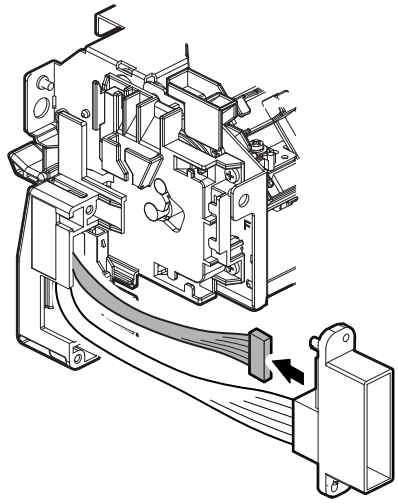
NOTE: When installing the thermistor retainer, push it until it clicks.

NOTE: When installing the drawer, push the harness with a tube first, then install the drawer so that the harness is not pinched.

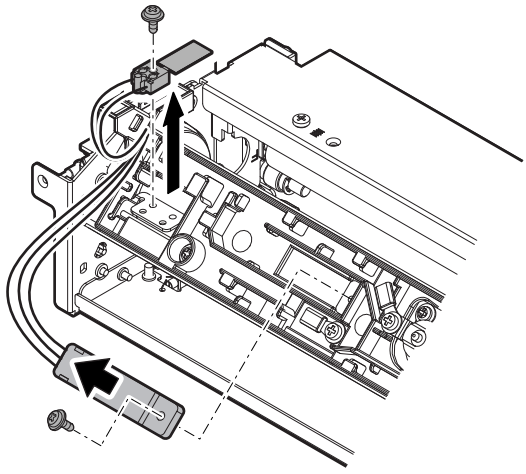


(4) Upper thermistor

1) Disconnect the connector of the upper thermistor from the drawer.

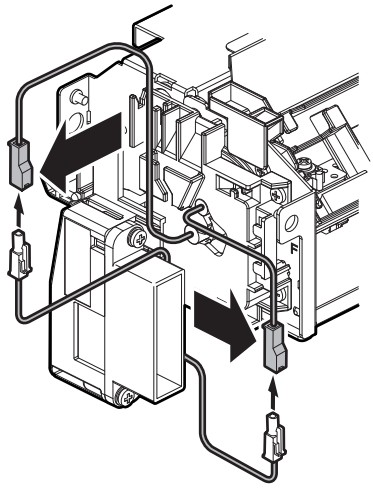


2) Remove the screw, and remove the upper thermistor.

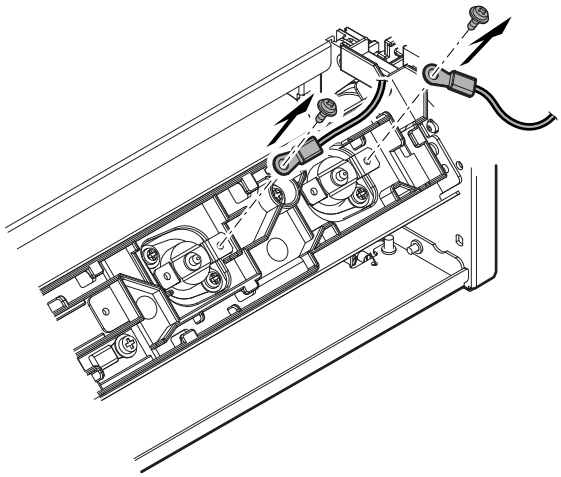


(5) Upper separation plate/Separation spring/ Upper heat roller unit/Oil roller spring/Oil roller/ Cleaning roller/Oil roller bearing

1) Disconnect the connector on the front side of the upper heater lamp.

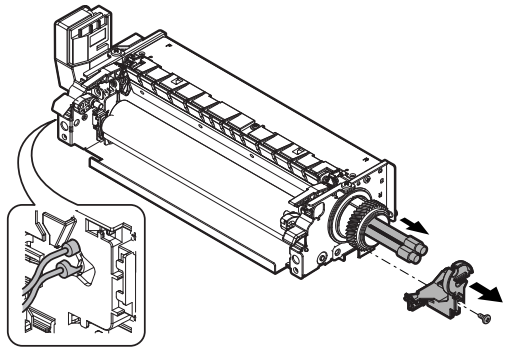


2) Remove the screw of the upper thermostat, and remove the terminal. Remove the harness.

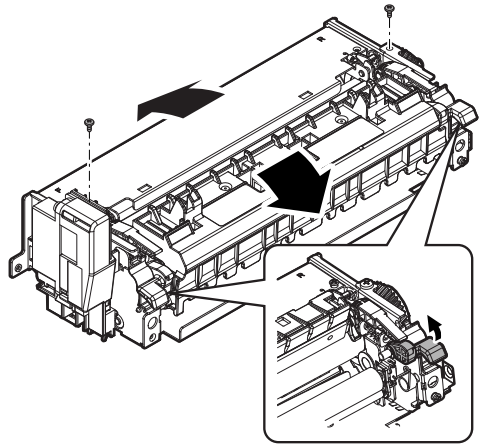


3) Remove the holder, and remove the upper heater lamp.

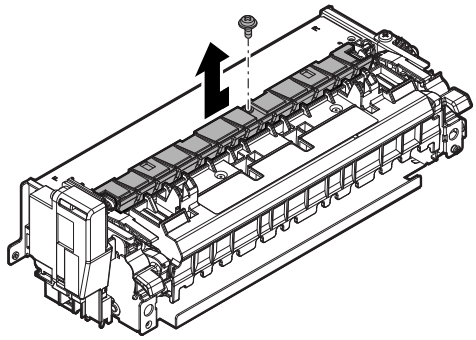
NOTE: Do not touch the glass section of the heater lamp with a bare hand.



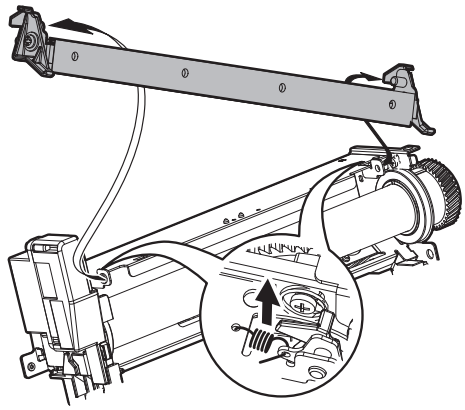
4) Raise the lever to release the pressure of the heat roller. Remove the screw, and open the fusing unit.



5) Remove the screw, and slide the paper guide to remove.



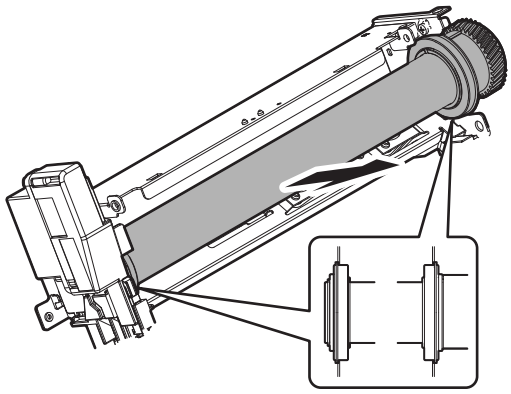
6) Remove the spring, slide the upper separation plate and remove it.



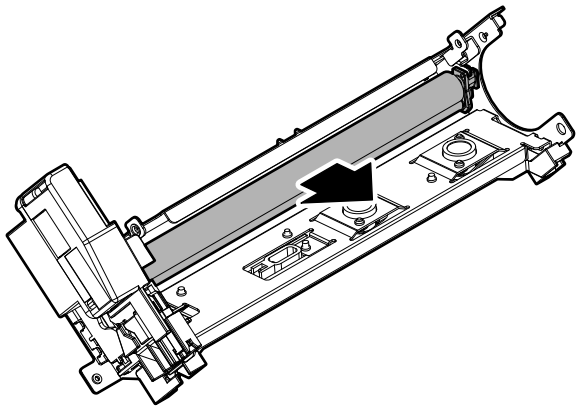
7) Remove the upper heat roller unit.

NOTE: Be careful not to scratch or put dirt on the heat roller.

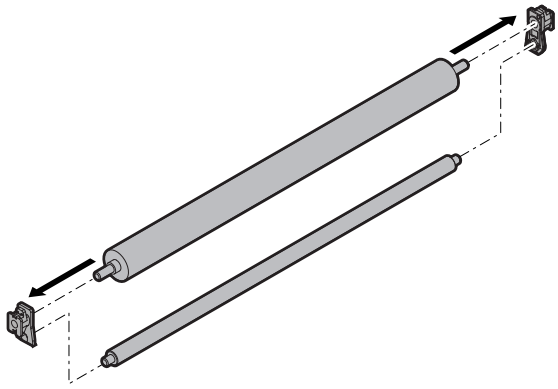
NOTE: When installing the upper heat roller unit, check to confirm that the bearing ring is outside of the frame.



8) Remove the oil roller unit.

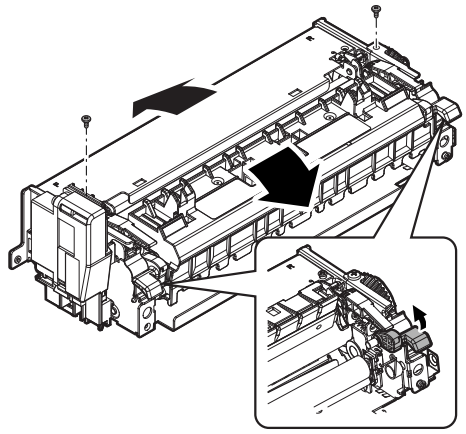


9) Remove the oil roller bearing. Remove the oil roller and the cleaning roller.



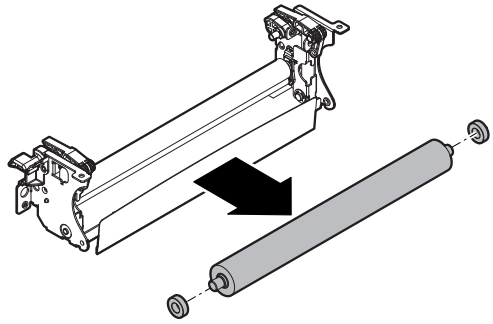
(6) Lower heat roller/Lower heat roller bearing

1) Raise the lever to release the pressure of the heat roller. Remove the screw, and open the fusing unit.



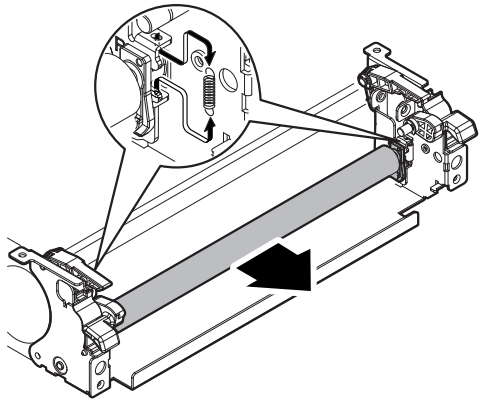
2) Remove the lower heat roller, and remove the lower heat roller bearing.

NOTE: Be careful not to scratch or put dirt on the heat roller.

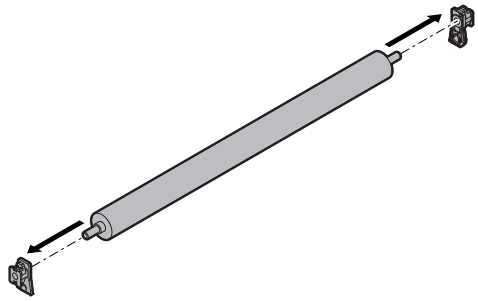


(7) Oil roller spring/Oil roller/Cleaning roller

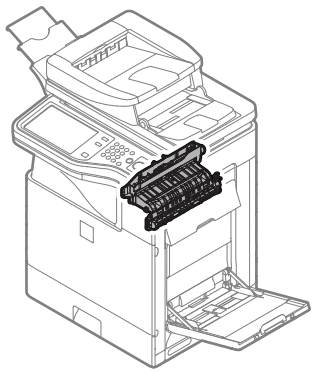
1) Remove the oil roller spring and remove the cleaning roller unit.

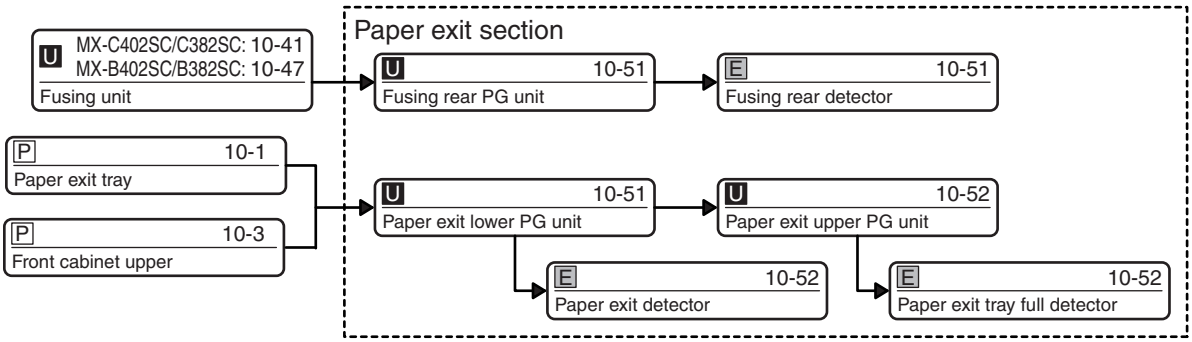


2) Remove the oil roller bearing and the cleaning roller.



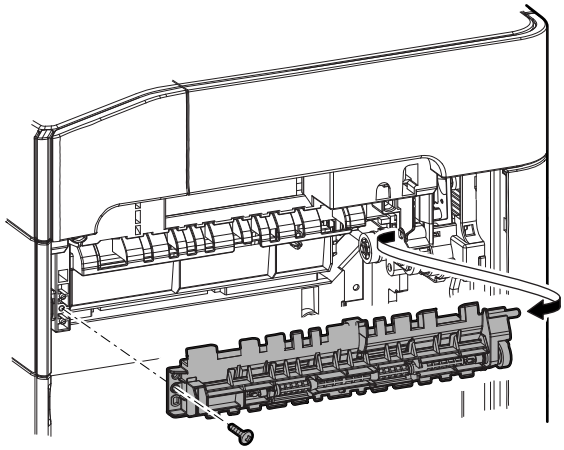
15. Paper exit section





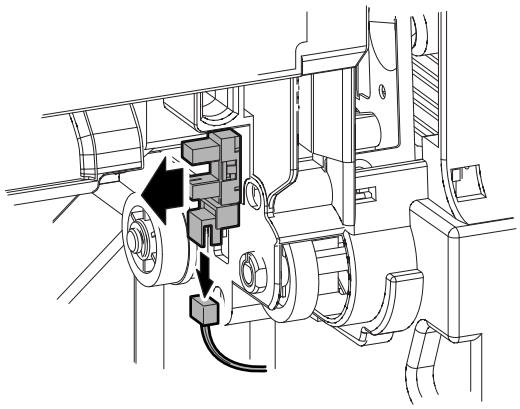
A. Fusing rear PG unit

1) Remove the screw, and remove the fusing rear PG unit.



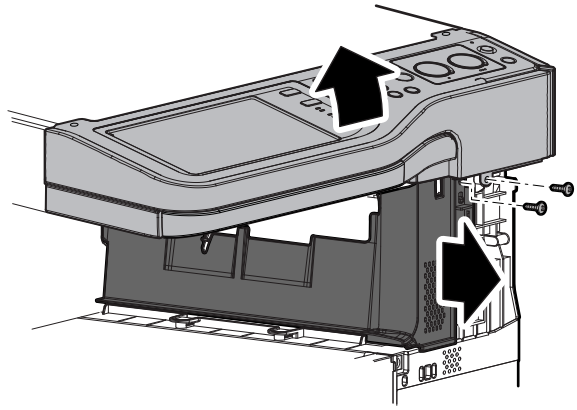
B. Fusing rear detector

1) Disconnect the connector, and remove the fusing rear detector.

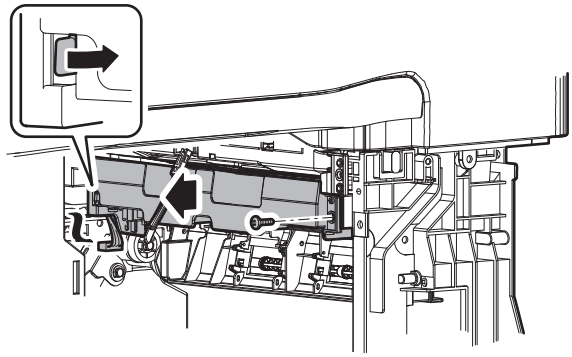


C. Paper exit lower PG unit

1) Slightly lift the operation panel unit, and remove the front connection cabinet.

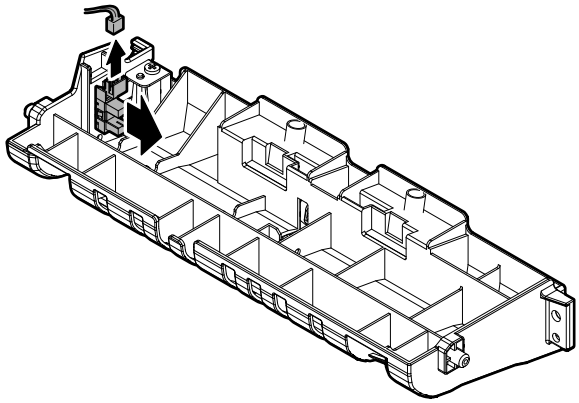


2) Disconnect the connector. Remove the screw, disengage the pawl, and remove the paper exit lower PG unit.



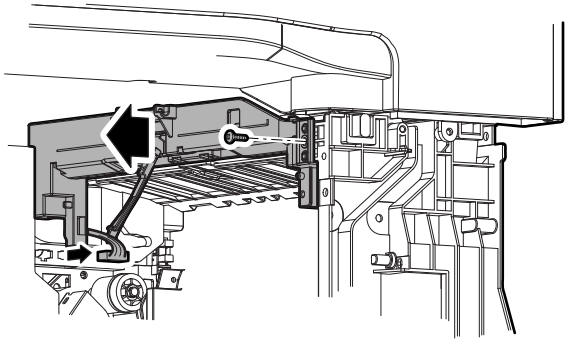
(1) Paper exit detector

1) Disconnect the connector, and remove the paper exit detector.



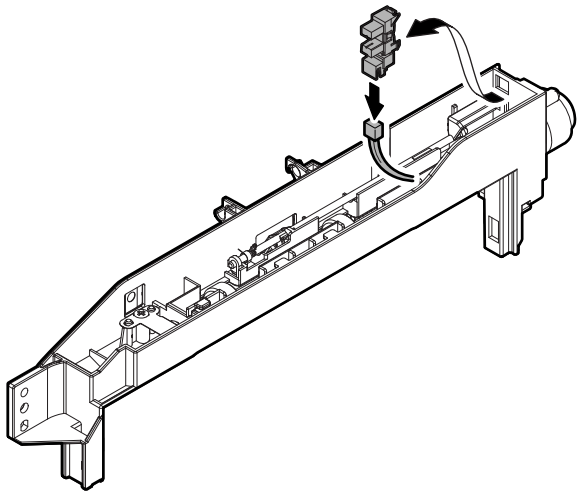
D. Paper exit upper PG unit

1) Disconnect the connector. Remove the screw, and remove the paper exit upper PG unit.

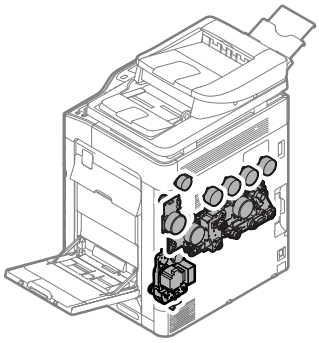


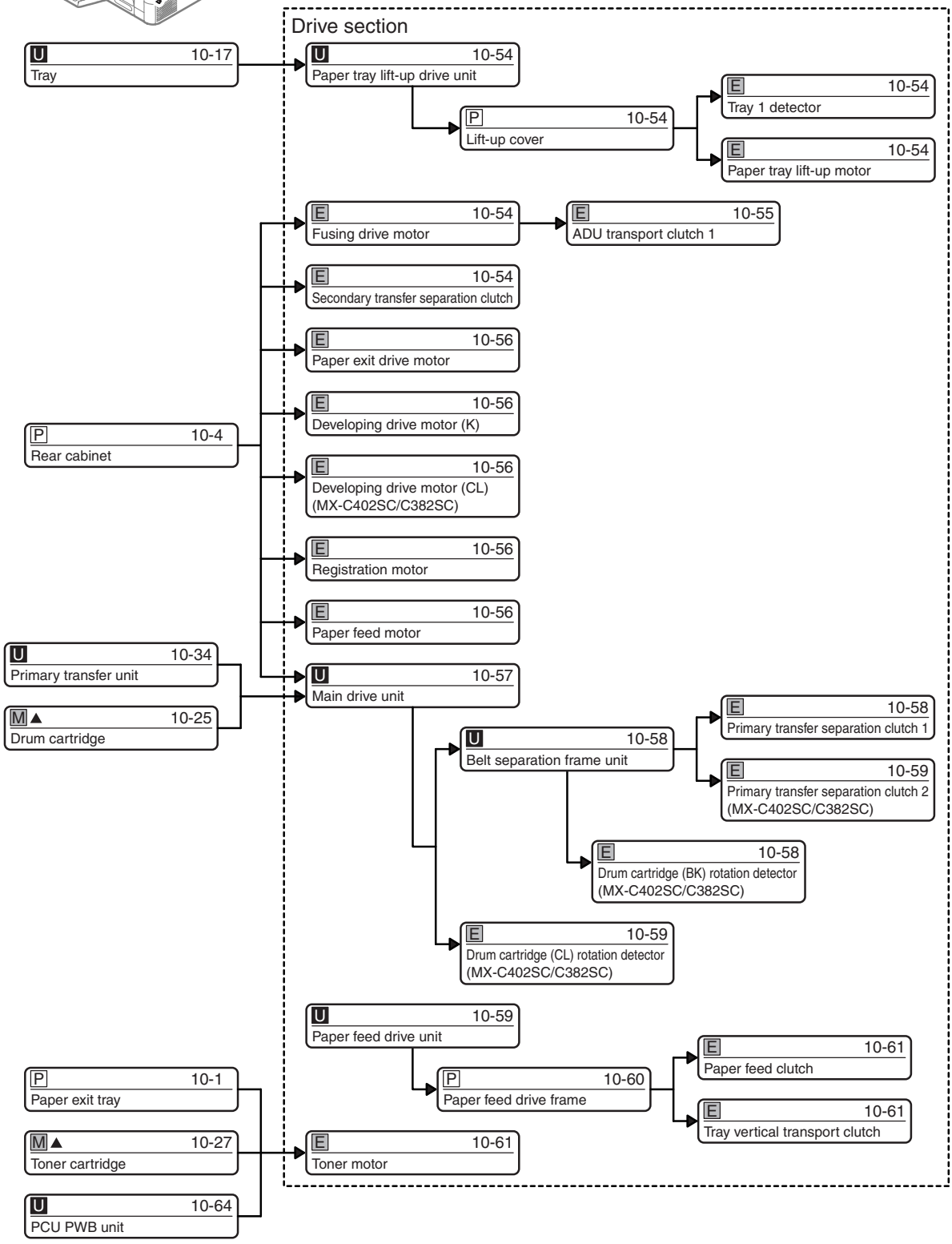
(1) Paper exit tray full detector

1) Remove the paper exit tray full detector, and disconnect the connector.



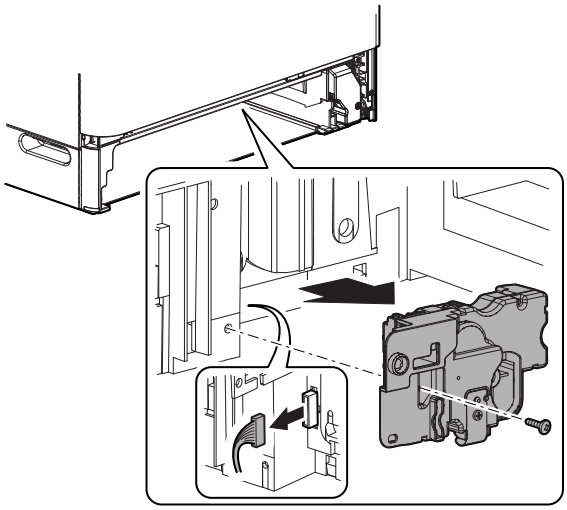
16. Drive section





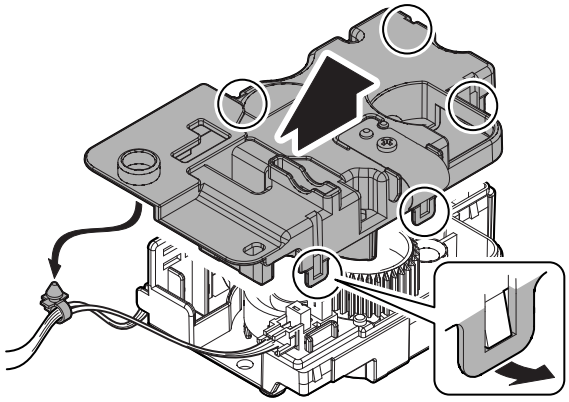
A. Paper tray lift-up drive unit

1) Remove the screw, and remove the paper tray lift-up drive unit. Disconnect the connector.



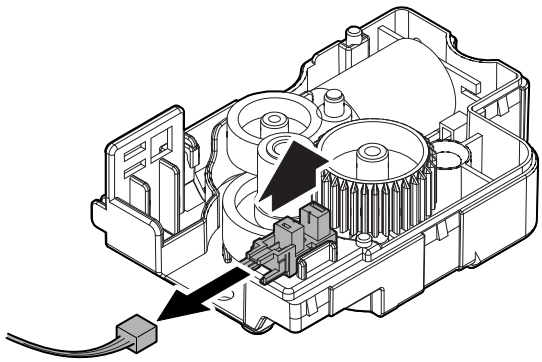
(1) Lift-up cover

1) Remove the snap band. Disconnect the connector, and remove the lift-up cover.



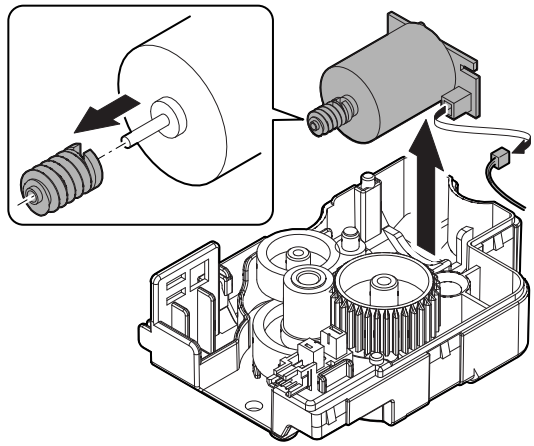
(2) Tray 1 detector

1) Disconnect the connector, and remove the tray 1 detector.



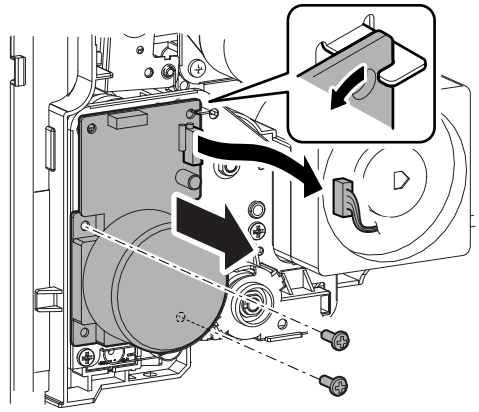
(3) Paper tray lift-up motor

1) Remove the paper tray lift-up motor, and disconnect the connector. Remove the gear from the paper tray lift-up motor.



B. Fusing drive motor

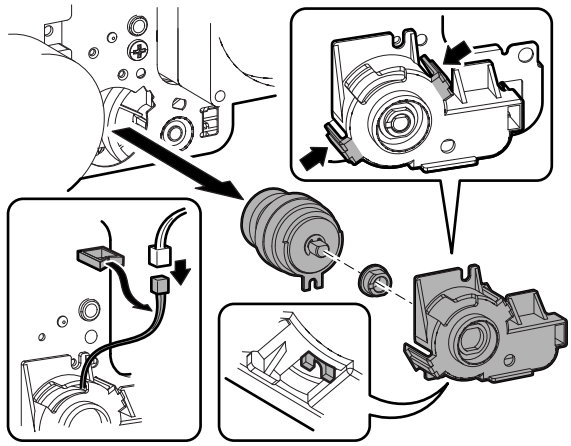
1) Disconnect the connector. Remove the screw, and slightly slide the fusing drive motor and rotate and remove it.



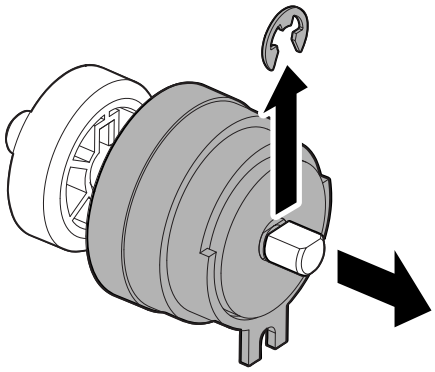
C. Secondary transfer separation clutch

1) Disconnect the connector, and remove the harness from the wire saddle. Disengage the pawl, and remove the holder. Remove the bearing and the secondary transfer separation clutch unit.

NOTE: When installing, fit the turn-stopper of the clutch.

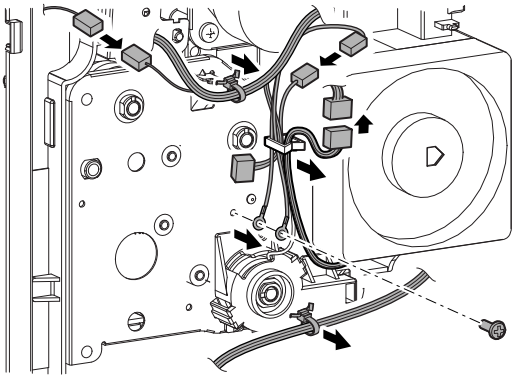


2) Remove the E-ring, and remove the secondary transfer separation clutch.



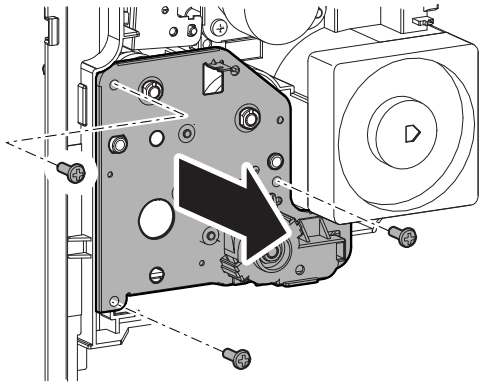
D. ADU transport clutch 1

1) Disconnect the connector. Remove the snap band, and remove the harness from the wire saddle. Remove the screw, and remove the earth wire.

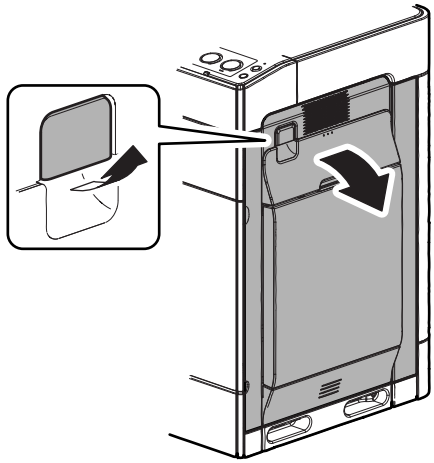


2) Remove the screw, and remove the fusing drive frame unit.

NOTE: When the fusing drive frame unit is removed, the bearing and the shaft may easily come off. Be careful not to lose them.

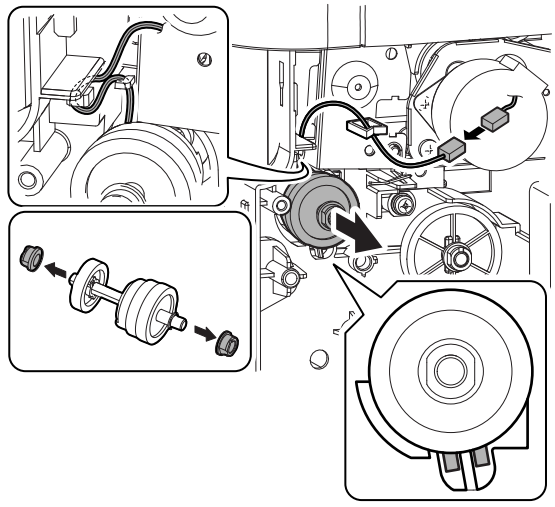


3) Pull the lever to release the lock, and open the right door.

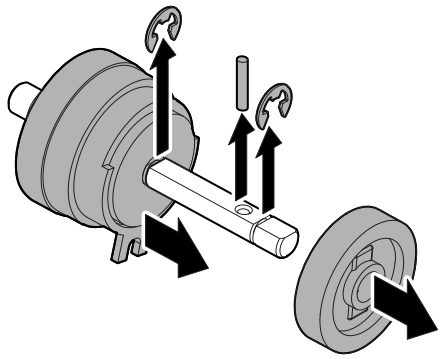


4) Disconnect the connector, and remove the harness from the wire saddle. Remove the ADU transport clutch 1 unit. Remove the bearing.

NOTE: When installing, fit the turn-stopper of the clutch.

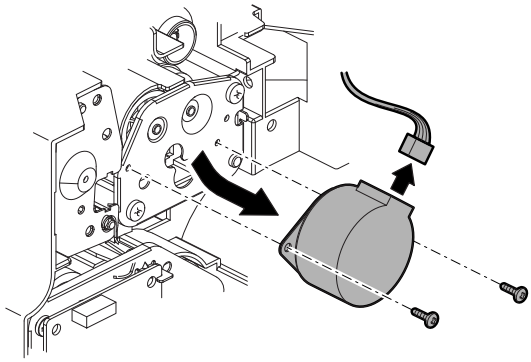


5) Remove the E-ring, and remove the gear. Remove the parallel pin. Remove the E-ring, and remove the ADU transport clutch 1.



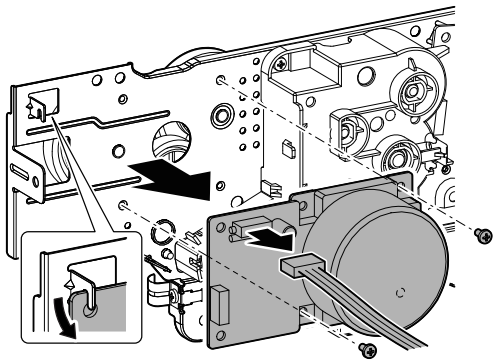
E. Paper exit drive motor

1) Disconnect the connector. Remove the screw, and remove the paper exit drive motor.



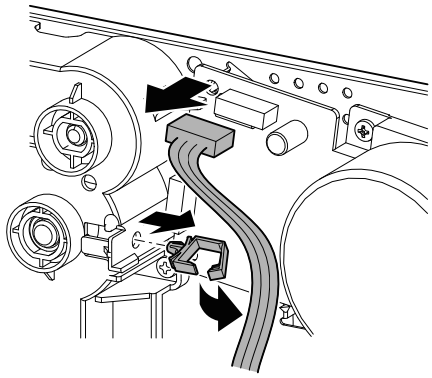
F. Developing drive motor (K)

1) Disconnect the connector. Remove the screw, and slightly turn the developing drive motor (K) and remove it.

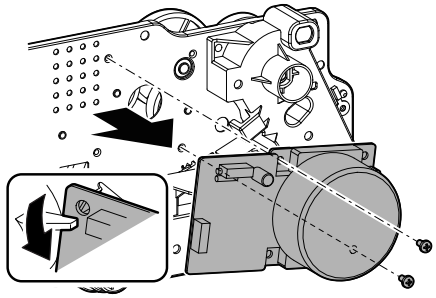


G. Developing drive motor (CL) (MX-C402SC/C382SC)

1) Disconnect the connector. Remove the harness from the wire saddle, and remove the wire saddle.

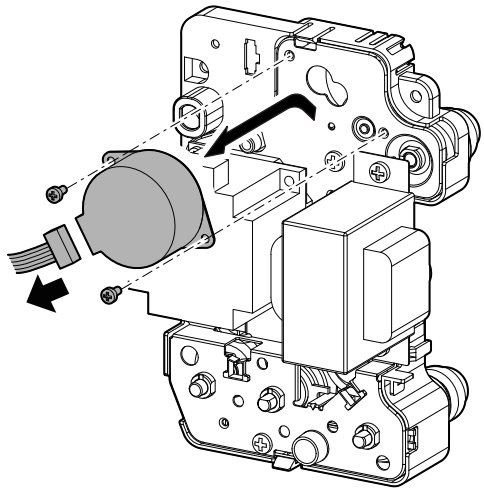


2) Remove the screw, and slightly turn the developing drive motor (CL) and remove it.

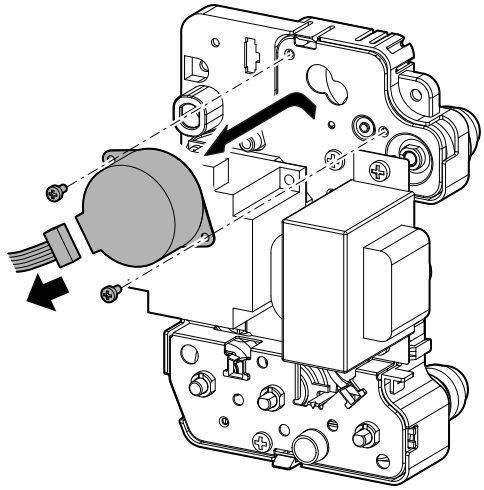


H. Registration motor

1) Disconnect the connector. Remove the screw, and remove the registration motor.
   - 100V series

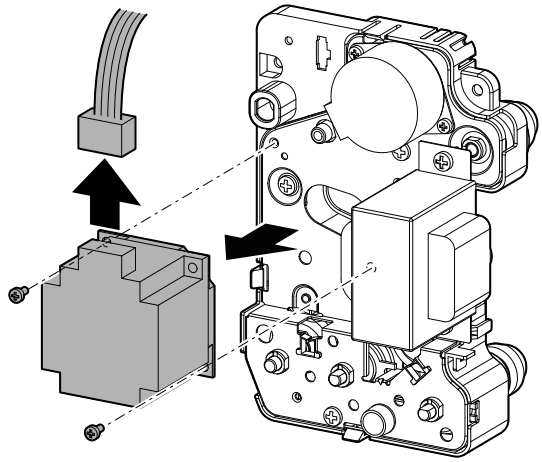


   - 200V series

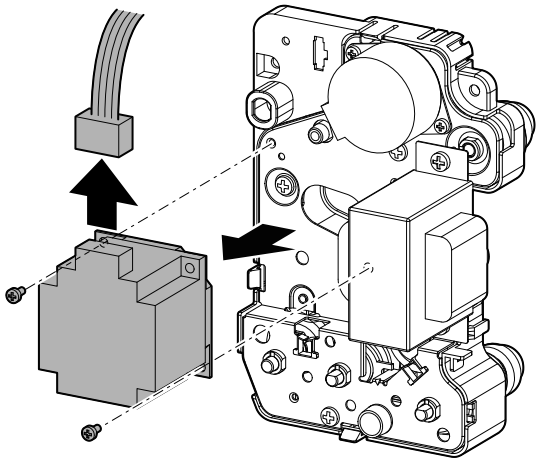


I. Paper feed motor

1) Disconnect the connector. Remove the screw, and remove the paper feed motor.
   - 100V series



• 200V series



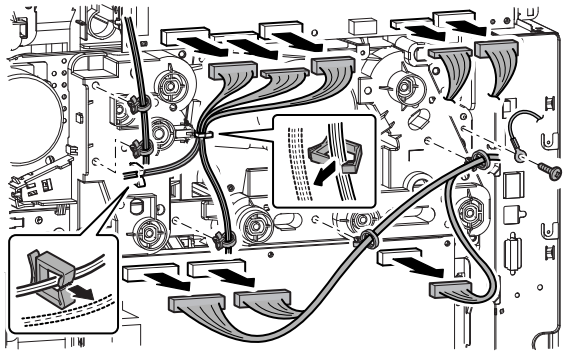
J. Main drive unit

NOTE:

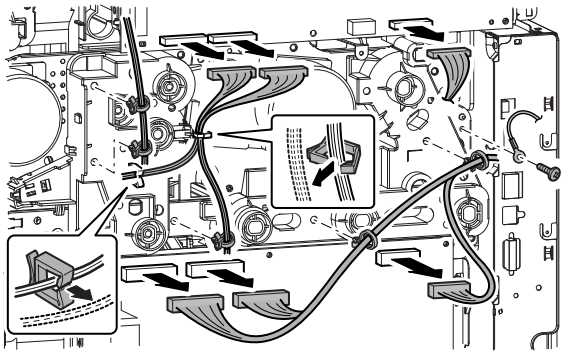
- Before removing the main drive unit, pull out the primary transfer unit, the drum cartridge, and the developer cartridge about 10cm.
- Use care not to expose the drum cartridge to lights during the work.
- Take great care not to scratch the tooth surfaces of the main drive unit gear and not to pinch a foreign material.

1) Disconnect the connector. Remove the snap band, and remove the harness from the wire saddle. Remove the screw, and remove the earth wire.

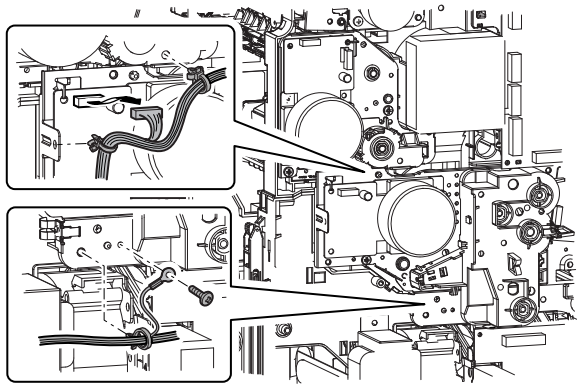
• **MX-C402SC/C382SC**



• **MX-B402SC/B382SC**

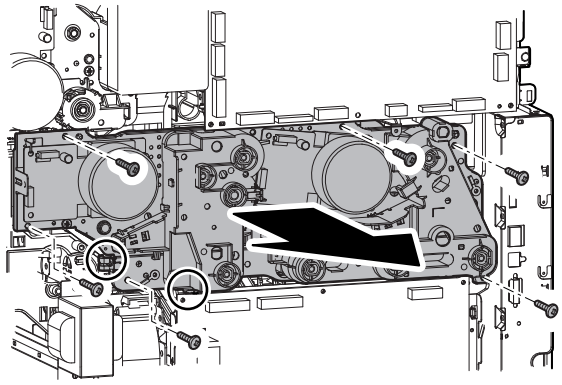


2) Disconnect the connector, and remove the snap band. Remove the screw, and remove the earth wire.

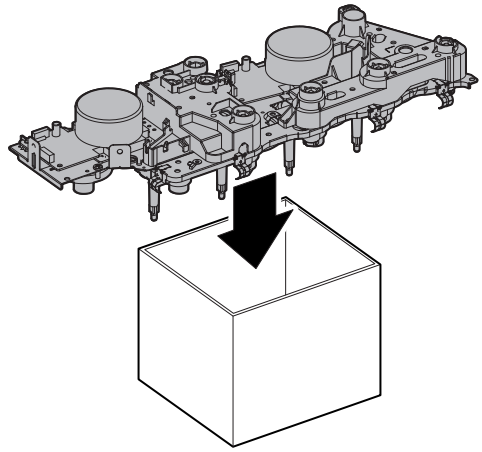


3) Remove the screw, and remove the main drive unit.

NOTE: When removing the main drive unit, be careful not to deform the earth plate (marked with ○).



NOTE: When placing the main drive unit, place so that the motor side comes down or place on an open box so that no load is applied to the gear inside the unit.

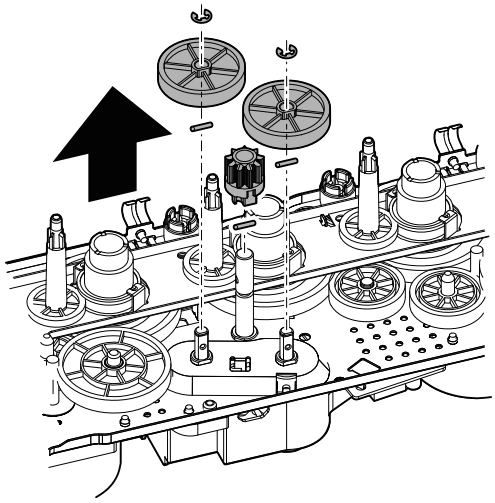


(1) Belt separation frame unit

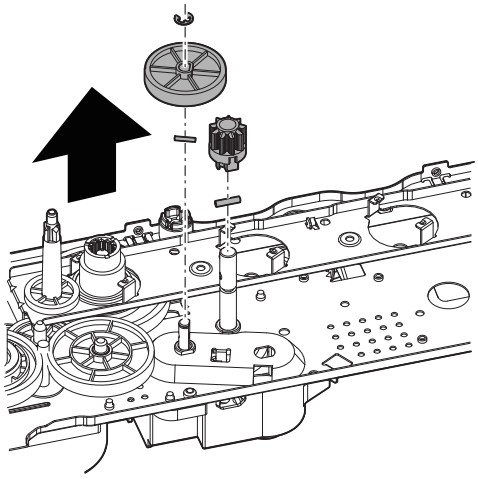
1) Remove the E-ring, and remove the gear. Remove the parallel pin.

* When removing the belt separation frame unit, this procedure is not required. When, however, removing the primary transfer separation clutch 1 and the primary transfer separation clutch 2 are removed, this procedure must be performed in advance.

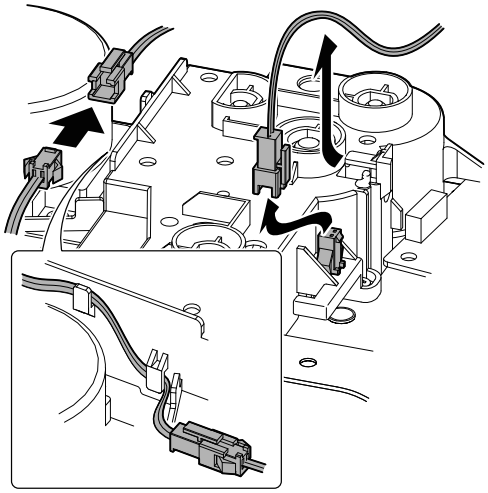
- **MX-C402SC/C382SC**



- **MX-B402SC/B382SC**

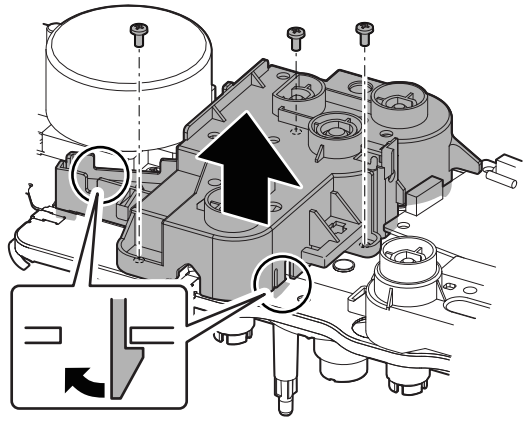


2) Disconnect the connector, and remove the harness from the belt separation frame unit.



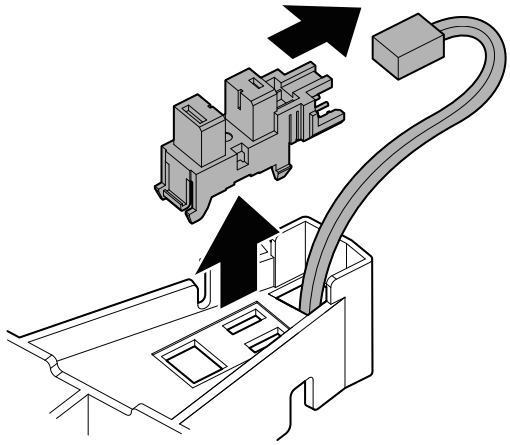
3) Remove the screw. Disengage the pawls (2 positions), and remove the belt separation frame unit.

NOTE: When the belt separation frame unit is removed, the bearing may easily come off. Be careful not to lose it.



a. Drum cartridge (BK) rotation detector (MX-C402SC/C382SC)

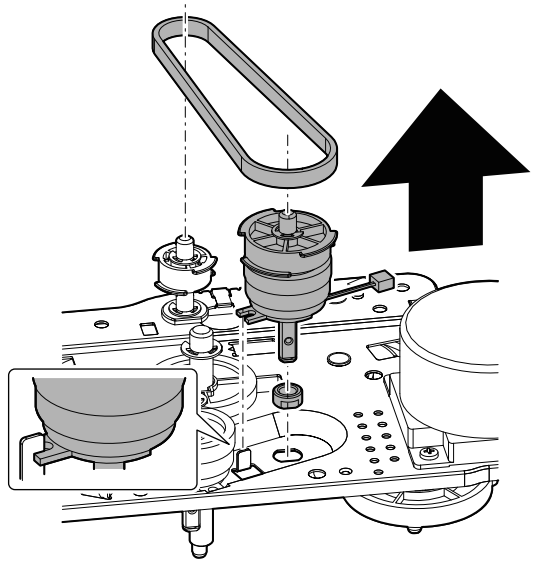
1) Disconnect the connector, and remove the drum cartridge (BK) rotation detector.



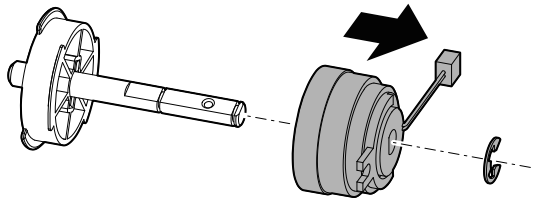
(2) Primary transfer separation clutch 1

1) Remove the belt. Remove the primary transfer separation clutch 1 unit. Remove the bearing.

NOTE: When installing, fit the turn-stopper of the clutch.



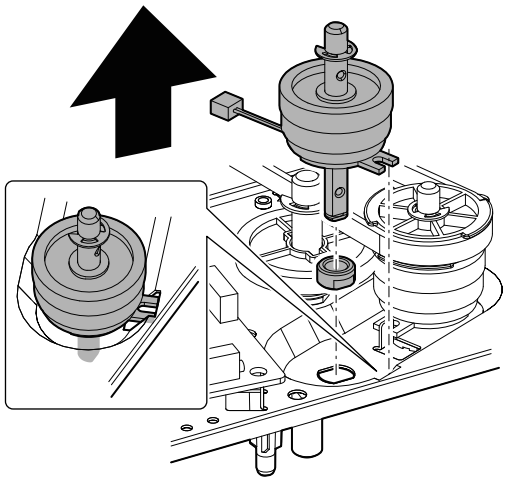
2) Remove the E-ring, and remove the primary transfer separation clutch 2.



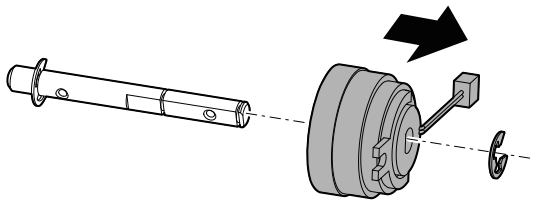
(3) Primary transfer separation clutch 2 (MX-C402SC/C382SC)

1) Remove the primary transfer separation clutch 2 unit. Remove the bearing.

NOTE: When installing, fit the turn-stopper of the clutch.



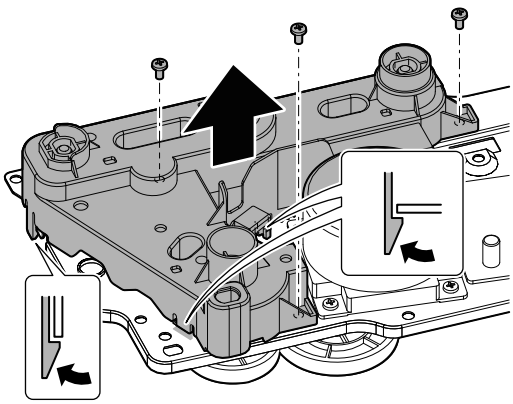
2) Remove the E-ring, and remove the primary transfer separation clutch 2.



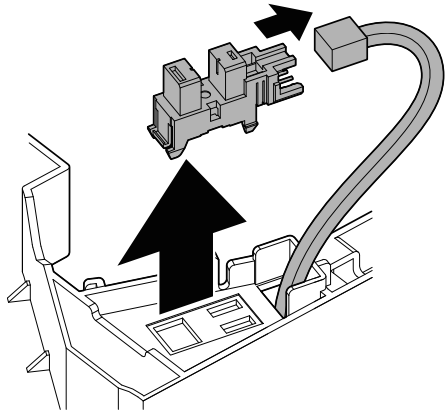
(4) Drum cartridge (CL) rotation detector (MX-C402SC/C382SC)

1) Remove the screw. Disengage the pawl, and remove the DV drive frame unit.

NOTE: When the DV drive frame unit is removed, the bearing may come off easily. Be careful not to lose it.

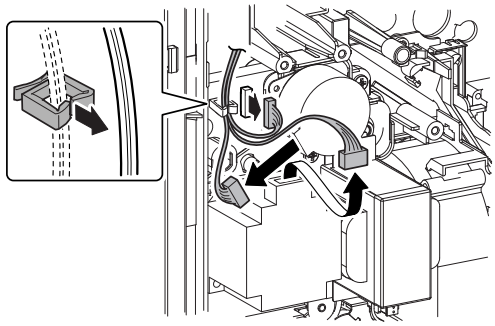


2) Disconnect the connector, and remove the drum cartridge (CL) rotation detector.

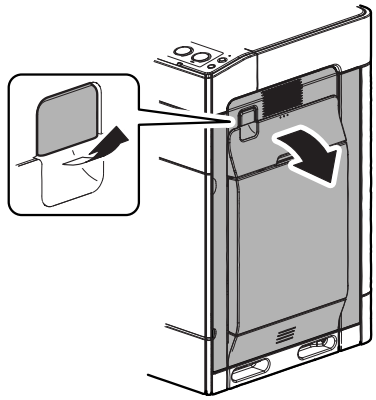


K. Paper feed drive unit

1) Disconnect the connector, and remove the harness from the wire saddle.

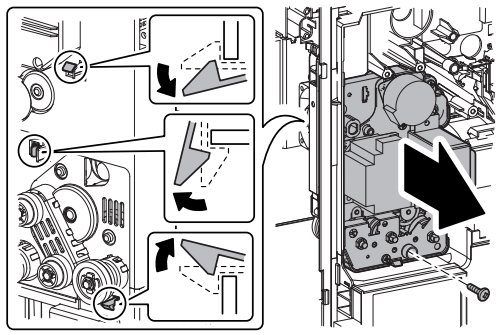


2) Pull the lever to release the lock, and open the right door.



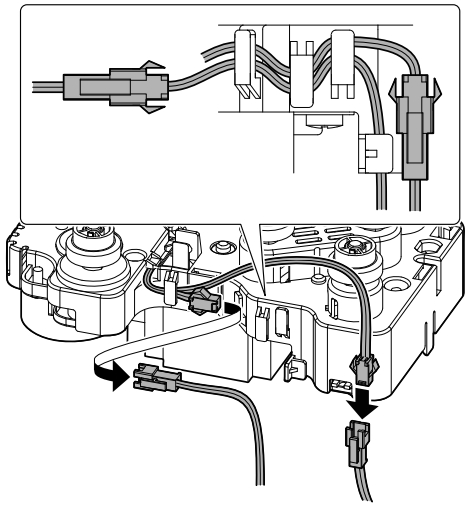
3) Remove the screw. Disengage the pawls (3 positions), and remove the paper feed drive unit.

NOTE: When placing the removed paper feed drive unit, place so that the motor is on the lower side.

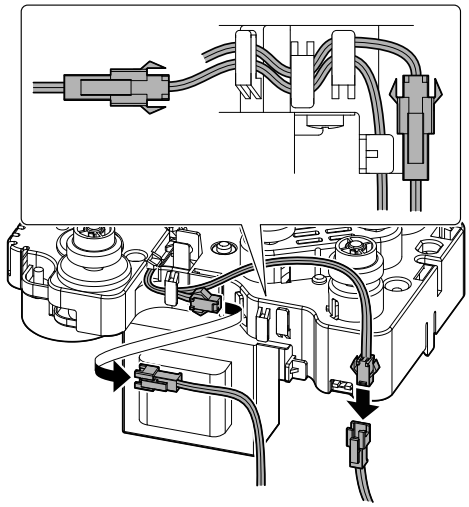


(1) Paper feed drive frame

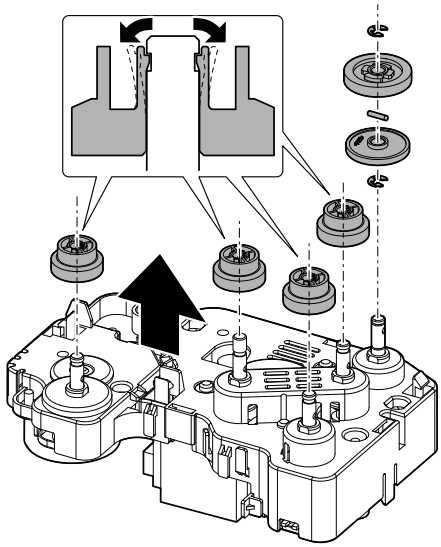
1) Disconnect the connector, and remove the harness from the paper feed drive frame.
   - 100V series



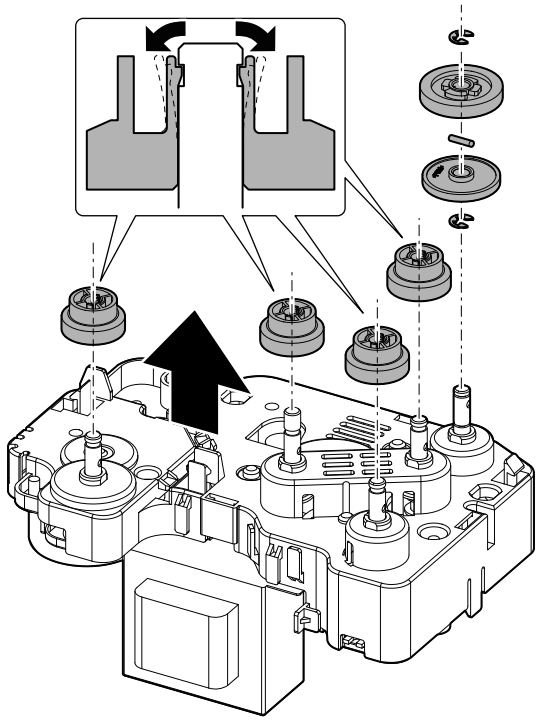
   - 200V series



2) Remove the E-ring, and remove the parallel pin and the collar. Remove the E-ring. Disengage the pawl, and remove the gear and the parallel pin.
   - 100V series

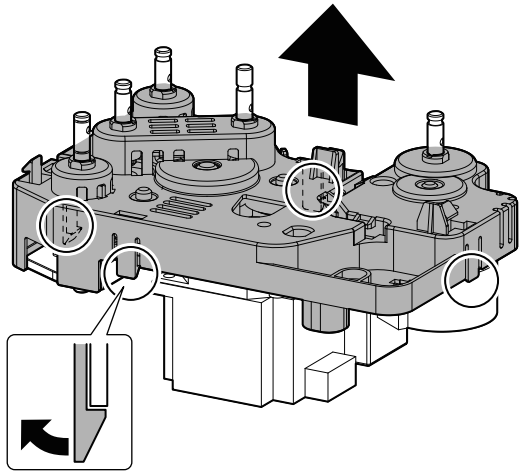


   - 200V series



3) Disengage the pawls (4 positions), and remove the cover.

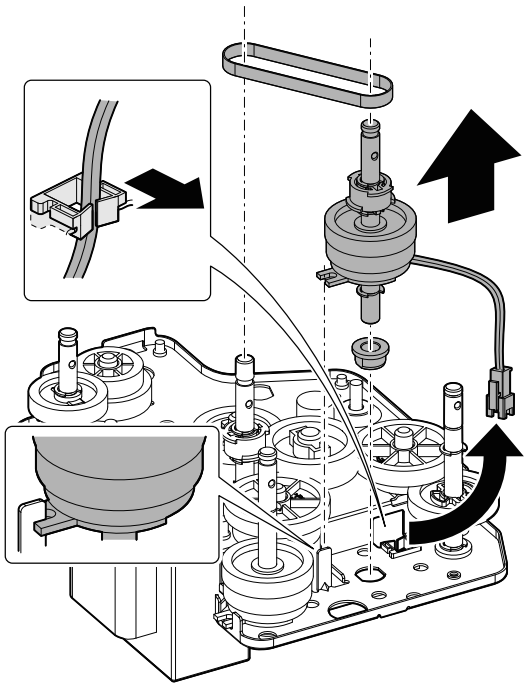
NOTE: When the paper feed drive frame is removed, the bearing may come off easily. Be careful not to lose it.



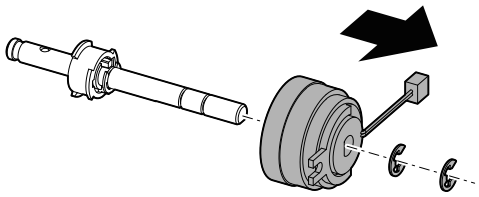
a. Paper feed clutch

1) Remove the belt. Remove the harness from the wire saddle, and remove the paper feed clutch unit. Remove the bearing.

NOTE: When installing, fit the turn-stopper of the clutch.



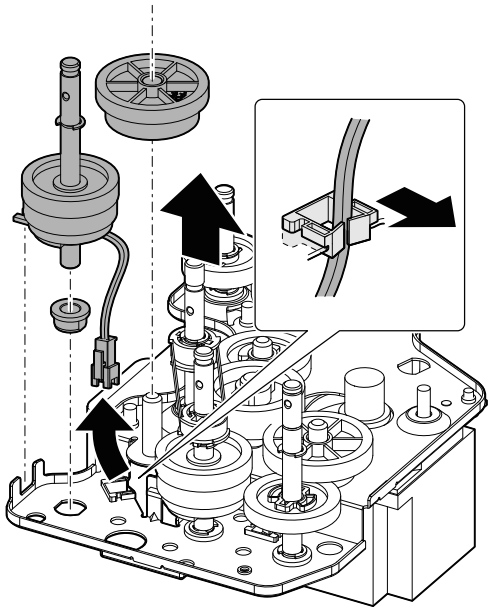
2) Remove the E-ring, and remove the paper feed clutch.



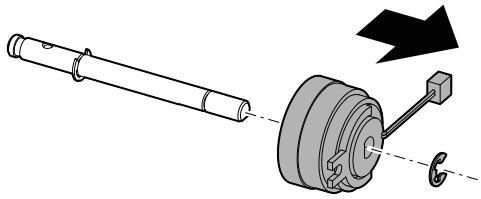
b. Tray vertical transport clutch

1) Remove the gear. Remove the harness from the wire saddle, and remove the tray vertical transport clutch unit. Remove the bearing.

NOTE: When installing, fit the turn-stopper of the clutch.

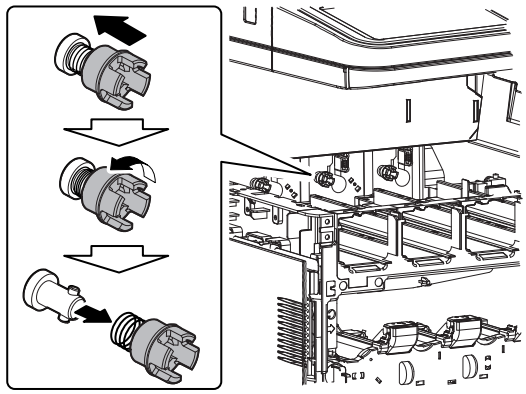


2) Remove the E-ring, and remove the tray vertical transport clutch.



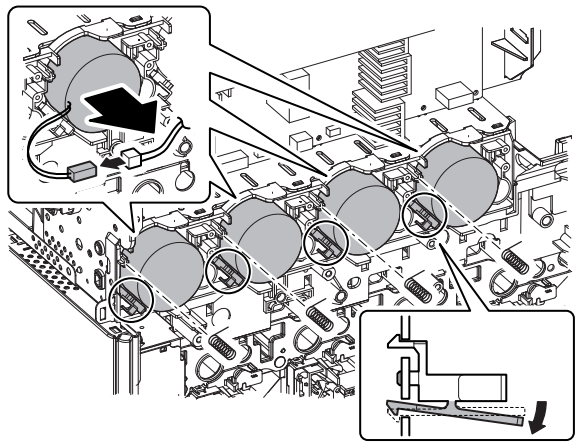
L. Toner motor

1) Push the coupling and rotate it 90° and remove the coupling and the spring.

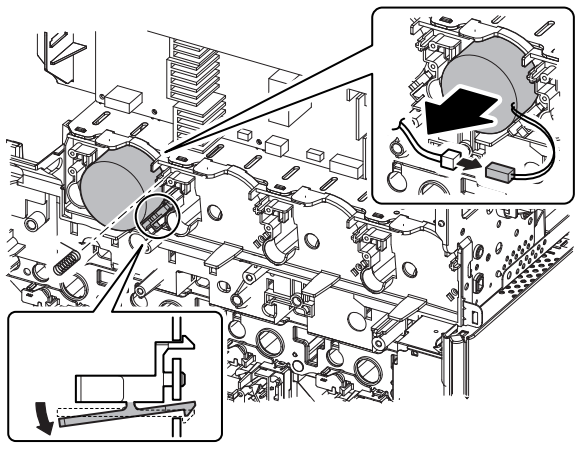


2) Remove the spring. Disconnect the connector, and remove the stopper and the toner motor.

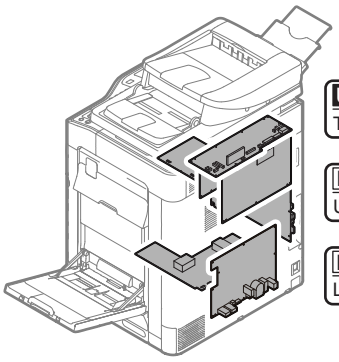
- **MX-C402SC/C382SC**



- **MX-B402SC/B382SC**



17. PWB



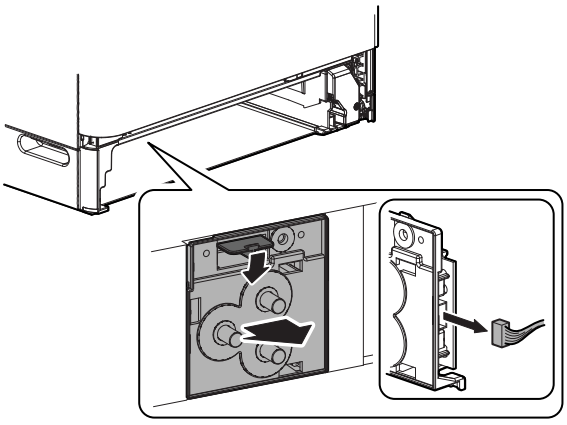
PWB

- U 10-17 Tray
- P 10-3 Upper cabinet rear
- P 10-2 Left cabinet
- U 10-67 HDD cooling fan motor unit
- P 10-4 Rear cabinet
- P 10-2 Left cabinet upper
- U 10-68 ACDC power unit
- M▲ 10-27 Toner cartridge
- P 10-1 Paper exit tray
- P 10-3 MFP ROM cover
- U 10-34 Primary transfer unit

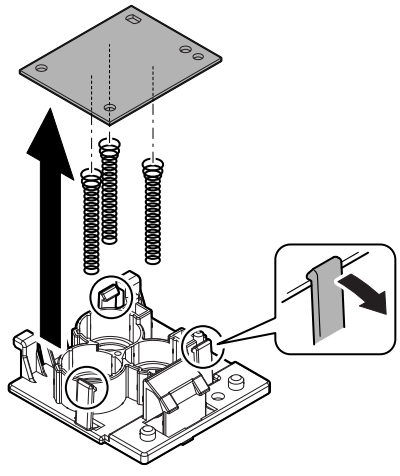
- E 10-62 Paper size detection PWB
- E 10-63 Scanner control PWB
- U 10-63 MFPC unit
  - E 10-63 MFPC PWB
- U 10-63 LSU mother PWB unit
  - E 10-64 LSU mother PWB
- E 10-64 ACDC power PWB
- E 10-64 PCU PWB
- U 10-64 PCU PWB unit
  - E 10-65 HL PWB
- U 10-65 MC PWB holder unit
  - E 10-65 MC PWB
- U 10-66 High voltage PWB holder unit
  - E 10-66 TC PWB

A. Paper size detection PWB

1) Disengage the pawl, and remove the paper size detection holder. Disconnect the connector.

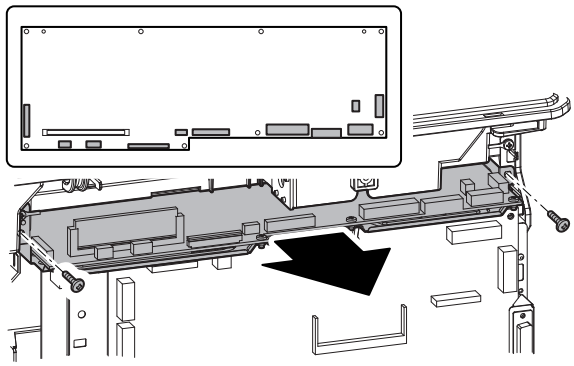


2) Disengage the pawl, and remove the paper size detection PWB.
   Remove the spring from the paper size detection PWB.

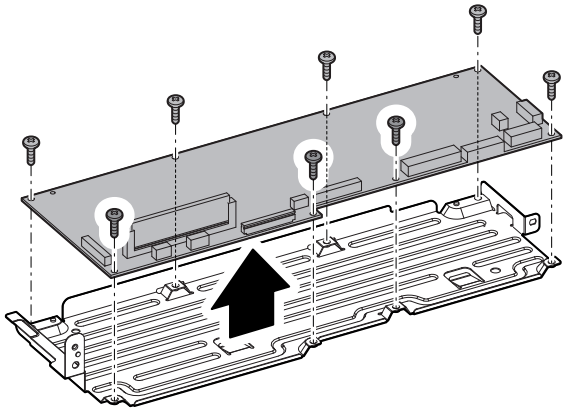


B. Scanner control PWB

1) Disconnect the connector. Remove the screw, and remove the scanner control PWB unit.

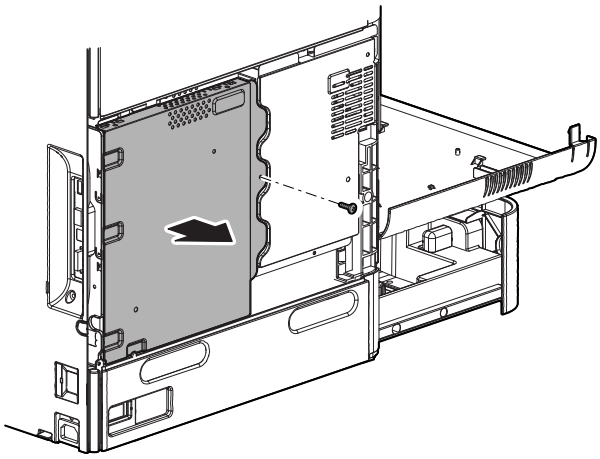


2) Remove the screw, and remove the scanner control PWB.

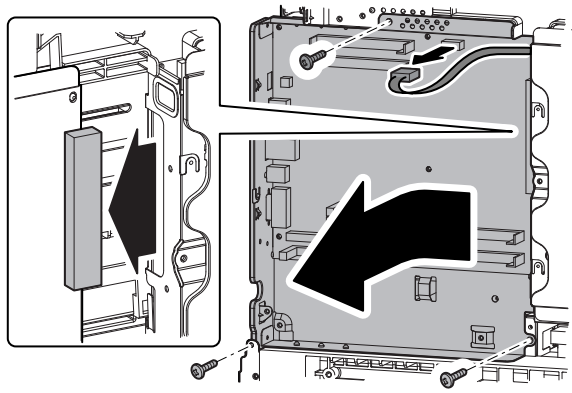


C. MFPC unit

1) Remove the screw, and remove the controller cover.

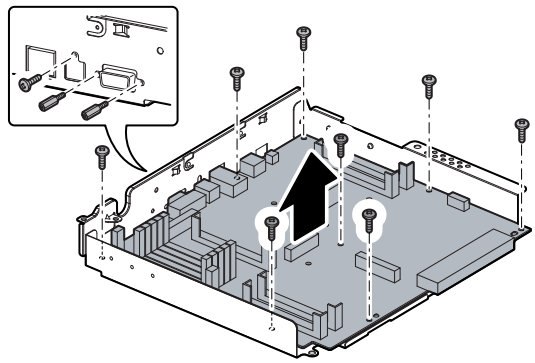


2) Remove the screw, and slide the MFPC unit to the rear side and disconnect the connector which is connected to the LSU mother PWB. Remove the MFPC unit.



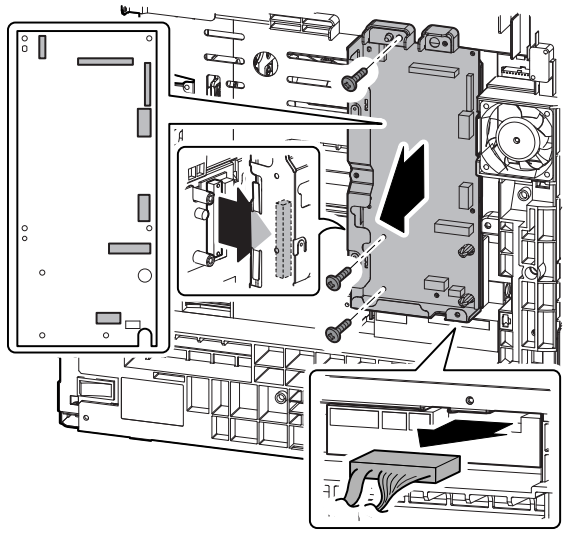
(1) MFPC PWB

1) Remove the hex screw and the screw. Remove the MFPC PWB.



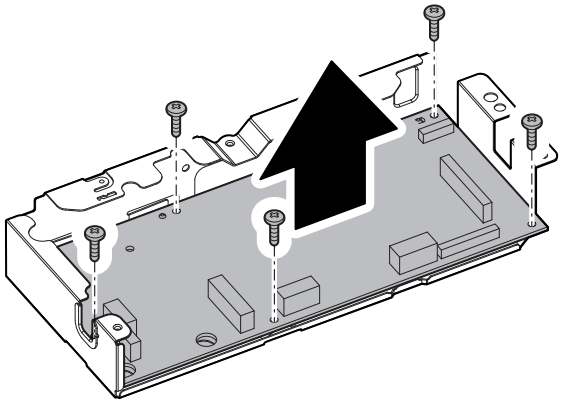
D. LSU mother PWB unit

1) Disconnect the connector. Remove the screw, and remove the LSU mother PWB unit.



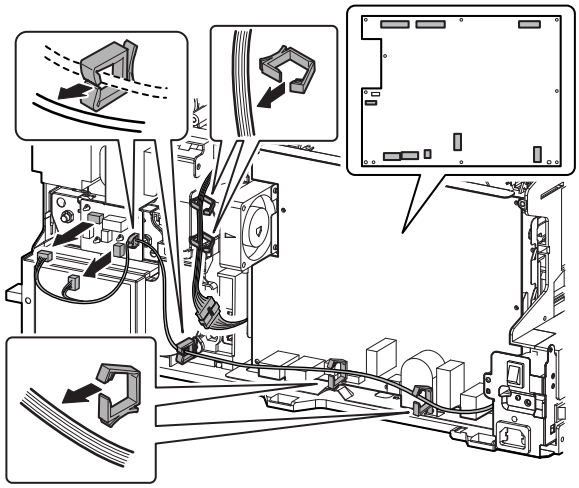
(1) LSU mother PWB

1) Remove the screw, and remove the LSU mother PWB.

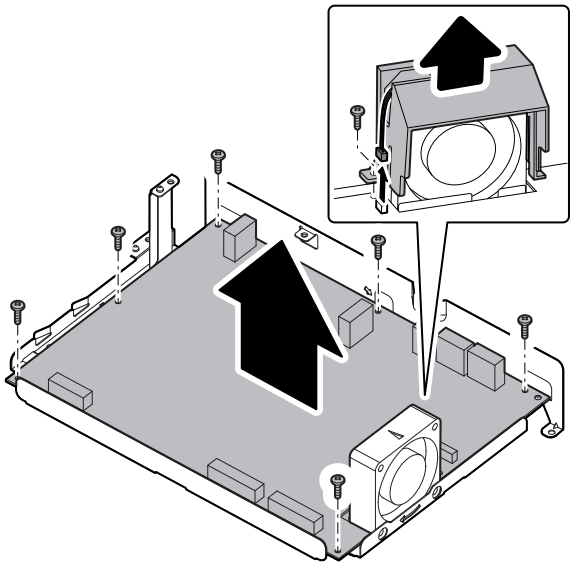


E. ACDC power PWB

1) Disconnect the connector. Remove the harness from the wire saddle.

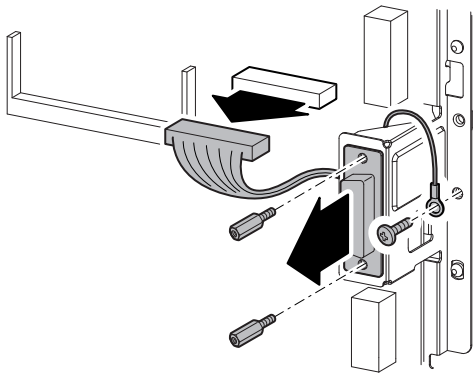


2) Disconnect the connector. Remove the screw, and remove the duct. Remove the screw, and remove the ACDC power PWB.

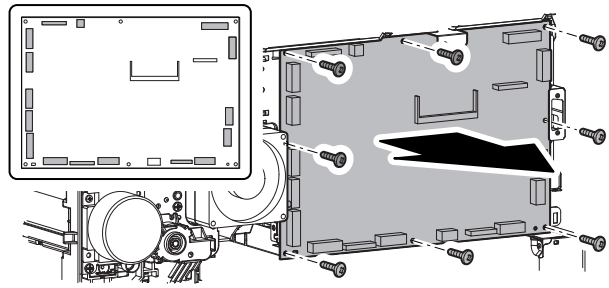


F. PCU PWB

1) Disconnect the connector, and remove the screw and the earth wire. Remove the hex screw, and disconnect the connector for the inner finisher connection.

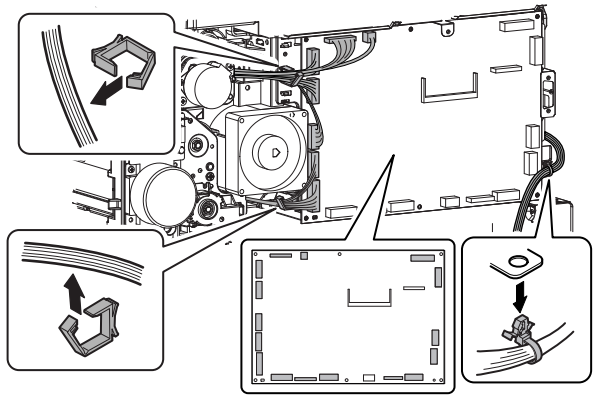


2) Disconnect the connector. Remove the screw, and remove the PCU PWB.
(Reference: MX-C402SC/C382SC)

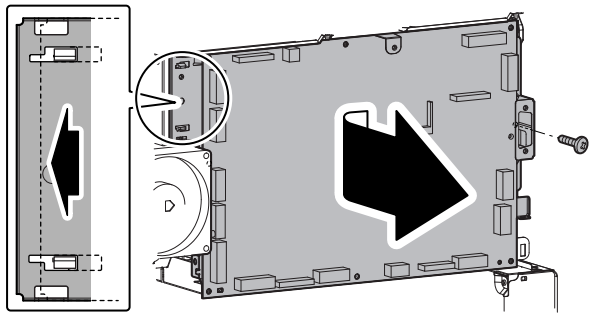


G. PCU PWB unit

1) Disconnect the connector. Remove the harness from the wire saddle. Remove the snap band.
(Reference: MX-C402SC/C382SC)

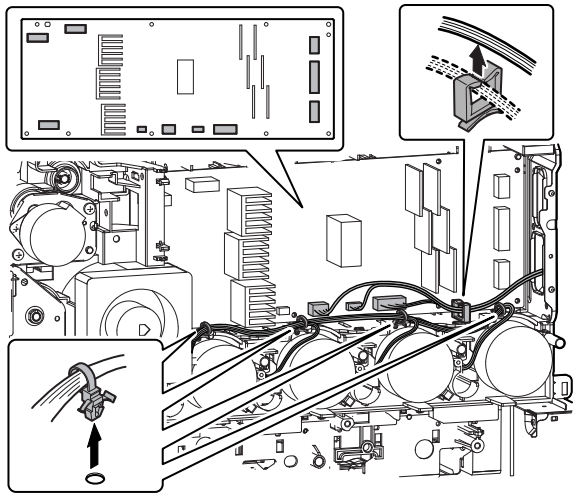


2) Remove the screw, and remove the PCU PWB unit.

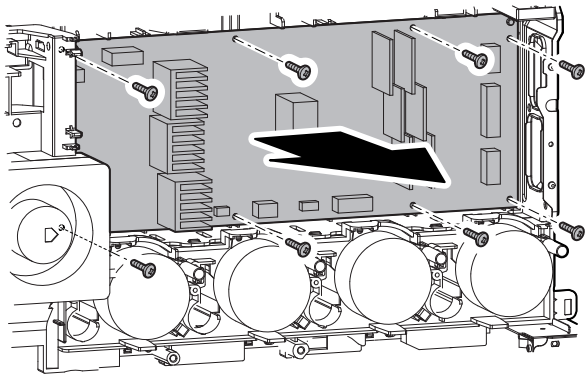


H. HL PWB

1) Disconnect the connector. Remove the harness from the wire saddle.



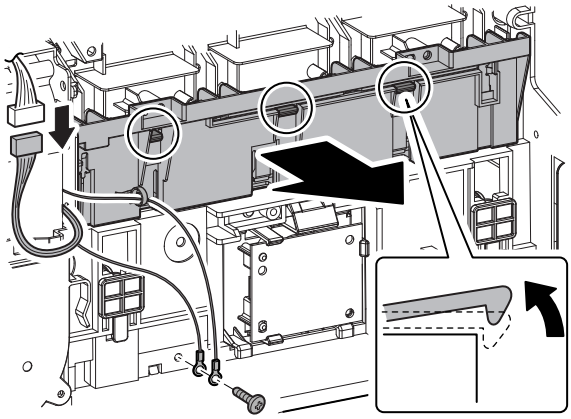
2) Remove the screw, and remove the HL PWB.



I. MC PWB holder unit

1) Disconnect the connector. Remove the screw, and remove the earth wire. Disengage the pawl, and remove the MC PWB holder unit.

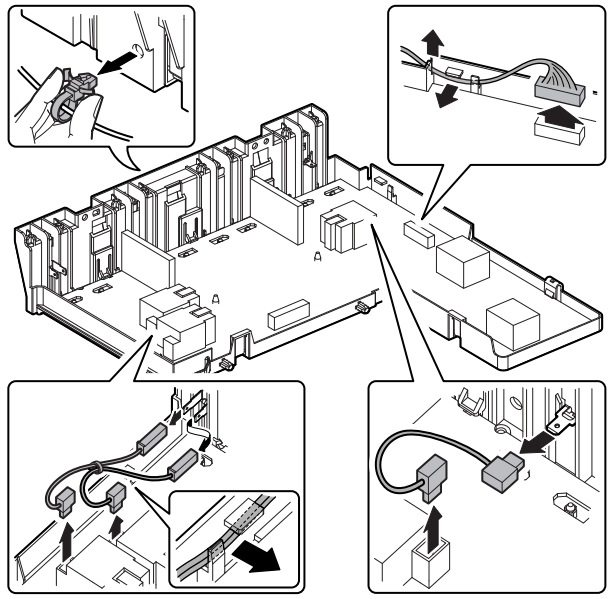
NOTE: When installing, check to confirm that there is no deformation or tilt in the high voltage terminal spring on the machine frame side.



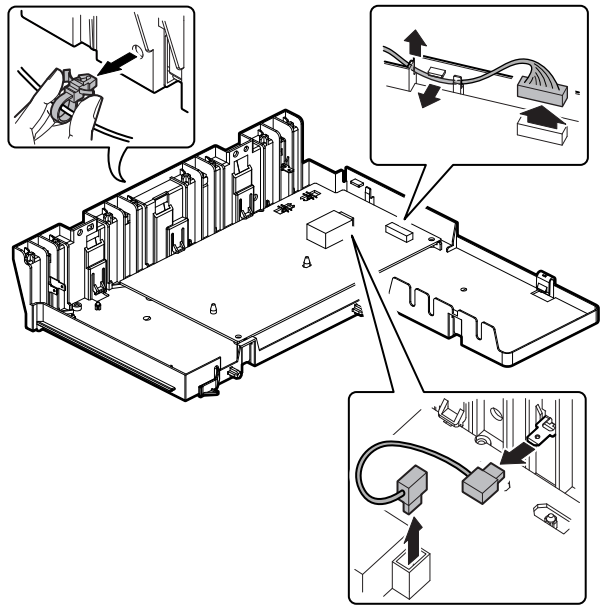
(1) MC PWB

1) Disconnect the connector. Remove the snap band, and remove the harness.

- **MX-C402SC/C382SC**

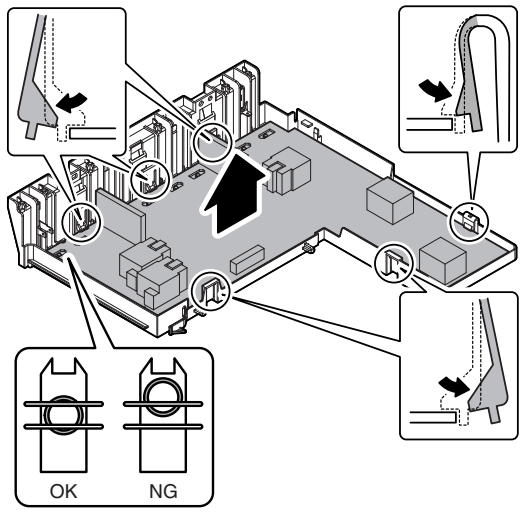


- **MX-B402SC/B382SC**

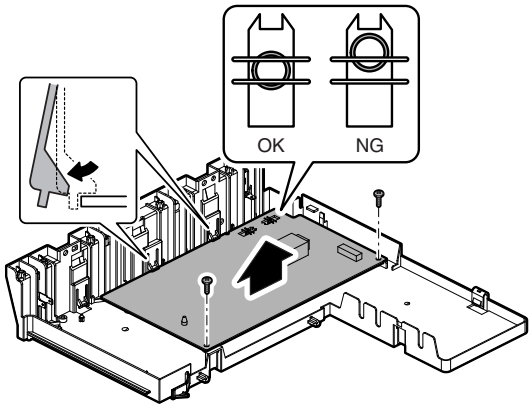


2) Disengage the pawl, and remove the MC PWB.

- **MX-C402SC/C382SC**



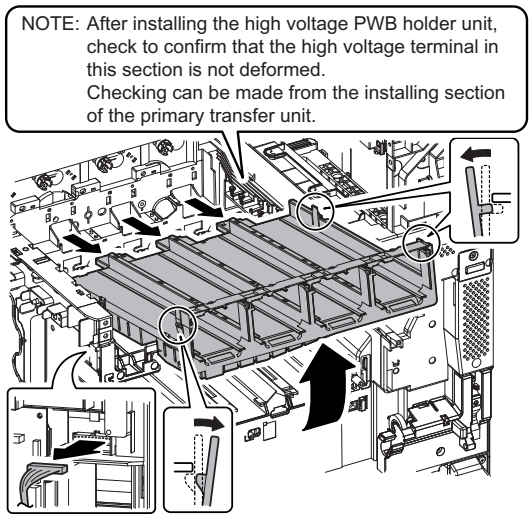
- **MX-B402SC/B382SC**



NOTE: When installing the PWB, check to confirm that there is no shift between the PWB terminal and the terminal on the MC PWB holder side.

J. High voltage PWB holder unit

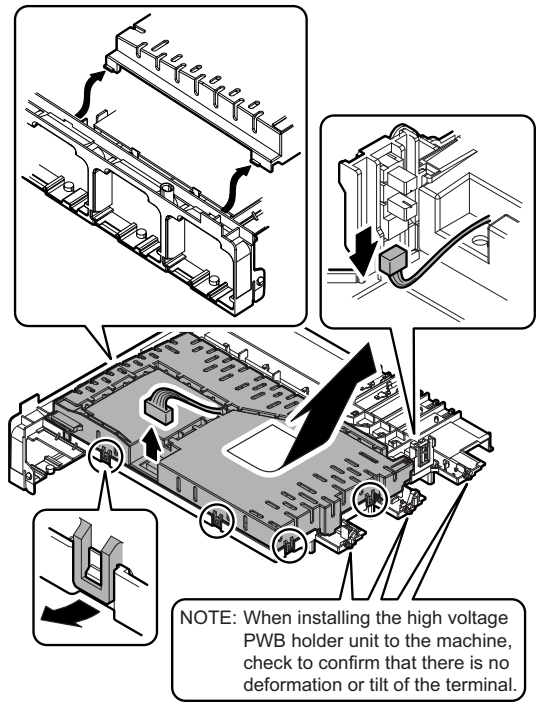
1) Disconnect the connector. Disengage the pawl, and remove the high voltage PWB holder unit.



NOTE: When installing, engage the rear side of the high voltage PWB holder unit first, and then lower the front side to engage.

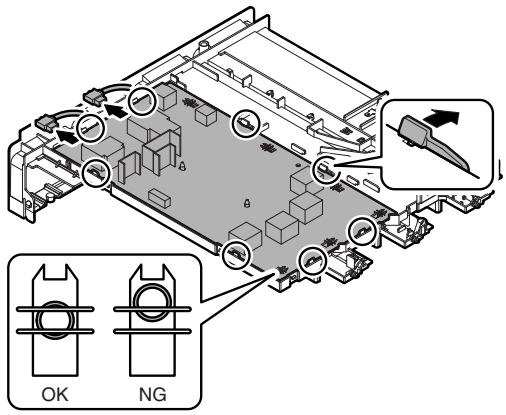
(1) TC PWB

1) Disconnect the connector. Disengage the pawl, and remove the cover.

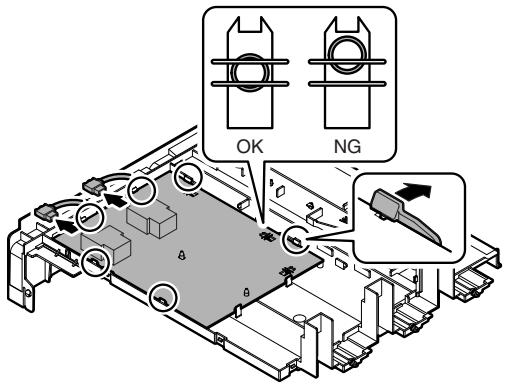


2) Disconnect the connector. Disengage the pawl, and remove the TC PWB.

- **MX-C402SC/C382SC**

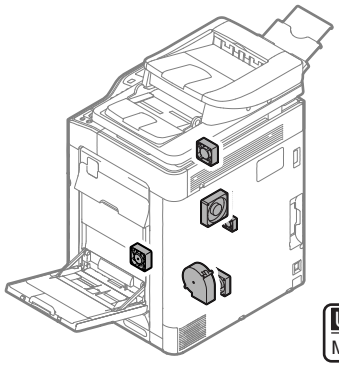


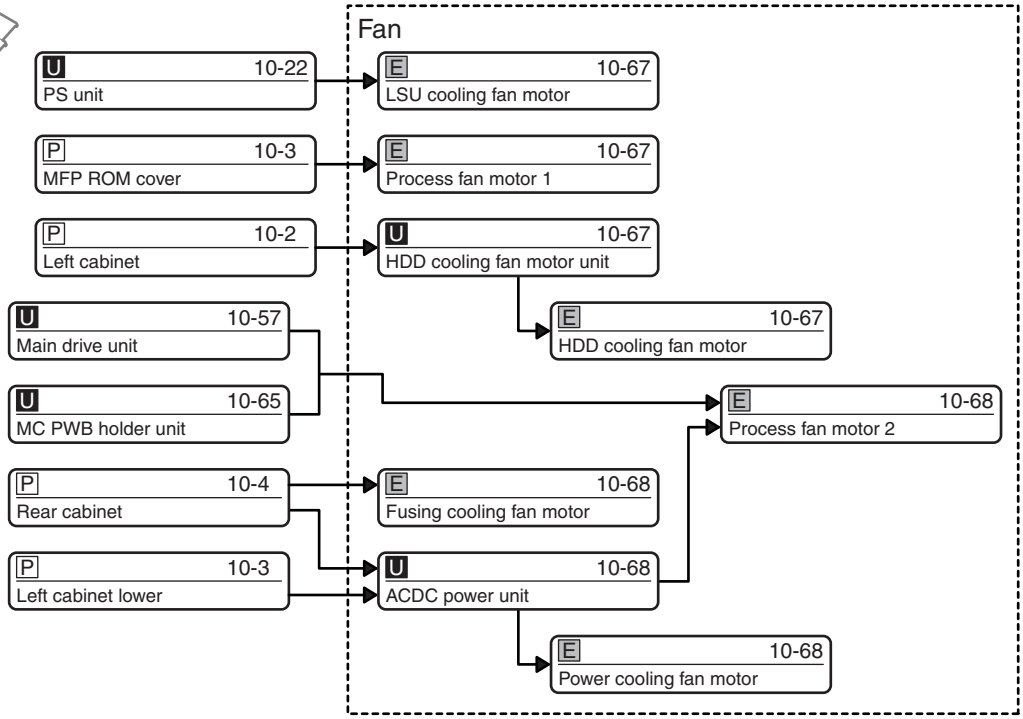
- **MX-B402SC/B382SC**



NOTE: When installing the PWB, check to confirm that there is no shift between the PWB terminal and the terminal on the high voltage PWB holder side.

18. Fan

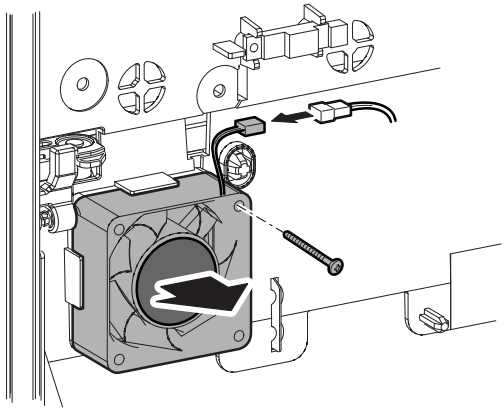




A. LSU cooling fan motor

1) Disconnect the connector. Remove the screw, and remove the LSU cooling fan motor.

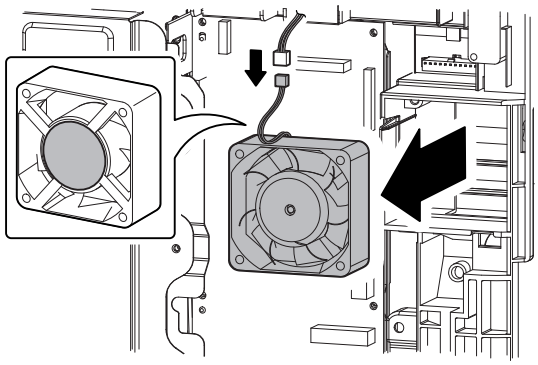
NOTE: When installing, install so that the fan label faces outside.



B. Process fan motor 1

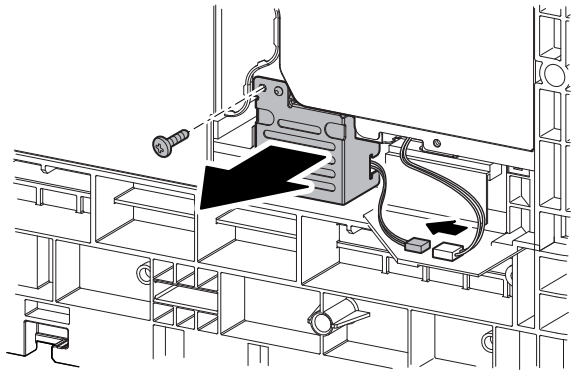
1) Disconnect the connector, and remove the process fan motor 1.

NOTE: When installing, install so that the fan label faces inside.



C. HDD cooling fan motor unit

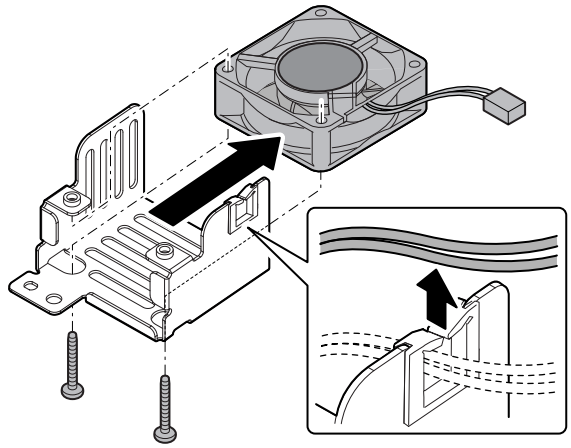
1) Remove the screw, and remove the HDD cooling fan motor unit, and disconnect the connector.



(1) HDD cooling fan motor

1) Remove the screw, and remove the HDD cooling fan motor.

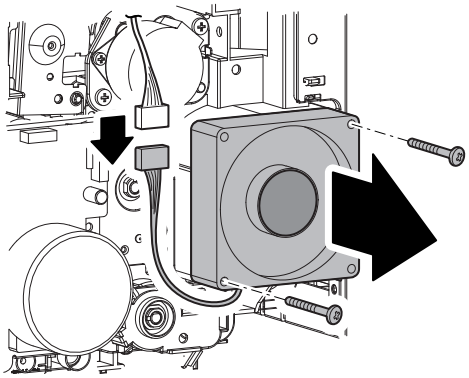
NOTE: When installing, install so that the fan label faces inside.



D. Fusing cooling fan motor

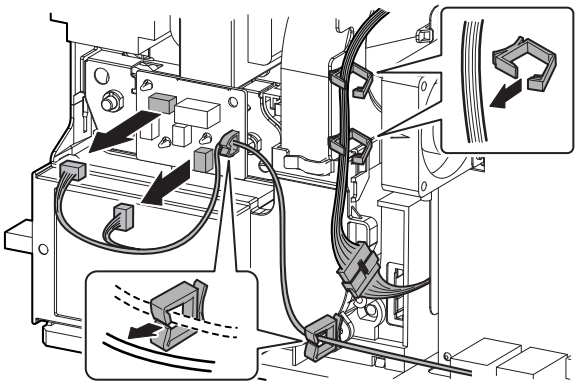
1) Disconnect the connector. Remove the screw, and remove the fusing cooling fan motor.

NOTE: When installing, install so that the fan label faces outside.

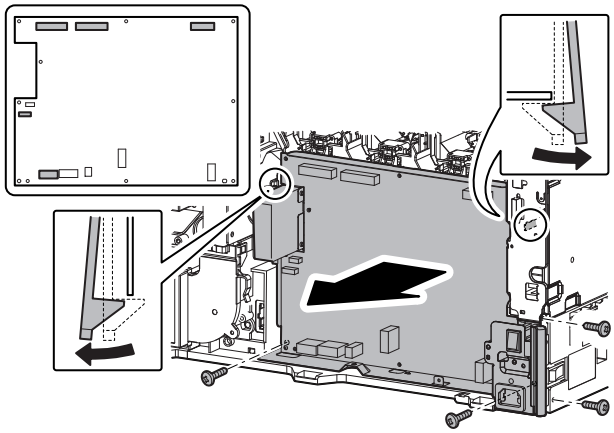


E. ACDC power unit

1) Disconnect the connector from the WH PWB, and remove the harness from the wire saddle.



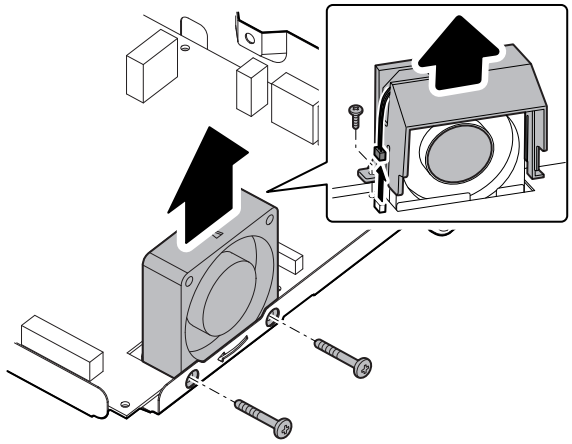
2) Disconnect the connector. Remove the screw, and disengage the pawl, and remove the ACDC power unit.



(1) Power cooling fan motor

1) Disconnect the connector. Remove the screw, and remove the duct. Remove the screw, and remove the power cooling fan motor.

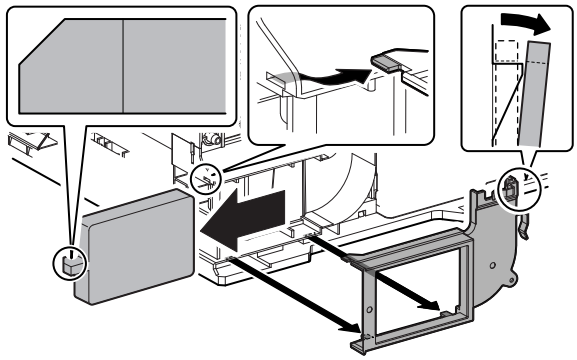
NOTE: When installing, install so that the fan label faces to the PWB side.



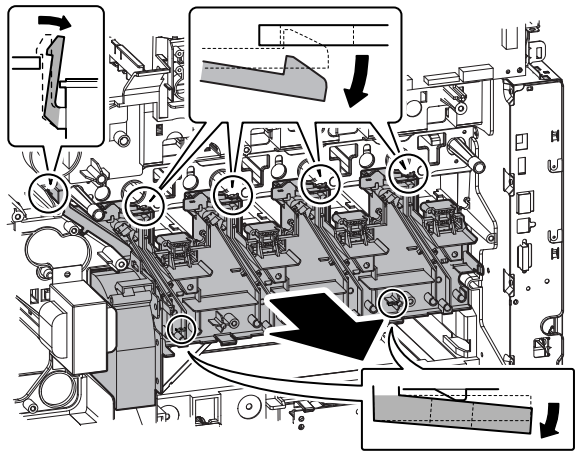
F. Process fan motor 2

1) Remove the ozone filter. Disengage the pawl, and remove the ozone duct cover.

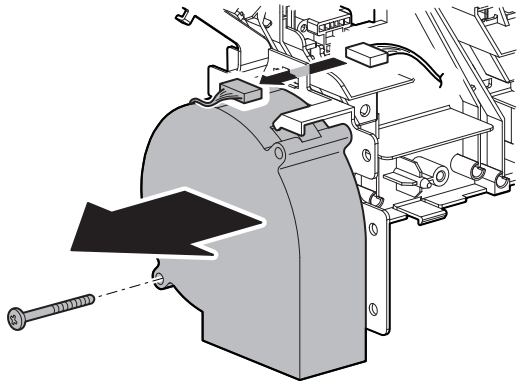
NOTE: When installing the ozone filter, install so that the knob whose corner is cut faces to the front side.



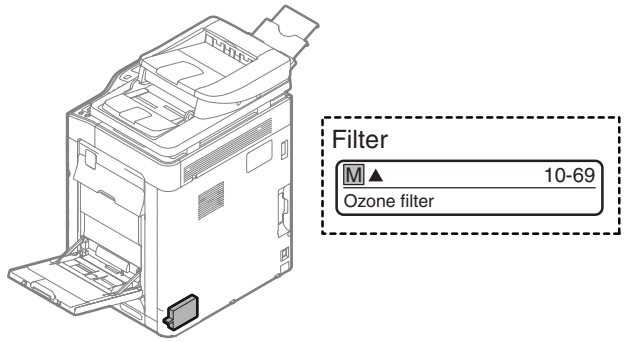
2) Disengage the pawl, and remove the ozone duct.



3) Disconnect the connector. Remove the screw, and remove the process fan motor 2.



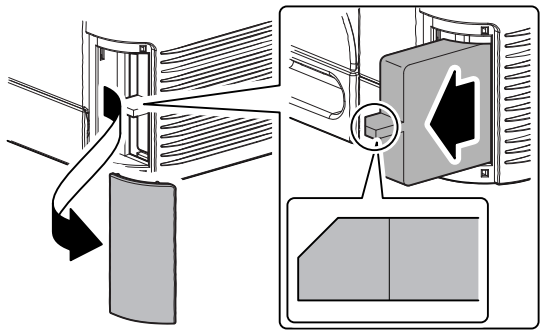
19. Filter



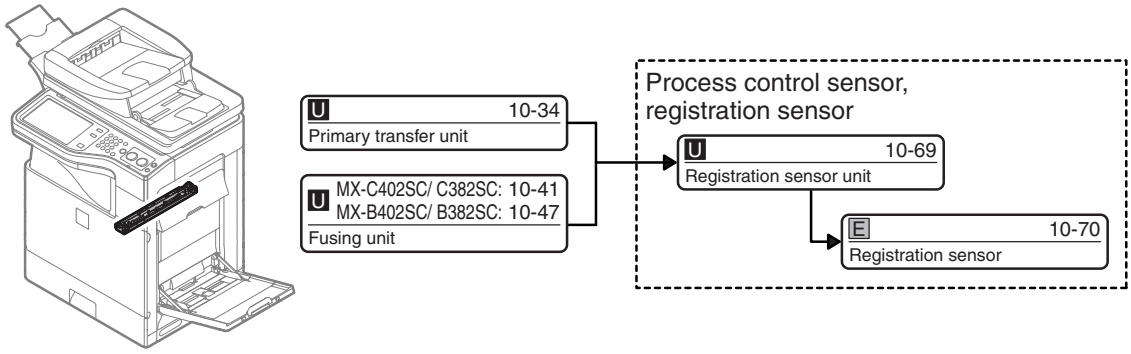
A. Ozone filter

1) Remove the filter cover, and remove the ozone filter.

NOTE: When installing the ozone filter, install cut corner (illustrated) facing toward front.

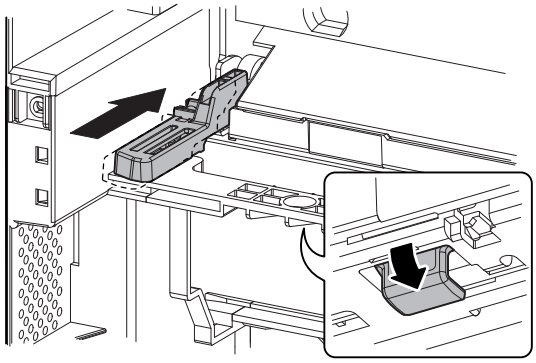


20. Process control sensor, registration sensor

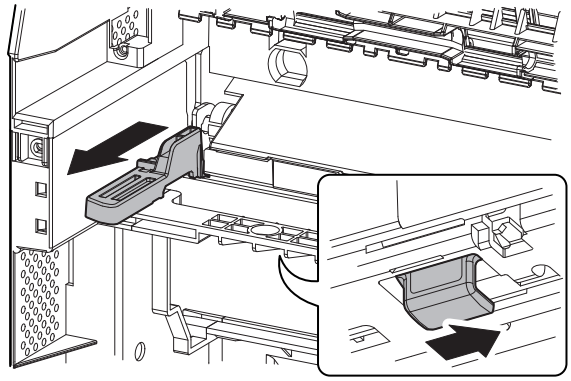


A. Registration sensor unit

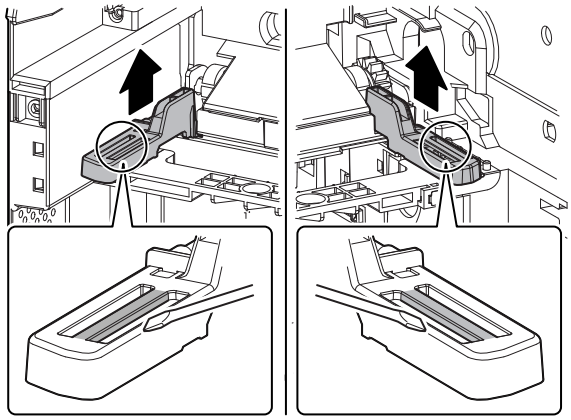
1) Push the lever on the front side. The shutter of the registration sensor unit is closed, and the cover comes to the registration sensor unit bottom.



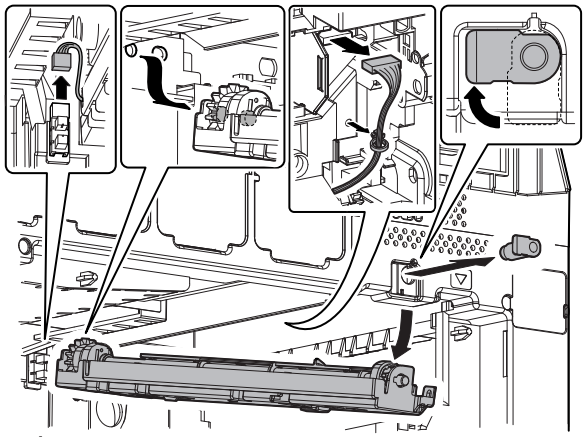
2) While pressing the cover which comes on the registration sensor unit bottom, pull out the lever.



3) Lift the rib at the center of the lever and remove the levers on the front side and the rear side.

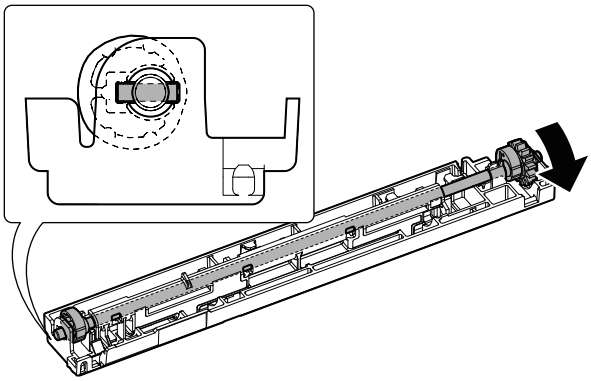


4) Release the lock. Disconnect the connector, and remove the snap band. Remove the registration sensor unit.

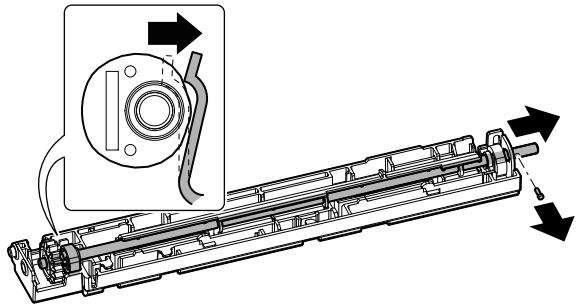


(1) Registration sensor

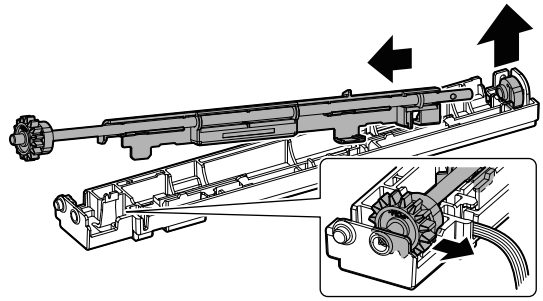
1) Turn the gear to fit the parallel pin on the front side with the hole in the frame.



2) Slide the shaft to the front side, and remove the parallel pin.

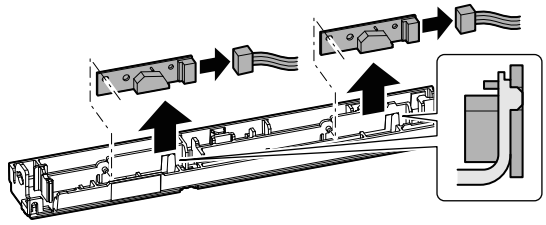


3) Pull the cam on the rear side to the harness side, and remove the shaft. Remove the cam on the front side.

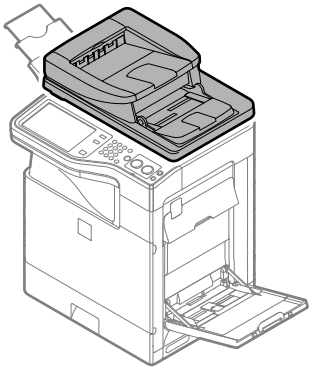


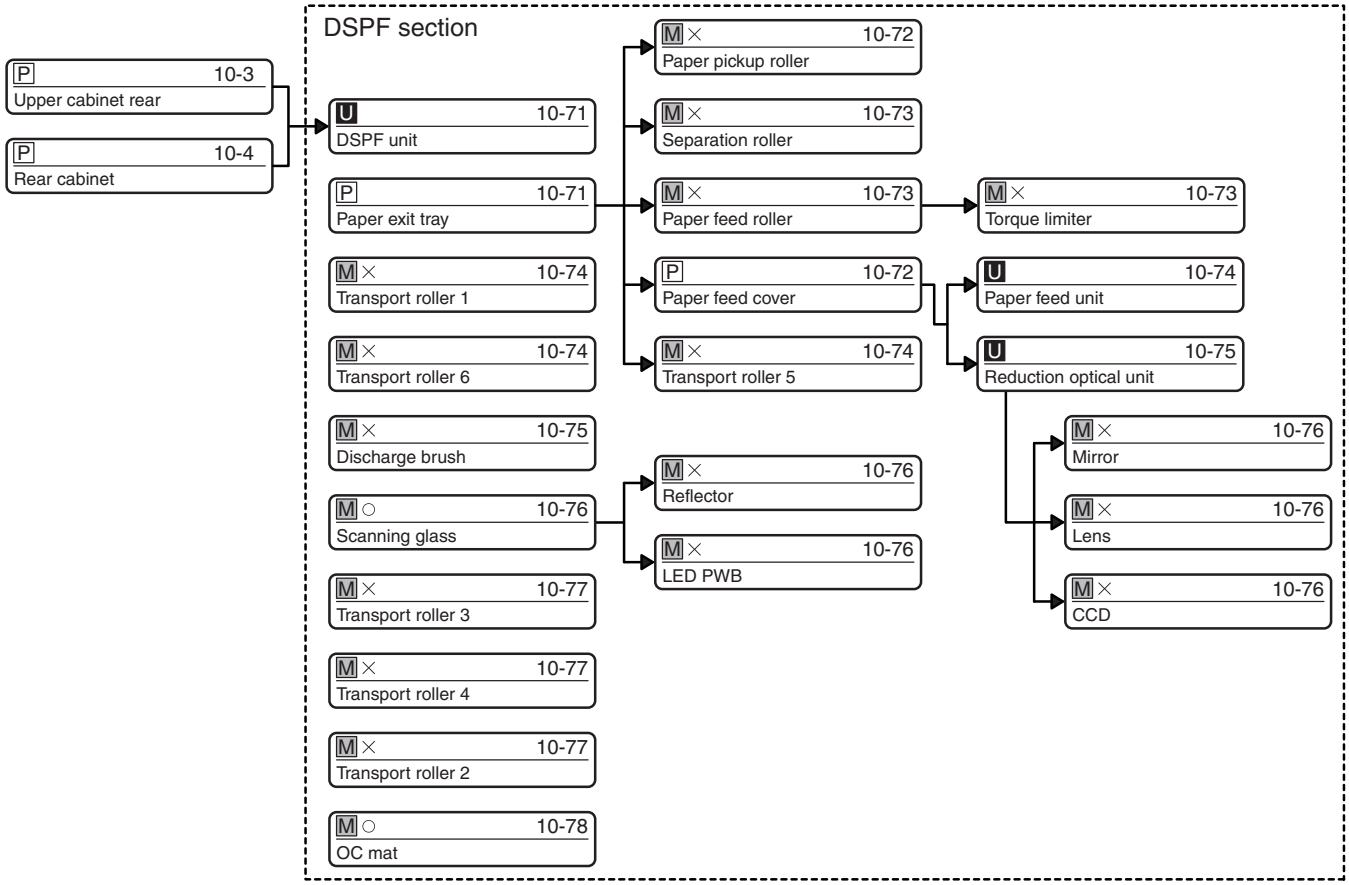
4) Disengage the pawl, and remove the registration sensor, and disconnect the connector.

NOTE: Use care not to touch the light receiving section and the PWB section of the registration sensor.



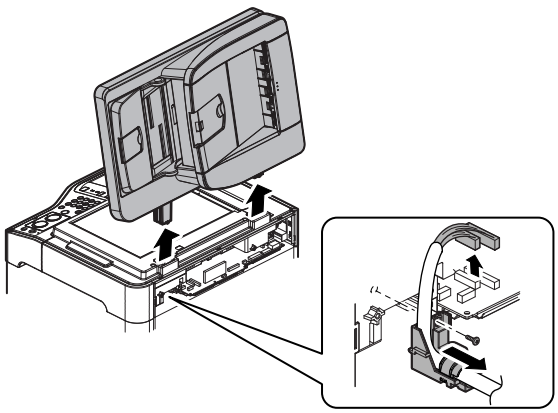
21. Document feed unit





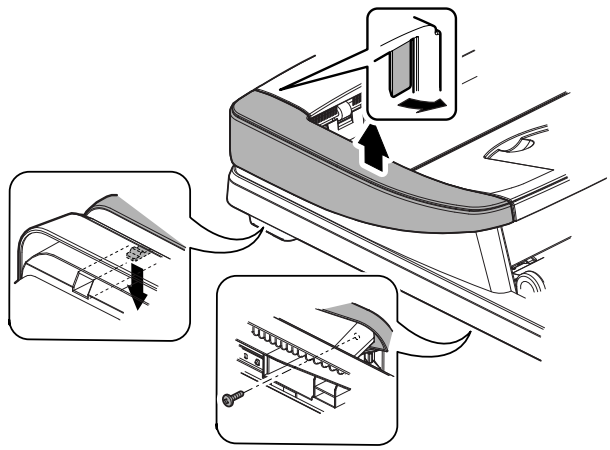
A. DSPF unit

1) Disconnect the connector. Remove the screw, and remove the holder. Remove the DSPF unit.

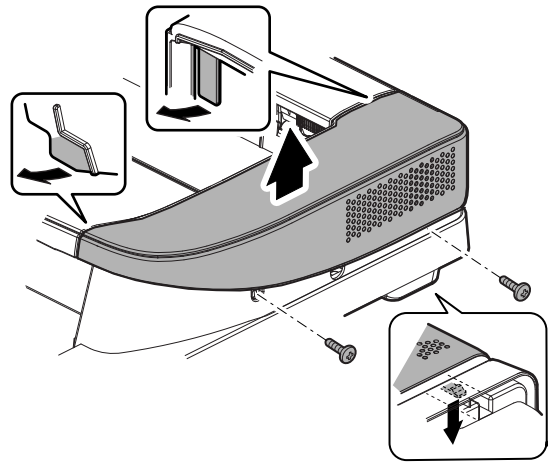


B. Paper exit tray

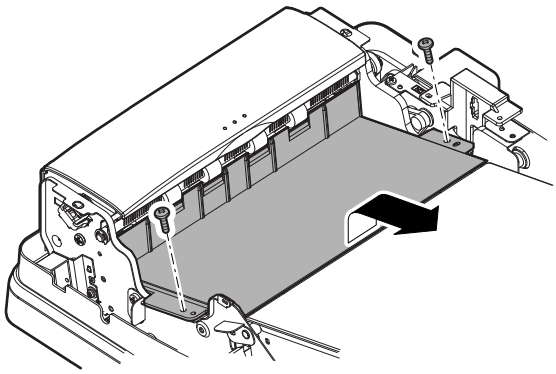
1) Remove the screw. Disengage the pawl, and remove the front cabinet.



2) Remove the screw. Disengage the pawl, and remove the rear cabinet.

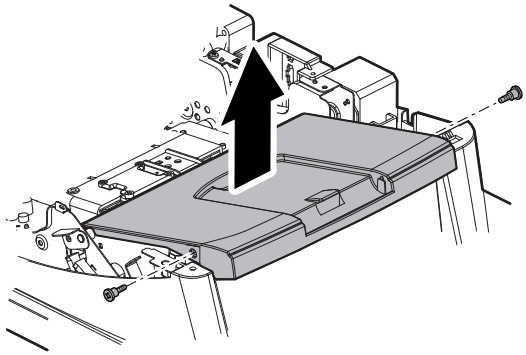


3) Remove the screw, and remove the paper exit tray.



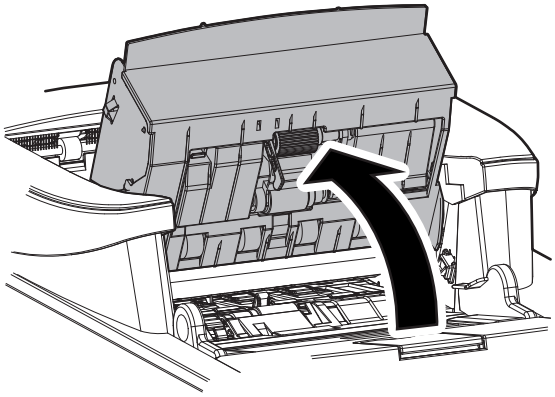
C. Paper feed cover

1) Remove the screw, and remove the paper feed cover.

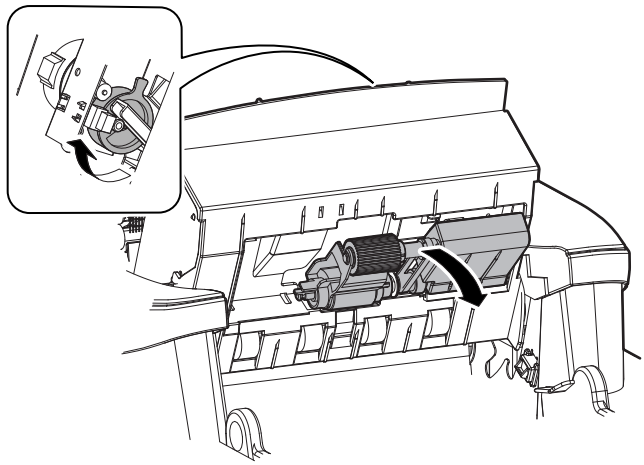


D. Paper pickup roller

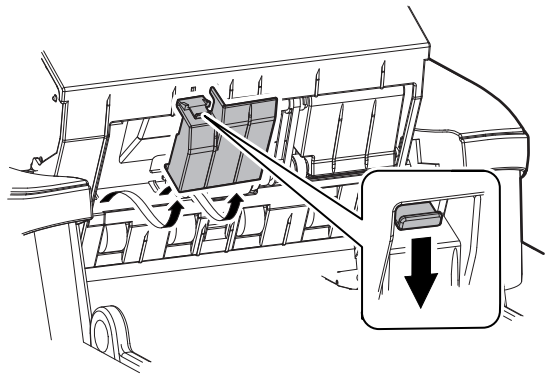
1) Open the paper feed unit.



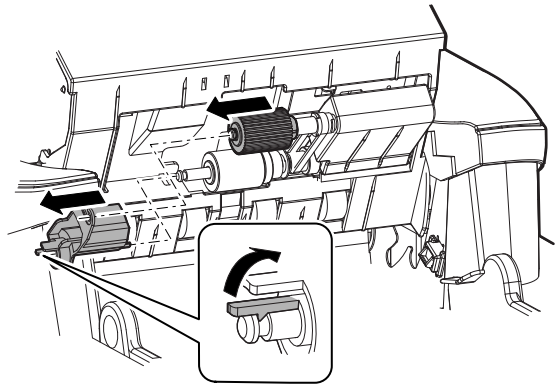
2) Lower the pickup roller.
(Method)
1. When the power is turned ON, use SIM2-2 to execute SLUM → EXECUTE to lower the pickup roller.
2. When the power is turned OFF, turn the cam to lower the pickup roller.



3) Disengage the pawl, and remove the cover.

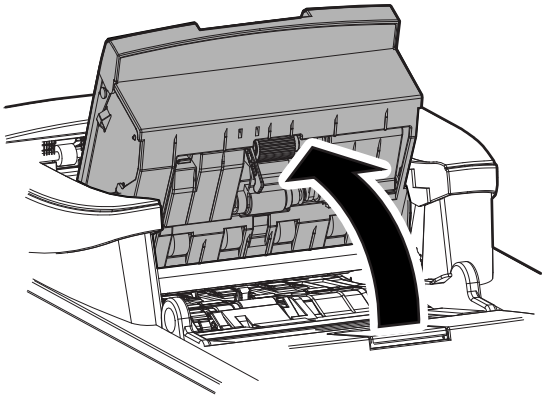


4) Disengage the pawl, and remove the holder. Remove the pickup roller.



E. Paper feed roller

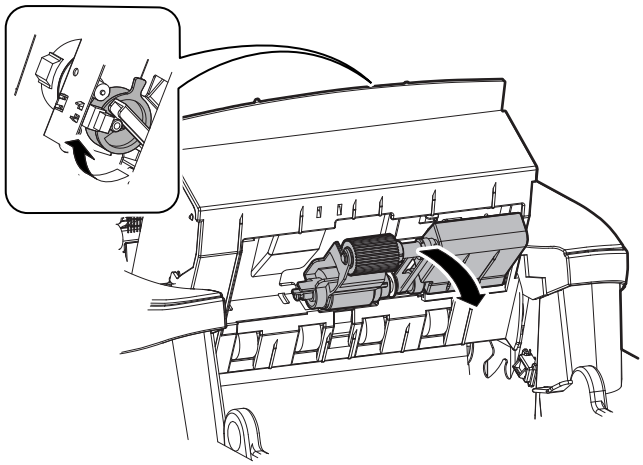
1) Open the paper feed unit.



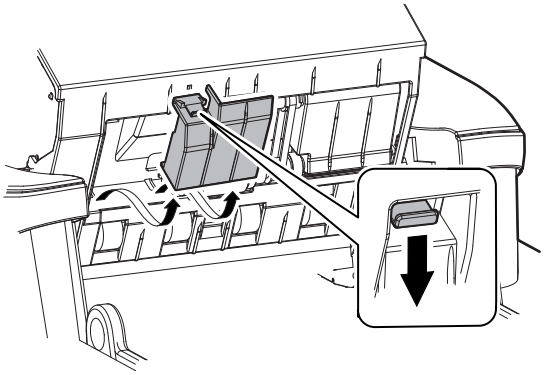
2) Lower the paper feed roller.

(Method)

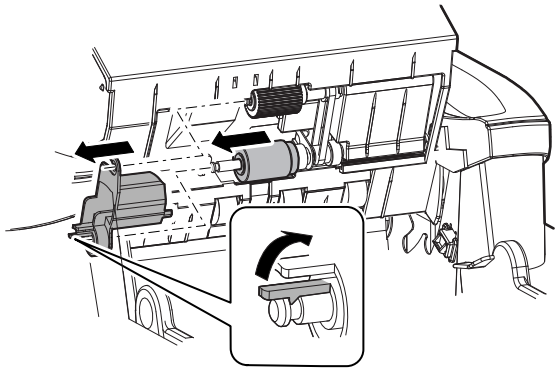
1. When the power is turned ON, use SIM2-2 to execute SLUM → EXECUTE to lower the pickup roller.
2. When the power is turned OFF, turn the cam to lower the pickup roller.



3) Disengage the pawl, and remove the cover.

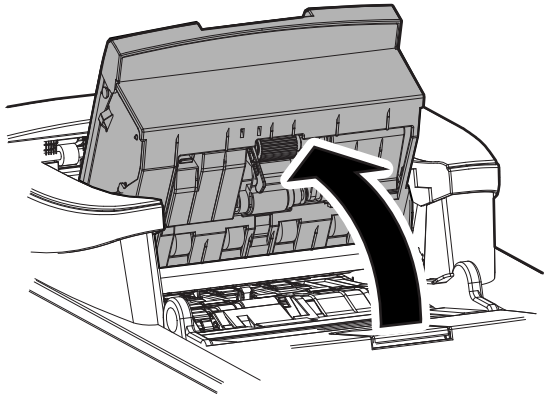


4) Disengage the pawl, and remove the holder. Remove the paper feed roller.

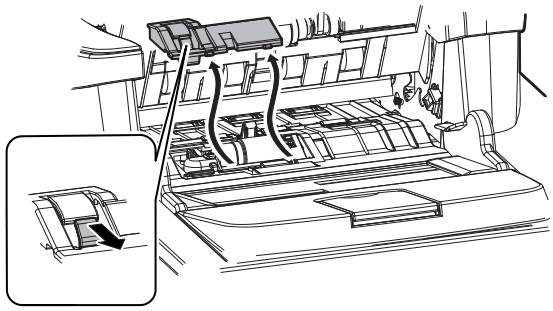


F. Separation roller/Torque limiter

1) Open the paper feed unit.

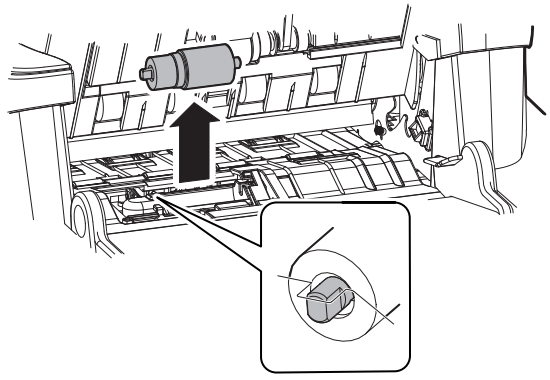


2) Disengage the pawl, and remove the cover.



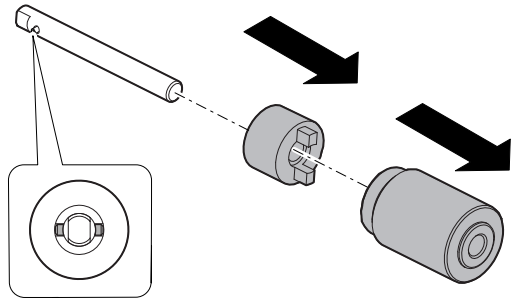
3) Remove the separation roller together with the shaft.

NOTE: When attaching, fit the D-cut of the shaft with the holder.



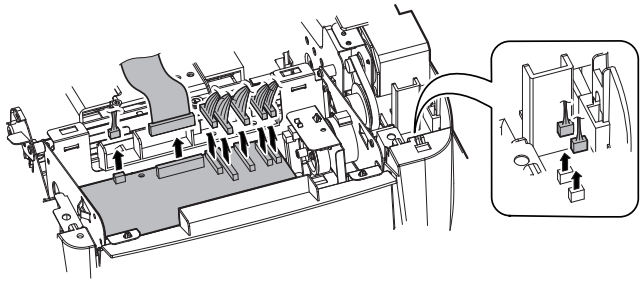
4) Remove the separation roller and the torque limiter from the shaft.

NOTE: When attaching, fit the spring pin of the shaft with the torque limiter.

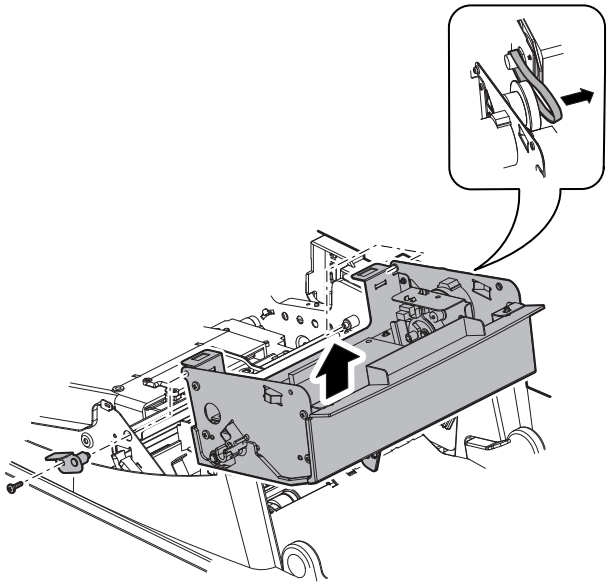


G. Paper feed unit

1) Remove the connector and the flat cable from the DSPF driver PWB.

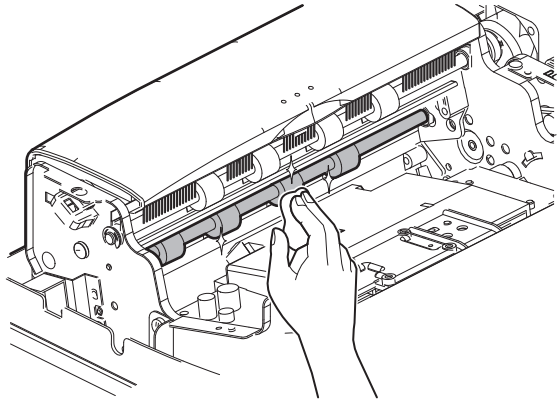


2) Remove the belt. Remove the screw, and remove the fixing plate. Remove the paper feed unit.



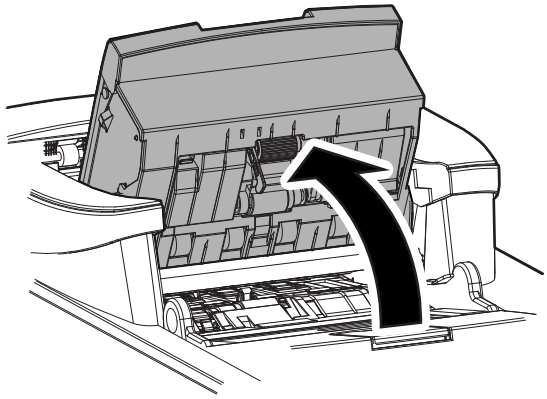
H. Transport roller 5

1) Clean the transport roller 5.

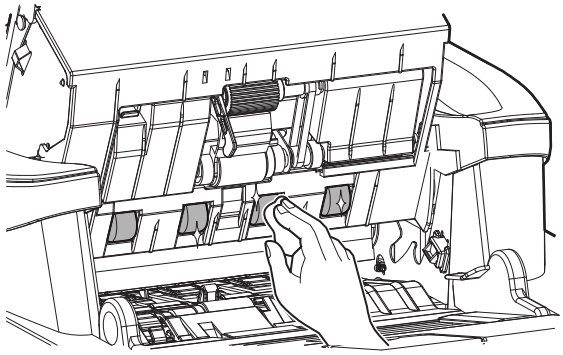


I. Transport roller 1

1) Open the paper feed unit.

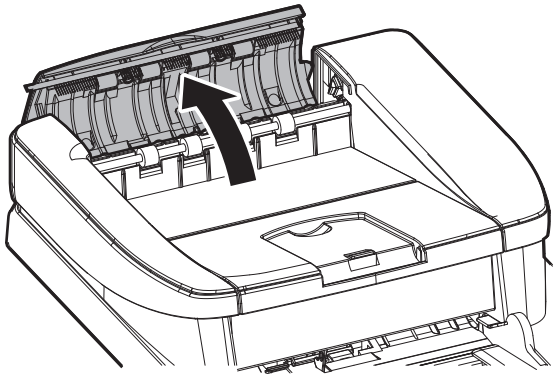


2) Clean the transport roller 1.

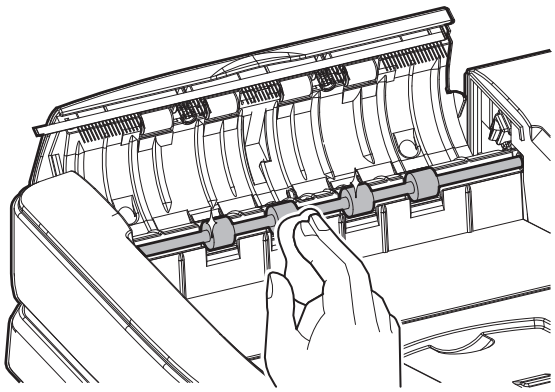


J. Transport roller 6

1) Open the upper door.

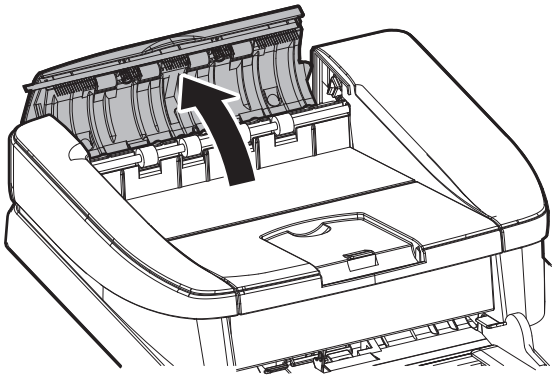


2) Clean the transport roller 6.

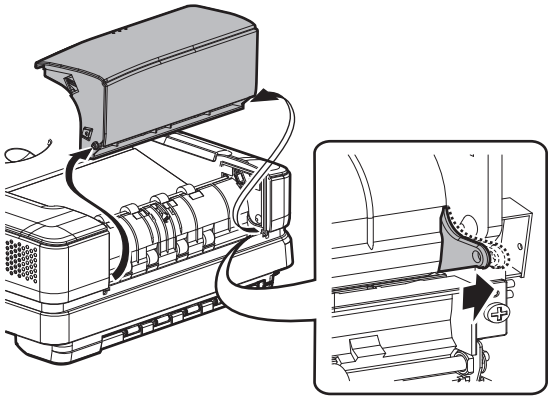


K. Discharge brush

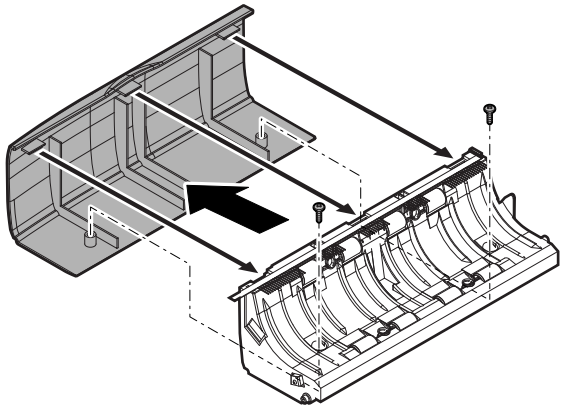
1) Open the upper door.



2) Open the boss section of the upper door, and remove the upper door.

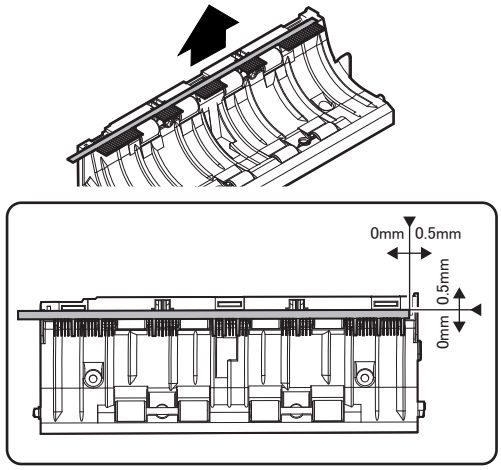


3) Remove the screw, and remove the upper door cover.



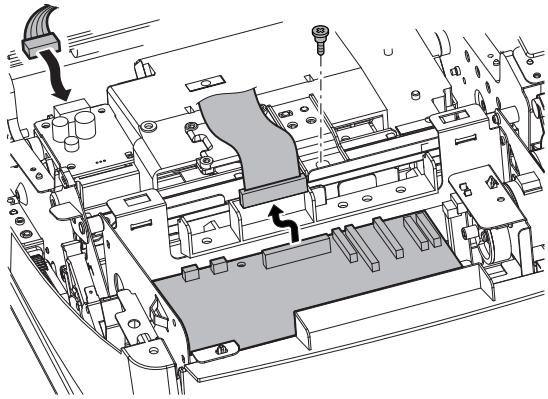
4) Remove the discharge brush.

NOTE: When attaching the discharge brush, fit with the reference.



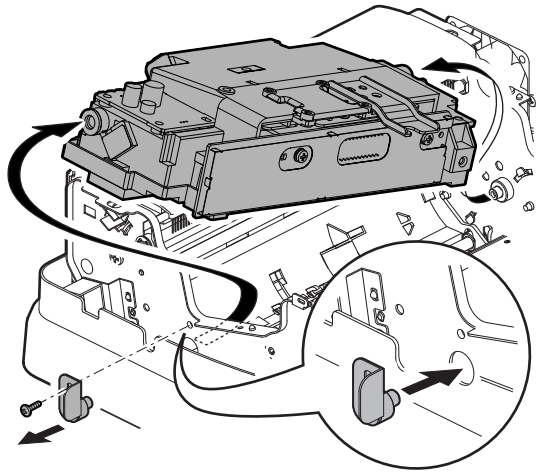
L. Reduction optical unit

1) Remove the flat cable from the DSPF driver PWB. Disconnect the connector from the DRV PWB. Remove the screw.



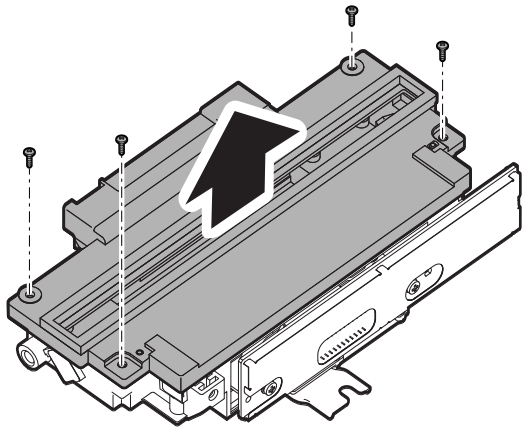
2) Remove the screw, and remove the fixing plate. Slide the reduction optical unit to remove.

NOTE: When attaching the reduction optical unit, insert the boss into the frame.

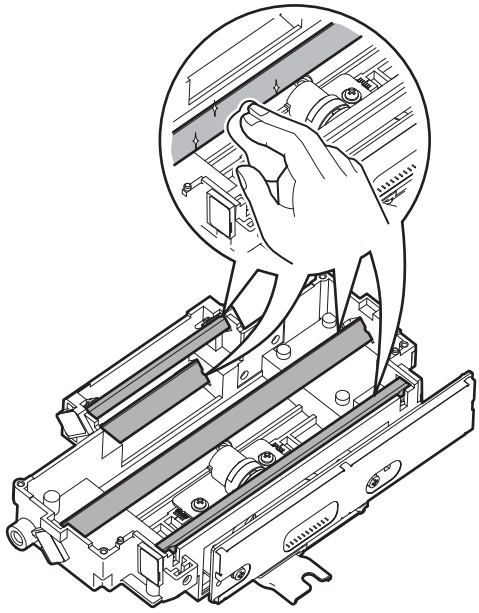


(1) Mirror/Lens/CCD

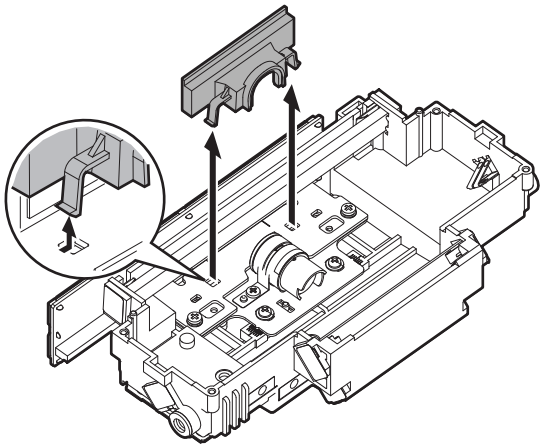
1) Remove the screw, and remove the cover.



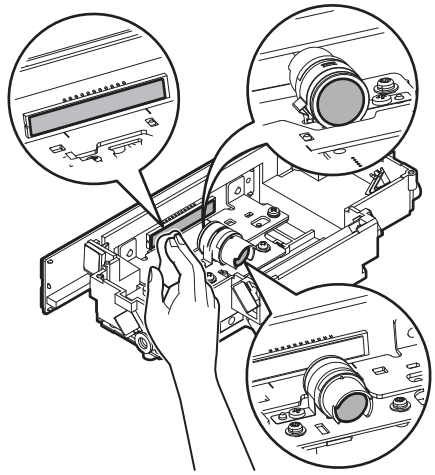
2) Clean the mirror.



3) Disengage the pawl, and remove the cover.

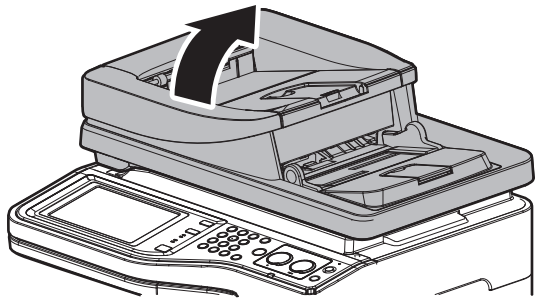


4) Clean the lens and the CCD.

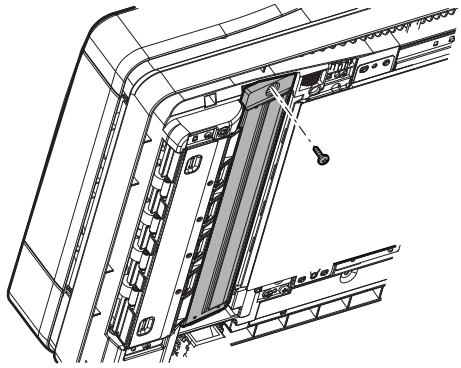


M. Scanning glass/Reflector/LED PWB

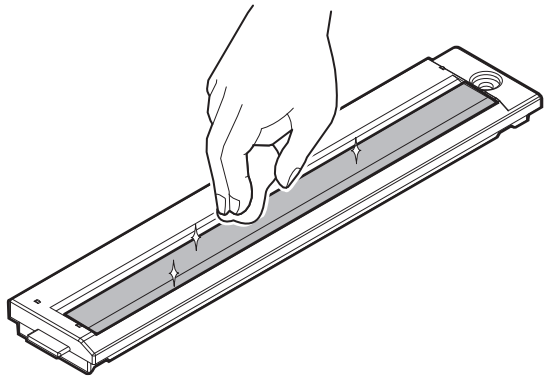
1) Open the DSPF unit.



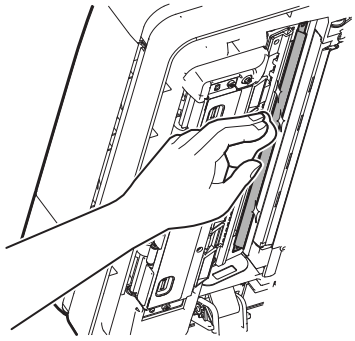
2) Remove the screw, and remove the scanning glass.



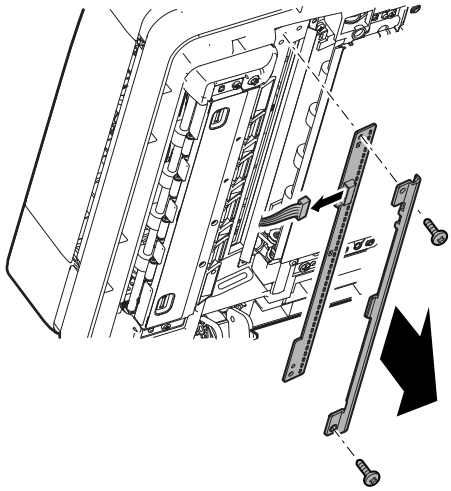
3) Clean the scanning glass.



4) Clean the reflector.

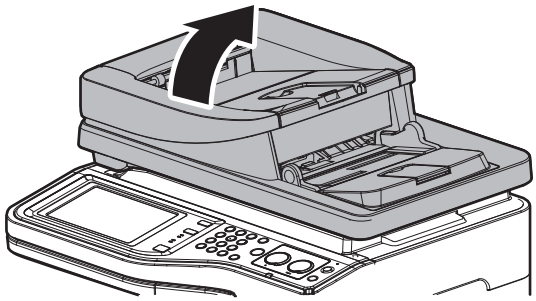


5) Remove the screw, and remove the backlight, and the LED PWB. Disconnect the connector from the LED PWB.

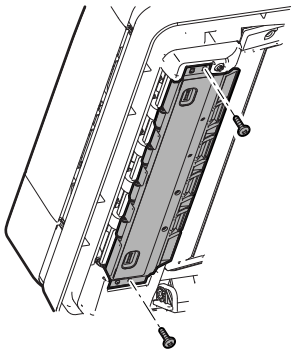


N. Transport roller 3/Transport roller 4

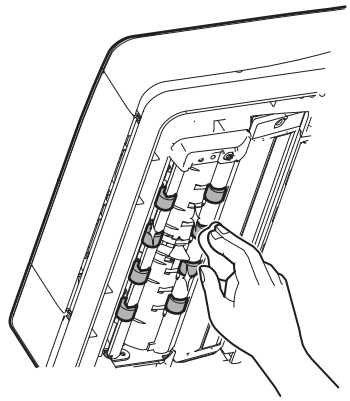
1) Open the DSPF unit.



2) Remove the screw, and remove the paper exit plate unit.

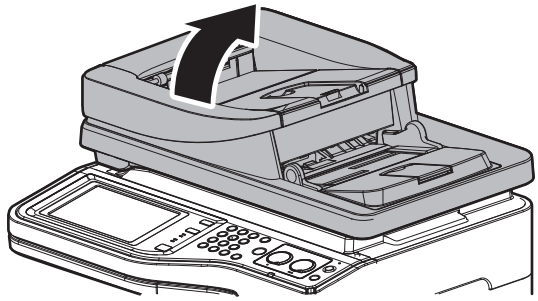


3) Clean the transport roller 3 and the transport roller 4.

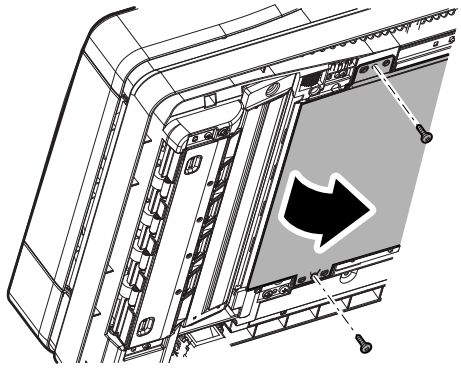


O. Transport roller 2

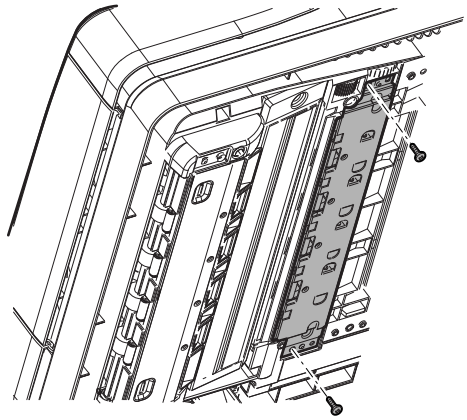
1) Open the DSPF unit.



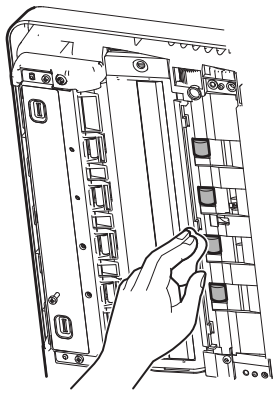
2) Remove the screw, and turn over the OC mat.



3) Remove the screw, and remove the scanning front unit.

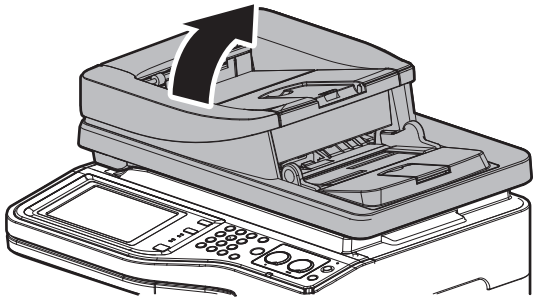


4) Clean the transport roller 2.

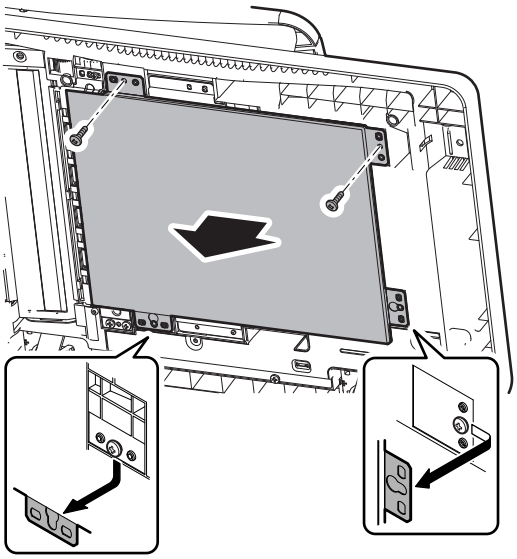


P. OC mat

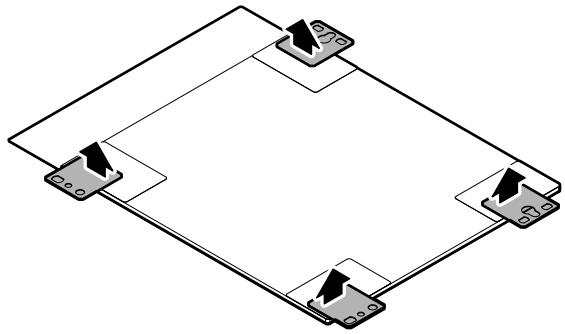
1) Open the DSPF unit.



2) Remove the screw, and remove the OC mat.

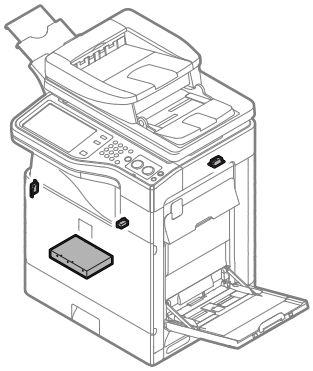


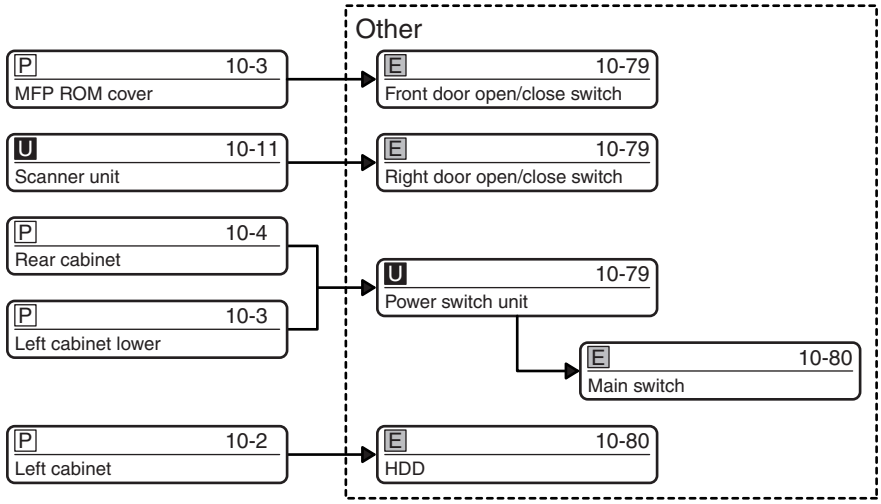
3) Remove the positioning sheet from the OC mat.



NOTE: When attaching the OC mat, attach the positioning sheet to the DSPF unit, then place the OC mat on the document table, then close the DSPF unit to attach the mat to the positioning sheet.

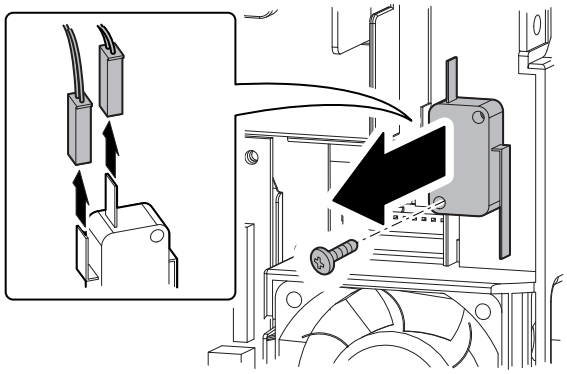
22. Other





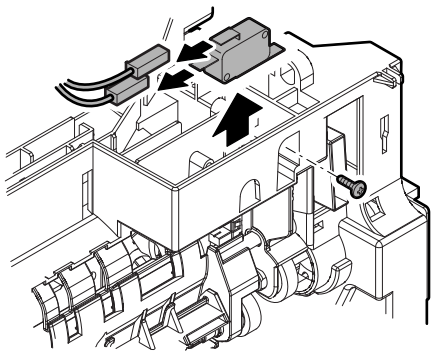
A. Front door open/close switch

1) Disconnect the connector. Remove the screw, and remove the front door open/close switch.



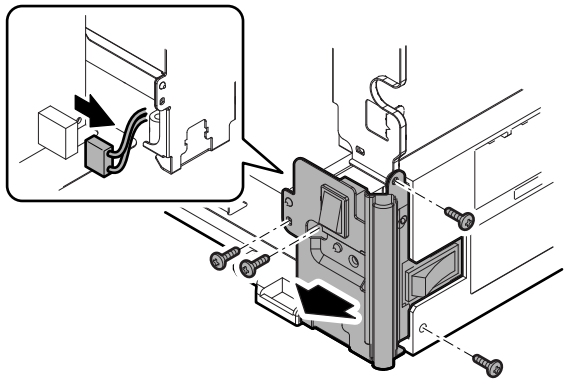
B. Right door open/close switch

1) Remove the screw, and remove the right door open/close switch, and disconnect the connector.



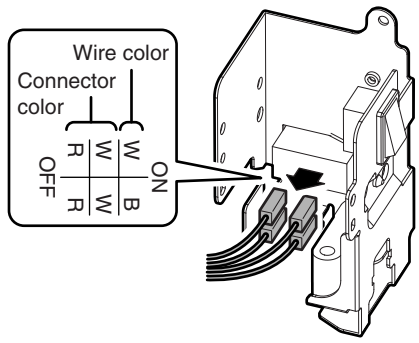
C. Power switch unit

1) Disconnect the connector from the ACDC PWB. Remove the screw, and remove the power switch unit.



2) Disconnect the connector from the main switch.

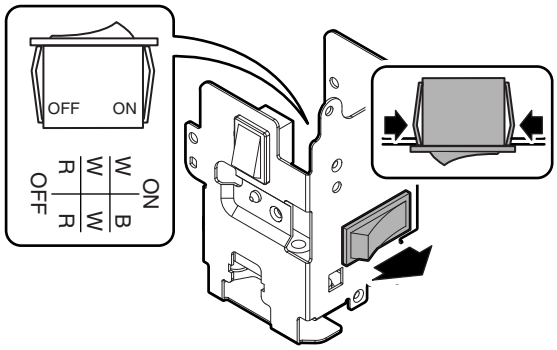
NOTE: When connecting the connector, be sure to fit with the engraved mark inside the mounting plate.



(1) Main switch

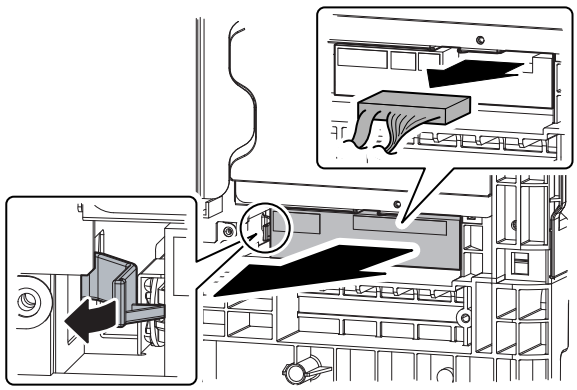
1) Disengage the pawl and remove the main switch.

NOTE: When installing the main switch, match the “ON” and “OFF” marks on the main switch with the “ON” and “OFF” marks inside the mounting plate, and be careful of the installing direction.



D. HDD

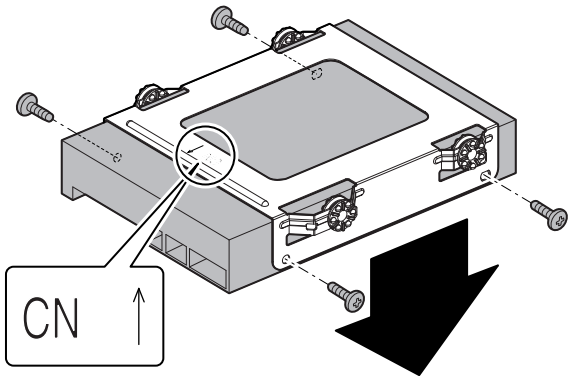
1) Disconnect the connector. While disengaging the pawl, remove the HDD unit.



2) Remove the screw, and remove the HDD.

NOTE: When installing, match the connector side of the HDD with the mark of “CN ↑” on the fixing plate.

NOTE: Be careful not to drop the HDD, and use care and handle gently.

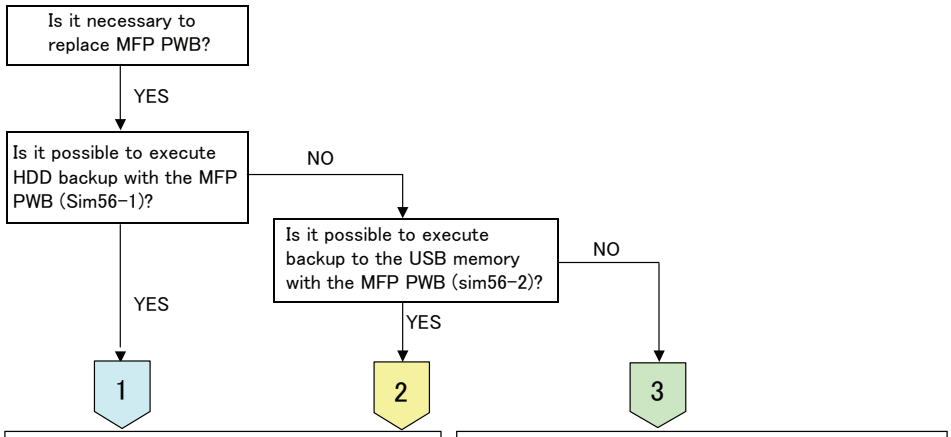


[11] VARIOUS STORAGE DATA HANDLING

1. Necessary works when replacing the PWB and the HDD

A. MFP substrate replacement necessary process (work flow)

(Note) Registered user information will not be recovered if the MFP PWB is affected by U2-05 trouble. (*1)



1

(Note) Never execute Sim16 even if "U2-05" trouble is indicated after turning on the power.
The registered user information will be deleted.

1. Execute Sim56-01 (data transmission) before replacing the MFP PWB, execute "ALL→HDD," and transfer the SRAM data and the EEPROM data to HDD.
2. Attach the flash ROM, the memory, the EEPROM etc. of the MFP PWB on the service parts MFP PWB and install it to the mainunit.
   Note: Ground your body with grounding band during the work.
3. Execute "HDD→ALL" by Sim56-01 (data transmission) to return the data of SRAM and EEPROM in the HDD to the new MFP PWB.

* Please be aware that if "ALL→HDD" is not executed by Sim56-01 (data transmission), blank data will be exported to the EEPROM when "HDD→ALL" is executed.

2

(Note) Never execute Sim16 even if "U2-05" trouble is indicated after turning on the power.
The registered user information will be deleted.

1. Execute "EEPROM&SRAM EXPORT" by Sim56-02 (memory HDD data backup) before replacing the MFP PWB to transfer the data of SRAM and EEPROM to USB memory.
2. Attach the flash ROM, the memory, the EEPROM etc. of the MFP PWB on the service parts MFP PWB and install it to the mainunit.
   Note: Ground your body with grounding band during the work.
3. Execute "EEPROM&SRAM IMPORT" by Sim56-02 (memory HDD data backup) to return the data of SRAM and EEPROM in the USB memory to the new MFP PWB.

3

1. Attach the flash ROM, the memory, the EEPROM etc. of the MFP PWB on the service parts MFP PWB and install it to the mainunit.
   Note: Ground your body with grounding band during the work.
2. Turn on the power, execute Sim16 to clear U2-05 trouble.
3. Set as follows after restarting the main unit.
   (1) Set the appropriate country code by Sim66-02 (clear the software switches related to FAX).
   (Note) Make sure to execute even if the fax option is not installed on the machine.
   (2) Use SIM67-70 to clear the contents of the MFP PWB SDRAM.
   (3) Select "Printer environment setting" at System setting, select "Printer initial setting," open " Standard paper feed paper size"screen, and set A4 size if you use an AB-type machine and letter size if you use an inch-type machine.

(*1) If you have backed up the data by storage backup (WEB) or device cloning (WEB for service) during normal use before the failure of MFP PWB, it is possible to return to the state when the data was backed up even if Sim16 is executed.

B. Works and procedures necessary for HDD replacement

Note for HDD replacement

- Data of the following list are saved in the HDD of the complex machine. If the HDD operates normally and data backup is possible before replacement, perform data backup and then replace the HDD.
- If the HDD does not operate normally, data cannot be backed up.
- The HDD replacement procedures with a broken HDD differs from that with a normal HDD.

Contents of this chapter

- HDD storage data and backup
- Replacement procedures when HDD storage data can be backed up
- Replacement procedures when HDD storage data cannot be backed up due to breakdown of HDD
- HDD replacement and firmware installation (version up)
- Reinstall and update procedures of Operation Manual data saved in HDD

(1) HDD storage data and backup

Some HDD storage data can be backed up, and some other cannot. Some HDD storage data can be reinstalled, and some other 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	Not available	Available	Enable	Sim56-2 / Device cloning / Storage backup	Enable	Sim56-2 / Device cloning / Storage backup	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	Input profile (Printer) (Registration from user WEB page)	Not available	Available	Enable	Perform with WEB PAGE.	Enable	Perform with WEB PAGE.	Service or User
11	Output profile (Printer) (Registration from Service WEB page)	Not available	Available	Disable	Not available	Enable	Perform with WEB PAGE.	Service
12	User font (Added)	Not available	Available	Disable	Not available	Enable	Perform with WEB PAGE.	Service or User
13	User macro	Not available	Available	Disable	Not available	Enable	Perform with WEB PAGE.	
14	Document filing	Not available	Available	Enable	Perform with WEB PAGE.	Enable	Perform with WEB PAGE.	
15	Main program	Available	Available	Disable	Not available	Enable	Emergency update procedures of the firmware	Service
16	Some of system setting data	Not available	Available	Enable	Sim56-2 / Device cloning / Storage backup	Enable	Sim56-2 / Device cloning / Storage backup	Service

*1: The e-Manual cannot be backed up, but can be reinstalled by using SIM49-3 and USB memory.

(2) Replacement procedures when HDD data can be backed up

a. Work contents and procedures

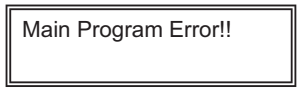
Procedures	When a new HDD (blank HDD, service part) is used, or when a HDD which is normal but a program error occurs in it is used.	When a used HDD (used in the same model) is used *
Step 1	Back up the HDD storage data before replacement. (Servicing) Use SIM56-2 or the device cloning, or the storage 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, Input profile)	
Step 3	Replace the HDD.	
Step 4	Reinstall the firmware (program) in the boot mode.	Use SIM49-1 to reinstall the firmware (program).
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	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 11	Import the data backed up with the Web page function in Step 2. Import enable data: Document filing data, Input profile, Output profile, 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

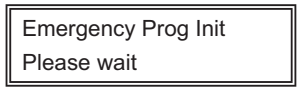
a. Display when HDD breakdown

When the machine is booted with the HDD broken down, the following operation and the display are made.

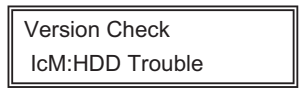
1) When the power is turned ON, the main program error is displayed.



2) The above error message is displayed for 10 sec. Then the following message is displayed.



3) Then the following message is displayed to indicate that a HDD trouble occurred.



When the above messages are displayed, the HDD is broken down. Turn OFF the main power and replace the HDD with a new one.

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	Reinstall the firmware (program) in the boot mode.	Use SIM49-1 to reinstall the firmware (program).
Step 2	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 3		The trouble code, U2-05, is displayed. → Cancel with SIM16.
Step 4	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 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.	

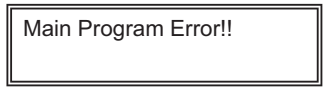
With the above procedures, the HDD is reset to the state of factory shipping.

(4) HDD replacement and firmware installation (version up)

a. Operations and displays after HDD replacement

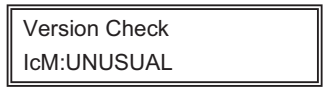
When a new HDD without the main program in it or a normal HDD with abnormal main program data in it is installed to the machine and the main power is turned ON, the following operations and displays are made.

1) When the power is turned ON, the main program error is displayed.



2) The above error message is displayed for 10 sec. Then the following message is displayed.

3) The machine enters the boot mode which indicates that there is an error in the main program.



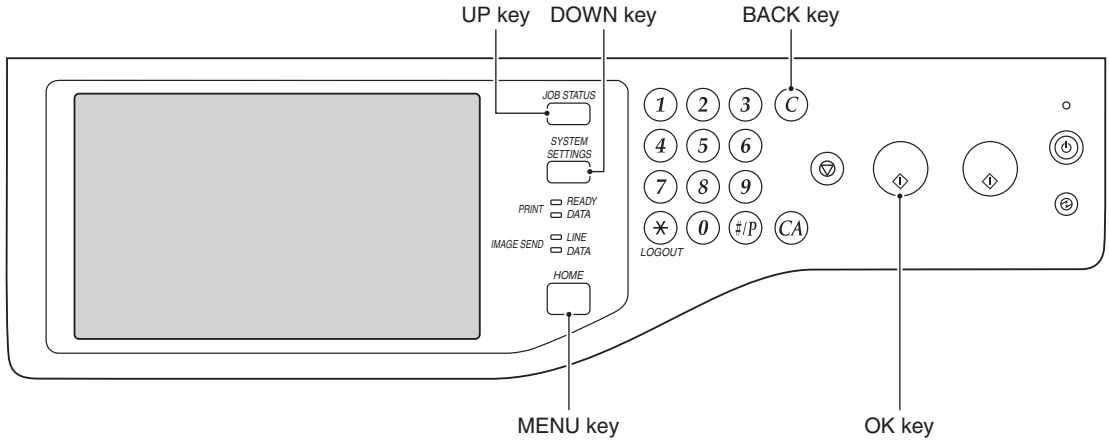
b. Operations in the boot mode

When the machine is booted in the boot mode, the firmware version check, the firmware install, and the version-up operation can be performed.

When a HDD is installed to the machine and the above operation is performed, the firmware must be installed.

* In the boot mode, the following keys are used for operation. Note that the functions of the keys in the boot mode differ from those in the normal mode.

b-1. Key functions



Key name in the normal mode	Key name in the boot mode	Function
Start key (Monochrome)	[OK] key	Performs the selected item or function.
Home key	[MENU] key	Selects a menu.
Clear key	[BACK] key	Selects a menu. (Serves as a cancel key in the execution check screen.)
Job status key	[UP] key	Selects an item.
System setting key	[DOWN] key	Selects an item.

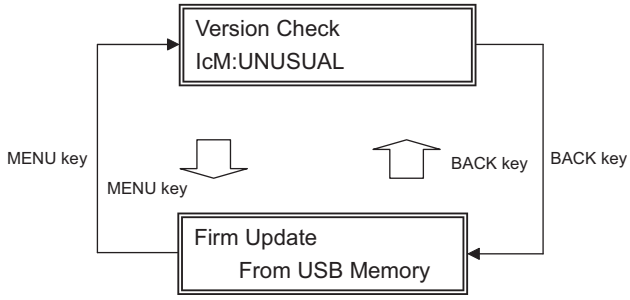
b-2. Functions in the boot mode

The following two functions are available in the boot mode.

Function	Content
Firmware version check function	Displays the firmware version of the ICU PWB, the SCU PWB, the PCU PWB, and the FAC PWB.
Firmware install (update) function	Installs (revises) the firmware by transmitting data from the PC which is connected to the ICU PWB, the SCU PWB, the PCU PWB, the FAX PWB, and other options with the USB memory or the USB cable.

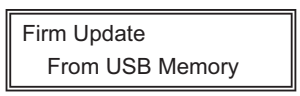
b-3. Selection of functions in the boot mode

There are two functions available in the boot mode. These modes can be selected by pressing MENU key and BACK key.

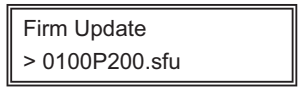


c. Firmware install and version-up procedures in the boot mode

1) Boot the machine in the boot mode. When the Version Check display is indicated, press [MENU] key, and the machine enters the Firm Update mode.



2) Insert the USB memory which includes the update firmware file (SFU file) into the USB port of the machine, and press [OK] key.



SFU file display

3) Select the firmware file (SFU file) of the target.

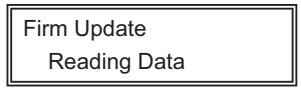
   Use [UP] key and [DOWN] key to select the target file.

   When [OK] key is pressed with the directory name displayed, the control can enter the lower level directory. (However, one-step lower level)

   When [BACK] key is pressed in the lower level directory, the control can return to the upper level directory.

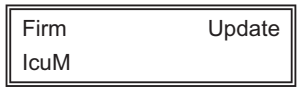
4) Press [OK] key.

   The selected firmware file (SFU) is read. (It takes about 1 minute.)



Display of reading file data

5) After completion of reading, the firmware is installed (updated). (It takes about 5 - 6 minutes.)



Display of firmware install (Update) process

* The abbreviated name of the firmware which is currently installed (updated) is displayed sequentially.
* The screen may flash instantaneously during the install (update) process. This is a normal operation.

6) Check the result of install (update) of the firmware.

Use [UP] key and [DOWN] key to check the results of install (update) of all the firmware programs.

Display of firmware update results

OK: Update success

NG: Update failed

Not Update: The update process is not executed.

Cause of Update process not executed:

The option unit for the target firmware is not connected.

7) Turn OFF the power to terminate the boot mode.

(5) Reinstall and update procedures of the HDD storage Operation Manual data

1) Obtain the Operation Manual data.

Download the Operation Manual data from the utility menu on the web site (Tech-DS home page).

Copy the downloaded files to the USB device without changing the file hierarchy.

(To upload to the complex machine, files of "**_pdf_fax.idx" and "**_pdf.idx" and "version.txt" as well as the Operation Manual data (**.pdf) are required. When the downloaded files are copied without changing the file hierarchy, these files also are copied.)

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 SIM49-3 mode.

3) Insert the USB memory into the machine.

- When the USB memory is not inserted, "INSERT A STORANGE-MANUAL STORED ON" is displayed. When [OK] button is pressed, the screen shifts to the folder select menu 1.

4) Select the folder of the Operation Manual data. (The screen shifts to the Operation Manual data install menu.)

The current version and the update version are displayed.

5) Press [EXECUTE] button.

[EXECUTE] button is highlighted, and [YES] and [NO] buttons are changed from gray-out to active display.

6) When [YES] button is pressed, the selected Operation Manual is installed.

When install is completed, "COMPLETE" is displayed. In case of an abnormality, "ERROR" is displayed.

[12] SERVICE WEB PAGE

1. General

The following functions are available on the Hidden Web Page exclusively used for the service technician.

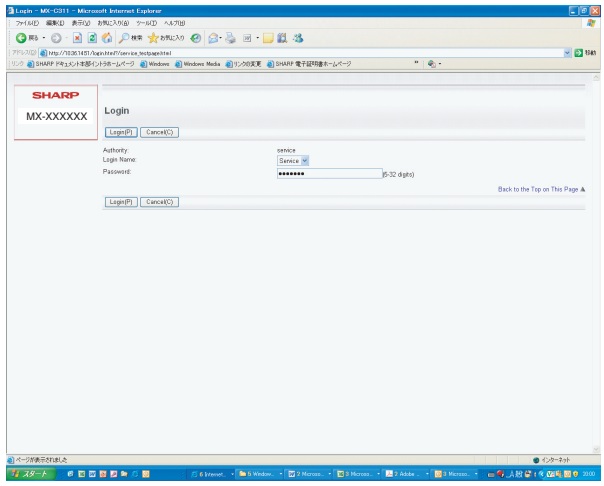
Menu/Item		Function and content
Password Setting		Used to set the password to enter the Hidden Web Page exclusively used for the serviceman.
Output of Test Page		Used to print out the test page (system setting contents).
Font/Form Download		Used to download Font/Form. Font/Form of PCL and PostScript, macro, and other resources are downloaded to the HDD and controlled. (PS, PCL5 only)
Output Profile Settings		Used to add or delete the output profile, and set the default.
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

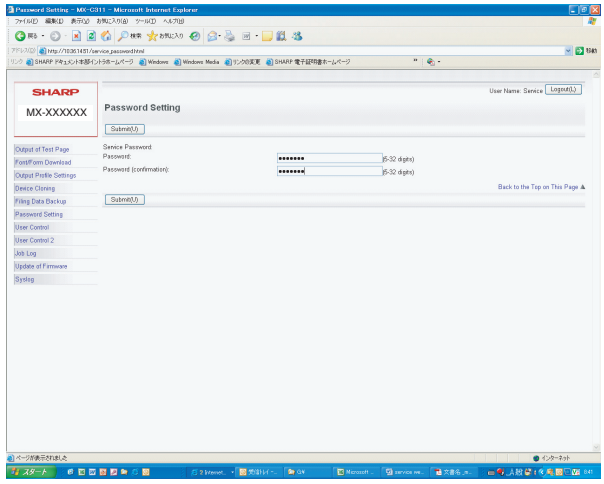
A. Procedures to enter the Hidden Web page exclusively used for the serviceman

1) Boot a browser program.
2) Enter "http://xxx.xxx.xxx.xxx/login.html?/service_testpage.html" on the address column of the browser, and press ENTER key.
"xxx.xxx.xxx.xxx" is the IP address of the machine.
3) Enter the password to log in.
Default Password: service



NOTE:
The password can be optionally changed in the Password Setting menu.
If the password is changed and forgotten, use SIM24-31 to reset the password to the default.

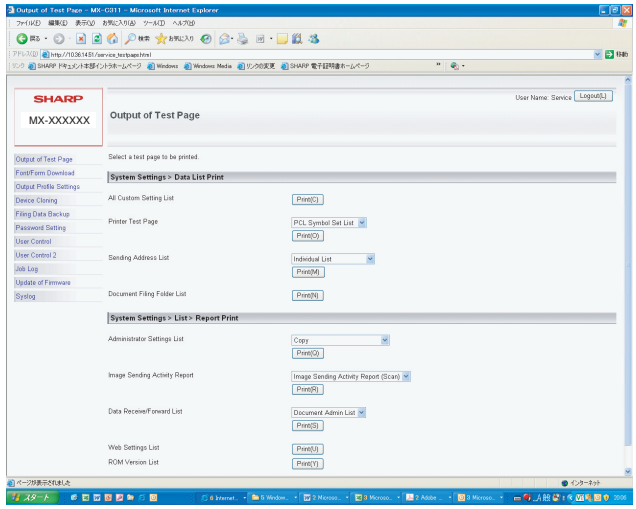
B. Password Setting



* The password can be optionally changed in the following procedures.

1) Enter a new password.
2) Enter the new password again to make confirmation.
3) Click "Submit" (registration) button.

C. Output of Test Page

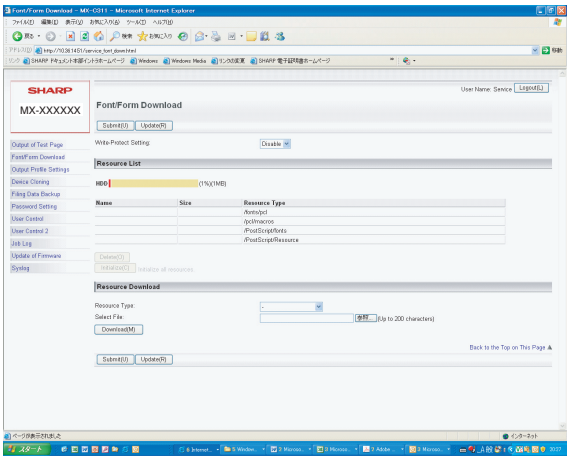


1) Click "Print" button of an item or report to be printed.

When there is a list of items for selection, select one of the items in the pull-down menu list, and click "Print" button.

The list is printed out.

D. Font/Form Download



(1) Download of Font, Form, and Macro

1) Select "Resource Type" from the pull-down menu list.

(Example: PCL/PostScript Font/Form or Macro)

2) Click "Refer" button to select a target file.
3) Click "Download" button.
4) Click "Submit" (registration) button.

The file is downloaded to the HDD.

The list of the downloaded files and the use percentage of the HDD are displayed.

(2) Delete of downloaded font (Procedures to delete a file separately)

1) Select a file to be deleted from the list of the downloaded files, and click "Delete" button.
2) Check that the confirmation message is displayed, and press Yes key.
3) Click "Submit" (registration) button.

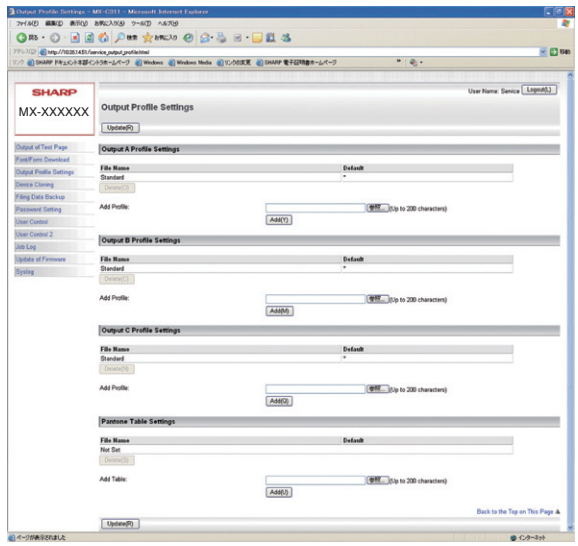
The file in the HDD is deleted.

(3) Procedures to delete all the files at a time

1) Click "Initialize" button.
2) Check that the confirmation message is displayed, and press Yes key.
3) Click "Submit" (registration) button.

NOTE: By the Write-Protect Setting function, the downloaded files can be set to write protect.

E. Output Profile Settings



(1) Download procedures of custom output profile

1) Click "Refer" button to select the output profile.
2) Click "Add" button to add the output profile.
3) Click "Add" button to add the output profile.

The added profile is displayed on the list. For the output A profile and the output B profile, the newly added profile becomes valid.

When no profile is added, the default output profile in the firmware of the machine set when shipping from the factory is valid.

For the output C profile, the custom profile is valid.

Output A profile / Output B profile: Commonly used.

Output C profile: PS mode, for CMYK simulation (Custom)

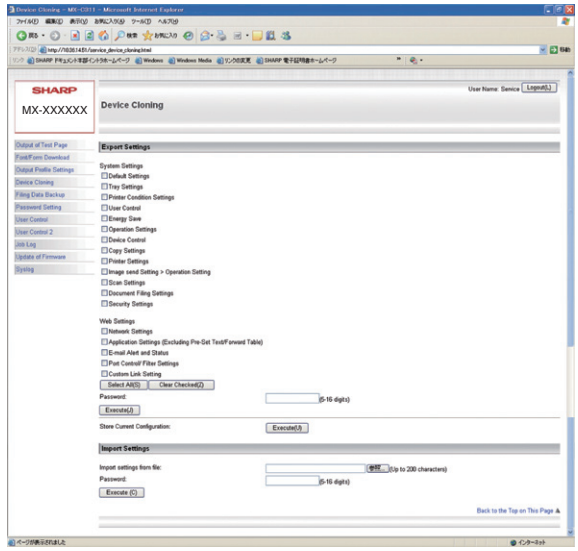
Pantone Table: For PS mode

(2) Procedures to delete the custom output profile and return to the default output profile

1) Clock "Delete" button of the output profile to be deleted.
2) Click "Update" button.

The custom output profile is deleted and the default output profile in the firmware of the machine becomes valid.

F. Device Cloning



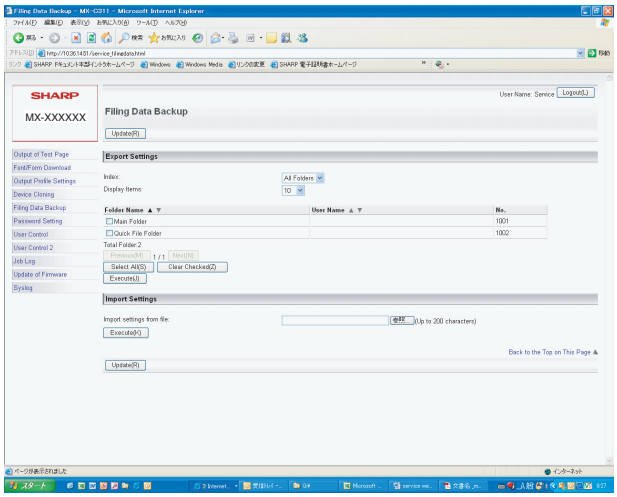
(1) Export

1) Select an item to be backed up.
2) Click "Execute" button to execute backup.
   (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.

G. Filing Data Backup



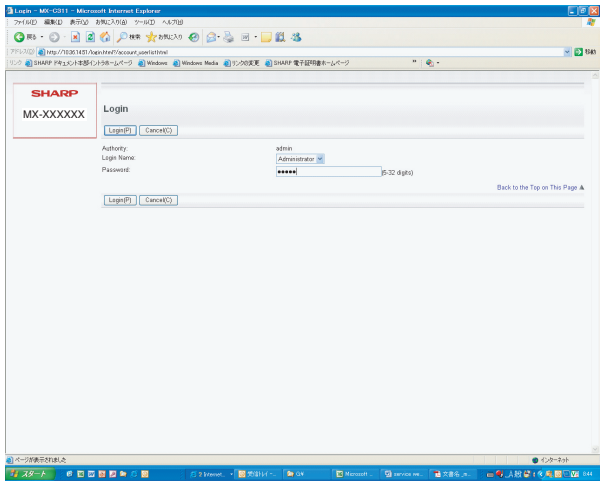
(1) Export

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

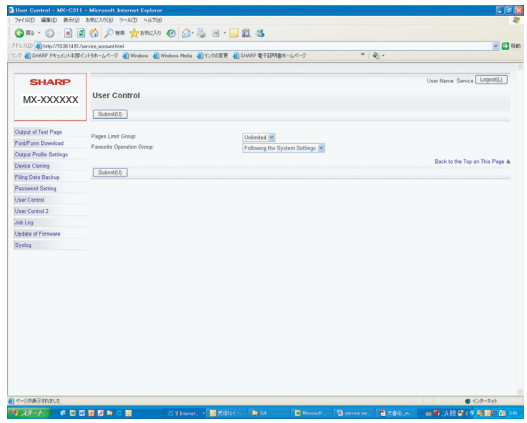
1) Click "Refer" button to select a target file. (File name: *****.bin)
2) Click "Execute" button.
   The target file is imported.
3) Click "Update" button.

H. User Control



1) Enter the password to log in.
   Default Password: admin
   The screen is shifted to the setting menu of user management.

I. User Control 2



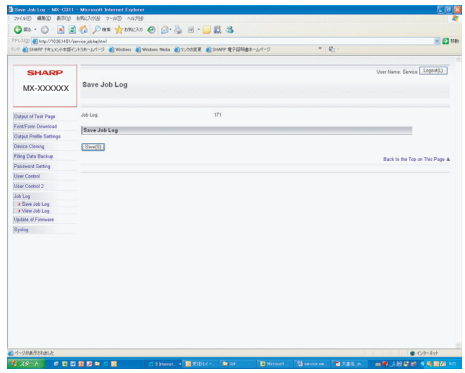
Select the Pages Limit Group and the Favorite Operation Group. (The Pages Limit Group and the Favorite Operation Group must be set in advance.)

(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.

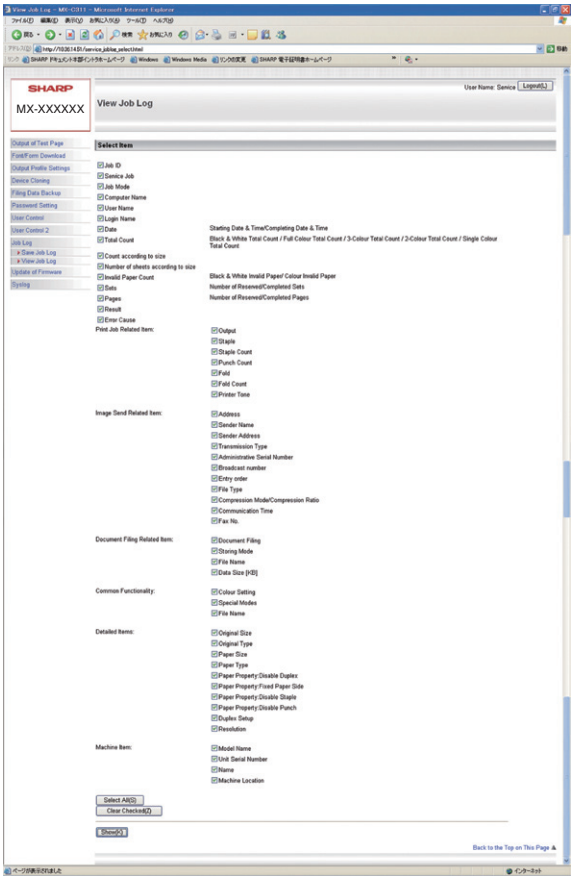
J. Job Log

(1) Save Job Log



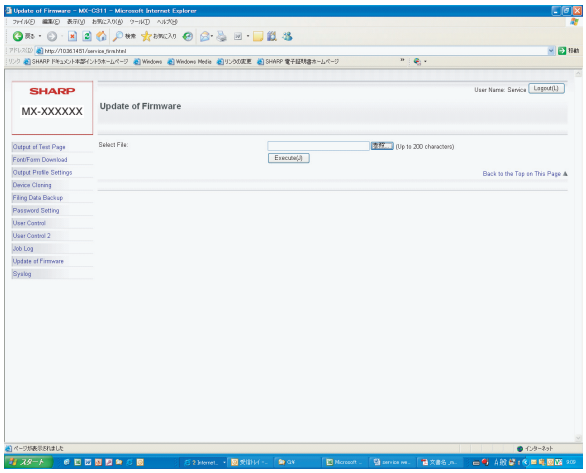
1) Click "Save" button, and specify the save position of the Job Log to save it.

(2) View Job Log



1) Select a Jog Log item to be displayed.
2) Click "Show" (display) button.
   The Jog Log is displayed.

K. Update of Firmware



1) Click "Refer" button to select a firmware file.
2) After selecting a firmware file, click "Submit" (registration) 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.

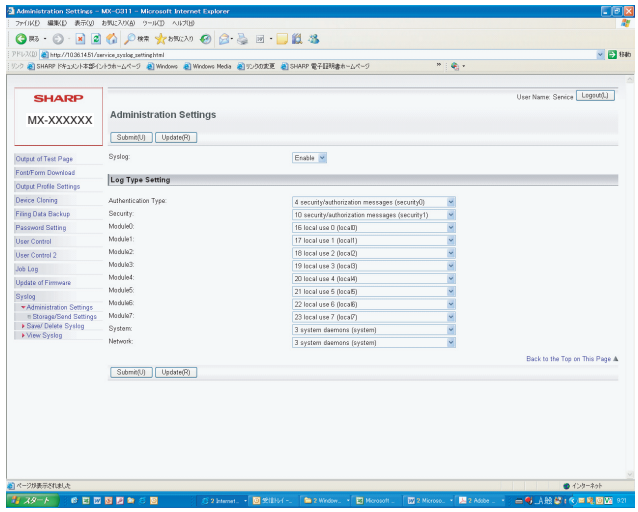
L. Syslog

There are following functions in the Syslog mode.

This function is provided to acquire the detailed Syslog to troubleshoot when a trouble occurs.

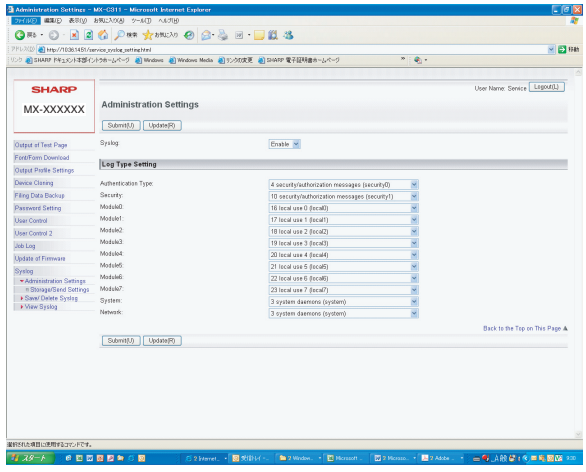
When submission of the log data file is requested for troubleshooting, use the log file save mode to export the log data file to the client PC.

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

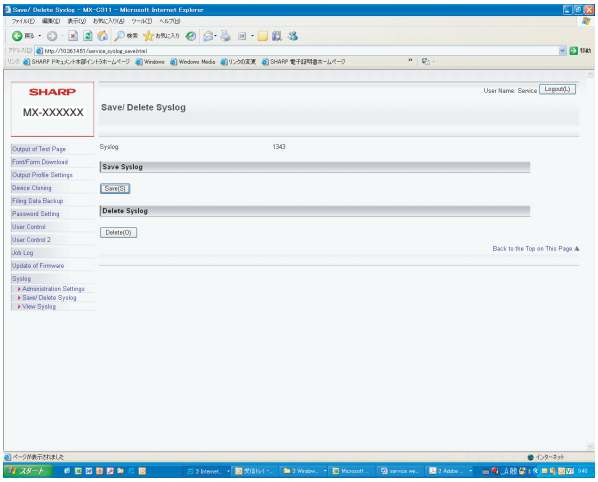
Set to the default.



(2) Storage/Send Settings

Keep all the items selected.

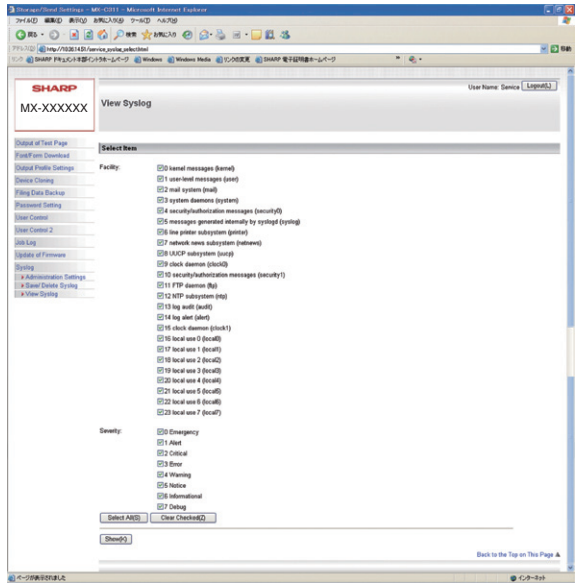
(3) Save/ Delete Syslog



When saving the Syslog, click "Save" button and specify the save position and save it.

When deleting, click "Delete" button.

(4) View Syslog



1) Select a Syslog item to be displayed.
2) Click "Show" button.
   The Syslog is displayed.

[13] SPECIFICATIONS

1. Basic specifications

A. Base engine

(1) Type

	MX-C402SC/C382SC	MX-B402SC/B382SC
Type	Desktop	
Color support	Full color	Monochrome

(2) Engine composition

Photo-conductor type	• MX-C402SC/C382SC: OPC (Drum diameter: ϕ30mm) Black x 1, Color x 3 • MX-B402SC/B382SC: OPC (Drum diameter: ϕ30mm)
Copying method	Electronic photo (Laser)
Developing system	Dry, 2-component magnetic brush development
Charging system	Corona discharge system
Primary transfer system	Intermediate transfer system
Secondary transfer system	Transfer roller system
Cleaning system	Counter blade
Fusing system	Heat roller
Waste toner disposal	No toner recycling system / Waste toner bottle system
Toner supply during operation	Disable

(3) Dimensions / Weight

Outer dimensions		560 x 494 x 789mm
Dimensions occupied by Machine (State of the manual paper feed tray is expansion.)		1101 x 494mm
Weight	Machine weight (with OPC drum) (Without Consumable parts)	Approx. 53kg (MX-C402SC/C382SC) Approx. 47kg (MX-B402SC/B382SC)
	Consumable parts (with developer cartridge, toner cartridge)	Approx. 58kg (MX-C402SC/C382SC) Approx. 49kg (MX-B402SC/B382SC)

(4) Warmup

Warm-up time	MX-C402SC/C382SC: 90 sec or less MX-B402SC/B382SC: 45 sec or less
Pre-heat	Yes
recovery time from jam *	45 sec. or less

* Condition: After the door is kept open for 60 seconds, the standard conditions, the polygon motor halt.

  The warm-up time must be measured under the stable power voltage.

(5) First copy time

	MX-C402SC/C382SC		MX-B402SC/B382SC
	Color	Monochrome	
Platen	8.5 sec	6.5 sec	6.5 sec
DSPF	9.5 sec	8.0 sec	8.0 sec

* Measurement conditions

  A4R/8.5" x 11"R Vertical. Differs depending on the machine state.

(6) Engine resolution

	MX-C402SC/C382SC	MX-B402SC/B382SC
Writing resolution	Writing: Copy: 600 x 600 dpi Print: 600 x 600 dpi, 1200 x 1200 dpi	
Smoothing	No	
Gradation (Monochrome/ Color)	Writing: Copy: 600 x 600 dpi (4bit) Print : 600 x 600 (4bit) 600 x 600 (1bit) 1200 x 1200 (1bit)	Writing: Copy : 600 x 600 dpi (4bit) Print*1: 600 x 600 (4bit) 600 x 600 (1bit) 1200 x 1200 (1bit) * Equivalent to 256 gradation

*1: In direct print (including OSA print), TIFF/JPEG/ (low-compression Sharp Scan) PDF are not printed in 600 x 600 dpi (4bit).

(7) Printable area

A4	206 x 290mm	8.5" x 13.4"	212 x 333mm
B5	178 x 250mm	8.5" x 13"	212 x 323mm
A5	144 x 203mm	Executive	180 x 260mm
8.5" x 14"	212 x 349mm	8.5" x 11"	212 x 272mm
8.5" x 13.5"	212 x 336mm	5.5" x 8.5"	136 x 209mm

Void area Image loss	Lead edge 3 ± 1mm 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

* No image loss in the mode of Card/Check/Visiting card.

(8) Engine speed (ppm)

a. Tray 1 - 4 (Tray 2 - 4: Option)

Paper size	Color	Monochrome
8.5" x 14", 8.5" x 13", 8.5" x 13.4", 8.5" x 13.5"	32	32
A4R	38	38
8.5" x 11"R, B5R, 7.25" x 10.5"R, 16KR	40	40
A5R, 5.5" x 8.5"R	40	40
Extra	28	28

b. Manual paper feed tray

Paper size	Color	Monochrome
8.5" x 14", 8.5" x 13", 8.5" x 13.4", 8.5" x 13.5"	26	28
A4R	30	33
A5R, 5.5" x 8.5"R	37	40
8.5" x 11"R, B5R, 7.25" x 10.5"R, 16KR	31	35
Extra	26	28
OHP (A4R, 8.5" x 11"R)	15	16
Envelope (Monarch, Com-10, DL, C5)	12	12
Heavy paper (A4R, A5R, 8.5" x 11"R, 8.5" x 5.5"R, 16KR)	15	16
Heavy paper (Postcard HIGH)*1	16	16
Heavy paper (Postcard LOW)*1	13	13
Heavy paper (Other sizes than above)	13	13

*1: Switched by the service simulation setting.

(9) Power source

	100V series	200V series
Voltage	100-127V 12A	220 - 240V 8A
Frequency	50/60Hz	50/60Hz
Power source code	Fixed type (Direct connection)	Inlet
Power switch	2 positions (Primary side switch: Left side of the machine, Secondary side switch: Operation panel)	

(10) Power consumption

	100V series	200V series
Max. Rated Power Consumption *1	1.44kW	1.84kW

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

B. Controller, Interface

(1) Controller board

CPU	Power QUICCIII-MPC8533E (MX-C402SC/C382SC: 1GHz, MX-B402SC/B382SC: 800MHz)	
Interface		
Ethernet	1 port	
	Interface	10Base-T , 100Base-TX, 1000Base-T
	Support Protocol	TCP/IP (IPv4, IPv6), IPX/SPX , NetBEUI , EtherTalk
USB 2.0 (High speed) (Host)	2 port	
USB 2.0 (High speed) (Device)	1 port	
Serial I/F	1 port	
Memory slot	MX-C402SC/C382SC: System 2 slots (Empty 1) Local 2 slots (Empty 1) Codec memory 1 slot MX-B402SC/B382SC: System 2 slots (Empty 1) Local 1 slot (No empty)	

(2) Memory capacity, HDD capacity

Model	Copier memory (Local memory)			Printer memory (System memory)			Codec memory			HDD
	Standard	Expansion	Max.	Standard	Expansion	Max.	Standard	Expansion	Max.	
MX-C402SC/C382SC	512MB	—	512MB	1GB	1GB	2GB	256MB	—	256MB	80GB*1
MX-B402SC/B382SC				512MB		1.5GB	—		—	

*1: The HDD capacity may vary depending on the production date.

C. Operation panel

(1) Display device (Color LCD)

Size	MX-C402SC/C382SC: 8.5 inch MX-B402SC/B382SC: 7.0 inch
Type	Dot matrix LCD, touch panel
Display dot number	800 x 480 dots (W-VGA)
LCD drive display area (W x D)	MX-C402SC/C382SC: 184.8 x 110.88mm MX-B402SC/B382SC: 152.4 x 91.44mm
LCD back-light	MX-C402SC/C382SC: Fluorescent lamp back-light system MX-B402SC/B382SC: LED back-light
Brightness adjustment	Yes
Angle/Position adjustment	Disable

D. Scanner section

(1) Resolution/Gradation

Copy Scanning Resolution (dpi)		Monochrome	Color	
	Platen	600 x 600 dpi (Default) 600 x 300 dpi	600 x 600 dpi (Default) 600 x 300 dpi	
	DSPF	600 x 600 dpi 600 x 300 dpi (Default)	600 x 600 dpi 600 x 300 dpi (Default)	
In sending Resolution (dpi)	Scanner	Internet Fax	FAX	
	100 x 100 dpi	200 x 100 dpi (middle tone not allowed)	Standard (203.2 x 97.8dpi) (middle tone not allowed)	
	200 x 200 dpi	200 x 200 dpi	Fine (203.2 x 195.6 dpi)	
	300 x 300 dpi	200 x 400 dpi	Super Fine (203.2 x 391 dpi)	
	400 x 400 dpi	400 x 400 dpi	Ultra Fine (406.4 x 391 dpi)	
	600 x 600 dpi	600 x 600 dpi	---	

Exposure lamp	White LED
Reading gradation	10 bits * Change in setting is valid only when in normal copy. (MX-C402SC/C382SC)
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	216 x 297mm
Original standard position	Left side center reference
Detection	No
Dehumidifying heater (Scanner section)	No

E. Paper feed, transport, paper exit section

(1) Paper feed section

Type	Standard: 1-stage paper feed tray + Multi manual feed Max.: 4-stage paper feed tray + Multi manual feed
Dehumidifying heater	Service parts (Supported by kit)

(2) Paper feed tray section (main unit), manual paper feed tray

Tray	Tray 1	Manual paper feed tray
Paper capacity Standard paper (80g/m^2)	500 sheets	100 sheets
Paper size	Refer to the table of paper feed/exit limitations.	
Paper size detection	Refer to the table of paper feed/exit limitations.	

Tray	Tray 1	Manual paper feed tray
Paper type setting	YES (Refer to the table of paper feed/exit limitations.)	
Paper size change method	Changed by the user	
Paper size setting when factory shipping	NO because of auto detection	
Paper remaining quantity detection	3 steps (100%, 67%, 33%, none)	Paper empty detection only
Tray hold section forward/backward support	No	---

(3) Manual paper feed tray special paper capacity

	Manual paper feed tray
Paper type	**Capacity**
Envelope	20 sheets
OHP	20 sheets
Heavy paper	40 sheets
Other special paper	1 sheet

(4) Duplex

System	Non-stack system
Feedable paper size / weighing capacity	Refer to the table of paper feed/exit limitations.
Logo paper support	YES

(5) Paper exit section

Paper exit section	Center section of the main unit
Paper exit system	Face-down paper exit system
Paper exit capacity	250 sheets (When A4R, 8.5x11R, color recommended paper is used)
Paper exit paper size/weight	Refer to the table of paper feed/ exit limitations.
Shifter function	NO
Discharged paper detection	NO
Paper exit full detection	YES

(6) Table of paper feed/exit limitations

			Paper feed section						Paper exit section	
			Tray 1			Manual feed tray			Paper exit tray	
			Auto detection AB series	Auto detection inch series	Manual setting	Auto detection AB series	Auto detection inch series	Manual setting	Normal paper exit	Duplex
Size setting			User setting			User setting				
Paper size	8.5" x 14" (Legal)	216 x 356	No	Yes	No	No	8.5" x 14' 8.5" x 13.4' One of the above can be selected. Default: 8.5" x 14"	No	Yes	Yes
	8.5" x 13.4" (Mexican Legal)	216 x 340	No	No	Yes	8.5" x 13.4" 8.5" x 13.5" 8.5" x 13" One of the above can be selected. Default: 8.5"x13"		No	Yes	Yes
	8.5" x 13.5" (Asian Legal)	216 x 343	No	No	Yes		No	No	Yes	Yes
	8.5" x 13" (Foolscap)	216 x 330	Yes	No	No		No	No	Yes	Yes
	8.5" x 11"R (Letter R)	216 x 279	No	Yes	No	No	Yes	No	Yes	Yes
	5.5" x 8.5"R (Invoice R)	140 x 216	No	Yes	No	No	Yes	No	Yes	Yes
	7.25" x 10.5" (Executive R)	184 x 266	No	Yes	No	No	Yes	No	Yes	No
	A4-R	210 x 297	Yes	No	No	Yes	No	No	Yes	Yes
	B5-R	182 x 257	Yes	No	No	Yes	No	No	Yes	Yes
	A5-R	148 x 210	Yes	No	No	Yes	No	No	Yes	Yes
	16K-R	195 x 270	No	No	Yes	No	No	Yes	Yes	Yes
	Postcard	100 x 148	No	No	No	No	No	No	Yes	No
	Monarch	98 x 191	No	No	No	No	No	Yes	Yes	No
	COM10	105 x 241	No	No	No	No	No	Yes	Yes	No
	DL	110 x 220	No	No	No	No	No	Yes	Yes	No
	C5-R	162 x 229	No	No	No	No	No	Yes	Yes	No
	Long format No. 3	120 x 235	No	No	No	No	No	No	Yes	No
	Western format No. 2	114 x 162	No	No	No	No	No	No	Yes	No
	Western format No. 4	105 x 235	No	No	No	No	No	No	Yes	No
Indeterminate form setting			No	No	No	Yes	Yes	Yes	Yes	No
Custom size setting			No	No	Yes *1	No	No	Yes	Yes	No
Custom range	Main scan (Inch in the parentheses)	min	No	No	132	No	No	100 (5-1/2)	98	No
		max	No	No	216	No	No	216 (8-1/2)	216	-
	Sub scan (Inch in the parentheses)	min	No	No	210	No	No	148 (5-1/2)	148	-
		max	No	No	356	No	No	356 (14)	356	-

			Paper feed section						Paper exit section	
			Tray 1			Manual feed tray			Paper exit tray	
			Auto detection AB series	Auto detection inch series	Manual setting	Auto detection AB series	Auto detection inch series	Manual setting	Normal paper exit	Duplex
Size setting			User setting			User setting				
Paper type	Thin paper 55-59g/m^2		No			Yes			Yes	No
	Plain paper 60-79g/m^2		Yes			Yes			Yes	Yes
	Plain paper 80-105g/m^2		Yes			Yes			Yes	Yes
	Heavy paper 106-209g/m^2		No			Yes			Yes	No
	Recycled paper		Yes			Yes			Yes	Yes
	Letterhead		Yes			Yes			Yes	Yes
	Punched paper		Yes			Yes			Yes	Yes
	Color paper		Yes			Yes			Yes	Yes
	Printed paper		Yes			Yes			Yes	Yes
	Envelope monarch	99 x 191	No			Yes			Yes	No
	Envelope Com-10	105 x 241	No			Yes			Yes	No
	Envelope DL	110 x 220	No			Yes			Yes	No
	Envelope C5	162 x 229	No			Yes			Yes	No
	Envelope Long format No. 3	120 x 255	No			Yes			Yes	No
	Envelope Western format No. 2	114 x 162	No			Yes			Yes	No
	Envelope Western format No. 4	105 x 235	No			Yes			Yes	No
	Label sheet		No			Yes			Yes	No
	OHP		No			Yes			Yes	No
	Glossy paper		No			Yes			Yes	No
	User type 1-7		Yes			Yes			Yes	Yes *2

*1: Switch ON/OFF with SIM. Default is OFF. For tray 2, R/C support.

*2: Follows the paper type registration setting.

* For the option paper feed tray, refer to the separate Service Manual (MX-CSX1/CSX2).

(7) Inhibited paper

- Special paper for ink-jet printers (Fine paper/Glossy paper/ Glossy film/Postcard, etc.)
- Carbon paper/Heat sensitive paper
- Irregular form paper
- Paper with glue, staplers, or clips
- Wet paper
- Folded paper, curled paper, broken paper
- Paper wrinkled with humidity
- OHP for oil feed (Example: S4BG746)
- Inhibited OHP SF4A6CS, SF4A6FS
- Thin paper less than 55g/m^2 (15lbs bond) and heavy paper of 209g/m^2 (56lbs bond) or above (Thin paper of 55 - 59g/m^2 (15 - 16lbs bond) and heavy paper of 106 - 209g/m^2 (28 - 56lbs bond) are limited to manual paper feed.)
- Paper with printing on the reverse side with the other printer or the copier
- Pre-print paper printed with the other printer or the copier
- Tracing paper

(8) Paper which is not recommended

Heat transfer paper

Perforated paper

Return postcard with folding line

F. Duplex automatic document feed unit section

(1) Type

Type	DSPF
Document set direction	Face up (1 to N paper feed reference)
Document reference position	Center reference
Document transport system	Sheet through system

(2) Document transport speed

Scan speed	Monochrome (8.5x11R)	Color (8.5x11R)	Monochrome (A4R)	Color (A4R)
Copy	• Single: 50 sheet/min (600 x 300 dpi) 25 sheet/min (600 x 600 dpi) • Duplex: 50 page/min (600 x 300 dpi) 25 page/min (600 x 600 dpi)	**MX-C402SC/C382SC** • Single: 50 sheet/min (600 x 300 dpi) 25 sheet/min (600 x 600 dpi) • Duplex: 50 page/min (600 x 300 dpi) 25 page/min (600 x 600 dpi) **MX-B402SC/B382SC:** N/A	• Single: 50 sheet/min (600 x 300 dpi) 25 sheet/min (600 x 600 dpi) • Duplex: 50 page/min (600 x 300 dpi) 25 page/min (600 x 600 dpi)	**MX-C402SC/C382SC** • Single: 50 sheet/min (600 x 300 dpi) 25 sheet/min (600 x 600 dpi) • Duplex: 50 page/min (600 x 300 dpi) 25 page/min (600 x 600 dpi) **MX-B402SC/B382SC:** N/A
FAX/ Internet Fax	• Single: 50 sheet/min (200 x 200 dpi, 1bit) • Duplex: 50 page/min (200 x 200 dpi, 1bit)	N/A	• Single: 50 sheet/min (200 x 200 dpi, 1bit) • Duplex: 50 page/min (200 x 200 dpi, 1bit)	N/A
Scanner	• Single: 50 sheet/min (200 x 200 dpi, 1bit) • Duplex: 50 page/min (200 x 200 dpi, 1bit)	• Single: 50 sheet/min (200 x 200 dpi, 8bit) • Duplex: 50 page/min (200 x 200 dpi, 8bit)	• Single: 50 sheet/min (200 x 200 dpi, 1bit) • Duplex: 50 page/min (200 x 200 dpi, 1bit)	• Single: 50 sheet/min (200 x 200 dpi, 8bit) • Duplex: 50 page/min (200 x 200 dpi, 8bit)

(3) Specifications

Document size detection	Yes (Only width-direction detection to classify cards and plain paper.)
Paper feed direction	To the right
Finish stamp	No
Power source	Supplied from the machine
Dimensions	535 x 346 x 152mm
Weight	Approx. 6.5kg
Option detection	No

(4) Applicable documents

Document size	Document width: 51mm-216mm Long paper : 500mm (Monochrome binary only) Mix paper feed (Same series, same width paper: Combination between 8.5" x 11" and 8.5" x 14" only) enabled Random paper feed disable
Original copy weight	Single Thin paper: 35-49g/m^2, 9 - 13 lbs bond (Thin paper mode) Plain paper: 50-128g/m^2, 13 - 32 lbs bond Heavy paper: 129-280g/m^2, 34 - 74 lbs bond * Thin paper mode for thin paper (30 sheets/ minute A4R/8.5" x 11", 300dpi when R) Duplex Plain paper: 50-128g/m^2, 13-32 lbs bond Heavy paper: 129-280g/m^2, 34-74 lbs bond Special Plastic card of 0.84mm thick or less * The image of the embossed plastic card scanned by the DSPF may have distortion of max. 3mm. (MX-C402SC/C382SC)
Max. loading capacity of documents	Max. 100 sheet (80g/m^2, 21 lbs bond) or MAX13mm, 1/2inch or less
Transport disable document	OHP, Second original drawing paper, tracing paper, carbon paper, heat-sensitive paper, wrinkle, folding, breakage, pasted paper, clipped paper, documents printed with an ink ribbon, perforated paper other than 2-hole, 3-hole, 4-hole, 4-hole wide
Heavy paper exit tray	Paper exit capacity: 10 sheets (8.5" x 14") Dischargeable document: Base paper 129 - 280g/m^2, plastic card Shape: 3-stage expansion type

G. Copy functions

(1) Copy magnification ratio

Copy magnification ratio	Normal ratio	1 :1 ±1.5%
	AB series	50%, 70%, 81%, 86%, 100%, 115%, 122%, 141%, 200%
	Inch series	50%, 64%, 77%, 100%, 129%, 200%
Zoom	50 - 200% (For the DSPF, 50 - 200%)	
Preset magnification ratio	4 (Registered by the system setting)	
Longitudinal/crosswise independent magnification ratio	Yes	

(2) Density/copy image quality process

	MX-C402SC/C382SC	MX-B402SC/B382SC
Exposure mode	Auto (Color: magical view, Black/White: Text AE), Text, Text/Printed Photo, Printed Photo, Text/Photograph, Photograph, Map, light document	Auto, Text, Text/ Printed Photo, Printed Photo, Text/Photograph, Photograph, Map, light document
Copy document mode	Enable in Text, Text/ Printed Photo, Printed Photo mode	No
Number of manual steps	9 steps	
Toner save mode	Yes * Off on printed photo, photograph or light document	

(3) Color copy mode (MX-C402SC/C382SC)

Auto color selection	Copy mode automatically discerning color/ monochrome.
Full color	Full color copy
Two color	(Red/Black mode) Copies with one color (R/G/B/C/M/Y) that is replaced from red color area in document, and black color.
Single color	Mode to select one color from R/G/B/C/M/Y
Black/White copy mode	Black/White copy mode

(4) Color adjustment

	MX-C402SC/C382SC	MX-B402SC/B382SC
RGB adjustment	Yes	No
Color balance	Yes	No
Chroma adjustment	Yes	No
Brightness adjustment	Yes	No
Sharpness adjustment	Yes	No
Background removal	Yes	No
Auto color calibration	Enable with the system setting	Can be used by the service simulation setting.
Registration adjustment	Enable with the system setting	No

(5) Copy functions

Function	MX-C402SC/ C382SC	MX-B402SC/ B382SC
Auto paper select	Yes	
Auto magnification ratio select	Yes	
Paper type select	Yes (Paper type setting enable)	
Auto tray switching	Yes	
Rotation copy	Yes (When 2 in 1)	
Electronic sort	Yes	
Job reservation	Yes (99 items)	
Tray installation priority	Yes	
Program call/registration	Yes (48 items) (Program name registration enable)	
Document size input	Yes (Document size registration enable)	
Indeterminate paper size input	Yes (Indeterminate form size registration enable)	
Duplex copy direction switch	Yes	
Preview function	Yes	

Special functions		MX-C402SC/ C382SC	MX-B402SC/ B382SC
Binding margin (Top and Bottom/Left and Right)		Yes (Default: Bottom)	
Edge erase (Edge/Specified side)		Yes	
Center binding (Centering)		Yes (Layout only)	
Large quantity document mode		Yes	
Sharpness		Yes	
OHP insertion paper (Inserted paper is automatically selected.)		Yes	
Multi shot		Yes (Centering)	
	Boundary line print	Yes	
	Centering	Yes	
Page printing per original page		Yes	
Card shot		Yes	
Card shot from DF *1		Yes	
Print menu	Date print	Yes	
	Text print	Yes	
	Stamp	Yes	
	Page print	Yes	
Image edit	Photo repeat	Yes	
	Mirror image	Yes	
	Centering	Yes	
	Black/white reverse	Yes (UK not supported)	
Color adjustment	RGB adjustment	Yes	No
	Sharpness	Yes	No
	Background delete	Yes	No
	Color balance	Yes	No
	Brightness adjustment	Yes	No
	Chroma adjustment	Yes	No
Auto temporary save		Yes	
Filing		Yes	
Trial copy		Yes	
Document quantity count		Yes	
Mixed document feed	MIX	Yes	
	Combination with APS	Yes	
	Combination with AMS	Yes	
Thin paper scan		Yes	
Document control		Yes (With the data security kit installed)	
Business card scan		Yes *2	

*1: Combination between the card shot and the duplex document setting is available. (When DF is used.)

*2: Combination of the 8-visiting-card layout and the duplex document setting is available.

H. Printer function

(1) Platform

- IBM PC/AT
- Macintosh

(2) Support OS

NOTE: The providing method differs depending on the content.

OS		Custom PCL6	Custom PCL5c/ PCL5e	Custom PS	PPD
Windows	2000	Yes	Yes	Yes	Yes
	XP				
	XP x 64	Yes	No	Yes	Yes
	Server 2003	Yes	Yes	Yes	Yes
	Server 2003 x 64	Yes	No	Yes	Yes
	Server 2008				
	Server 2008 x 64				
	Vista	Yes	Yes	Yes	Yes
	Vista x 64	Yes	No	Yes	Yes
	Windows 7				
	Windows 7 x 64				
Mac	9.0 - 9.2.2	No	No	No	Yes
	X 10.2.8				
	X 10.3.9				
	X 10.4.11				
	X 10.5-10.5.8				
	X 10.6-10.6.2				

(3) PDL emulation

	MX-C402SC/ C382SC	MX-B402SC/ B382SC
PCL5c compatibility	Compatible with PCL of Hewlett-Packard.	—
PCL5e compatibility	—	Compatible with PCL of Hewlett-Packard.
PCL6 compatibility	Compatible with PCL of Hewlett-Packard.	
PCL XL compatibility	Compatible with PCL of Hewlett-Packard.	
PostScript 3 compatibility	Compatible with PS3 of Adobe Systems.	

(4) Font

Emulation	Built-in fonts	Option font
PCL5c/PCL5e compatibility, PCL6 compatibility	Roman outline fonts = 80 fonts Line printer font (BMP) = 1 font	Font for bar code = 28 fonts
PostScript 3 compatibility	Roman outline fonts = 136 fonts	—

(5) Print channel

USB	USB1.1:Windows 2000 / Server 2003 / XP / Vista / Sever 2008 / 7 only USB2.0 (High-Speed): Windows 2000 / XP / Vista / Server 2003 /server 2008 / 7 only
PSERVER/RPRINT for NetWare environment	PSERVER/RPRINT used in the NetWare environment
LPR	UNIX LPR/LPD command compatible
IPP	IPP1.0 conforming print channel
PAP: EtherTalk (AppleTalk)	Macintosh environment
FTP	Data received through the built-in FTP server
NetBEUI	Microsoft NetBEUI compatible
Raw Port (Port9100)	Supporting 9100 TCP port (Raw Port).
HTTP (Web Submit Print)	Yes
POP3 (E-Mail To Print)	Yes

(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	Setting of the PCL symbol and fonts
PS setting	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 data send without using the IP address under DHCOP environment) • 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 Scan to e-mail/FTP/Desktop/SMB (Document Admin)
Internet Fax (Direct SMTP including send/ receive)	• Internet Fax to Internet FAX (Manual) • Internet Fax to e-mail/FTP/Desktop/SMB (Inbound routing) • Internet Fax 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 (Document Admin)

(2) Support system

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

(3) Support image

Mode	Scanner	Internet Fax Direct SMTP	Fax
File format	Monochrome: TIFF, PDF, Encrypted PDF, XPS Color/Gray scale: Color TIFF, JPEG, PDF, Encrypted PDF, XPS	Monochrome: TIFF-FX (TIFF-F, TIFF-S)	---
Compression system	Monochrome: • Non-compression • G3 (One dimension) = MH (Modified Huffman) • G4 = MMR (Modified MR) Color / Gray scale: • JPEG (High/Middle/Low)	Monochrome: • Non-compression • G3 (One dimension) = MH (Modified Huffman) • G4 = MMR (Modified MR)	MH, MR, MMR, JBIG
Conversion for each page to a file (Available to quantity specification)	Yes	---	

(4) Image process

Mode	Scanner	Internet Fax Direct SMTP	Fax
Document scan color	Full color, Gray scale, Black/White	Black/White	
Auto color selection	Yes	---	
Half tone reproduciton	Equivalent to 256 gradations		
Density adjustment	Auto + Manual (5 steps)		
Document type (Selectable when manual)	• Text/Printed Photo • Text/Photography • Text • Photography • Printed Photo • Map	---	
Magical scan (Area separation + Background delete)	Yes	---	
Image quality select	---	Half tone (Black/white only) ON/ OFF	
Resolution (Varies depending on the file type/send method)	100 x 100 dpi	200 x 100 dpi (Half tone disable)	Normal text (203.2 x 97.8 dpi) (Half tone disable)
	200 x 200 dpi	200 x 200 dpi	Fine (203.2 x 195.6 dpi)
	300 x 300 dpi	200 x 400 dpi	Super Fine (203.2 x 391 dpi)
	400 x 400 dpi	400 x 400 dpi	Ultra Fine (406.4 x 391 dpi)
	600 x 600 dpi	600 x 600 dpi	---

(5) Address specification

Mode	Scanner	Internet Fax Direct SMTP	Fax
Address specification	Specification by one-touch, group, direct address input Selection from the LDAP server Input by an externally connected keyboard * Modes which allows direct address specification: e-mail/Internet Fax (including Direct SMTP)/Fax/ SMB		
Default address setting	Yes Set a document and press START key to send the data.	---	
Number of One-touch address key registration	Total (Number of keys): Max. 999 items (The total number of registration items of FTP/SMB/ Desktop is max. 200 items.)		
Number of Group (1 key) address registration	Numer of addresses registered in 1 group (1 key): Max. 500 items Number of direct input addresses registered as Group key: 5000 (Total number of addresses included in 999 keys)		
Program	48 items (Group/One-touch)		
Direct address input	Input by the soft keyboard and the external connection keyboard		Input with 10 key, # key, * key
Directory walking (Reference/ Retrieval)	Yes		---
Chain dial	---		Yes (Supported by PAUSE key)
Resend	Call up the nearest 8 addresses (single address send) (Desktop, USB memory, SMB, FTP, excluding broadcast send)		
Address check function	---		Yes
Reduction address (Quck key) selection	Use 10 key to call up the registered numbers of addresses.		
CC/BCC send	Yes	---	
Subject	Selection/direct entry from the list: Max. 80 characters		---
Subject list	30 items		---
Subject direct entry	Yes		---
File name	Selection/direct entry from the list		---
File name list	30 items		---

Mode	Scanner	Internet Fax Direct SMTP	Fax
Sender name	Selection/direct entry from the list / Selection from the LDAP server	--- (1 Default address fixed as sender name)	---
Send message (message body)	Selection/direct entry from the list Numer of characters: Max. 1,800 half-width characters		---
Preset mail footer *1	Yes		---
Inhibit of address registration from the machine	Yes		
Inhibit of address registration from Web screen	Yes		
Inhibit of registration from the network scanner tool	Yes	---	
Inhibit of [resend] from FAX/image send mode	Yes		
Inhibit of selection from address book	Yes		
Inhibit of direct input	Yes		
Inhibit of send from PC-Internet Fax	---	Yes	---
Inhibit of send to PC-FAX	---	---	Yes

*1: This function is used to set a footer text which is automatically added to a mail text when sending a mail. The footer text cannot be edited when sending a mail.

(6) Specification of Multiple Addresses

Mode	Scanner	Internet Fax Direct SMTP	Fax
Broadcast send	Yes (Email/FTP/Desktop/ SMB/Enable)	Yes	
Broadcast send addresses	500 addresses (The total number of registration items of FTP/SMB/ Desktop is max. 200 items.)		
Sequential send request	---		Yes

(7) Send function

Mode		Scanner	Internet Fax Direct SMTP	Fax
Memory send		94 items in total		
On-hook		---		Yes
Quick online send		---		Yes
Direct send		---		Yes Memory send ↔ Direct send selection
Auto reduction send		---		Yes
Rotation send		---	B5R → B5, A5R → A5 rotation only supported	
Zoom send		Standard size, enlargement send only supported		
Recall mode	Error	---	Yes	
	Busy	---	Yes (When D-SMTP)	Yes
		---	Internet Fax: Only the number of setting is set. DSMTP: Number of times and time are set conditionally with the system setting.	Yes
Long-size document send		Yes (Max. 500mm) (Single surface only/Black-White binary only)		
Changing the number of pages for a file		Yes	---	
Ignore blank paper		Yes * Combination with the filing function is disable.	---	
Send size limitation		Yes (Direct SMTP is No)		No
Drop-out color		Yes * Combination with the filing function is disabled.	---	
Large quantity document mode		Yes		
Thin paper scan		Yes		
Mixed document feed		Yes (Same width only)		
Default date sender send		---	Yes (ON only)	
Preview check function		Yes		
Edge erase (Edge/Specified side)		Yes		
Document quantity count		Yes		
Fax destination confirmation (Preventing mistarnsmittion)		---		Yes

(8) Receive function

Mode	Scanner	Internet Fax Direct SMTP	Fax
Auto receive	---	Yes	
Manual receive	---	Yes (Direct SMTP: No)	Switch from manual receive to auto receive (Enable only for France)
Switching from manual reception to automatic reception	---	---	Yes (France only)
Standard size reduction receive	---	Yes	
Rotation receive	---	Yes	
Receive data print condition setting	---	---	Yes
Duplex receive	---	Setting conditions by system setting	
Automatic reduction setting upon letter receive	---	Yes (Other than North America) (Other than inch areas of Fax destinations)	
Specified address/ domain receive allow	---	Yes (50 items)	---
Specified address/ domain receive inhibit (reject)	---	Yes (50 items)	---

Mode	Scanner	Internet Fax Direct SMTP	Fax
Receive inhibit (reject) from specified number	---		Specified numbers only (50 items/ 20 digits)
Receive allow from specified number	---		Specified numbers only (50 items/ 20 digits)
External telephone connection remote	---		Yes
Receive data overtake output	---	Yes	
Receive check cycle setting	---	Yes (0 - 8 ours, setting for every 1 min) (Direct SMTP: No)	---
POP3 communication time-out time setting	---	Yes (30 - 300 sec. setting for every 30 sec) (Direct SMTP: No)	---
Machine print setting	---	Yes	---
Transfer setting when output disable	---	Yes (Transfer address registration: 1 address)	
Routing function • Inbound Routing (Internet Fax / Fax receive data network transfer)	---	Yes 1. Selection of the format in transfer is enabled. (PDF/Single, TIFF/Multi, TIFF/XPS) 2. Transfer address trget is e-mail/FTP/SMB/Desktop. 3. The sender information is added to the transfer address when transfer. 4. Transmission table has timetable.	
Countermeasure against transfer destination error	---	Yes	
Setting of the number of copies of receive data	---	No	Yes
Receive data staple function	---	No	Yes
Auto rise-up mode	---	Yes	
Receive data print hold function (ALL RX data into the Memory regardless)	---	Yes	
Foot print	---	Yes	
Image check function (Preview function)	---	Yes (Print after checking images of receive data is enabled.)	

(9) Report/List function

Mode	Scanner	Internet Fax Direct SMTP	Fax
Comunication report table	Yes Time specificationoutput / Output at memory full When scanning, manual output only. * Receive/send total max. 200 items		
Communication result table	---	Yes	
Address/telephone numer table	Yes		
Group table	Yes		
Program table	Yes		
Memory box table (F code)	---		Yes
Communication document content print	---	Always print / Print at error / No print	
Receive reject number list	---		Yes
Receive reject address list	---	Yes	---
Inbound routing tablelist	No	Yes	
Document Admin list	Yes		
All setting list	Yes		
Web setting list	Yes		

(10) Other functions

Mode	Scanner	Internet Fax Direct SMTP	Fax
Time specification	Yes		
Polling receive	---		Yes
BBS send	---		Yes 100 items in total of BBS / Confidential / Interface broadcast can be registered. (Free area: 1 item) Setting the number of times of send: Once / No limit
Sender print	---	Yes	
Sender select	---		Yes
Paper numer print	---	Yes	
Date print	---	Yes (Date description selectable)	
Polling protection function	---		Yes
Confidential (Remote machine)	---		Yes (F code system)
Interface broadcast direction	---		Yes (F code system)
Fax to e-mail/ Internet Fax/Fax (F code)	---		Yes
Background delete	Yes (Color, Gray scale only)	---	
Card scan	Yes (Magnification ratio 63-200%)		
Card scan from DF	Yes		
Reach check function	---	Yes Time-out time 1 min - 240 hours Setting for every 1 min (Direct SMTP: No)	---
Send/receive data transfer (Document Admin)	Yes Transfer data format selection is enabled. (single-TIFF/ multi-TIFF/PDF/XPS) (Scan to e-mail/FTP/SMB/Desktop/Fax/Internet-Fax: Send/receive data enable) (PC-Internet Fax/PC-Fax: Only send data enable) Enable for separate destination folders of Send/ Receive		
The number of items of job status display	99 items		

(11) Record size

Mode	Scanner	Internet Fax Direct SMTP	Fax
Max. record width	---	293mm	
Record size	---	A4R-A5, Letter R-Invoice	

(12) Registration system

Mode	Scanner	Internet Fax Direct SMTP	Fax
One-touch / group *1 e-mail FTP Desktop SMB Internet Fax (Direct SMTP) Fax	999 items LDAP can be used. Max. number of registration for 1 group dial: 500 addresses Registration name: All half-width 36 characters <Fax only> One-touch dial destination number registration: Destination number + Sub address + Pass code, 64 digits in total (including "/")		
Default destination setting	Yes	---	
Desktop registration	Yes Web or NST (Registration by use of network scanner tool)	---	
SMB destination registration	Yes Registered by Web	---	
FTP destination registration	Yes Registered by Web	---	
Program	Address (one-touch, group), various setting (density, image quality, resolution, doeucmnt setting), and special functions can be registered as one set. (48 items)		
Number of items in memory box	---		100 items in total of BBS / Confidential / Interface broadcast can be registered. Registration name: 18 characters
Reply destination name registration	1000 items (User registration, Web registration) *2	---	

Mode	Scanner	Internet Fax Direct SMTP	Fax
Sender registration number	---	1 item (20 characters) Only one sender can be registered commonly. The address of Internet Fax/Fax or the telephone number is registered.	
Sender select retistration number	---		18 items in total (20 characters) Sender selection: In addition to the default, 18 items can be registered.
Polling allow number registration	---		Yes 10 items / 20 lines
Quick key (Reduction registration) *3	Yes (001 - 999)		
Address book import/export	Yes (Enabled by the storage back up)		

*1: For Scan/Internet Fax (including Direct SMTP)/Fax, the common address book is used. Therefore, the number of addreses which can be registered is to total of all the modes.

*2: When Scan sender is selected, the destination selection address book is used.

*3: The quick key is used to select the destination according to the registration number of each destination in the destination selection address book. The user can select and register the quick key number optionally.

(13) Sound setting

Mode	Item	Scanner	Internet Fax Direct SMTP	Fax
On-hook sound	Sound volume setting	---		9 steps Setting can be made with system setting.
Call sound volume	Sound volume setting	---		10 steps (including mute) Setting can be made with the system setting.
Line monitor sound	Sound volume setting	---		9 steps Setting can be made with the system setting.
Receive sound	Sound volume setting	---	Yes (Set by the system setting.)	No
	Sound pattern	---		PATTERN1/2/3/4. Setting can be made with the system setting.
Receive end sound	Sound volume setting	---		10 steps (including mute) Setting can be made with the system setting.
	Sound pattern	---		PATTERN1/2/3/4. Setting can be made with the system setting.
Send end sound	Sound volume setting	---		10 steps (including mute) Setting can be made with the system setting.
	Sound pattern	---		PATTERN1/2/3/4. Setting can be made with the system setting.
	Communication end sound time setting	---		5 steps setting of 2.0 - 4.0sec. Setting can be made with the system setting.

Mode	Item	Scanner	Internet Fax Direct SMTP	Fax
Send/receive error sound	Sound volume setting	---		10 steps (including mute) Setting can be made with the system setting.
	Sound pattern	---		PATTERN1/2/3/4. Setting can be made with the system setting.
	Communication end sound time setting	---		2 steps setting of every 0.3sec or every 0.7sec. Setting can be made with the system setting.
Communication error sound	Sound volume setting	---	Yes (Set by the system setting.)	No
Document scan end sound setting (Image send)	Sound volume setting	Yes (Set by the system setting.)		No

(14) Others

Mode	Scanner	Internet Fax Direct SMTP	Fax
PC-Internet Fax	---	Yes	---
PC-Fax	---		Yes
FAST	---		Yes (North America only)
Distinctive ring detection	---		Setting differs depending on the area.
Trial mode support	Scanner: Yes Meta data: Yes	No	---
Linearize PDF	Yes Supportiong with Net Scan Tool	---	---

J. PC-Fax, PC internet Fax functions

(1) Working environment

OS	• Windows 2000 • Windows XP Home Edition • Windows XP Professional • Windows Server 2003 • Windows Server 2008 • Windows Vista • Windows 7
PC	IBM PC/AT compatible machine
CPU	Pentium II 300MHz or more
Monitor	Screen resolution: 640 X 480 pixel or above Number of colors: 256 colors or above
Memory	64 MB or more
HDD	Empty capacity of 50MB or above
Interface	USB 2.0 10/100BASE-TX
Communication protocol	LPR / lp Port9100 (RAW) IPP USB2.0

(2) Functions

PC-Internet Fax send	Yes (Internet Fax expansion kit is required) Internet Fax address: max. 64 digits		
PC-Fax send	Yes (When FAX is installed) Fax number max. 64 digits (including sub address and pass code)		
Resolution	200 x 100 dpi / 200 x 200 dpi / 200 x 400 dpi / 400 x 400 dpi /600 x 600 dpi* * Internet-Fax/Direct SMTP only Windows 2000 type is only supported.		
Send document size	A3 / B4 / A4 / A5 / B5 / 11" x 17" / 8.5" x 14" / 8.5" x 11" / 5.5" x 8.5" / 8.5" x 13" / 8k / 16k		
Compression system	MH / MMR		
Broadcast send	Yes (Mix of FAX/Internet Fax Enable: Max. 500 items)		
F-code send	Yes	Sub address	Yes (Max. 20 digits)
		Pass code	Yes (Max. 20 digits)
Telephone book registration, Send function	Yes		
Covering letter attachment function	Yes (Disable in broadcast send)		
Covering letter making function	Yes		
Sender print	Prints always		
Preview	Yes		
Delivery confirmation (Notification to PC by NJR)	Yes		
Document filing function	Filing		Yes
	Automatic temporary save		Yes
PC-Fax send log	Yes (Resend is Disable.)		
User authentication	Yes		
Time specification	Yes		
R-KEY	Yes (Germany only)		

K. Document filing function

(1) Basic function

Document filing capacity	Standard folder	38GB
	User folder Temporary save folder	12GB
Number of pages and files which can be filed	Standard folder User folder	5,500 pages or 3,000 files (Sharp standard document)
	Temporary save folder	1,700 pages or 1,000 files (Sharp standard document)
Number of folders that can be made as user folders.	Max. 1,000 folder	
Number of users which can be registered	Same as that of account users of the main unit (1000 users)	

Reference of pages which can be filed:

		Color			Mono-chrome
Document		What's color	Greg fruit	Watermelon	Test Sheet C
					
Number of pages which can be filed	12GB	1100	800	800	1700
	38GB	3700	2500	2500	5500

(2) Data operation by each function

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

(3) Reprint operation limitations

Mode	Job kind	Data storage	MX-C402SC/ C382SC		MX-B402SC/ B382SC
			Color print	B/W print	Reprint (B/W only)
Printer	Printer	Color	Yes	No	N/A
		B/W	No	Yes	Yes
Copy	Copy	Color	Yes	Yes	N/A
		Gray	N/A	Yes	Yes
Image send	Scan send	Color	Yes	Yes	Yes
		Gray	No	Yes	Yes
		B/W	No	Yes	Yes
	Internet Fax send	B/W	No	Yes	Yes
	Fax send	B/W	No	Yes	Yes
Document filing	Scan save	Color	Yes	Yes	Yes
		Gray	No	Yes	Yes
		B/W	No	Yes	Yes

"Color" includes "Color and B/W mixed."

Function setting for reprint	Basic function	Number of copies, finish, paper specification, duplex, B/W print
	Special function (Printer data (Color, B/W) cannot be set with the special function.)	Center binding, 2 in 1, binding margin, print menu, document control data (when the data security kit is installed)

(4) Resend operation limitations

MX-C402SC/C382SC

Mode	Job kind	Data storage	MX-C402SC/C382SC		
			Color	Gray	B/W
Printer	Printer	Color	No	No	No
		B/W	No	No	No
Copy	Copy	Color	Yes	Yes	Yes
		Gray	No	Yes	Yes
Image send	Scanner send	Color	Yes	Yes	Yes
		Gray	No	Yes	No
		B/W	No	No	Yes
	Internet Fax send	B/W	No	No	Yes
	Fax send	B/W	No	No	Yes
Document filing	Scan save	Color	Yes	Yes	Yes
		Gray	No	Yes	No
		B/W	No	No	Yes

MX-B402SC/B382SC

Mode	Job kind	Data storage	MX-B402SC/B382SC		
			Color	Gray	B/W
Printer	Printer	Color	N/A	N/A	N/A
		B/W	No	No	No
Copy	Copy	Color	N/A	N/A	N/A
		Gray	No	Yes	Yes
Image send	Scanner send	Color	Yes	Yes	Yes
		Gray	No	Yes	No
		B/W	No	No	Yes
	Internet Fax send	B/W	No	No	Yes
	Fax send	B/W	No	No	Yes
Document filing	Scan save	Color	Yes	Yes	Yes
		Gray	No	Yes	No
		B/W	No	No	Yes

"Color" includes "Color and B/W mixed."

Function setting in resend	Basic function	Format, resolution, image quality, send details setting, meta data input
	Special function	Time specification, sender print, sender selection, communication result table

(5) Special functions limitations in resend

Function		Copy mode	Image send mode	Resend Enable/Disable	Details
Binding margin		Yes	---	Enable	Images sent are not shifted by the specified shift amount. When output is made again on the receive side, the binding margin is not made.
Frame delete		Yes	Yes	Enable	
Center binding		Yes	---	Disable	Since image sequence is changed on the output side, resend is disabled.
Large quantity document mode		Yes	Yes	Enable	
OHP insert paper		Yes	---	Enable	The insert paper is not sent. Though resend is made on the receive side, the insert paper is not inserted.
2 in 1		Yes	---	Disable	
Card scan		Yes	Yes	Enable	
Print menu		Yes	---	Enable	Print menu is not added when sending. (Because there is no print menu in image send originally.)
Image edit	Photo repeat	Yes	---	Disable	
	Mirror image	Yes	---	Enable	Send in mirror images.
	Centering	Yes	---	Enable	Images which are not centered are sent. Though output is made again on the receive side, centering is not made.
	B/W reverse	Yes	---	Enable	Send in B/W reverse.
Mixed documents	Mix paper feed	Yes	Yes	Enable	
Thin paper scan		Yes	Yes	Enable	This function does not affect resend.
Number of documents count		Yes	Yes	Enable	This function does not affect resend.
Ignore blank paper		---	Yes	Disable	Filing is disable when ignore blank paper.
Drop-out color		---	Yes	Disable	Filing is disable when setting the drop-out color.
Document control		Yes	---	Enable	Not added when sending.

(6) Data operation contents

Operation content	Machine operation panel	Web page
Reprint	Yes	Yes
Resend	Yes	Yes
Delete	Yes	Yes
Shift	Yes	Yes
Attribute change (Common/ Confidential/Protection)	Yes	Yes
File confidential setting (Password: Max. 8 digits number)	Yes	Yes
Folder confidential setting (Password: Max. 8 digits number)	Yes	Yes
File name change	Yes	Yes
Folder creation (User folder, 1 level only)	Yes	Yes
File transfer to Local PC, FTP server (Data backup)	No	Yes
Backup schedule setting	No	No

Operation content		Machine operation panel	Web page
Auto backup in trouble		No	No
Machine HDD occupation ratio display		Yes	Yes
Preview	Preview before save when scan save	No	---
	Save data image check	Yes	Yes
Retrieval		Yes	Yes
Changing file format		Yes	Yes
Collective print		Yes	Yes
Time specification delete		Yes	Yes
Uniting different files		No	No
Selection of two or more files: Print only		Yes	Yes

When the above setting is performed on the operation panel, Web access is disabled.

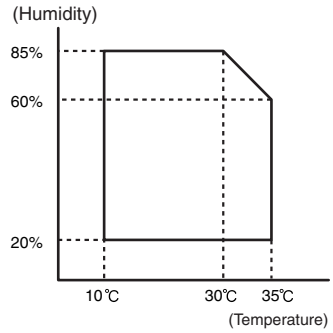
L. Remote PC function

(1) Pull scan (TWAIN) specifications

Interface	NIC	Yes
	USB	No
Supported OS	Windows 2000/XP/Server 2003/Server 2008/Vista/7	
WHQL authentication acquired OS	Windows 2000/XP/Vista/7	
Hardware environment	(System) Must satisfy the OS operation conditions. (HDD) 10MB or more. 100MB or more is recommendable. (Monitor) 800 x 600dots or more 256 colors or more must be displayed. (Other) Network port	
Duplex scan	Yes	
Color mode	B/W (Simple binary) / B/W (Error diffusion) / Gray scale / Full color	
Resolution	75dpi/100dpi/150dpi/200dpi/300dpi/400dpi/600dpi or custom: 5 0 - 9600dpi	
Scan range	OC: A4/ A5/B5/Letter/Executive/Invoice/Postcard/16K/Name card/Custom DSPF: A4/A5/B5/Letter/Executive/Foolscap/Invoice/Legal /Postcard/16K/Mexican legal/343 x 216/Name card/Auto/Custom	
Document exit destination	Upper paper exit/Heavy paper exit	
Preview function	Yes	
Zoom preview function	Yes	
Rotation scan	Yes (90 degree/180 degree/270 degree)	
Brightness/Contrast adjustment	Auto / Manual (-10 0 - +100)	
Gamma adjustment	Yes	
Color matching	No/Printer/CRT/LCD display/ICM	
Edge emphasis	No/Normal/Strong/Feathering	
B/W reverse	Yes	
Light source color select	Yes (Red/Green/Blue/White)	
Threshold value setting	Auto / manual (1 - 254)	
Set contents save	Yes	
Preview screen save	Yes	
Scan range display unit	Pixel/mm/inch	
Note' security function	Yes (color only)	
Image acquisition format from the machine	Non compression	

M. Ambient conditions

(1) Working environment



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

[14] SIGNAL LIST

1. MX-C402SC/C382SC

Signal name	Name [Type]	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	NOTE
			"L"	"H"				
1TNFD	Waste toner full detection [Mechanical switch]	Detects waste toner full.	Empty	Full	CN13	B8	PCU	
1TUD_CL	Primary transfer belt separation CL detection [Transmission type]	Detects the primary transfer belt separation CL.	–	–	CN6	1	PCU	
1TUD_K	Primary transfer belt separation BK detection [Transmission type]	Detects the primary transfer belt separation BK.	–	–	CN18	6	PCU	
1TURC_1	Primary transfer separation clutch 1 [Electromagnetic clutch]	Controls the primary transfer separation mode.	Separation select	–	CN9	14	PCU	
1TURC_2	Primary transfer separation clutch 2 [Electromagnetic clutch]	Controls the primary transfer separation mode. (The mode is reversed.)	Separation select	–	CN9	9	PCU	
2TCCRU	Secondary transfer initial detection	Detects the initial state of the secondary transfer unit.	–	–	CN17	A4	PCU	
2TURC	Secondary transfer separation clutch [Electromagnetic clutch]	Controls the secondary transfer separation mode.	Separation select	–	CN16	10	PCU	
ADUC1	ADU transport clutch [Electromagnetic clutch]	Controls ON/OFF of the paper transport roller in the ADU.	ON	OFF	CN16	14	PCU	
APPD1	ADU transport path detection 1 [Transmission type]	Detects paper pass in the ADU upper stream section.	Pass	–	CN17	A11	PCU	
APPD2	ADU transport path detection 2 [Transmission type]	Detects paper pass in the ADU lower stream section.	Pass	–	CN17	A8	PCU	
BD	LSU synchronization detection signal (BD signal)	Detects synchronization in the main scanning direction of the LSU.	–	Detection	CN17	52	LSU-Mother	
BRAKE	Polygon motor brake signal	Stops the polygon motor.	–	Brake	CN17	27	LSU-Mother	
CCFT	LCD backlight [CCFT cool cathode ray tube]	LCD backlight	ON	OFF	CN9	24	SCNcnt	
CL	Scanner lamp	Radiates lights onto a document for the CCD to scan the document image.	ON	OFF	CN3	5	SCNcnt	
CLUD	Tray 1 upper limit detection (Lift HP detection) [Transmission type]	Detects the tray 1 upper limit.	–	Upper limit	CN13	A8	PCU	
CLUM	Paper tray lift-up motor (Paper feed tray 1) [DC brush motor]	Drives the paper tray lift plate.	Stop	Drive	CN8	7	PCU	
CPED1	Tray paper empty detection [Transmission type]	Detects paper empty in the tray 1.	YES	NO	CN13	A14	PCU	
CPFC	Tray vertical transport clutch [Electromagnetic clutch]	Controls ON/OFF of the paper transport roller in the paper feed tray section.	ON	OFF	CN15	16	PCU	
CPFD1	Tray transport detection [Reflection type]	Detects paper exit from the tray.	Pass	–	CN13	A11	PCU	
CPFM	Paper feed motor [Stepping motor]	Drives the paper feed section.	–	–	CN15	9, 13, 15, 19	PCU	Drives with the 4-phase signal.
CPUC1	Paper feed clutch (Paper feed tray 1) [Electromagnetic clutch]	Controls ON/OFF of the roller in the paper feed tray section.	ON	OFF	CN15	12	PCU	
CSPD1	Tray remaining paper quantity detection [Transmission type]	Detects the remaining paper quantity in the tray.	Remaining quantity	–	CN8	11	PCU	Detects during lifting up.
CSS11	Tray paper size detection 1	Detects the paper size in the tray.	–	–	CN8	21	PCU	
CSS12	Tray paper size detection 2	Detects the paper size in the tray.	–	–	CN8	19	PCU	
CSS13	Tray paper size detection 3	Detects the paper size in the tray.	–	–	CN8	17	PCU	
DHPD_CL	CL phase detection [Transmission type]	Detects the CL phase.	Reference	–	CN9	6	PCU	
DHPD_K	BK phase detection [Transmission type]	Detects the BL phase.	Reference	–	CN9	11	PCU	

Signal name	Name [Type]	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	NOTE
			"L"	"H"				
DL_BK	Discharge lamp BK [LED]	Discharges electric charges on the OPC drum.	OFF	ON	CN12	8	PCU	
DL_C	Discharge lamp C [LED]	Discharges electric charges on the OPC drum.	OFF	ON	CN12	6	PCU	
DL_M	Discharge lamp M [LED]	Discharges electric charges on the OPC drum.	OFF	ON	CN12	4	PCU	
DL_Y	Discharge lamp Y [LED]	Discharges electric charges on the OPC drum.	OFF	ON	CN12	2	PCU	
DRCRU_C	Drum (C) initial detection	Detects the initial state of the drum unit (C).	–	–	CN13	B6	PCU	
DRCRU_K	Drum (K) initial detection	Detects the initial state of the drum unit (K).	–	–	CN13	B7	PCU	
DRCRU_M	Drum (M) initial detection	Detects the initial state of the drum unit (M).	–	–	CN13	B5	PCU	
DRCRU_Y	Drum (Y) initial detection	Detects the initial state of the drum unit (Y).	–	–	CN13	B4	PCU	
DRSET	Process installation detection	Detects installation of the process unit.	YES	NO	CN13	B2	PCU	4-color series detection
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	CN3	8	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	CN1	2	PCU	
DVCRU_C	Development (C) initial detection [Fuse]	Detects the initial state of the developing unit (C).	–	–	CN11	B3	PCU	
DVCRU_K	Development (K) initial detection [Fuse]	Detects the initial state of the developing unit (K).	–	–	CN11	B11	PCU	
DVCRU_M	Development (M) initial detection [Fuse]	Detects the initial state of the developing unit (M).	–	–	CN11	A6	PCU	
DVCRU_Y	Development (Y) initial detection [Fuse]	Detects the initial state of the developing unit (Y).	–	–	CN11	A14	PCU	
DVM_CL_CK	Development drive motor (CL) speed control	Controls the speed of the development drive motor (CL).	–	–	CN9	3	PCU	
DVM_CL_D	Development drive motor (CL) [Brushless motor]	Drives the development section, the color OPC drum, and the transfer section.	Drive	Stop	CN9	4	PCU	
DVM_CL_LD	Development drive motor (CL) lock detection	Detects the development drive motor (CL) lock.	–	Lock detection	CN9	5	PCU	
DVM_K_CK	Development drive motor (K) speed control	Controls the speed of the development drive motor (K).	–	–	CN15	6	PCU	
DVM_K_D	Development drive motor (K) [Brushless motor]	Drives the development section, the black OPC drum, and the transfer section.	Drive	Stop	CN15	8	PCU	
DVM_K_LD	Development drive motor (K) lock detection	Detects the development drive motor (K) lock.	–	Lock detection	CN15	10	PCU	
FUCRU	Fusing unit initial detection	Detects the initial state of the fusing unit.	–	–	CN19	18	PCU	
FUFM_CNT	Fusing fan motor speed control	Controls the speed of the fusing fan motor.	–	–	CN16	4	PCU	Pulse (Duty) drive
FUFM_LD	Fusing fan motor lock detection	Detects the fusing fan motor lock.	–	Lock detection	CN16	8	PCU	
FUFM_V	Fusing fan motor	Cools the fusing unit.	Stop	Drive	CN16	2	PCU	
FUM_CK	Fusing motor speed control	Controls the speed of the fusing motor.	–	–	CN16	5	PCU	
FUM_D	Fusing motor [Brushless motor]	Drives the fusing section.	Drive	Stop	CN16	7	PCU	
FUM_LD	Fusing motor lock detection	Detects the fusing motor lock.	–	Lock detection	CN16	9	PCU	
GSOL_PULL	Gate solenoid pull control	Controls the paper exit gate solenoid (straight paper exit).	ON	–	CN2	9	DSPF Driver	
GSOL_RETURN	Gate solenoid return control	Controls the paper exit gate solenoid (return paper exit).	ON	–	CN2	8	DSPF Driver	
HDDFAN	Machine cooling fan motor	Cools inside of the machine.	Stop	Drive	CN14	1	LSU-Mother	
HDDFM_LD	HDD fan motor lock detection	Detects the HDD fan motor lock.	–	Lock detection	CN23	4	PCU	
HDDFM_V	HDD fan motor	Cools the HDD unit.	Stop	Drive	CN23	1	PCU	

Signal name	Name [Type]	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	NOTE
			"L"	"H"				
HLOUT_EX	External heater lamp	Turns ON/OFF the external heater lamp 1/2.	OFF	ON	CN14	8	PCU	
HLOUT_LOW	Lower heater lamp	Turns ON/OFF the lower heater lamp.	OFF	ON	CN14	12	PCU	
HLOUT_MAIN	Upper heater lamp	Turns ON/OFF the upper heater lamp.	OFF	ON	CN14	10	PCU	
HLPCD	Fusing pressure detection sensor [Transmission type]	Detects a change in the fusing pressure.	Pressure release	Pressure applying	CN19	13	PCU	
HLPCS	Fusing pressure release solenoid [Electromagnetic solenoid]	Controls the fusing pressure mode.	Pressure select	–	CN19	16	PCU	
HOME	Scanner home position sensor [Transmission type]	Detects the scanner home position.	–	Home position	CN2	24	SCU	
HUD_M	Humidity detection	Detects the humidity.	–	–	CN17	B14	PCU	Analog detection
INV PW	Scanner lamp	Radiates lights to the document for the CCD to scan the document images.	–	–	CN2	27, 28	SCU	
LOCK_HDDFAN	Machine fan motor lock detection	Detects the machine cooling fan motor lock.	–	Lock detection	CN14	4	LSU-Mother	
LSUFM_LD	LSU fan motor lock detection	Detects the LSUFM lock.	–	Lock detection	CN13	B12	PCU	
LSUFM_V	LSU fan motor	Cools the LSU unit.	Stop	Drive	CN13	B10	PCU	
MC_BK_ERR	High voltage BK error detection	Detects an abnormal output of high voltage BK.	Error detection	–	CN12	13	PCU	Judged when a high voltage is outputted.
MC_CL_ERR	High voltage CL error detection	Detects an abnormal output of high voltage CL.	Error detection	–	CN12	14	PCU	Judged when a high voltage is outputted.
MHPS	Scanner home position sensor	Detects the scanner home position.		Home position	CN7	1	SCNcnt	
MIM_*	Scanner motor	Scanner (reading) section			CN5	1, 2, 3, 4	SCNcnt	
MPED	Manual feed paper empty detection [Transmission type]	Detects paper empty in the manual paper feed tray.	YES	NO	CN17	B5	PCU	Manual paper feed unit
MPFS	Manual paper feed solenoid [Electromagnetic solenoid]	Controls ON/OFF of the paper pickup roller.	Pickup	–	CN17	B2	PCU	
MPLD	Manual feed paper length detector [Transmission type]	Detects the paper length in the manual paper feed tray.	–	–	CN17	B8	PCU	Manual paper feed unit
MPWD	Manual paper feed tray paper width detector [Volume resistance]	Detects the paper width in the manual paper feed tray.	–	–	CN17	B10	PCU	Analog detection
OFF_CNT (DC_CNT2)	+5VL power OFF signal	Turns OFF the power of +5VL.	Power ON	Power OFF	CN13	8	LSU-Mother	Only 5VO is ON.
PCS_F	Registration process control sensor (Front, diffusion) [Reflection type]	Detects the toner patch density.	–	–	CN18	11	PCU	Analog detection
PFCOV	Document paper feed section cover open detection	Detects the document paper feed section cover open.	Close	Open	CN4	18	DSPF Driver	
POD1	Fusing rear detection [Transmission type]	Detects the paper exit from fusing.	Pass	–	CN18	10	PCU	
POD2	Paper exit detection [Transmission type]	Detects the discharged paper.	Pass	–	CN18	16	PCU	
POFM_CNT	Paper exit cooling fan motor speed control	Controls the speed of the paper exit cooling fan motor.	–	–	CN17	A14	PCU	Pulse (Duty) drive
POFM_LD	POFM lock detection	Detects the POFM lock.	–	Lock detection	CN17	A12	PCU	
POFM_V	Paper exit cooling fan motor	Cools the paper exit unit.	Stop	Drive	CN17	A15	PCU	
POLY_CK	Polygon motor clock signal	Controls the speed of the polygon motor.	–	–	CN17	28	LSU-Mother	
POLY_LOCK	Polygon motor lock signal	Detects the polygon motor lock.	–	Lock detection	CN17	29	LSU-Mother	Pulse (Duty) drive
POM	Paper exit drive motor [Stepping motor]	Drives the paper exit roller.	–	–	CN16	11, 13, 15, 17	PCU	Drives with the 4-phase signal.
PORY_START	Polygon motor ON signal	Drives the polygon motor of the LSU unit.	Drive	Stop	CN17	30	LSU-Mother	
PPD1	Registration front detection [Transmission type]	Detects paper in front of the registration roller.	Pass	–	CN13	A5	PCU	
PPD2	Registration detection [Reflection type]	Detects paper at the rear of the registration roller.	Pass	–	CN13	B14	PCU	
PROFM1_CNT	Process fan motor 1 speed control	Controls the speed of the process fan motor 1.	–	–	CN6	10	PCU	Pulse (Duty) drive

Signal name	Name [Type]	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	NOTE
			"L"	"H"				
PROFM1_LD	Process fan motor 1 lock detection	Detects PROFM1 lock.	–	Lock detection	CN6	14	PCU	
PROFM1_V	Process fan motor 1	Cools the process unit.	Stop	Drive	CN6	8	PCU	
PROFM2_CNT	Process fan motor 2 speed control	Controls the speed of the process fan motor 2.	–	–	CN12	10	PCU	Pulse (Duty) drive
PROFM2_LD	Process fan motor 2 lock detection	Detects PROFM2 lock.	–	Lock detection	CN12	12	PCU	
PROFM2_V	Process fan motor 2	Cools the process unit.	Stop	Drive	CN12	9	PCU	
PSFM_LD	Power cooling fan motor lock detection	Detects the power cooling fan motor lock.	–	Lock detection	CN8	10	PCU	
PSFM_V	Power cooling fan motor	Cools the power unit.	Stop	Drive	CN8	8	PCU	
PTC_ERR	PTC high voltage error detection	Detects the output abnormality of the PTC high voltage.	Error detection	–	CN6	7	PCU	Judgment at PTC high voltage output
PWM_HDDFAN	Machine cooling fan motor speed control	Controls the speed of the machine cooling fan motor.	–	–	CN14	2	LSU-Mother	Pulse (Duty) drive
REGS_F	Registration process control sensor (Front, reflection) [Reflection type]	Detects the registration shift and toner patch density.	–	–	CN18	13	PCU	Analog detection
REGS_F_LED	Registration process control sensor LED (Front) [LED]	Registration process control sensor LED light emitting	–	–	CN18	15	PCU	Analog output
REGS_R	Registration process control sensor (Rear, reflection) [Reflection type]	Detects the registration shift and toner patch density.	–	–	CN18	3	PCU	Analog detection
REGS_R_LED	Registration process control sensor LED (Rear) [LED]	Registration process control sensor LED light emitting	–	–	CN18	5	PCU	Analog output
RRM	PS motor [Stepping motor]	Drives the registration roller and controls ON/OFF.	–	–	CN15	1, 3, 5, 7	PCU	Drives with the 4-phase signal.
RY_CNT (DC_CNT1)	Main system power OFF signal	Turns OFF the power other than +5VO and +5VL.	Power ON	Power OFF	CN13	7	LSU-Mother	Only 5VL_5VO is ON.
SCAN	Scanner motor [Stepping motor]	Scanner (reading) section	–	–	CN4	1, 2, 3, 4	SCU	
SCOV	Upper cover open/close detection	Detects the upper cover open/close.	Open	Close	CN7	7	DSPF cnt	
SCWD	Card width detection	Detects the card width.	–	Card width detection	CN5	22	DSPF cnt	
SLUM	Lift-up motor	Controls the Lift-up motor.	–	–	CN6	1, 2, 3, 4	DSPF cnt	Drives with the 4-phase signal.
SOCD	DSPF open detection	Detects open/close of the DSPF cover.	Open	Close	CN8	2	DSPF cnt	
SPED	Document set detection	Detects document set.	Document set	–	CN9	4	DSPF cnt	
SPFC	Paper feed clutch	Controls the paper feed clutch.	ON	–	CN2	11	DSPF Driver	
SPFFAN	SPF fan	Cools the DSPF unit.	Stop	Drive	CN7	15	DSPF cnt	
SPFFAN_LD	SPF fan lock detection	Detects SPF fan lock.	–	Lock detection	CN7	16	DSPF cnt	
SPFM	Transport motor	Controls the transport motor.	–	–	CN1	7, 8, 9, 10	DSPF Driver	Drives with the 4-phase signal.
SPOD1	Paper exit detection 1	Detects paper exit.	Paper pass detection	–	CN7	4	DSPF cnt	
SPOD2	Paper exit detection 2	Detects paper exit.	Paper pass detection	–	CN7	10	DSPF cnt	
SPPD1	Paper pass detection	Detects paper pas.	Paper pass detection	–	CN7	3	DSPF cnt	
SPPD2	Paper pass detection	Detects paper pas.	Paper pass detection	–	CN8	3	DSPF cnt	
SPPSC	PS clutch	Controls the PS clutch.	ON	–	CN2	10	DSPF Driver	
SPUM	Paper feed motor	Controls the paper feed motor.	–	–	CN1	1, 2, 3, 4	DSPF Driver	Drives with the 4-phase signal.
STUD	Tray upper limit detection	Detects tray upper limit.	–	Upper limit detection	CN9	1	DSPF cnt	
TCS_C	Toner density sensor [Magnetic sensor]	Detects the toner density (C).	–	–	CN11	B6	PCU	Analog detection
TCS_K	Toner density sensor [Magnetic sensor]	Detects the toner density (K).	–	–	CN11	B14	PCU	Analog detection
TCS_M	Toner density sensor [Magnetic sensor]	Detects the toner density (M).	–	–	CN11	A3	PCU	Analog detection
TCS_Y	Toner density sensor [Magnetic sensor]	Detects the toner density (Y).	–	–	CN11	A11	PCU	Analog detection

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	–	CN18	22	PCU	
TH1_LSU	LSU UN thermistor	Detects the temperature.	–	–	CN7	A3	PCU	Analog detection
TH_EX1_IN	External heater lamp 1 contact thermistor	Detects the temperature.	–	–	CN19	6	PCU	Analog detection
TH_EX2_IN	External heater lamp 2 contact thermistor	Detects the temperature.	–	–	CN19	8	PCU	Analog detection
TH_LOW_IN	Lower heater lamp contact thermistor	Detects the temperature.	–	–	CN19	10	PCU	Analog detection
TH_M	Temperature detection	Detects the temperature.	–	–	CN17	B12	PCU	Analog detection
TH_MAIN_CS_IN	Upper heater lamp non-contact thermistor	Detects the temperature.	–	–	CN19	2	PCU	Analog detection
TH_MAIN_IN	Upper heater lamp non-contact thermistor	Detects the temperature.	–	–	CN19	1	PCU	Analog detection
TH_SUB_IN	Upper heater lamp contact thermistor	Detects the temperature.	–	–	CN19	4	PCU	Analog detection
TNM_C	Toner motor C [Synchronous motor]	Transports toner from the toner cartridge to the developing unit.	–	–	CN14	5, 7	PCU	
TNM_K	Toner motor K [Synchronous motor]	Transports toner from the toner cartridge to the developing unit.	–	–	CN14	1, 3	PCU	
TNM_M	Toner motor M [Synchronous motor]	Transports toner from the toner cartridge to the developing unit.	–	–	CN14	9, 11	PCU	
TNM_Y	Toner motor Y [Synchronous motor]	Transports toner from the toner cartridge to the developing unit.	–	–	CN14	2, 4	PCU	
WH_CNT	Dehumidifying heater control	Turns ON/OFF the dehumidifying heater.	OFF	ON	CN8	5	PCU	

2. MX-B402SC/B382SC

Signal name	Name [Type]	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	NOTE
			"L"	"H"				
1TNFD	Waste toner full detection [Mechanical switch]	Detects waste toner full.	Empty	Full	CN13	10	PCU	
1TUD_CL	Primary transfer belt separation CL detection [Transmission type]	Detects the primary transfer belt separation CL.	–	–	CN6	3	PCU	
1TUD_K	Primary transfer belt separation BK detection [Transmission type]	Detects the primary transfer belt separation BK.	–	–	CN18	13	PCU	
1TURC_1	Primary transfer separation clutch 1 [Electromagnetic clutch]	Controls the primary transfer separation mode.	Separation select	–	CN11	1	PCU	
2TCCRU	Secondary transfer initial detection	Detects the initial state of the secondary transfer unit.	–	–	CN17	A4	PCU	
2TURC	Secondary transfer separation clutch [Electromagnetic clutch]	Controls the secondary transfer separation mode.	Separation select	–	CN18	24	PCU	
ADUC1	ADU transport clutch [Electromagnetic clutch]	Controls ON/OFF of the paper transport roller in the ADU.	ON	OFF	CN18	20	PCU	
APPD1	ADU transport path detection 1 [Transmission type]	Detects paper pass in the ADU upper stream section.	Pass	–	CN17	A11	PCU	
APPD2	ADU transport path detection 2 [Transmission type]	Detects paper pass in the ADU lower stream section.	Pass	–	CN17	A8	PCU	
BD	LSU synchronization detection signal (BD signal)	Detects synchronization in the main scanning direction of the LSU.	–	Detection	CN17	52	LSU-Mother	
BRAKE	Polygon motor brake signal	Stops the polygon motor.	–	Brake	CN17	27	LSU-Mother	
CCFT	LCD backlight [CCFT cool cathode ray tube]	LCD backlight	ON	OFF	CN9	24	SCNcnt	
CL	Scanner lamp	Radiates lights onto a document for the CCD to scan the document image.	ON	OFF	CN3	5	SCNcnt	
CLUD	Tray 1 upper limit detection (Lift HP detection) [Transmission type]	Detects the tray 1 upper limit.	–	Upper limit	CN13	15	PCU	

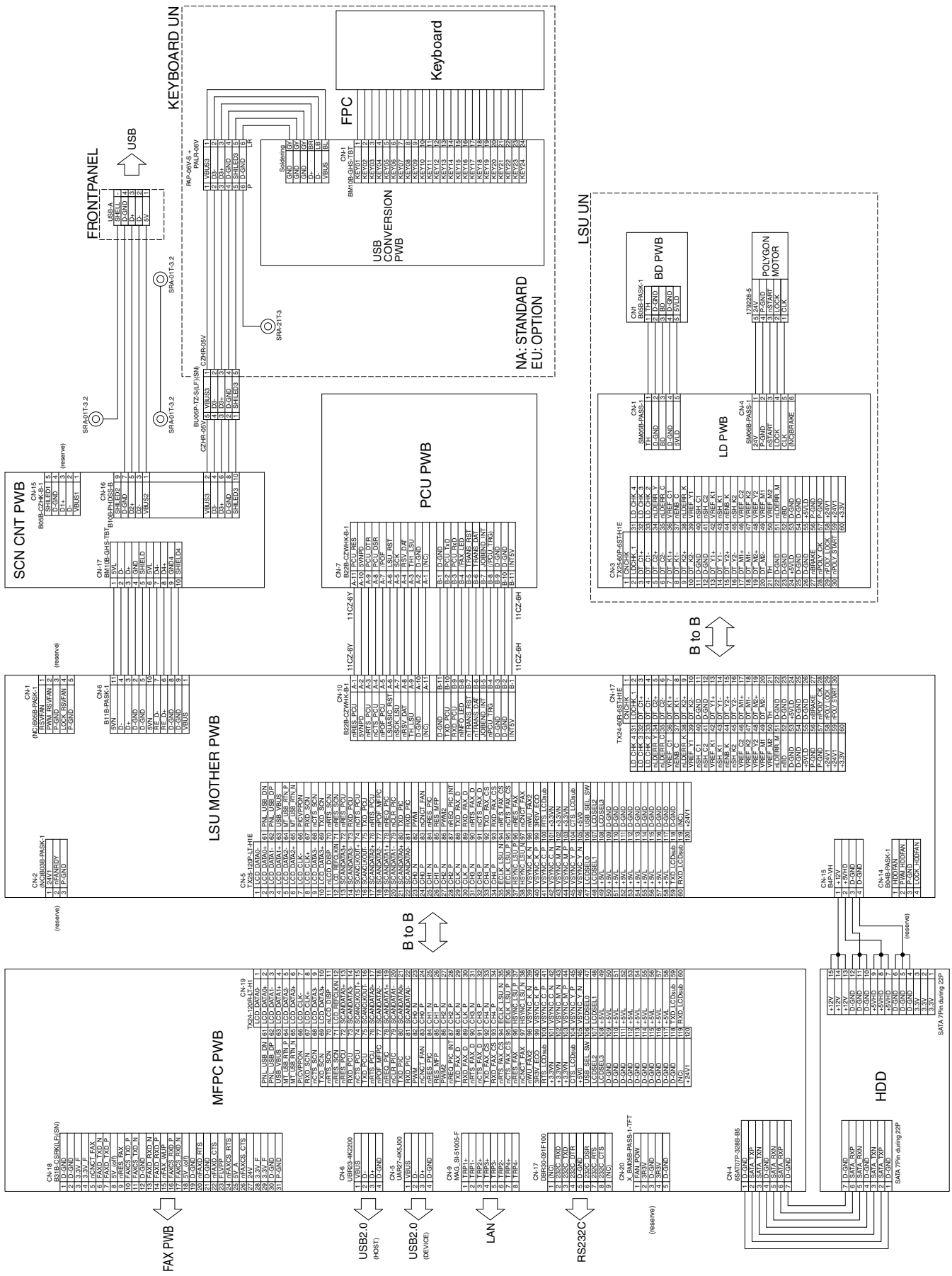
Signal name	Name [Type]	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	NOTE
			"L"	"H"				
CLUM	Paper tray lift-up motor (Paper feed tray 1) [DC brush motor]	Drives the paper tray lift plate.	Stop	Drive	CN8	3	PCU	
CPED1	Tray paper empty detection [Transmission type]	Detects paper empty in the tray 1.	YES	NO	CN13	3	PCU	
CPFC	Tray vertical transport clutch [Electromagnetic clutch]	Controls ON/OFF of the paper transport roller in the paper feed tray section.	ON	OFF	CN15	16	PCU	
CPFD1	Tray transport detection [Reflection type]	Detects paper exit from the tray.	Pass	–	CN13	9	PCU	
CPFM	Paper feed motor [Stepping motor]	Drives the paper feed section.	–	–	CN15	9, 13, 15, 19	PCU	Drives with the 4-phase signal.
CPUC1	Paper feed clutch (Paper feed tray 1) [Electromagnetic clutch]	Controls ON/OFF of the roller in the paper feed tray section.	ON	OFF	CN15	12	PCU	
CSPD1	Tray remaining paper quantity detection [Transmission type]	Detects the remaining paper quantity in the tray.	Remaining quantity	–	CN8	11	PCU	Detects during lifting up.
CSS11	Tray paper size detection 1	Detects the paper size in the tray.	–	–	CN8	21	PCU	
CSS12	Tray paper size detection 2	Detects the paper size in the tray.	–	–	CN8	19	PCU	
CSS13	Tray paper size detection 3	Detects the paper size in the tray.	–	–	CN8	17	PCU	
DL_BK	Discharge lamp BK [LED]	Discharges electric charges on the OPC drum.	OFF	ON	CN11	9	PCU	
DRCRU_K	Drum (K) initial detection	Detects the initial state of the drum unit (K).	–	–	CN13	8	PCU	
DRSET	Process installation detection	Detects installation of the process unit.	YES	NO	CN13	4	PCU	4-color series detection
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	CN3	8	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	CN1	2	PCU	
DVCRU_K	Development (K) initial detection [Fuse]	Detects the initial state of the developing unit (K).	–	–	CN11	6	PCU	
DVM_K_CK	Development drive motor (K) speed control	Controls the speed of the development drive motor (K).	–	–	CN15	6	PCU	
DVM_K_D	Development drive motor (K) [Brushless motor]	Drives the development section, the black OPC drum, and the transfer section.	Drive	Stop	CN15	8	PCU	
DVM_K_LD	Development drive motor (K) lock detection	Detects the development drive motor (K) lock.	–	Lock detection	CN15	10	PCU	
DVTYP_K	DV unit type detection	Detects whether the regular type of the DV unit is used or not.	–	–	CN11	4	PCU	Analog detection
FUCRU	Fusing unit initial detection	Detects the initial state of the fusing unit.	–	–	CN19	16	PCU	
FUFM_CNT	Fusing fan motor speed control	Controls the speed of the fusing fan motor.	–	–	CN18	14	PCU	Pulse (Duty) drive
FUFM_LD	Fusing fan motor lock detection	Detects the fusing fan motor lock.	–	Lock detection	CN18	18	PCU	
FUFM_V	Fusing fan motor	Cools the fusing unit.	Stop	Drive	CN18	12	PCU	
FUM_CK	Fusing motor speed control	Controls the speed of the fusing motor.	–	–	CN18	6	PCU	
FUM_D	Fusing motor [Brushless motor]	Drives the fusing section.	Drive	Stop	CN18	8	PCU	
FUM_LD	Fusing motor lock detection	Detects the fusing motor lock.	–	Lock detection	CN18	10	PCU	
FUSET	Fusing installation detection	Detects installation of the fusing unit.	YES	NO	CN19	11	PCU	
GSOL_PULL	Gate solenoid pull control	Controls the paper exit gate solenoid (straight paper exit).	ON	–	CN2	9	DSPF Driver	
GSOL_RETURN	Gate solenoid return control	Controls the paper exit gate solenoid (return paper exit).	ON	–	CN2	8	DSPF Driver	
HDDFM_LD	HDD fan motor lock detection	Detects the HDD fan motor lock.	–	Lock detection	CN6	10	PCU	
HDDFM_V	HDD fan motor	Cools the HDD unit.	Stop	Drive	CN6	6	PCU	

Signal name	Name [Type]	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	NOTE
			"L"	"H"				
HLOUT_UA	Upper heater lamp all	Turns ON/OFF the upper all lamp.	OFF	ON	CN15	20	PCU	
HLOUT_UM	Upper heater lamp main	Turns ON/OFF the upper heater lamp main.	OFF	ON	CN15	22	PCU	
HUD_M	Humidity detection	Detects the humidity.	–	–	CN17	B14	PCU	Analog detection
LSUFM_LD	LSU fan motor lock detection	Detects the LSUFM lock.	–	Lock detection	CN13	24	PCU	
LSUFM_V	LSU fan motor	Cools the LSU unit.	Stop	Drive	CN13	20	PCU	
MC_BK_ERR	High voltage BK error detection	Detects an abnormal output of high voltage BK.	Error detection	–	CN11	11	PCU	Judged when a high voltage is outputted.
MHPS	Scanner home position sensor	Detects the scanner home position.		Home position	CN7	1	SCNcnt	
MIM_*	Scanner motor	Scanner (reading) section	.	.	CN5	1, 2, 3, 4	SCNcnt	
MPED	Manual feed paper empty detection [Transmission type]	Detects paper empty in the manual paper feed tray.	YES	NO	CN17	B5	PCU	Manual paper feed unit
MPFS	Manual paper feed solenoid [Electromagnetic solenoid]	Controls ON/OFF of the paper pickup roller.	Pickup	–	CN17	B2	PCU	
MPLD	Manual feed paper length detector [Transmission type]	Detects the paper length in the manual paper feed tray.			CN17	B8	PCU	Manual paper feed unit
MPWD	Manual paper feed tray paper width detector [Volume resistance]	Detects the paper width in the manual paper feed tray.	–	–	CN17	B10	PCU	Analog detection
OFF_CNT (DC_CNT2)	+5VL power OFF signal	Turns OFF the power of +5VL.	Power ON	Power OFF	CN13	8	LSU-Mother	Only 5VO is ON.
PFCOV	Document paper feed section cover open detection	Detects the document paper feed section cover open.	Close	Open	CN4	18	DSPF Driver	
POD1	Fusing rear detection [Transmission type]	Detects the paper exit from fusing.	Pass	–	CN18	17	PCU	
POD2	Paper exit detection [Transmission type]	Detects the discharged paper.	Pass	–	CN18	31	PCU	
POFM_CNT	Paper exit cooling fan motor speed control	Controls the speed of the paper exit cooling fan motor.	–	–	CN17	A14	PCU	Pulse (Duty) drive
POFM_LD	POFM lock detection	Detects the POFM lock.	–	Lock detection	CN17	A12	PCU	
POFM_V	Paper exit cooling fan motor	Cools the paper exit unit.	Stop	Drive	CN17	A15	PCU	
POLY_CK	Polygon motor clock signal	Controls the speed of the polygon motor.	–	–	CN17	28	LSU-Mother	
POLY_LOCK	Polygon motor lock signal	Detects the polygon motor lock.	–	Lock detection	CN17	29	LSU-Mother	Pulse (Duty) drive
POM	Paper exit drive motor [Stepping motor]	Drives the paper exit roller.	–	–	CN18	28, 30, 32, 34	PCU	Drives with the 4-phase signal.
PORY_START	Polygon motor ON signal	Drives the polygon motor of the LSU unit.	Drive	Stop	CN17	30	LSU-Mother	
PPD1	Registration front detection [Transmission type]	Detects paper in front of the registration roller.	Pass	–	CN13	21	PCU	
PPD2	Registration detection [Reflection type]	Detects paper at the rear of the registration roller.	Pass	–	CN13	16	PCU	
PROFM1_CNT	Process fan motor 1 speed control	Controls the speed of the process fan motor 1.	–	–	CN6	14	PCU	Pulse (Duty) drive
PROFM1_LD	Process fan motor 1 lock detection	Detects PROFM1 lock.	–	Lock detection	CN6	12	PCU	
PROFM1_V	Process fan motor 1	Cools the process unit.	Stop	Drive	CN6	18	PCU	
PROFM2_CNT	Process fan motor 2 speed control	Controls the speed of the process fan motor 2.	–	–	CN11	20	PCU	Pulse (Duty) drive
PROFM2_LD	Process fan motor 2 lock detection	Detects PROFM2 lock.	–	Lock detection	CN11	22	PCU	
PROFM2_V	Process fan motor 2	Cools the process unit.	Stop	Drive	CN11	18	PCU	
PSFM_LD	Power cooling fan motor lock detection	Detects the power cooling fan motor lock.	–	Lock detection	CN8	24	PCU	
PSFM_V	Power cooling fan motor	Cools the power unit.	Stop	Drive	CN8	22	PCU	
PTC_ERR	PTC high voltage error detection	Detects the output abnormality of the PTC high voltage.	Error detection	–	CN6	7	PCU	Judgment at PTC high voltage output
REGS_R	Registration process control sensor (Rear, reflection) [Reflection type]	Detects the registration shift and toner patch density.	–	–	CN18	3	PCU	Analog detection
REGS_R_LED	Registration process control sensor LED (Rear) [LED]	Registration process control sensor LED light emitting	–	–	CN18	5	PCU	Analog output
RRM	PS motor [Stepping motor]	Drives the registration roller and controls ON/OFF.	–	–	CN15	1, 3, 5, 7	PCU	Drives with the 4-phase signal.

Signal name	Name [Type]	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	NOTE
			"L"	"H"				
RY_CNT (DC_CNT1)	Main system power OFF signal	Turns OFF the power other than +5VO and +5VL.	Power ON	Power OFF	CN13	7	LSU-Mother	Only 5VL_5VO is ON.
SCOV	Upper cover open/close detection	Detects the upper cover open/close.	Open	Close	CN7	7	DSPF cnt	
SCWD	Card width detection	Detects the card width.	–	Card width detection	CN5	22	DSPF cnt	
SLUM	Lift-up motor	Controls the Lift-up motor.	–	–	CN6	1, 2, 3, 4	DSPF cnt	Drives with the 4-phase signal.
SOCD	DSPF open detection	Detects open/close of the DSPF cover.	Open	Close	CN8	2	DSPF cnt	
SPED	Document set detection	Detects document set.	Document set	–	CN9	4	DSPF cnt	
SPFC	Paper feed clutch	Controls the paper feed clutch.	ON	–	CN2	11	DSPF Driver	
SPFFAN	SPF fan	Cools the DSPF unit.	Stop	Drive	CN7	15	DSPF cnt	
SPFFAN_LD	SPF fan lock detection	Detects SPF fan lock.	–	Lock detection	CN7	16	DSPF cnt	
SPFM	Transport motor	Controls the transport motor.	–	–	CN1	7, 8, 9, 10	DSPF Driver	Drives with the 4-phase signal.
SPOD1	Paper exit detection 1	Detects paper exit.	Paper pass detection	–	CN7	4	DSPF cnt	
SPOD2	Paper exit detection 2	Detects paper exit.	Paper pass detection	–	CN7	10	DSPF cnt	
SPPD1	Paper pass detection	Detects paper pas.	Paper pass detection	–	CN7	3	DSPF cnt	
SPPD2	Paper pass detection	Detects paper pas.	Paper pass detection	–	CN8	3	DSPF cnt	
SPPSC	PS clutch	Controls the PS clutch.	ON	–	CN2	10	DSPF Driver	
SPUM	Paper feed motor	Controls the paper feed motor.	–	–	CN1	3, 4, 5, 6	DSPF Driver	Drives with the 4-phase signal.
STUD	Tray upper limit detection	Detects tray upper limit.	–	Upper limit detection	CN9	1	DSPF cnt	
TCS_K	Toner density sensor [Magnetic sensor]	Detects the toner density (K).	–	–	CN11	12	PCU	Analog detection
TFD2	Paper exit full detection [Transmission type]	Detects the face-down paper exit tray full.	Full	–	CN18	23	PCU	
TH_M	Temperature detection	Detects the temperature.	–	–	CN17	B12	PCU	Analog detection
TH_NCUM_CS_IN	Upper heater lamp non-contact thermistor	Detects the temperature.	–	–	CN19	2	PCU	Analog detection
TH_NCUM_IN	Upper heater lamp non-contact thermistor	Detects the temperature.	–	–	CN19	1	PCU	Analog detection
TH_UM_IN	Upper heater lamp contact thermistor	Detects the temperature.	–	–	CN19	6	PCU	Analog detection
TH_US_IN	Upper heater lamp contact thermistor	Detects the temperature.	–	–	CN19	4	PCU	Analog detection
TH1_LSU	LSU UN thermistor	Detects the temperature.	–	–	CN7	A3	PCU	Analog detection
TNM_K	Toner motor K [Synchronous motor]	Transports toner from the toner cartridge to the developing unit.	–	–	CN15	21, 23	PCU	
TSG_BK	Toner density sensor gain	Adjust the toner density sensor gain.	–	–	CN11	16	PCU	Analog output
WH_CNT	Dehumidifying heater control	Turns ON/OFF the dehumidifying heater.	OFF	ON	CN8	5	PCU	

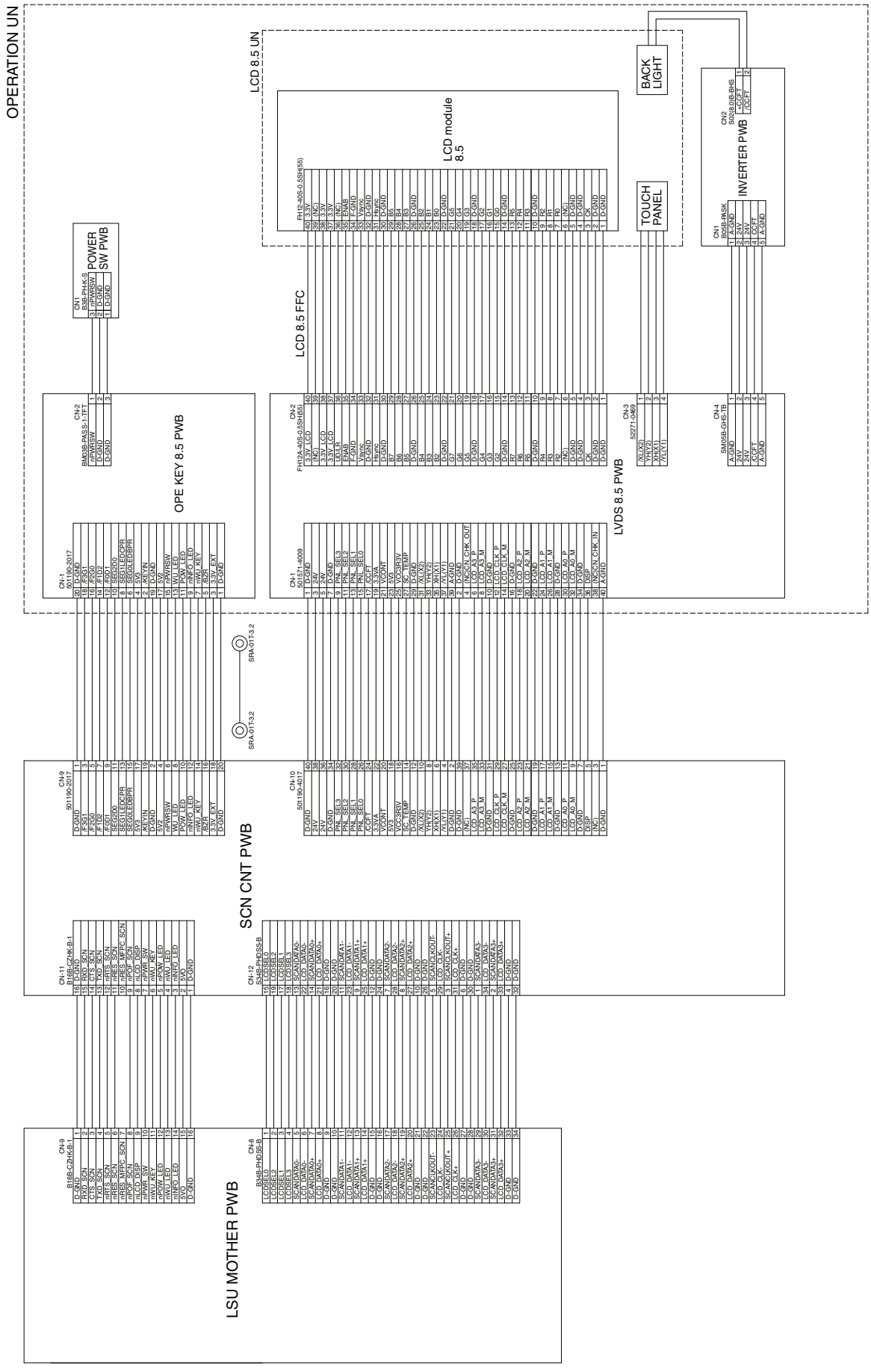
[15] ACTUAL WIRING DIAGRAM

1. Image process (MFPC, LSU)

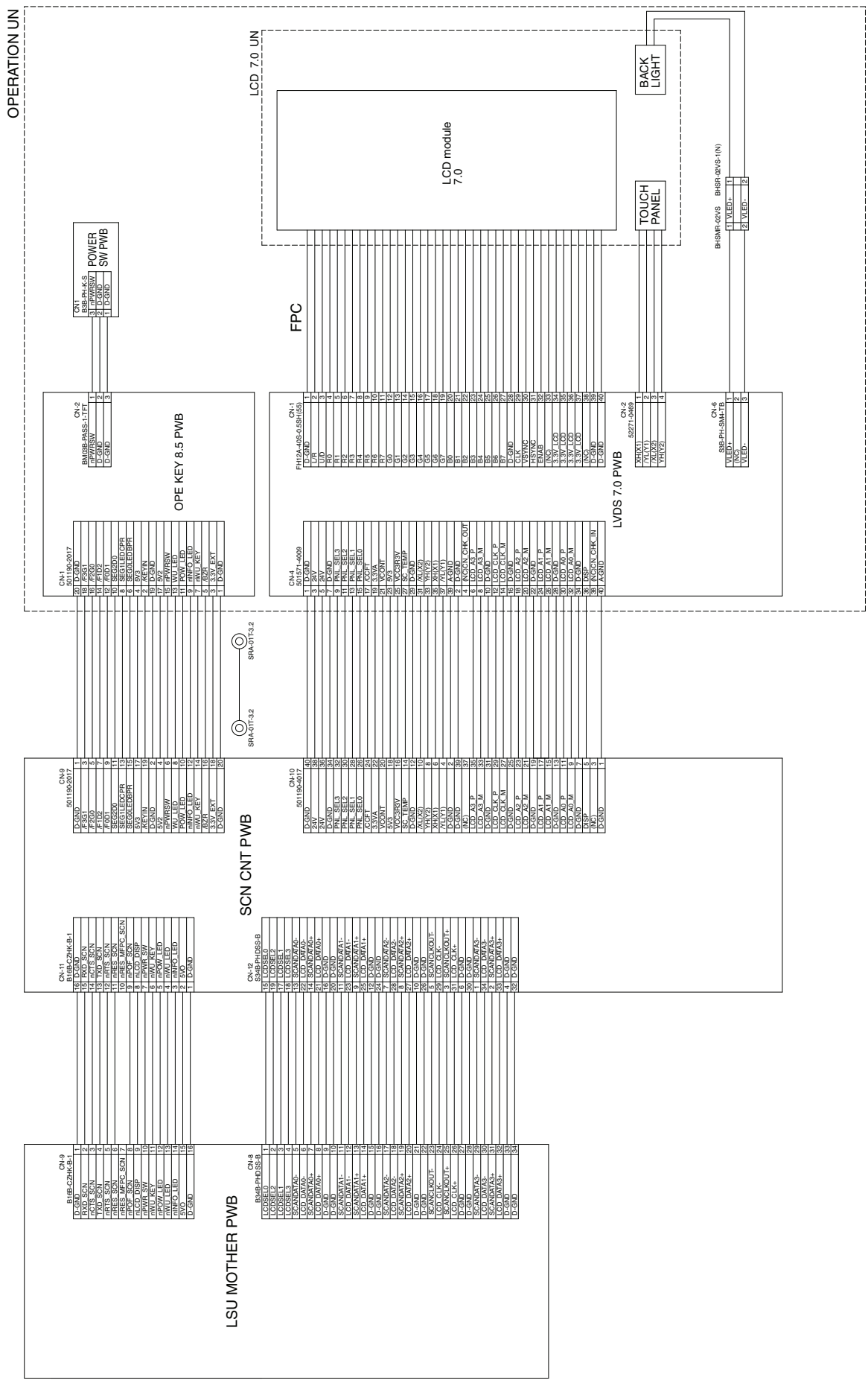


2. Scanner, Operation section

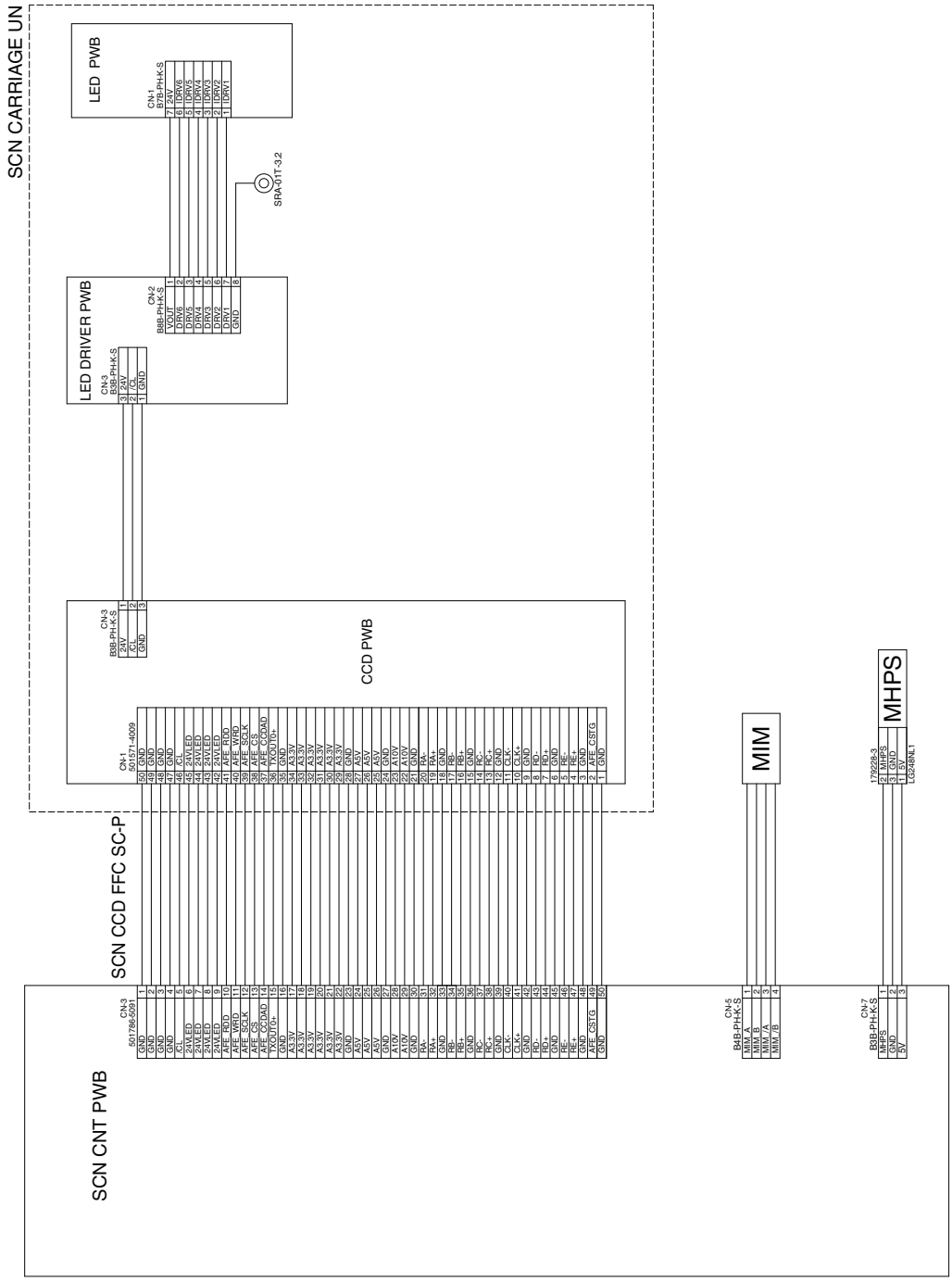
A. MX-C402SC/C382SC



B. MX-B402SC/B382SC

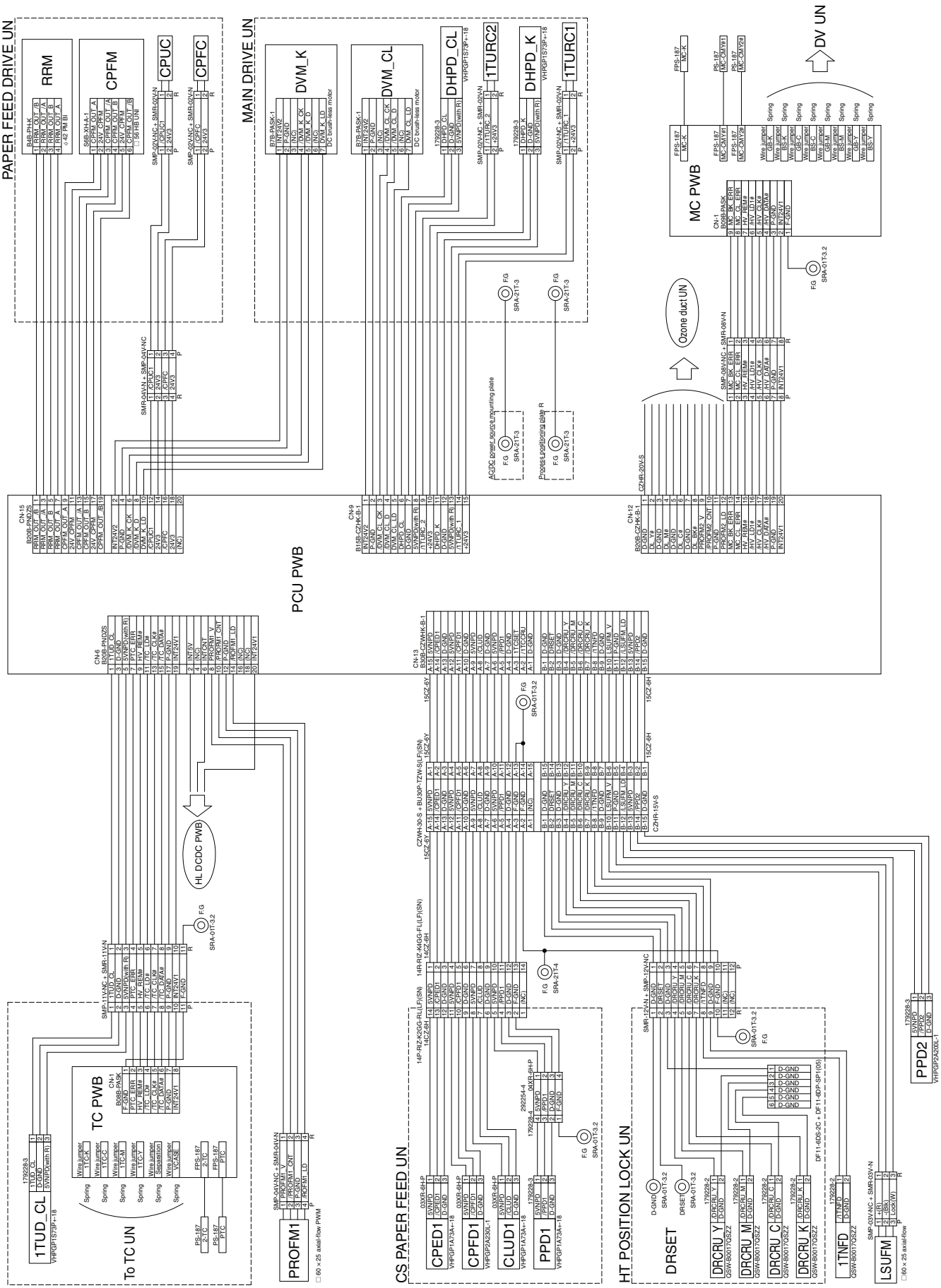


3. Scanner, CCD

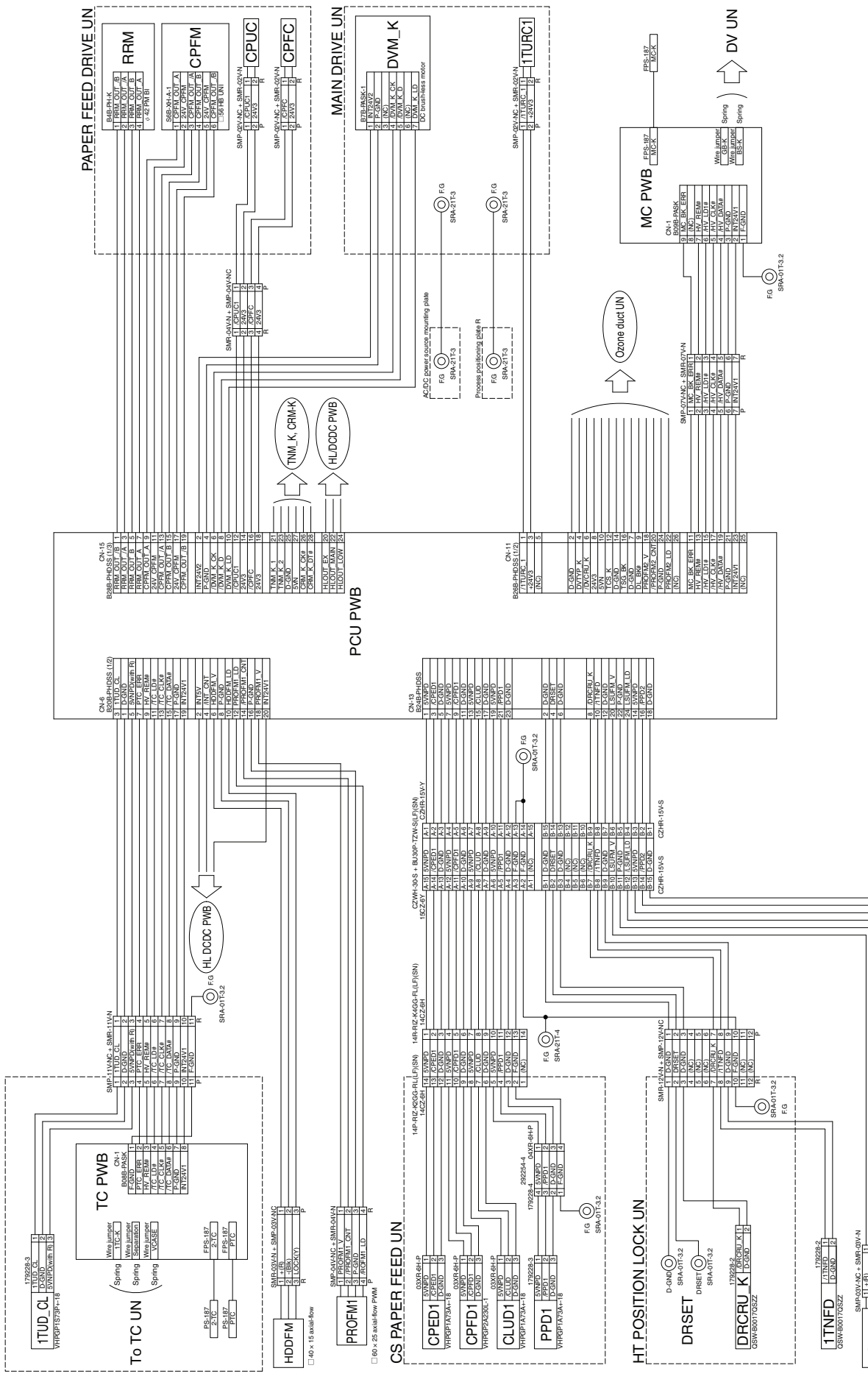


4. Paper feed transport, Process drive, Front, High voltage

A. MX-C402SC/C382SC

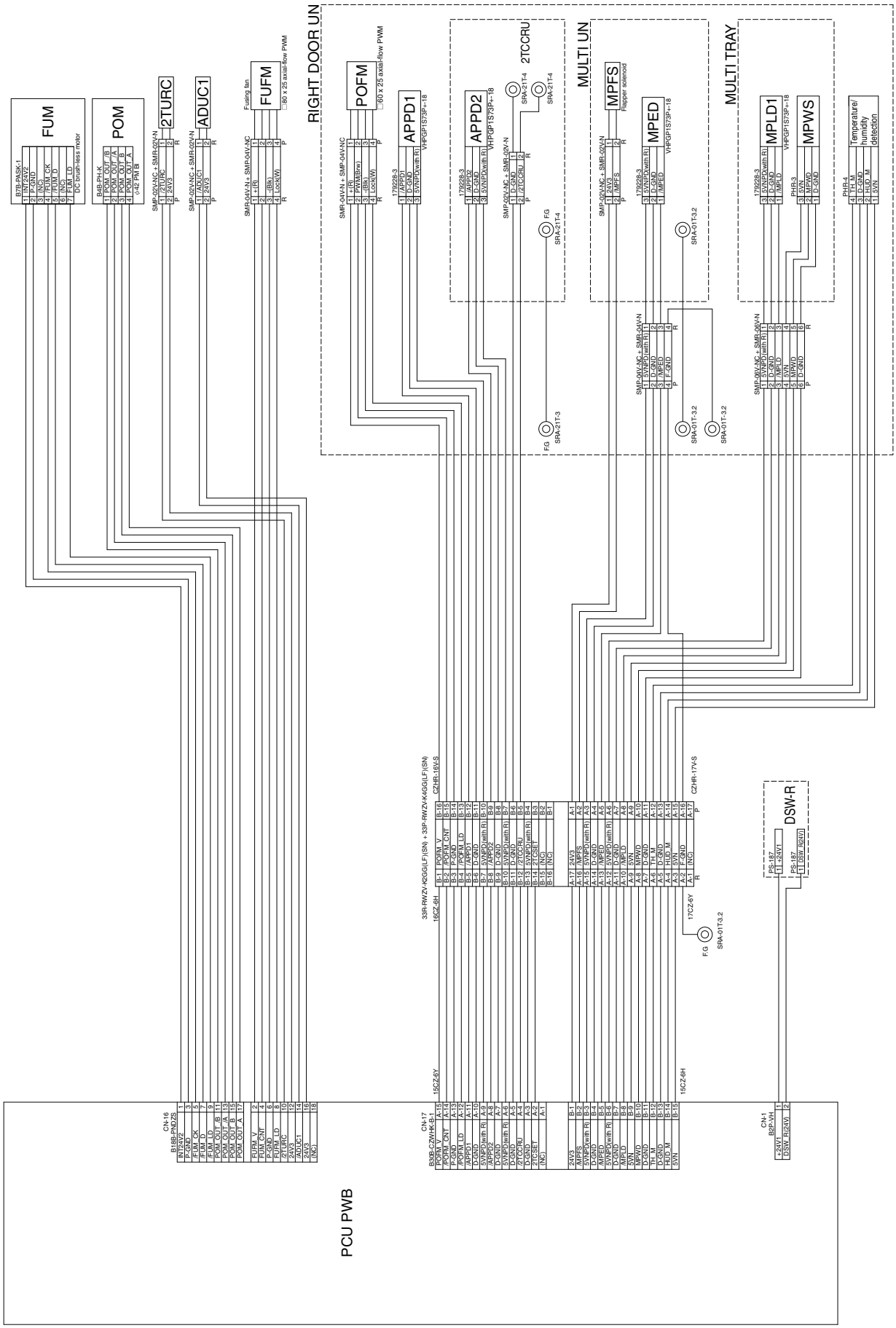


B. MX-B402SC/B382SC

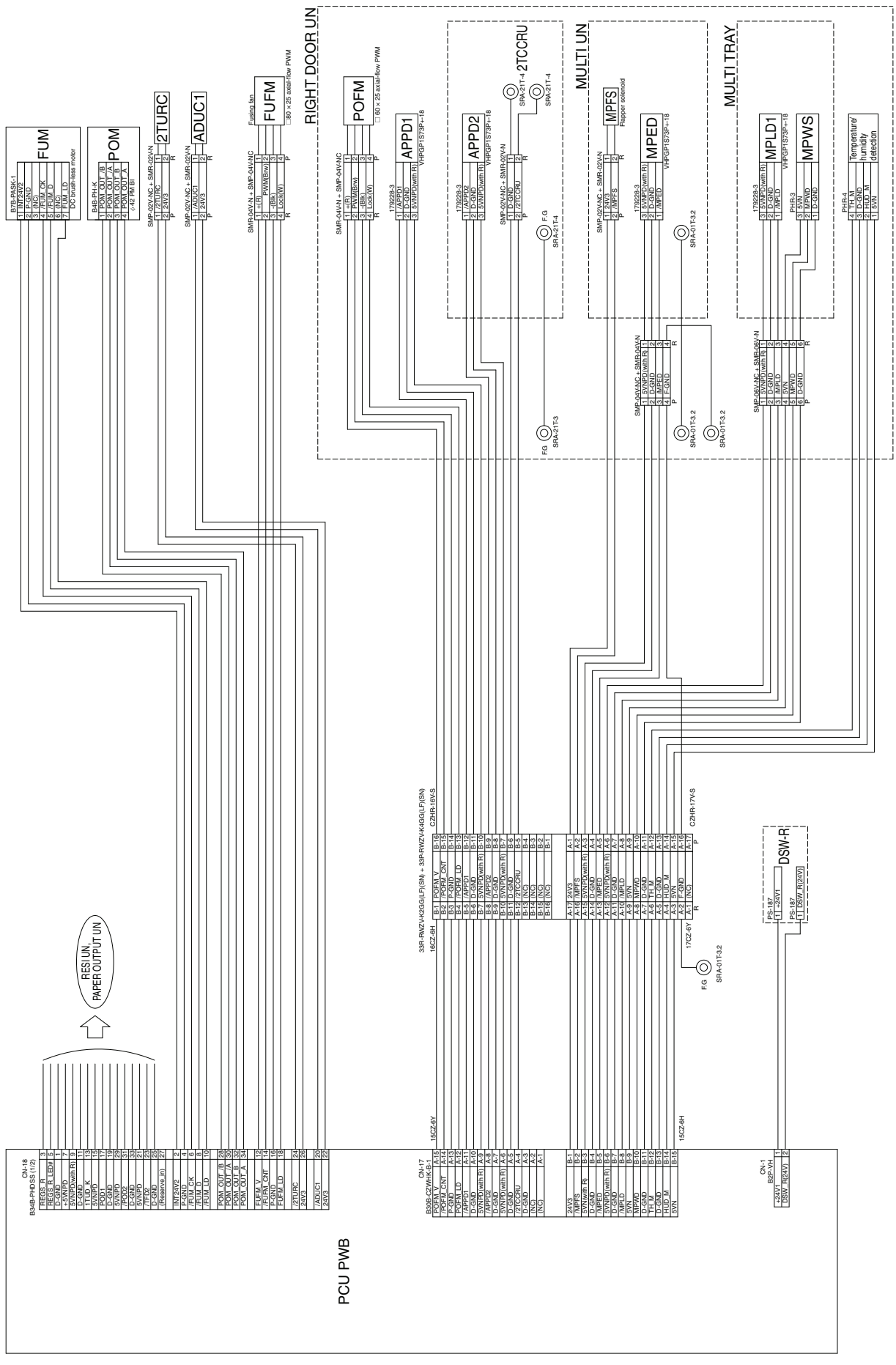


5. Right door, Frame fusing

A. MX-C402SC/C382SC

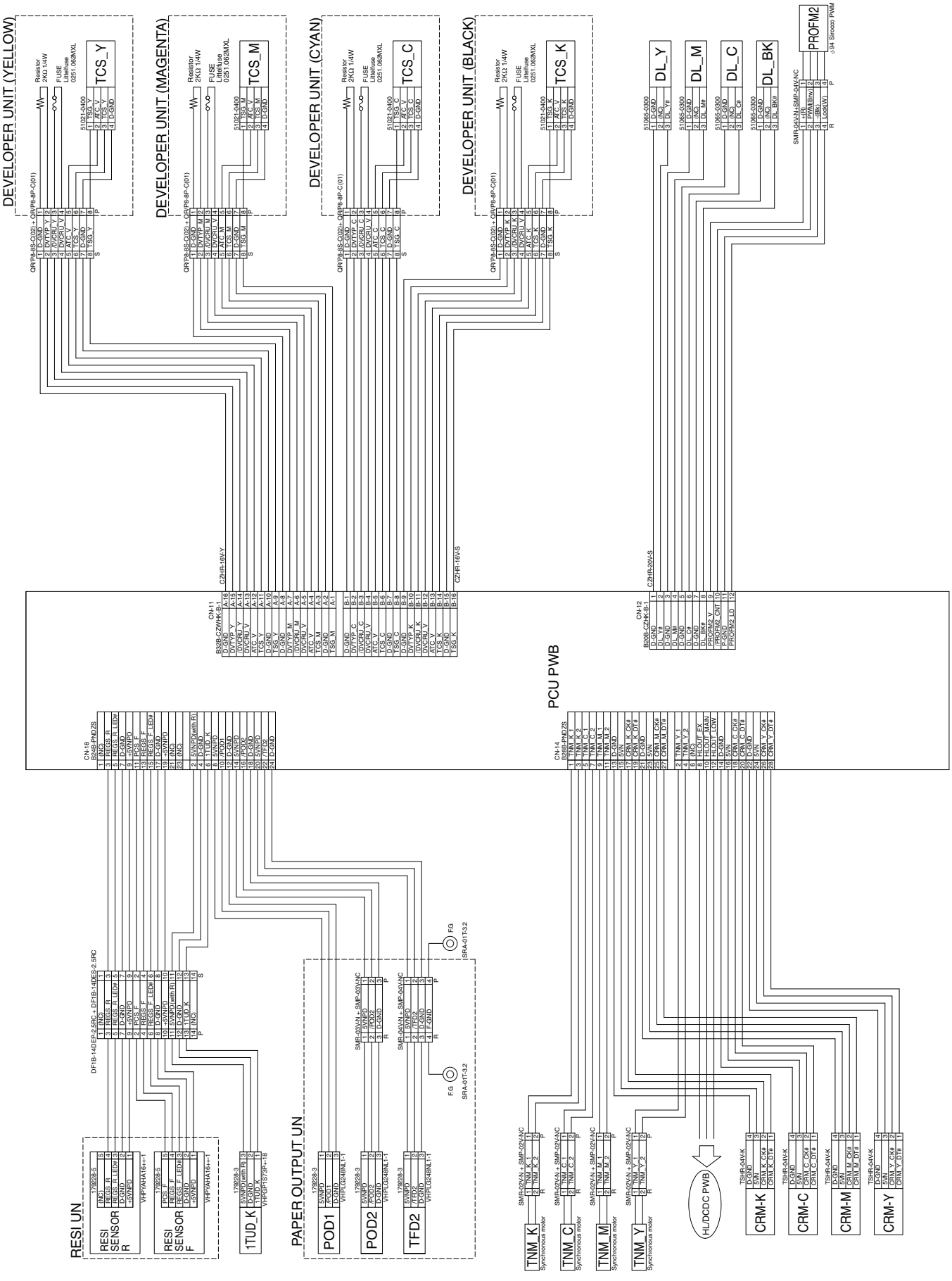


B. MX-B402SC/B382SC

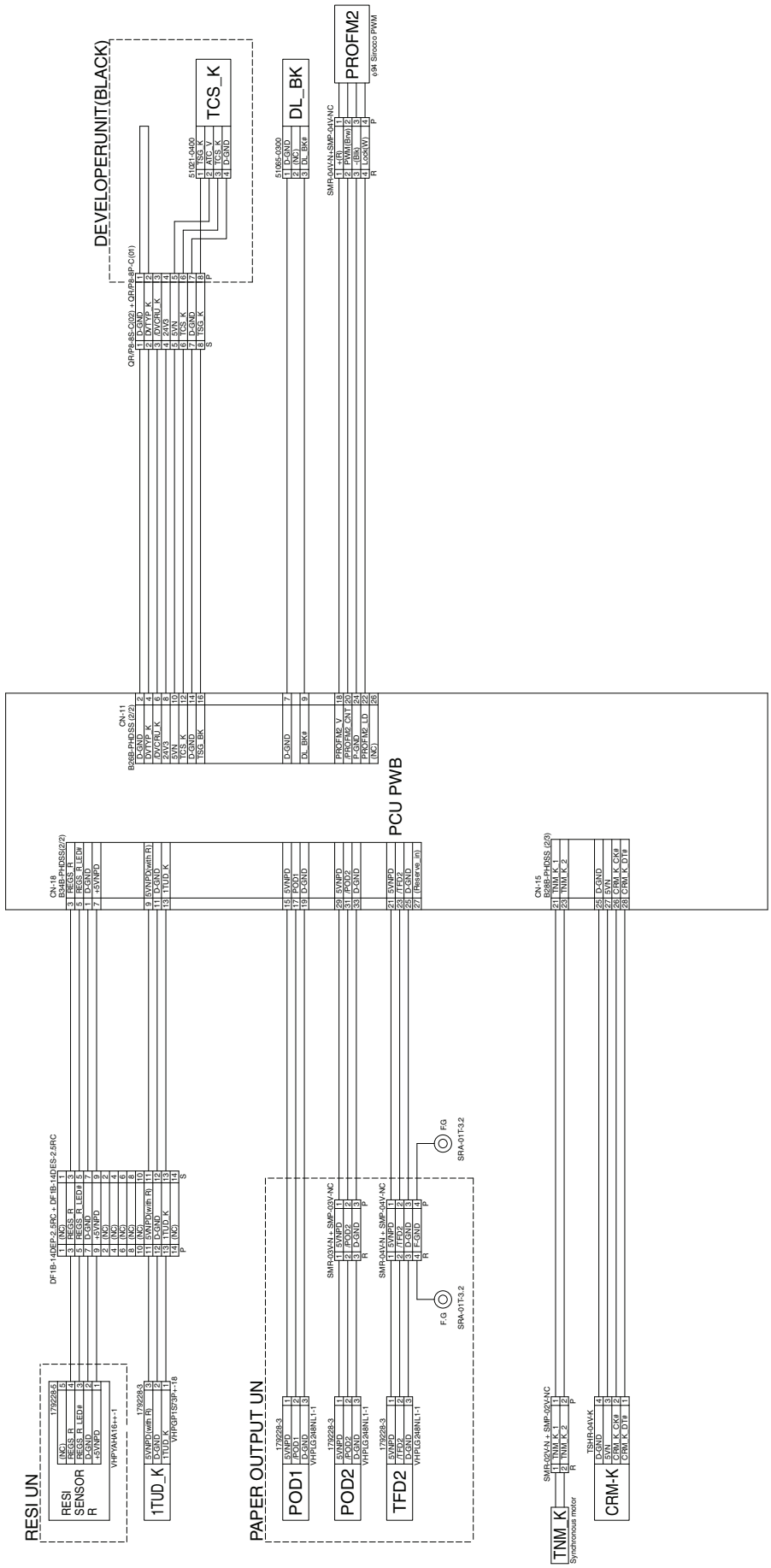


6. Process, DV, RESI, Paper exit

A. MX-C402SC/C382SC

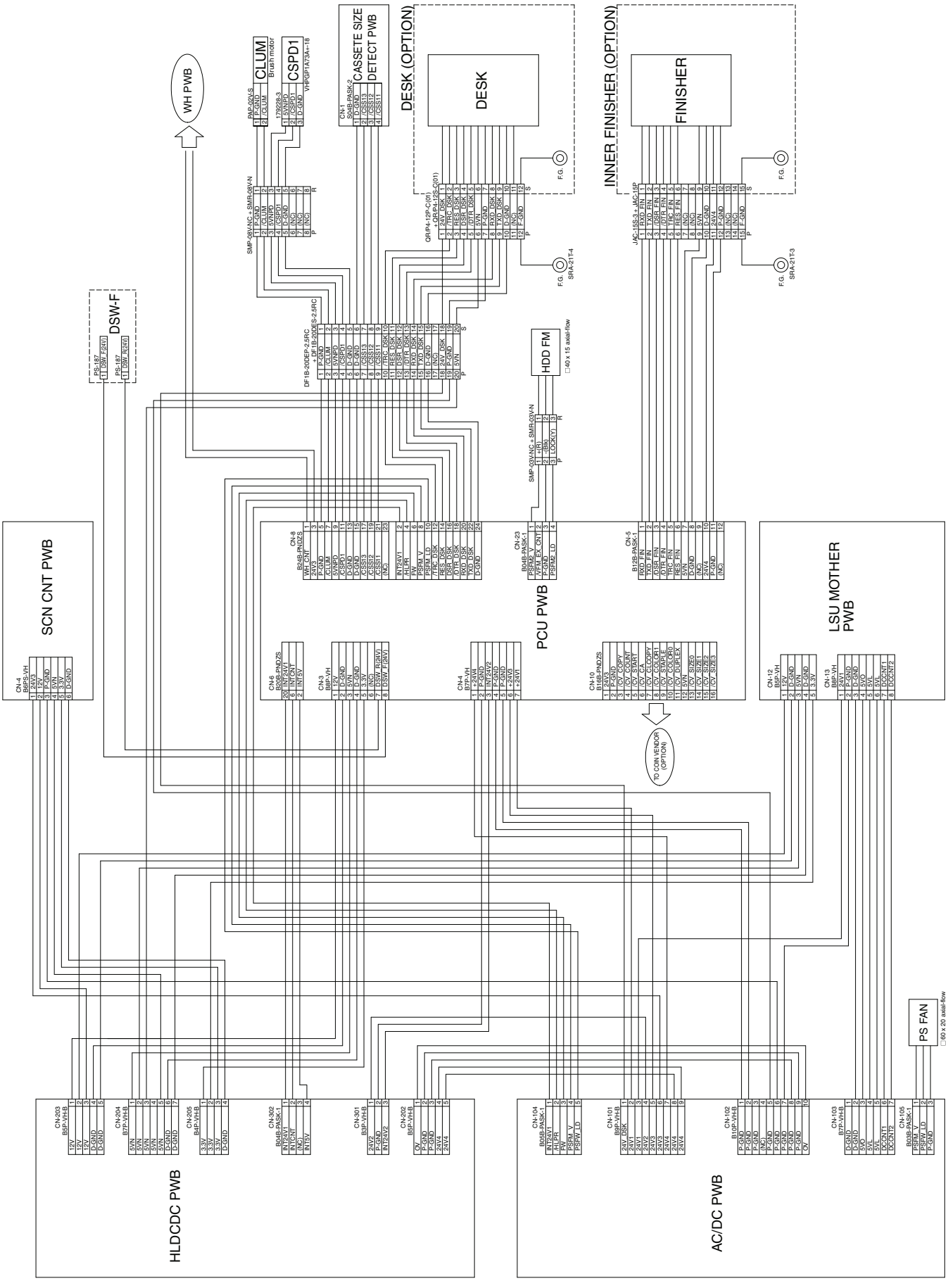


B. MX-B402SC/B382SC

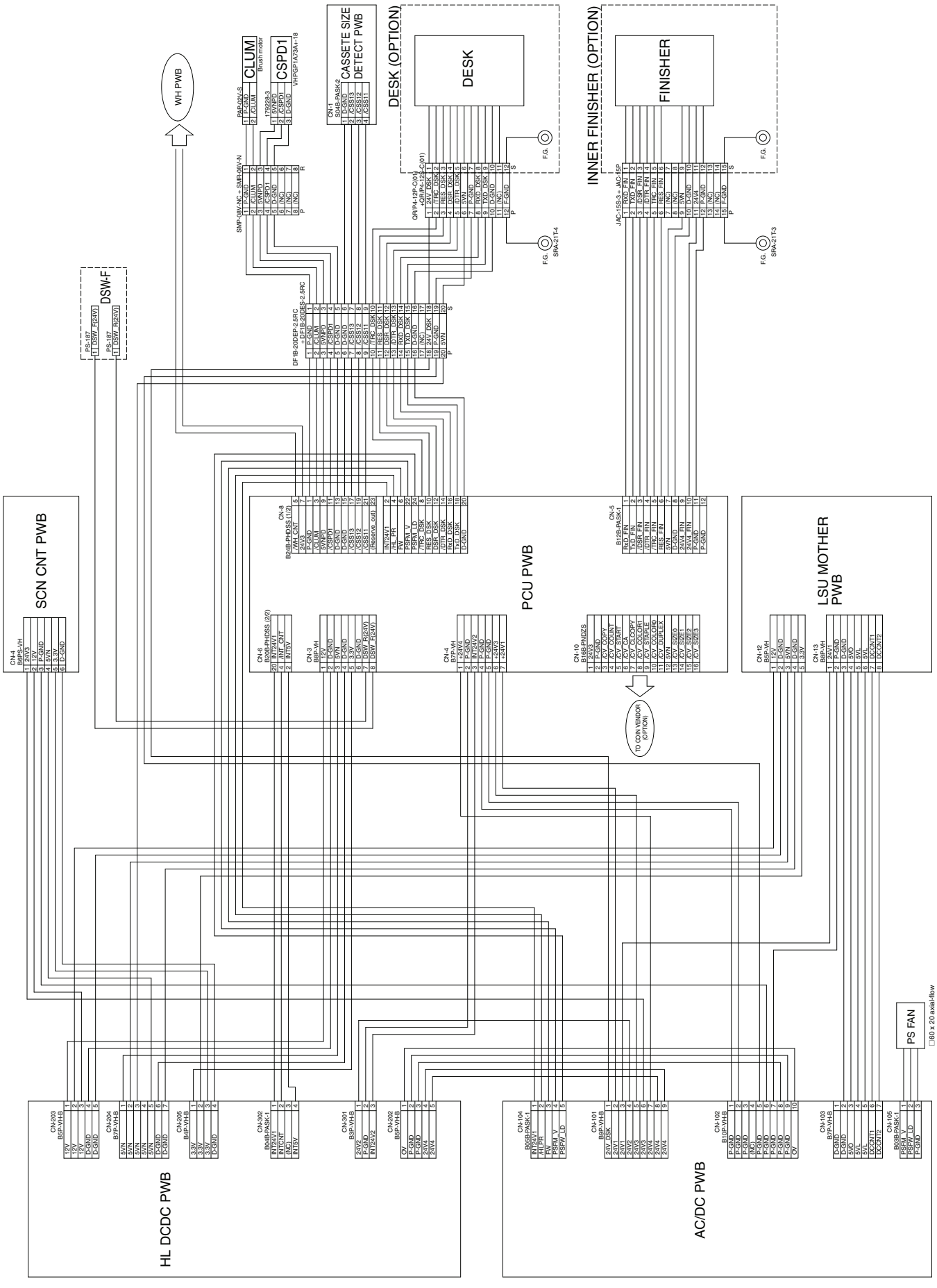


7. Power source, Frame electrical fitting, Option

A. MX-C402SC/C382SC

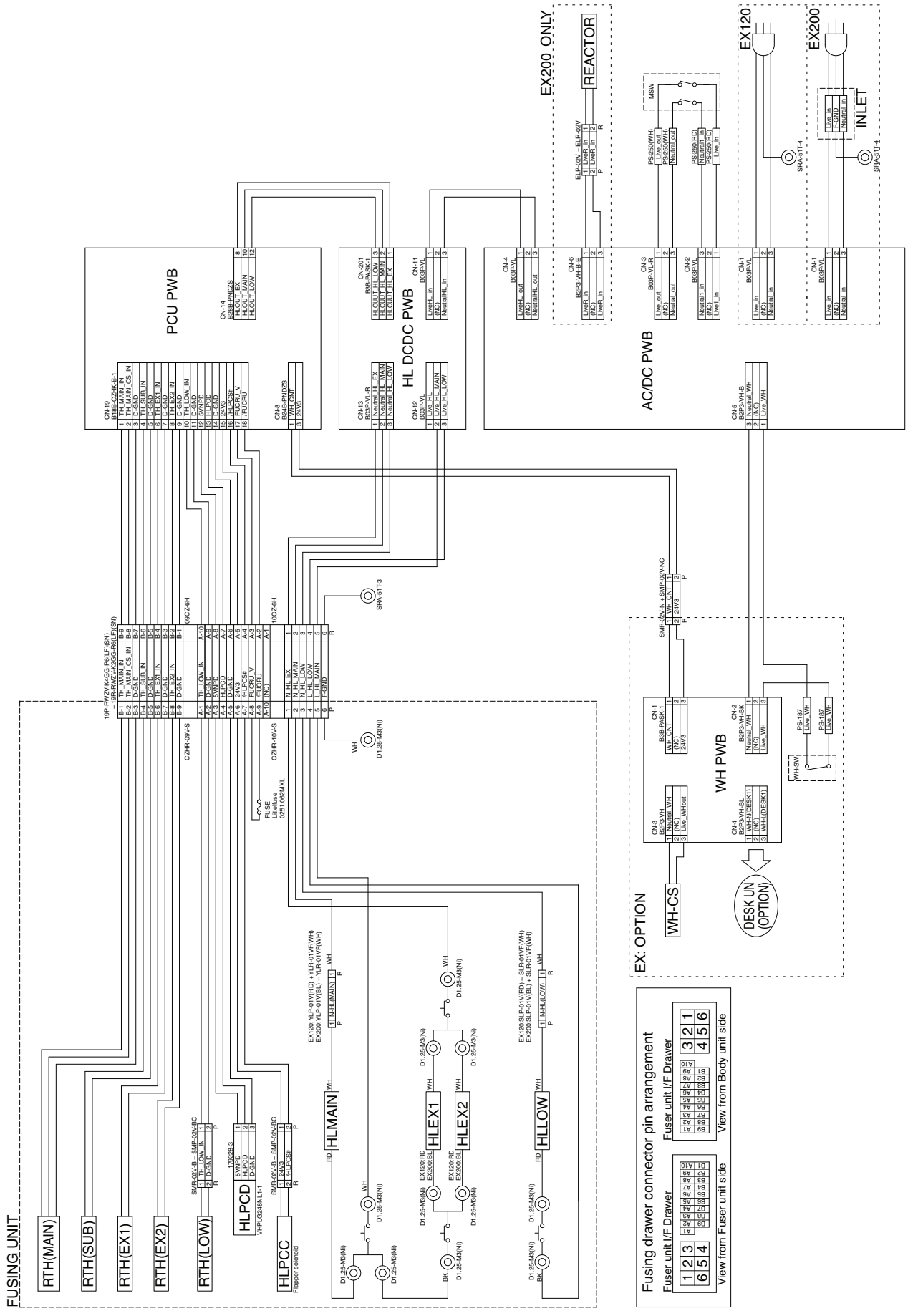


B. MX-B402SC/B382SC

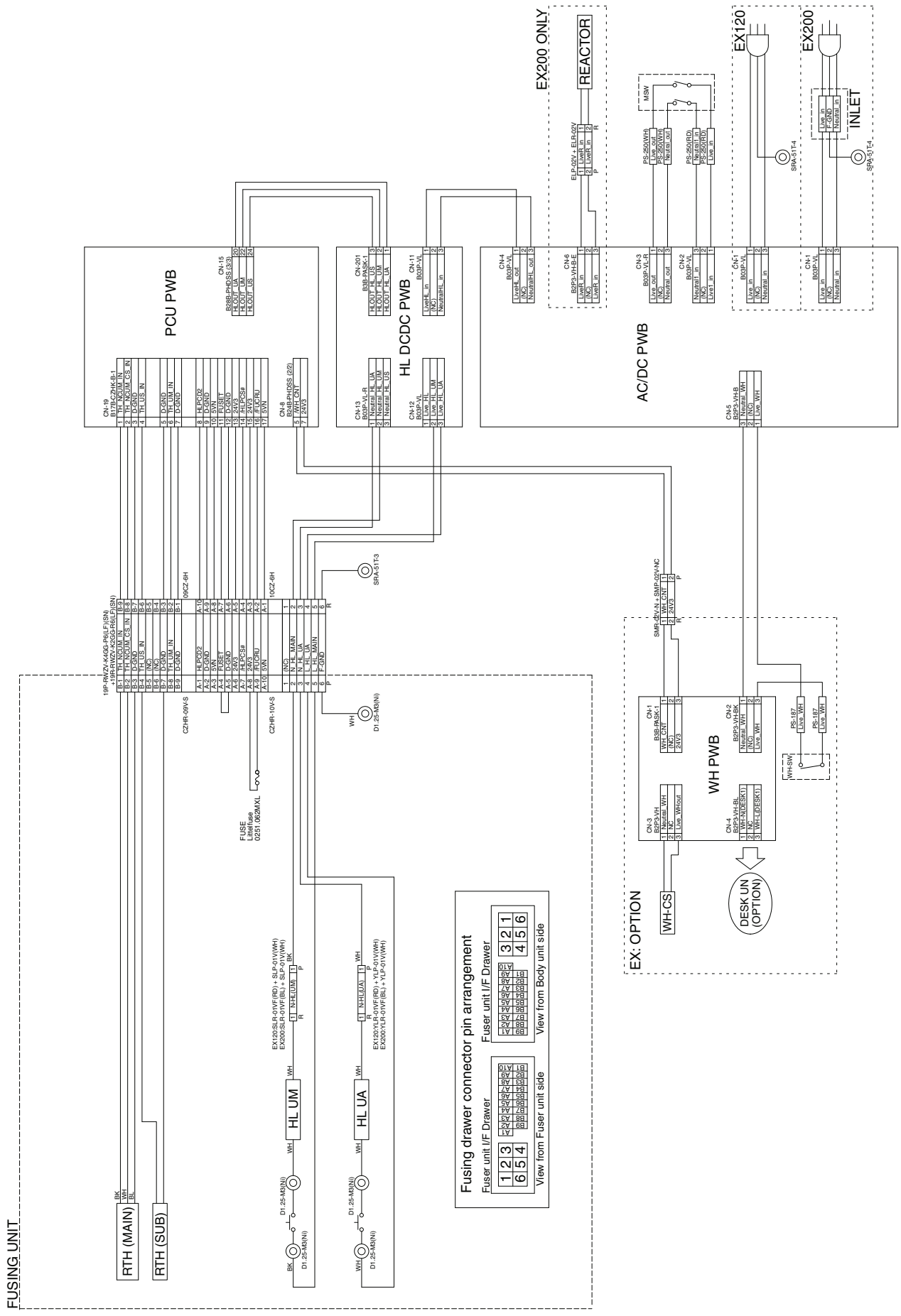


8. AC, Fusing

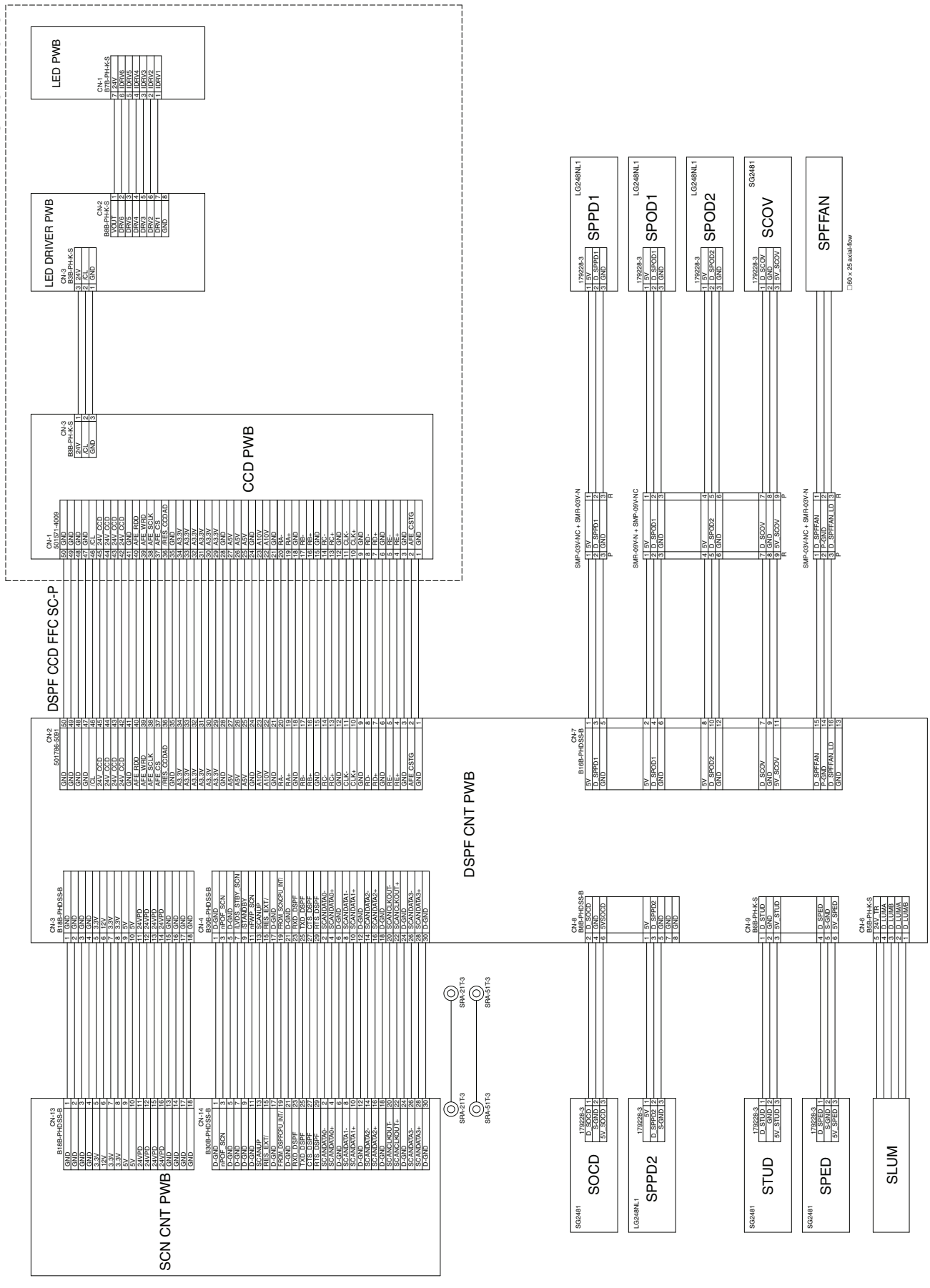
A. MX-C402SC/C382SC



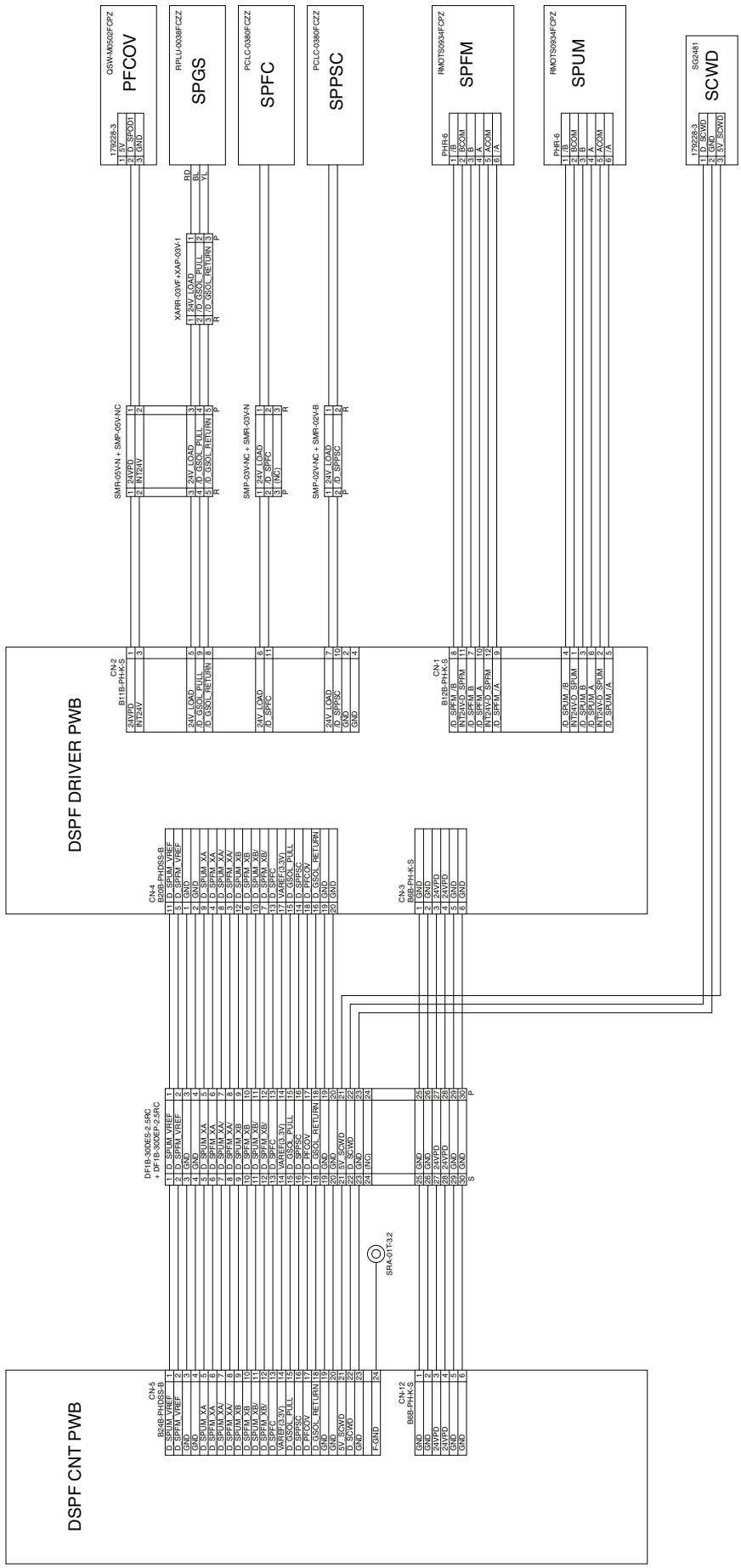
B. MX-B402SC/B382SC



9. DSPF_CNT, DSPF CCD



10. DSPF DRIVER

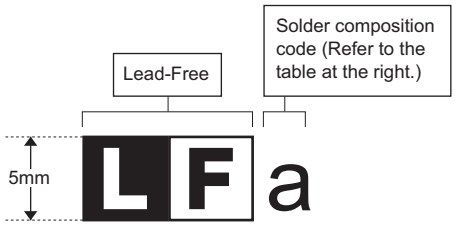


Memo

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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