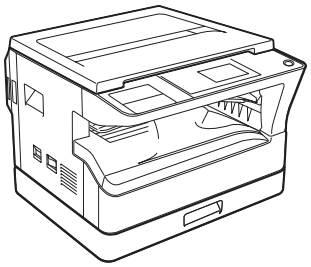
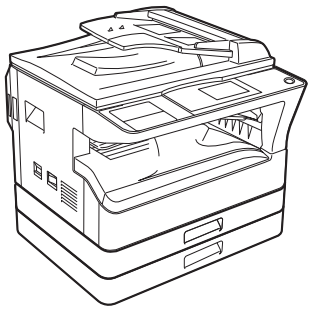
SHARP SERVICE MANUAL

CODE : 00ZMXM200DS1E



MX-M160D
MX-M160



MX-M200D

DIGITAL MULTIFUNCTIONAL SYSTEM

MODEL MX-M200D MX-M200DK MX-M160D MX-M160DK MX-M160

As for the content of the MX-M200DK/MX-M160DK, refer to the content of the MX-M200D/MX-M160D as long as there is no proviso.

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

SHARP CORPORATION

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LEAD-FREE SOLDER

CAUTION

This product is a class 1 laser product that complies with 21CFR 1040.10 and 1040.11 of the CDRH standard and IEC60825-1 Edition 1.2-2001.
This means that this machine does not produce hazardous laser radiation. The use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
This laser radiation is not a danger to the skin, but when an exact focusing of the laser beam is achieved on the eye's retina, there is the danger of spot damage to the retina.
The following cautions must be observed to avoid exposure of the laser beam to your eyes at the time of servicing.

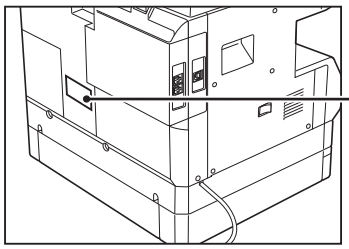
1) When a problem in the laser optical unit has occurred, the whole optical unit must be exchanged as a unit, not as individual parts.
2) Do not look into the machine with the main switch turned on after removing the developer unit, toner cartridge, and drum cartridge.
3) Do not look into the laser beam exposure slit of the laser optical unit with the connector connected when removing and installing the optical system.
4) The middle frame contains the safety interlock switch.
   Do not defeat the safety interlock by inserting wedges or other items into the switch slot.

Warning:

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

LUOKAN 1 LASERLAITE

KLASS 1 LASERAPPARAT



Disconnect the AC cord before servicing the unit.

CLASS 1
LASER PRODUCT
LASER KLASSE 1
LASER KLASY 1

LASER WAVE - LENGTH: 785 nm + 10 nm/ –15 nm
Pulse times : (8.141 μs ± 0.1 μs/7 mm
Output power : 0.14 mW – 0.22 mW

CAUTION
CLASS 3B INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.

VORSICHT
UNSICHTBARE LASERSTRAHLUNG DER KLASSE 3B, WENN ABDECKUNG GEÖFFNET UND SICHERHEITSVERRIEGELUNG ÜBERBRÜCKT. NICHT DEM STRAHL AUSSETZEN.

ADVARSEL
USYNLIG LASERSTRÅLING AF KLASSE 3B VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.

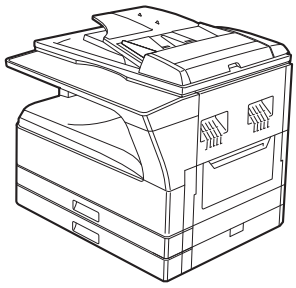
ADVERSEL
USYNLIG KLASSE 3B LASERSTRÅLING NÅR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES. UNNGÅ EKSPONERING FOR STRÅLEN.

VARNING
OSYNLIG LASERSTRÅLNING KLASS 3B NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRRAR ÄR URKOPPLADE. UNDVIK EXPONERING FÖR STRÅLEN.

V A R O !
AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTÖNTÄ LUOKAN 3B LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.

注 意
盖板打开并且连锁装置处于无效状态时，请不要直视激光光束。

警 告
當打開並使連鎖裝置失效時，會產生等級3B不可見的雷射光照射，應避免暴露於雷射光中。



[1] GENERAL

1. Note for servicing

Pictogram

The label (⚠ ♨) in the fusing area of the machine indicates the following:

⚠ : Caution, risk of danger

♨ : Caution, hot surface

A. Warning for servicing

- The fusing area is hot. Exercise care in this area when removing misfed paper.
- Do not look directly at the light source. Doing so may damage your eyes.

B. Cautions for servicing

- Do not switch the machine rapidly on and off. After turning the machine off, wait 10 to 15 seconds before turning it back on.
- Machine power must be turned off before installing any supplies.
- Place the machine on a firm, level surface.
- Do not install the machine in a humid or dusty location.
- When the machine is not used for a long time, for example, during prolonged holidays, turn the power switch off and remove the power cord from the outlet.
- When moving the machine, be sure to turn the power switch off and remove the power cord from the outlet.
- Do not cover the machine with a dust cover, cloth or plastic film while the power is on. Doing so may prevent heat dissipation, damaging the machine.
- Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous laser radiation exposure.
- The socket-outlet shall be installed near the machine and shall be easily accessible.

C. Note for installation place

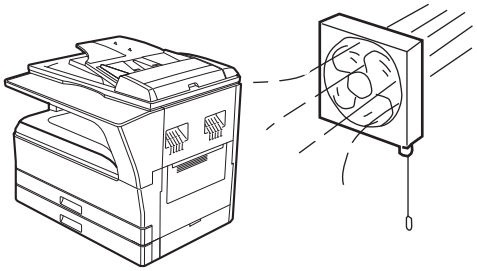
Improper installation may damage the machine. Please note the following during initial installation and whenever the machine is moved.

Caution : If the machine is moved from a cool place to a warm place, condensation may form inside the machine. Operation in this condition will cause poor copy quality and malfunctions. Leave the machine at room temperature for at least 2 hours before use.

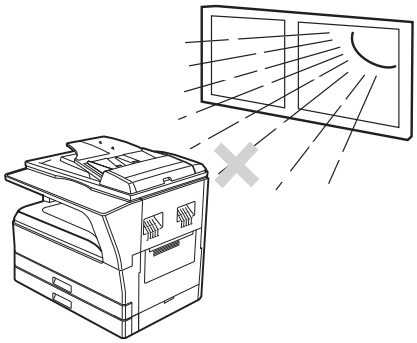
Do not install your machine in areas that are:

- damp, humid, or very dusty

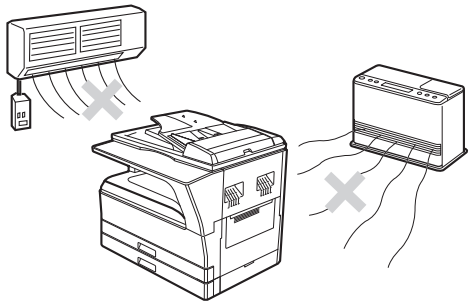
- poorly ventilated



- exposed to direct sunlight



- subject to extreme temperature or humidity changes, e.g., near an air conditioner or heater.

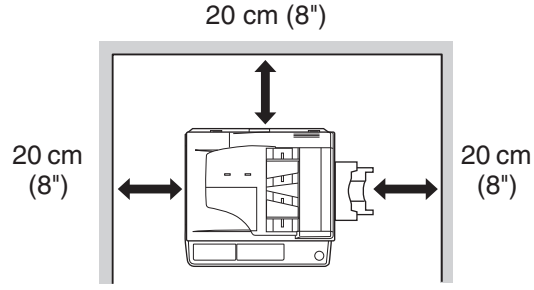


The machine should be installed near an accessible power outlet for easy connection and disconnection.

Be sure to connect the power cord only to a power outlet that meets the specified voltage and current requirements. Also make certain the outlet is properly grounded.

Note : Connect the machine to a power outlet which is not used for other electric appliances. If a lighting fixture is connected to the same outlet, the light may flicker.

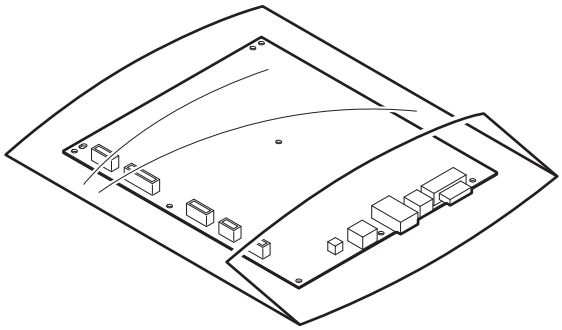
Be sure to allow the required space around the machine for servicing and proper ventilation.



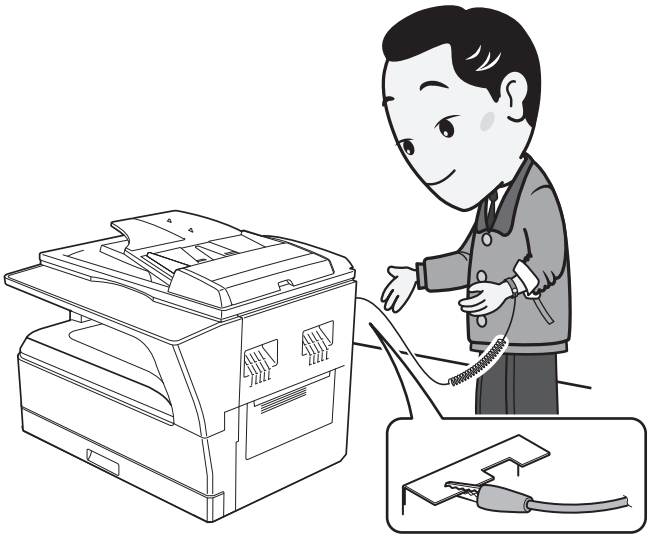
D. Note for handling PWB and electronic parts

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

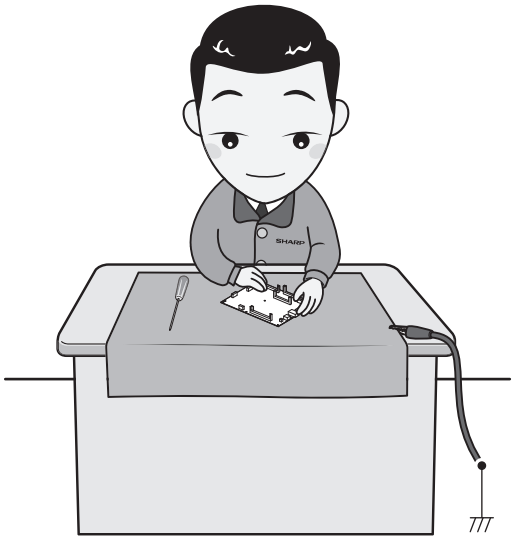
1) When in transit or storing, put the parts in an anti-static bag or an anti-static case and do not touch them with bare hands.



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.

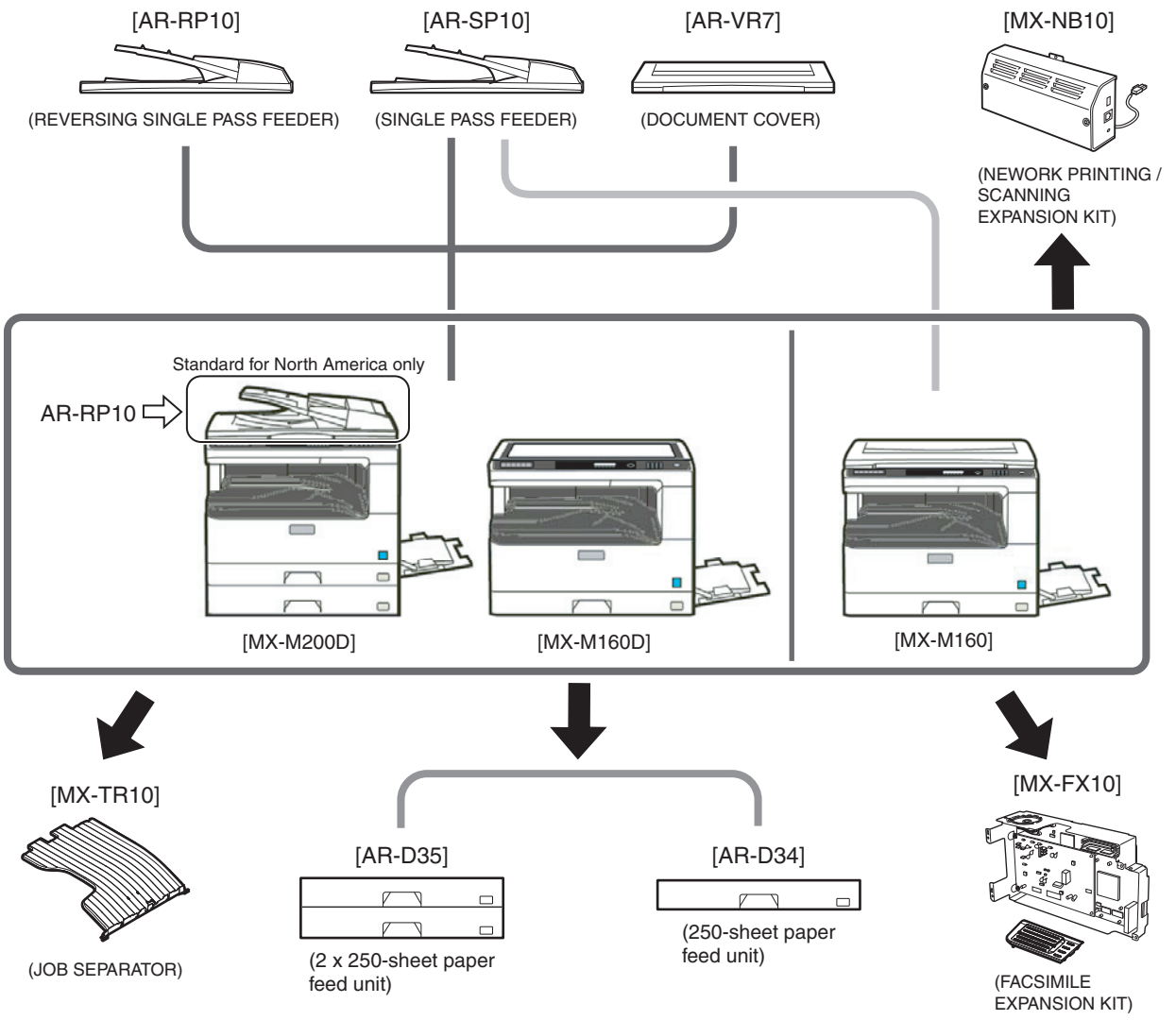


3) When repairing or replacing an electronic part, perform the procedure on an anti-static mat.



[2] CONFIGURATION

1. System Configurations



2. Machine configuration

	MX-M200D	MX-M160D	MX-M160
Copy	STD	STD	STD
Color scanner	STD	STD	STD
SPLC printer	STD	STD	STD
PCL printer	OPT	OPT	OPT
Fax	OPT	OPT	OPT
Network	OPT	OPT	OPT
Duplex	STD	STD	N/A
Sort	STD	STD	STD
Shifter ∗1	STD	STD	STD
Paper tray	2-stage	1-stage	1-stage

∗1: Except for North America

3. Option list

Model name	Name	MX-M200D	MX-M160D	MX-M160	Product key target
AR-RP10	REVERSING SINGLE PASS FEEDER	North/South America: STD Europe, Australia, Agency: OPT	OPT	N/A	—
AR-SP10	SINGLE PASS FEEDER	North/South America: N/A Europe, Australia, Agency: OPT	OPT	OPT	—
AR-VR7	DOCUMENT COVER	North/South America:N/A Europe, Australia, Agency: OPT	OPT	STD	—
AR-D34	250-SHEET PAPER FEED UNIT	OPT	OPT	OPT	—
AR-D35	2X250-SHEET PAPER FEED UNIT	OPT	OPT	OPT	—
MX-TR10	JOB SEPARATOR TRAY KIT	OPT	OPT	OPT	—
MX-NB10	NEWORK PRINTING / SCANNING EXPANSION KIT	OPT	OPT	OPT	—
MX-FX10	FACSIMILE EXPANSION KIT	OPT	OPT	OPT	—
AR-SM5	256MB EXPANTION MEMORY BOARD	OPT	OPT	OPT	—
AR-MM9	FAX EXPANTION MEMORY BOARD	OPT	OPT	OPT	—
AR-PF1	BARCODE FONT KIT	OPT	OPT	OPT	—
MX-PK10	PS3 EXPANSION KIT	OPT	OPT	OPT	Yes
AR-PF2	MACRO FONT FLASH ROM KIT	OPT	OPT	OPT	—

O: Option installation enable X: Option installation disable

[3] SPECIFICATIONS

1. Copy mode

A. Type

Type	Desk-top
Paper exit	center tray / internal

B. Machine composition

MX-M160D/MX-M160	16-CPM multi function model
MX-M200D	20-CPM multi function model

C. Copy speed

(1) Engine speed (ppm)

Paper size	MX-M200D	MX-M160D/MX-M160
A4/ 8.5”x11”	20ppm	16ppm
A4R	14ppm	12ppm
8.5”x11”R	15ppm	12ppm
A5/ 5.5”x8.5”	20ppm	16ppm
B5/ 16K	20ppm	16ppm
B5R	16ppm	14ppm
16KR	15ppm	14ppm
8.5x13”	12ppm	11ppm
B4/ 8.5”x14	12ppm	10ppm
A3	11ppm	9ppm
11”x17”	10ppm	9ppm
8K	11ppm	10ppm

(2) Document replacement speed (Copy mode)

Copy mode	MX-M200D		MX-M160D/MX-M160	
S to S	20cpm	(100%)	16cpm	(100%)

S to S : Tray1 A4/8.5”X11” document 11 sheets (11 pages), copy 1 set

(3) Job efficiency

Copy mode	MX-M200D	MX-M160D	MX-M160
S to S	18cpm (90%)	15cpm (49%)	15cpm (94%)
S to D	10cpm (50%)	10cpm (63%)	—
D to D	10cpm (50%)	10cpm (63%)	—

S to S : Tray1 A4/8.5”X11” document 10 sheets (10 pages), copy 5 sets
S to D : Tray1 A4/8.5”X11” document 10 sheets (10 pages), copy 5 sets
D to D : Tray1 A4/8.5”X11” document 10 sheets (20 pages), copy 5 sets

(4) First copy time

Tray	Content
1st tray	7.2 sec or less
2nd tray	8.5 sec or less
3rd tray	9.5 sec or less
4th tray	10.5 sec or less
Bypass tray	7.5 sec or less

600x300dpi, AE mode, A4/Letter, single surface copy with OC, in polygon ready state

D. Document

Max. document size	A3, 11" X 17"
Document reference position	Left bottom reference
Detection (Platen)	Yes

E. Paper feed

(1) Paper feed section details

Item		1st tray	2nd tray	Bypass tray
Paper capacity		250 sheets	250 sheets	100 sheets
Paper size detection		No (Paper size is set with the system setting.)		
Paper type setting		No	No	No (Heavy paper setting is enabled.)
Paper size changing method		The paper guide is set by the user.		
Paper when shipping	AB series	A4	A4	-
Size setting	Inch series	8 1/2” x11”	8 1/2” x11”	-
Remaining paper quantity detection		Only empty detection available		

(2) Feedable paper

Paper size		1st tray	2nd tray	Bypass tray
A3	297x420	Yes	Yes	Yes
B4	257x364	Yes	Yes	Yes
A4	297x210	Yes	Yes	Yes
A4-R	210x297	Yes	Yes	Yes
B5	257x182	Yes	Yes	Yes
B5R	182x257	Yes	Yes	Yes
A5	210x148.5	Yes	N/A	Yes
A5R	148.5x210	N/A	N/A	Yes
A6R	105x148.5	N/A	N/A	Yes
B6R	128.5x182	N/A	N/A	Yes
Ledger 11 x 17 in	279.4x431.8	Yes	Yes	Yes
Legal 8.5x14in.	215.9x355.6	Yes	Yes	Yes
Foolscap 8.5 x 13 in	215.9x330.2	Yes	Yes	Yes
Letter 11x8.5in	279.4x215.9	Yes	Yes	Yes
Letter-R 8.5x11in	215.9x279.4	Yes	Yes	Yes
Executive-R 7.25x10.5in.	184.2x266.7	N/A	N/A	Yes
Invoice 8.5x5.5 in.	215.9x139.7	Yes	N/A	Yes
Invoice-R 5.5x8.5 in	139.7x215.9	N/A	N/A	Yes
8K	270x390	Yes	Yes	Yes
16K	270x195	Yes	Yes	Yes
16KR	195x270	Yes	Yes	Yes
COM10	104.8x241.3	N/A	N/A	Yes
COM9	98.4x225.4	N/A	N/A	Yes
C5	162x229	N/A	N/A	Yes
DL	110x220	N/A	N/A	Yes
Postcard	100x148	N/A	N/A	Yes
Return postcard	200x148	N/A	N/A	Yes
Long format No. 3	120.1x235	N/A	N/A	Yes
Monarch	98.4x190.5	N/A	N/A	Yes
Western format No. 2	114x162	N/A	N/A	Yes
Western format No. 4	105x235	N/A	N/A	Yes

(3)Types of feedable paper

Types of paper		1st tray	2nd tray	Bypass tray
Thin paper	56-59g/m^2 15-15.9lbs	Yes	Yes	Yes
Plain paper	60-90g/m^2 16-24lbs	Yes	Yes	Yes (Multi paper feed enable)
Heavy paper	91-105g/m^2 16-24lbs	N/A	N/A	Yes (Multi paper feed enable)
Heavy paper	106-128g/m^2 24.1-33.5lbs	N/A	N/A	Yes (A4 or less) (Multi paper feed enable)
Heavy paper	129-200g/m^2 33.6-53.2lbs	N/A	N/A	Yes (A4 or less) (Only single paper feed)
Heavy paper	201-256g/m^2 53.3-68lbs	N/A	N/A	N/A
Envelope	75-90g/m^2 20-24lbs	N/A	N/A	Yes
Postcard		N/A	N/A	Yes
OHP film		N/A	N/A	Yes
Label sheet		N/A	N/A	Yes
Tab paper 20		N/A	N/A	No

F. Multi copy

Max. number of multi copy	999 sheets

G. Warm-up time

Warm-up time	45 seconds or less
Pre-heat	Available
Jam recovery	Within 45 sec

H. Copy magnification ratio

Fixed magnification ratio	AB system: 400, 200, 141, 122, 115, 100, 86, 81, 70, 50, 25%
	Inch system: 400, 200, 141, 129, 121, 100, 95, 77, 64, 50, 25%
Zooming	25 ~ 400% SPF/RSPF(50 ~ 200%)
Independent zooming(vertical)	Available (25 ~ 400%) SPF/RSPF(50 ~ 200%)
Independent zooming (horizontal)	Available (25 ~ 400%) SPF/RSPF(50 ~ 200%)

I. Print density

Density mode	Auto / Text / Photo
No. of manual adjustment	5 steps (Text / Photo)
Resolution	Writing: 600 x 600dpi Reading: 600 (main) x 600 (sub) (PHOTO mode) 600 (main) x 300 (sub) (AUTO exposure mode) 600 (main) x 300 (sub) dpi (TEXT mode)
Gradation	Reading: 256 gradations Writing: Binary
Toner save mode	Set by the user program

J. Void width

Void area	Lead edge 1 ~ 4mm, rear edge 4mm or less, Total of both sides: 6mm or less
Image loss	4.0mm or less

K. Paper exit / finishing

Paper exit section capacity	Face down 250 sheets
Full detection	Detection of 250 sheets count is for only copy mode When the job separator is installed, only detection is available Upper stage: 100 sheets or 10.6mm or less Lower stage: 150 sheets
Finishing	Shifter (Standard except for North America) Job separator (Option)
Electronic sort capacity	A4/ 8.5" x 11" standard document: TEST CHART B = 100 sheets TEST CHART C = 80 sheets
Offset function	Yes (Except for North America)
Staple function	None

L. Additional functions

APS	O
AMS	O
Auto tray switching	O
Memory copy	O
Rotation copy	O
E-sort (Sorting function)	O Single surface, A4, Max. 80 sheets
E-sort (Grouping function)	O
Rotation sort	X
Prevention of sky shot	X
Independent zooming	O
1 set 2 copy	O SPF: Disable OC: Enlargement is disable.
Binding margin	O Default AB series: 10mm (5, 10, 15, 20mm) Inch series: 1/2 inch (1/4, 1/2, 3/4, 1 inch)
Edge erase	O Default AB series: 10mm (5, 10, 15, 20mm) Inch series: 1/2 inch (1/4, 1/2, 3/4, 2 inch)
Center erase	O Default AB series: 10mm (5, 10, 15, 20mm) Inch series: 1/2 inch (1/4, 1/2, 3/4, 3 inch)
Black/white reverse	X
Multi shot	O
Offset	X
Preheating	O The conditions are set by the user program.
Auto shut-off	O The conditions are set by the user program.
User programming	O
Total counter	O Supports Total counter and Copy counter and Scanner counter.
Coin vendor support	O (Supports I/F only.)
Auditor support	O (Supports I/F only.)
Toner save	O (Set according to the destination)
Department management	O (Total of copy, printer, and scanner: 50 Dept., Fax: 50 Dept.)

O : Available X : Not available

M. Other specifications

Photoconductor type	OPC (Organic Photo Conductor)
Photoconductor drum dia.	30mm
Copy lamp	Cold cathode fluorescent lamp (CCFL)
Developing system	Dry 2-component magnetic brush development
Charging system	Saw teeth charging
Transfer system	(+) DC corotron
Separation system	(-) DC corotron
Fusing system	Heat roller
Cleaning system	Contact blade

N. Package form

Body	Body / Accessories

O. External view

	MX-M200D	MX-M160D	MX-M160
External dimensions (With the bypass tray closed)	590 mm(W) x 574 mm(D) x 522 mm(H) (Except for North America) 651 mm(H) (For North America)	590 mm (W) x 574 mm (D) x 437 mm (H)	590 mm (W) x 574 mm (D) x 470 mm (H)
Occupying area (With the bypass tray opened)	883mm(W) x 574mm(D)		
Weight (Excluding developer)	33.0Kg (Except for North America) 38.3Kg (For North America)	28.1Kg	29.7Kg

P. Power source

Voltage	100 - 127V 220 - 240V
Frequency	50/60Hz common

Q. Power consumption

Max. power consumption	1200W

* EnergyStar conformity

Power consumption when standby	10W (Not including option)

R. Digital performance

Resolution	Reading	600 x 600dpi (PHOTO mode) 600 x 300dpi (AUTO exposure mode) 600 (main) x 600 (sub) dpi (TEXT mode)
	Writing	600 x 600dpi
Gradation	Reading	256 gradations
	Writing	Binary
Memory	64MB	
Hard disk	None	

S. Printing function

(1) Platform

Item	Content
Support platform	IBM PC/AT compatible machine

(2) Support OS

OS		SPLC	PCL6 SPDL2	PCL5e	PS	PPD	Rerease method
Windows	98/Me	No	No	No	No	No	
	NT 4.0 SP5 or later	No	No	No	No	No	
	2000	Yes	Yes	Yes	Yes	Yes	CD-ROM
	XP	Yes	Yes	Yes	Yes	Yes	CD-ROM
	XP x64	Yes	Yes	No	Yes	Yes	Web
	Server 2003	No	Yes	Yes	Yes	Yes	CD-ROM
	Server 2003 x64	No	Yes	No	Yes	Yes	Web
	Vista	Yes	Yes	Yes	Yes	Yes	CD-ROM
	Vista x64	Yes	Yes	No	Yes	Yes	Web
	Server 2008	No	Yes	No	Yes	Yes	CD-ROM
	Server 2008 x64	No	Yes	No	Yes	Yes	Web
Mac	9.0-9.2.2	No	No	No	No	Yes	CD-ROM
	X 10.2.8	No	No	No	No	Yes	CD-ROM
	X 10.3.9	No	No	No	No	Yes	CD-ROM
	X 10.4.11	No	No	No	No	Yes	CD-ROM
	X 10.5-10.5.6	No	No	No	No	Yes	CD-ROM

(3) Printer driver function (SPLC)

Item			SPLC
Common	Custom settings		Yes
	Reset to default		Yes
	MIMIC		Yes
Configuration	Paper feed option		Tray1/ Tray2/ Tray3/ Tray4
	Tray Settings	Paper tray	Tray1/ Tray2/ Tray3/ Tray4/ Manual paper feed
		Set Paper size	Not set/ A3/ A4-R/ A5-R/ A6/ B4/ B5-R/ B6/ Ledger/ Letter-R/ Legal/ Executive/ Invoice-R/ Foolscap/ Folio/ Com10/ DL/ C5/ 8k/ 16k-R/ Custom paper
	Status window		Yes
	Version information		Yes
Main	Number of copies		1-999
	Print in the unit of copies		On/ Off
	N-UP printing		1/ 2/ 4 /6 up
	frame line		On/ Off
	Order		From left to right */ From right to left */ From top to bottom */ From top right to downward **/ From top left to right **/ From top right to left **/ From top right to downward ** ("*" is displayed for 2UP only. "**" is displayed except for 1UP and 2UP.)
	Print direction		Vertical/Horizontal
	Print after rotating 180°C		Yes

Item			SPLC
Paper	Paper size		A3/ A4/ A5/ A6/ B4/ B5/ B6/ Ledger/ Letter/ Legal/ Executive/ Invoice/ Foolscap/ Folio/ Com10/ DL/ C5/ 8k/ 16k/ Custom page
			- Custom paper: Width [100.0] -[297.0] [3.94"] -[11.69"] Length [148.0] -[431.8] [5.83"] - [17.00"] - Milimeters/ Inches
	Setting for zoom		None/ Fit page printing/ zoom ("24" - "400")
	Setting		Yes
	Paper feed system		Auto paper feed/ manual feed/ Tray1/ Tray2/ Tray3/ Tray4
Advanced setting	Image adjust-ment	brightness	"0" - "100"
		Contrast	"0" - "100"
	Print text in black		On/ Off
	Print line in black		On/ Off
Advanced setting	Compati-bility	Input resolution	300dpi/ 600dpi
		Hatching pattern	Standard/Fine
		Spool type	RAW/ EMF
		Reduction system	Standard/Unit of page/Unit of object
		Print density adjustment	"1" - "5"
		Priority on the driver setting - Print in the unit of copies	On/ Off
		Priority on the driver setting - Duplex print	On/ Off
Watermark	Watermark		Top secret/ Confidential/ Draft/ Original/ Copy
	Position		X: [-50] - [50] Y: [-50] - [50] Sets to the center position.
	Size		"6" - "300"
	Angle		"-90" - "90"
	Edit	Font name	
		Bold text	On/ Off
		Italic face	On/ Off
		Text set	It depends on the font name.
		Color density	"0" - "255"
	Print the first page only		On/ Off

T. Scanner function

Type	Flat bed scanner
Scan system	Document table/document feed unit
Light source	White CCFL
Resolution	Color: 600 x 600dpi B/W: 600 x 300dpi (Default) 600 x 600dpi
Document	Sheet/Book
Effective scan range	OC/SPF/RSPF: about 297(length) x 431(width) mm
Scan speed	OC/SPF/R-SPF: 0.962msec/line(300 dpi)
Input data	1bit or 12bit
Output data	1bit or 8bit
Scan color	B/W(Simple binary) / B/W(error diffusion) / Gray scale / Full color
Protocol	TWAIN/WIA(XP,Vista)/STI
Interface	USB2
Scanner utility	Button Manager/Sharpdesk
Drop-out color	Yes (Red/Green/Blue/White)
Scanner button	Provided (6)
Supported OS	Windows 2000/XP/VISTA
Void area	Lead edge/rear edge (2.5mm) on the driver side Left/right: 3.0mm
WHQL support	Support by running change

[4] CONSUMABLE PARTS

1.Supply system table

A. USA/Canada

MX-M200D

No.	Name	Product name	Content	Life	Remark
1	Toner cartridge	MX-206NT	Toner cartridge x1 (Toner:Net 547g With IC)	16K	Life setting by A4 6% document
2	Developer	AR-205MD	Developer x10 (Net 300g)	500K (50x10)	
3	Drum KIT	AR-205DR	Drum x1 Drum fixing plate x1	50K	

B. South and Central America (200V series)

MX-M160/MX-M160D/MX-M200D

No.	Name	Product name	Content	Life	Remark
1	Toner cartridge	MX-206GT	Toner cartridge x1 (Toner:Net 547g With IC)	19K	Life setting by A4 6% document (In a toner save mode)
2	Developer	AR-205LD	Developer x10 (Net 300g)	500K (50x10)	
3	Drum KIT	AR-205DM	Drum x1 Drum fixing plate x1	50K	

C. Europe

MX-M160D/MX-M200D

No.	Name	Product name	Content	Life	Remark
1	Toner cartridge	MX-206GT	Toner cartridge x1 (Toner:Net 547g With IC)	16K	Life setting by A4 6% document
2	Developer	AR-205LD	Developer x10 (Net 300g)	500K (50x10)	
3	Drum KIT	AR-205DM	Drum x1 Drum fixing plate x1	50K	

D. Australia/New Zealand

MX-M160/MX-M160D/MX-M200D

No.	Name	Product name	Content	Life	Remark
1	Toner cartridge	MX-206GT	Toner cartridge x1 (Toner:Net 547g With IC)	16K	Life setting by A4 6% document
2	Developer	AR-205LD	Developer x10 (Net 300g)	500K (50x10)	
3	Drum KIT	AR-205DM	Drum x1 Drum fixing plate x1	50K	

E. Middle East/Africa/Israel/Palestine/Philippine/Taiwan

MX-M160/MX-M160D/MX-M200D

No.	Name	Product name	Content		Life
1	Toner cartridge	MX-206FT	Toner cartridge x1 (Toner:Net 547g With IC)	16K	Life setting by A4 6% document
2	Developer	AR-205CD	Developer x10 (Net 300g)	500K (50x10)	
3	Drum KIT	AR-205DR	Drum x1 Drum fixing plate x1	50K	

F. Asia (Except the above)

MX-M160/MX-M160D/MX-M200D

No.	Name	Product name	Content	Life	Remark
1	Toner cartridge	MX-206AT	Toner cartridge x1 (Toner:Net 547g With IC)	16K	Life setting by A4 6% document
2	Developer	AR-205CD	Developer x10 (Net 300g)	500K (50x10)	
3	Drum KIT	AR-205DR	Drum x1 Drum fixing plate x1	50K	

2. Environmental conditions

A. Transport conditions

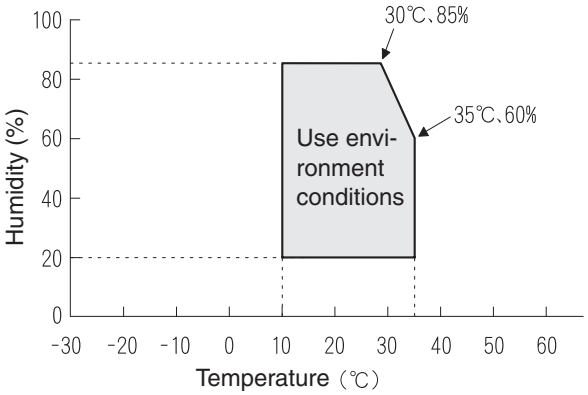
(1) Transport conditions

-20°C - 45°C (No condensation)

(2) Storage conditions

-10°C - 40°C (Unopened, No condensation)

B. Use conditions



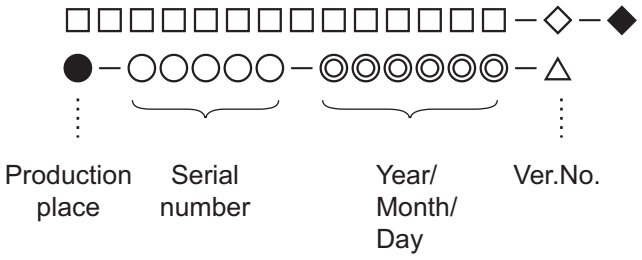
C. Life(packed conditions)

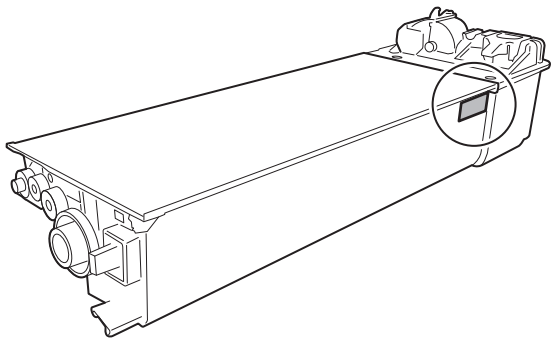
Photoconductor drum (36 months from the production month)
Developer, toner (24 months from the production month)

3. Production number identification

<Toner cartridge>

The label on the toner cartridge shows the date of production.



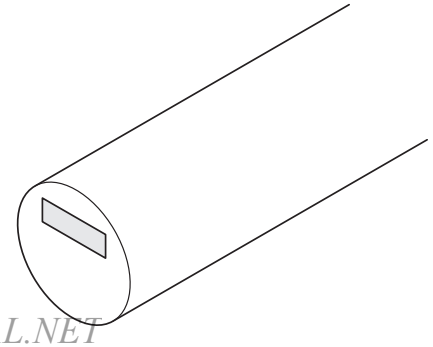


<Drum cartridge>

The lot number, printed on the front side flange, is composed of 6 digits, each digit showing the following content:

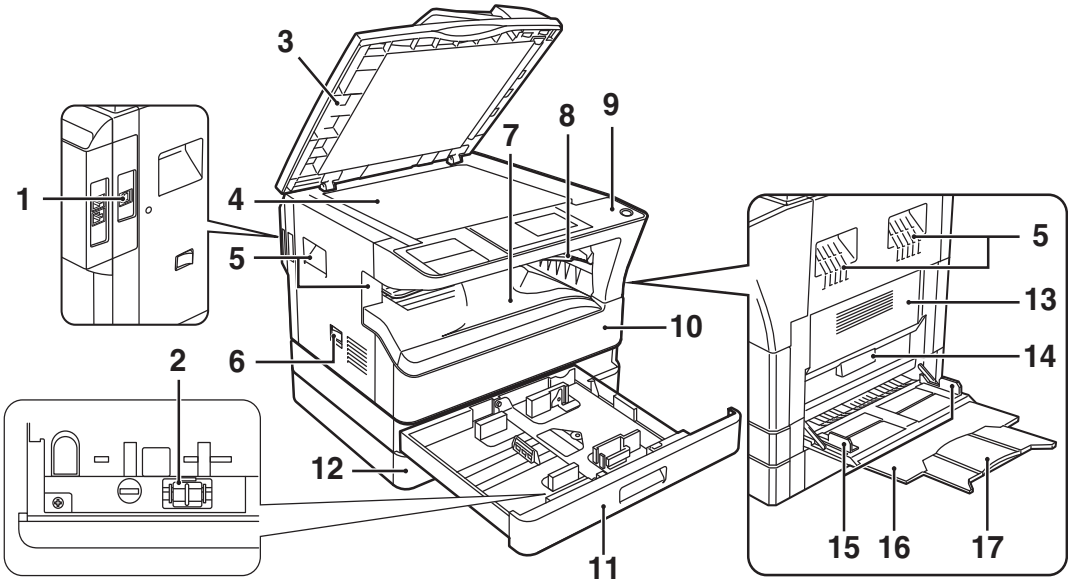
1	2	3	4	5	6

1	Alphabet Indicates the model conformity code. A for this model.
2	Number Indicates the end digit of the production year.
3	Number or X, Y, Z Indicates the month of packing. X stands for October, Y November, and Z December.
4/5	Number Indicates the day of the month of packing.
6	Alphabet Indicates the production factory. "A" for Nara Plant, “C“ for SOCC



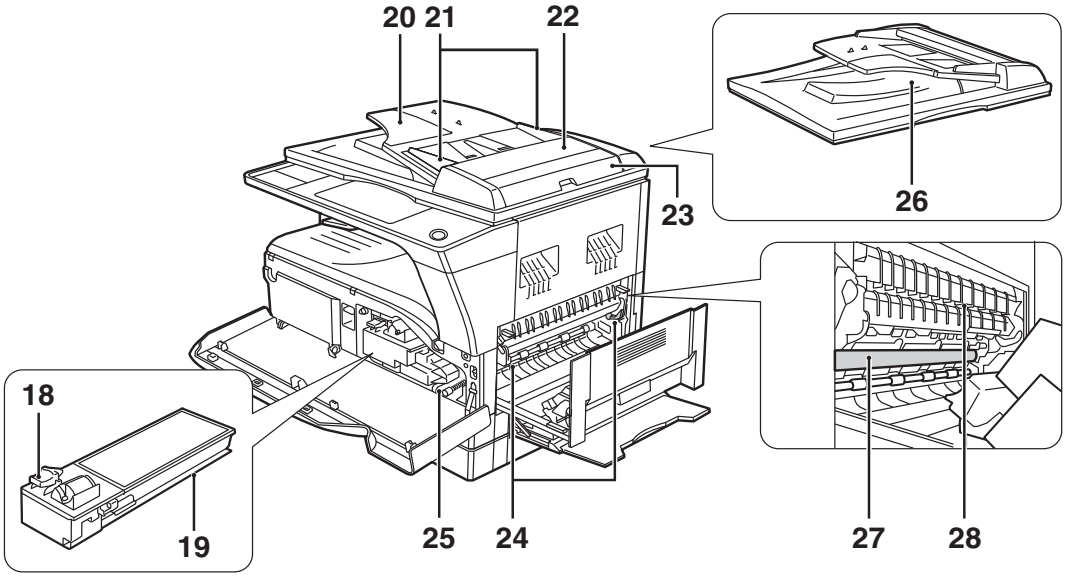
[5] EXTERNAL VIEWS AND INTERNAL STRUCTURES

1. Appearance



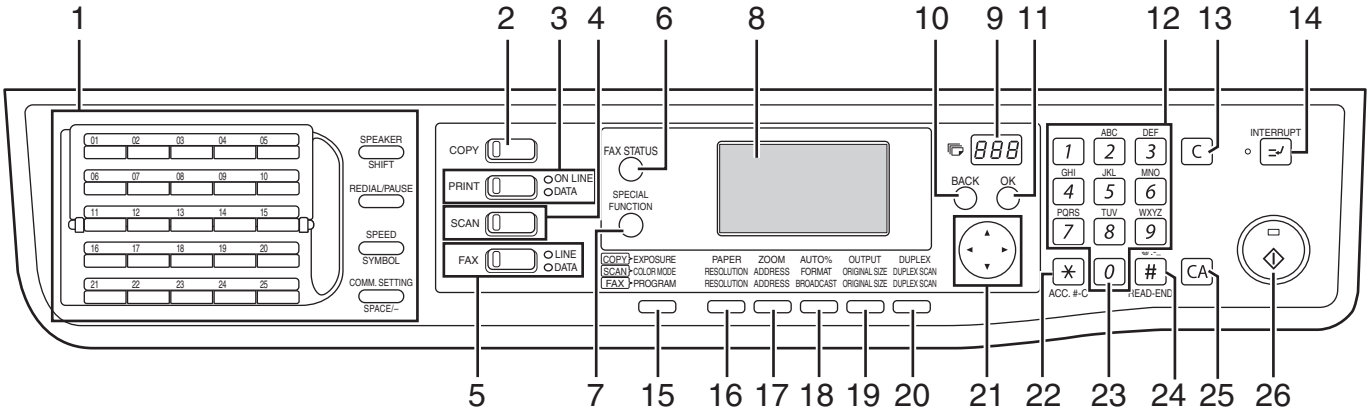
1	**USB 2.0 port** Connect to your computer to this port to use the printer and scanner functions.	10	**Front cover** Open to remove paper misfeeds or replace the toner cartridge.
2	**Charger cleaner** Use to clean the transfer charger.	11	**Tray 1** Tray 1 can hold approximately 250 sheets of copy paper (20 lbs. (80 g/m^2)).
3	**Glass cleaner** Use to clean the original scanning glass.	12	**Tray 2** Tray 2 can hold approximately 250 sheets of copy paper (20 lbs. (80 g/m^2)).
4	**Document glass** Place an original that you wish to scan face down here.	13	**Side cover** Open to remove misfed paper.
5	**Handles** Use to move the machine.	14	**Side cover handle** Pull to open the side cover.
6	**Power switch** Press to turn the machine power on and off.	15	**Bypass tray guides** Adjust to the width of the paper when using the bypass tray.
7	**Center tray** Copies and printed pages are output to this tray.	16	**Bypass tray** Special paper (heavy paper or transparency film) can be fed from the bypass tray.
8	**Top tray** **(when the job separator tray kit is installed)** Received faxes (when the fax option is installed) and print jobs are delivered to this tray.	17	**Bypass tray extension** Pull out when feeding large paper such as 11" x 17" and 8-1/2" x 14" (A3 and B4).
9	**Operation panel** Contains operation keys and indicator lights.		

2. Internal



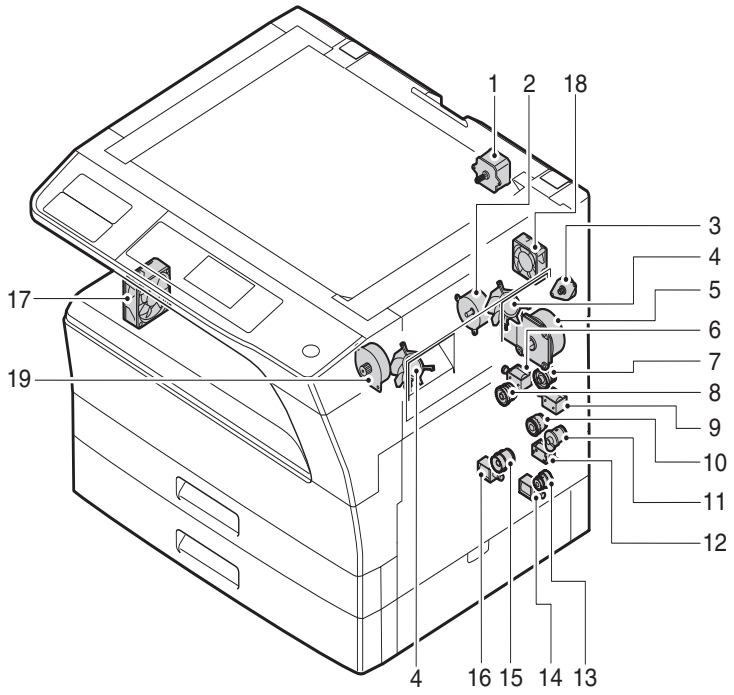
18	**Toner cartridge lock release lever** To replace the toner cartridge, pull out the toner cartridge while pushing on this lever.	24	**Fusing unit release levers** To remove the paper misfed in the fusing unit, push down on these levers and remove the paper. ∗ The fusing unit is hot. Do not touch the fusing unit when removing misfed paper. Doing so may cause a burn or injury.
19	**Toner cartridge** Contains toner..	25	**Roller rotating knob** Rotate to remove misfed paper.
20	**Document feeder tray** Place the original(s) that you wish to scan face up here. Up to 40 sheets can be placed.	26	**Exit area** Originals exit the machine here after copying/scanning when the SPF is used.
21	**Original guides** Adjust to the size of the originals.	27	**Photoconductive drum** Images are formed on the photoconductive drum. ∗ Do not touch the photoconductive drum (green portion) when removing the misfed paper. Doing so may damage the drum and cause smudges on copies.
22	**Feeding roller cover** Open to remove misfed originals.	28	**Fusing unit paper guide** Open to remove misfed paper.
23	**Right side cover** Open to remove misfed originals.		

3. Operation Section



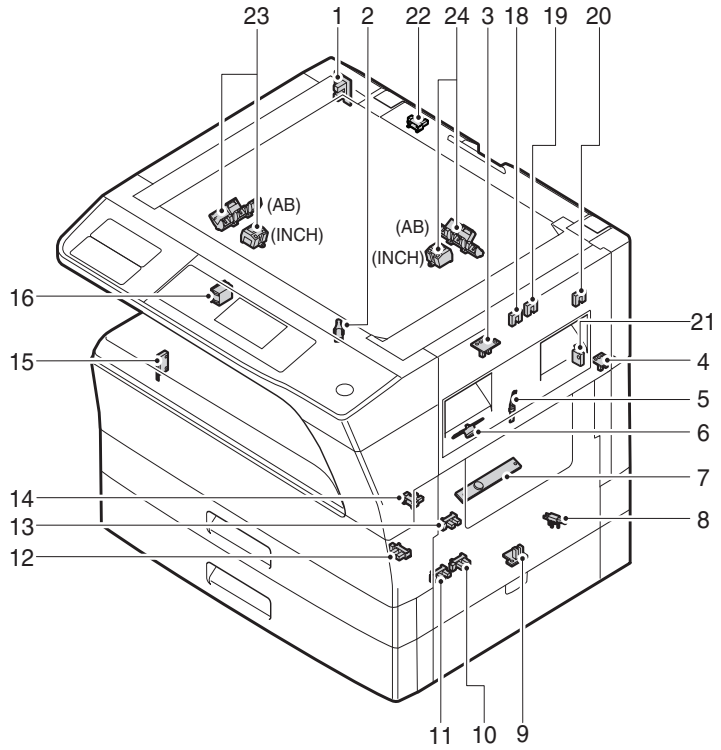
1	**Keys for fax function (when the fax option is installed)** These are used in fax mode.	14	**[INTERRUPT] key ( ) / INTERRUPT indicator** Interrupts a copy run to allow an interrupt copy job to be performed.
2	**[COPY] key / indicator** Press to select copy mode. If pressed when "Ready to copy." appears or during warm-up, the total number of sheets used appears while the key is pressed.	15	**[EXPOSURE] key** Use to select the exposure mode. "AUTO", "TEXT", or "PHOTO" can be selected.
3	**[PRINT] key / indicator** Press to select print mode. ▪ ONLINE indicator Print jobs can be received when this indicator is lit. ▪ DATA indicator This lights steadily when there is a print job in memory that has not been printed, and blinks during printing.	16	**[PAPER] key** Use to manually select a paper tray.
4	**[SCAN] key / indicator** Press to select scan mode. (To connect a computer to the USB port on the machine and use the scanner function. To use the machine as a network scanner.)	17	**[ZOOM] key** Press to select a reduction or enlargement copy ratio.
5	**[FAX] key / indicator (when the fax option is installed)** LINE indicator, DATA indicator This key is used in fax mode.	18	**[AUTO%] key** Press to have the copy ratio selected automatically.
6	**[FAX STATUS] key (when the fax option is installed)** This key is used in fax mode.	19	**[OUTPUT] key** Use to select the sort function.
7	**[SPECIAL FUNCTION] key** Press to select special functions.	20	**[DUPLEX] key (only on models that support two-sided printing)** Select the two-sided copying mode.
8	**Display** Shows various messages.	21	**Arrow keys** Press to move the highlighting (which indicates that an item is selected) in the display.
9	**Copy number display** The selected number of copies appears. During copying, this shows the remaining number of copies.	22	**[ACC.#-C] key ( )** Press the end the use of an account and return the display to the account number entry screen.
10	**[BACK] key** Press to return the display to the previous screen.	23	**[0] key** Press during a continuous copy run to display the number of copies completed.
11	**[OK] key** Press to enter the selected setting.	24	**[READ-END] key ( )** When copying in sort mode from the document glass, press this key when you have finished scanning the original pages and are ready to start copying.
12	**Numeric keys** Use to select the number of copies.	25	**[CA] key** Clears all selected settings and returns the machine to the default settings.
13	**[C] key** Press to clear the set number of copies or stop a copy run.	26	**[START] key ( ) / indicator** Copying is possible when this indicator is on. Press the key to start copying.

4. Motor, solenoid, clutch



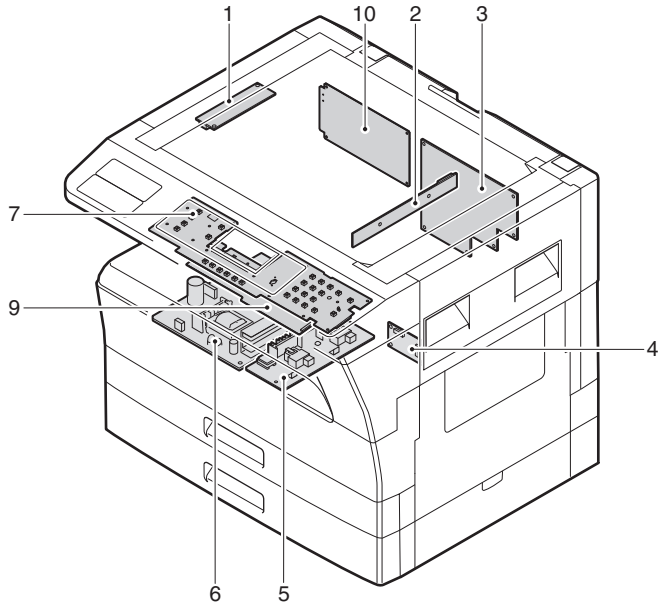
No.	Name	Code	Function operation
1	Mirror motor	MRM	Drives the optical mirror base (scanner unit).
2	Toner motor	TM	Toner supply
3	Duplex motor	DPX	Switchback operation and paper exit motor in duplex. (Only for MX-M160D/MX-M200D)
4	Cooling fan motor	CFM	Cools the inside of the machine.
5	Main motor	MM	Drives the machine.
6	1st tray paper feed clutch	CPFC1	Drive the pick up roller
7	PS clutch	RRC	Drives the resist roller
8	Paper feed solenoid	CPSOL1	Solenoid for paper feed from tray
9	Resist roller solenoid	RRS	Resist roller rotation control solenoid
10	Bypass tray paper transport clutch	MPTC	Drives the bypass tray paper transport roller.
11	Bypass tray paper feed clutch	MPFC	Drives the bypass tray paper feed roller.
12	Bypass tray paper feed solenoid	MPFS	Bypass tray paper feed solenoid
13	2nd tray transport clutch	CPFC2	Drives the 2nd tray transport roller.
14	2nd tray transport solenoid	FSOL1	2nd tray transport solenoid
15	2nd tray paper feed clutch	CPFC1	Drives the 2nd tray paper feed roller.
16	2nd tray paper feed solenoid	PSOL2	2nd tray transport solenoid
17	Exhaust fan motor	VFM	Cools the inside of the machine.
18	Cooling fan motor	CFM	Cools the inside of the machine.
19	Job separator motor		Job separator tray up/down

5. Sensor, switch



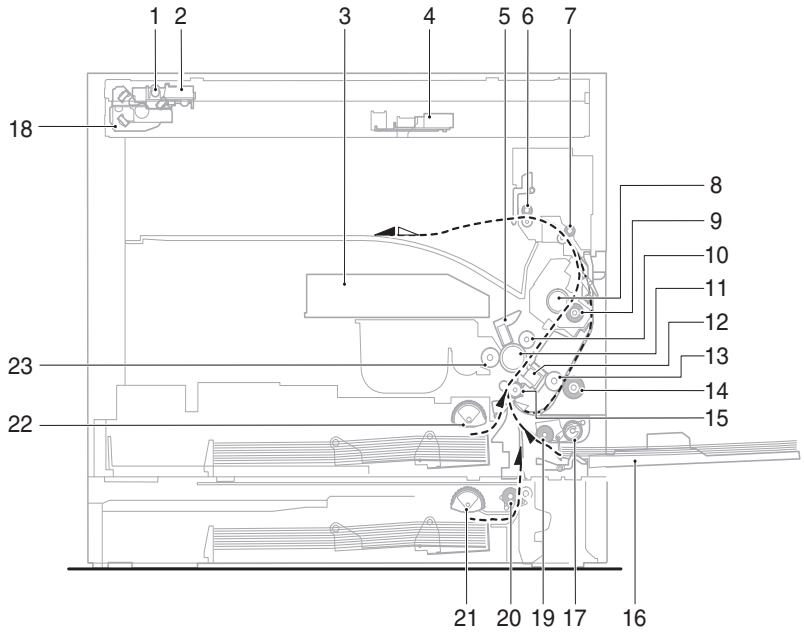
No.	Name	Code	Function operation
1	Mirror home position sensor	MHPS	Detects the mirror (scanner unit) home position.
2	Side door switch	DSWR	Side door open detection
3	Paper exit sensor (paper exit side)	POD1	Detects paper exit.
4	Paper exit sensor (DUP side)	PDPX	Paper transport detection
5	Thermistor	RTH	Fusing section temperature detection
6	Thermostat	RDTCT	Fusing section abnormally high temperature detection
7	Toner density sensor	TCS	Detects the toner density in the developing unit.
8	2nd tray detection switch	CSD2	2nd tray detection
9	Bypass tray sensor	MPED	Bypass tray transport detection
10	2nd tray door open/close sensor	DRS2	2nd tray door open/close detection
11	2nd tray door paper pass sensor	PPD2	2nd tray paper entry detection
12	2nd tray paper empty sensor	CSS2	2nd tray paper empty detection
13	Paper in sensor	PIN	Paper transport detection
14	Tray empty	CSS1	Tray paper entry detection
15	Front cover SW	DSWF	Front cover open detection
16	Power switch	MAIN SW	Turns ON/OFF the main power source.
18	Tray full sensor	TRAY-D	Tray full detection
19	Job separator paper presence/empty sensor	TRAY-FULL	Job separator tray paper presence/empty detection
20	Job separator HP sensor	LFT UP	Job separator HP detection
21	Lower limit switch	/ JOBS_DLD	Job separator tray lower limit position detection
22	OC sensor	OCSW	Original cover and SPF open/close detection
23	Original size sensor(Main Scaning)	DSIN0	Original size detection
24	Original size sensor(Sub Scaning)	DSIN1	Original size detection

6. PWB unit



No.	Name	Function operation
1	Copy lamp Inverter PWB	Copy lamp control
2	CCD sensor PWB	Image scanning
3	Main control PWB	Main control PWB
4	2nd tray PWB	2nd tray control
5	High voltage PWB	High voltage control
6	Power PWB	AC power input/DC power control
7	Operation main PWB	Operation panel input/Display, operation panel section control
9	LCD OPE PWB	Display and operation panel control
10	IMC2 PWB	Electronic sort, USB2.0

7. Cross sectional view



No.	Name	Function/Operation
1	Copy lamp	Image radiation lamp
2	Copy lamp unit	Operates in synchronization with No. 2/3 mirror unit to radiate documents sequentially.
3	LSU unit	Converts image signals into laser beams to write on the drum.
4	Lens unit	Reads images with the lens and the CCD.
5	MC holder unit	Supplies negative charges evenly on the drum.
6	Paper exit roller	Used to discharge paper.
7	Transport roller	Used to transport paper.
8	Upper heat roller	Fuses toner on paper (with the teflon roller).
9	Lower heat roller	Fuses toner on paper (with the silicon rubber roller).
10	Waste toner transport roller	Transports waste toner to the waste toner box.
11	Drum unit	Forms images.
12	Transfer charger unit	Transfer images (on the drum) onto paper.
13	DUP follower roller	Transports paper for duplex.
14	Duplex transport roller	Transports paper for duplex .
15	Resist roller	Takes synchronization between the paper lead edge and the image lead edge.
16	Bypass tray	Bypass tray
17	Bypass tray paper pick up roller	Picks up paper in bypass tray.
18	No. 2/3 mirror unit	Reflects the images from the copy lamp unit to the lens unit.
19	Bypass tray transport roller	Transports paper from the bypass tray.
20	2nd tray paper transport roller	Transports paper from the 2nd tray. (MX-M200D only)
21	2nd tray paper pick up roller	Picks up paper from the 2nd tray. (MX-M200D only)
22	1st tray paper feed roller	Picks up paper from the 1st tray.
23	MG roller	Puts toner on the OPC drum.

[6]ADJUSTMENTS

1.Adjustment item list

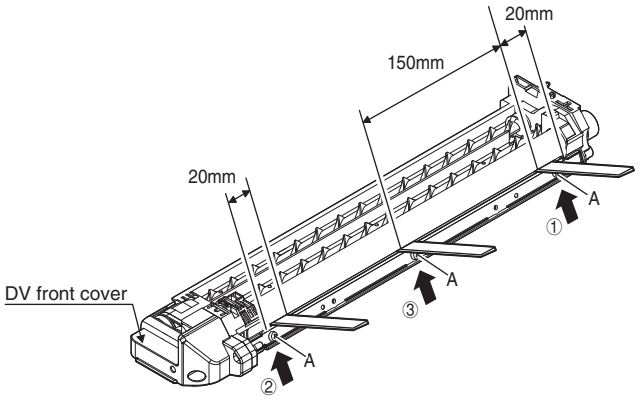
Section		Adjustment item		Adjustment procedure/SIM No.
A	Process section	(1)	Developing doctor gap adjustment	Developing doctor gap adjustment
		(2)	MG roller main pole position adjustment	MG roller main pole position adjustment
		(3)	Developing bias voltage check	
		(4)	Main charger voltage check	
B	Mechanism section	(1)	Image position adjustment	SIM-50
		(2)	Main scanning direction (FR direction) distortion balance adjustment	No. 2/3 mirror base unit installing position adjustment
				Copy lamp unit installing position adjustment
		(3)	Main scanning direction (FR direction) distortion adjustment	Rail height adjustment
		(4)	Sub scanning direction (scanning direction) distortion adjustment	Winding pulley position adjustment
		(5)	Main scanning direction (FR direction) magnification ratio adjustment	SIM 48-1
		(6)	Sub scanning direction (scanning direction) magnification ratio adjustment	OC mode in copying (SIM 48-1)
				SPF mode in copying (SIM 48-5)
		(7)	Off center adjustment	OC mode (SIM 50-12)
				SPF mode (SIM 50-12)
		(8)	SPF white correction pixel position adjustment (required in an SPF model when replacing the lens unit)	SIM63-7
C	Image density adjustment	(1)	Copy mode	SIM 46-1

2.Copier adjustment

A.Process section

(1) Developing doctor gap adjustment

1) Loosen the developing doctor fixing screw A.
2) Insert a thickness gauge of 1.5mm to the three positions at 20mm and 150mm from the both ends of the developing doctor as shown.



3) Push the developing doctor in the arrow direction, and tighten the fixing screws of the developing doctor in the sequence of ①→②→③.
4) Check the clearance of the developing doctor. If it is within the specified range, then fix the doctor fixing screw with screw lock.

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

<Adjustment specification>

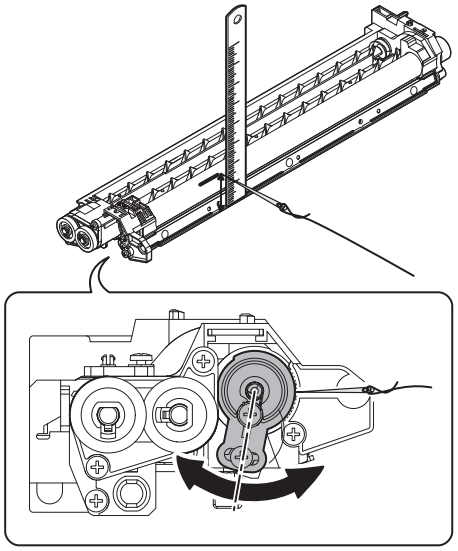
Developing doctor gap

Both ends (20mm from the both ends) : 1.5±0.1mm

C (Center) (150mm from the both ends) : 1.5±0.1mm

(2) MG roller main pole position adjustment

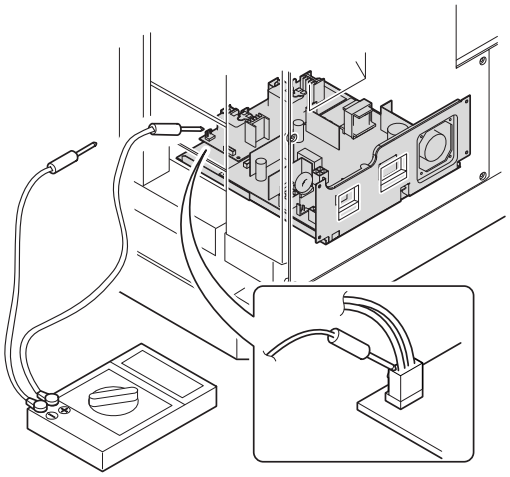
1) Remove the DV front cover, and put the developing tank on a flat surface.
2) Tie a string to a needle or a pin.
3) Hold the string and bring the needle close to the MG roller horizontally. (Do not use paper clip, which is too heavy to make a correct adjustment.) (Put the developing unit horizontally for this adjustment.)
4) Do not bring the needle into contact with the MG roller, but bring it to a position 2 or 3mm apart from the MG roller. Mark the point on the MG roller which is on the extension line from the needle tip.
5) Measure the distance from the marking position to the top of the doctor plate of the developing unit to insure that it is 18mm.
   If the distance is not within the specified range, loosen the fixing screw A of the main pole adjustment plate, and move the adjustment plate in the arrow direction to adjust.



(3)Developing bias voltage check

Note: Use a digital multi-meter with an internal resistance of 10MΩ or more.

1) Set the digital multi-meter range above 500 Vdc.
2) Put the test rod of the digital multi-meter on the developing bias voltage output check pin.
3) Turn on the power, execute SIM25-1.



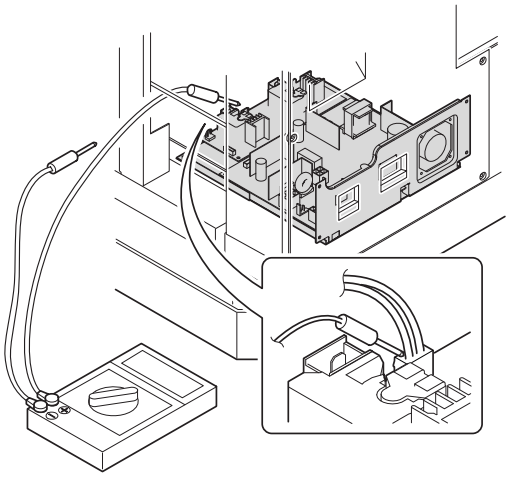
<Specification>

Mode	Specification
Developing bias voltage	DC - 400±10V

(4) Grid bias voltage check

Note: Use a digital multi-meter with an internal resistance of 10MΩ or more.

1) Set the digital multi-meter range above 600 Vdc.
2) Put the test rod of the digital multi-meter on the grid bias voltage output check pin.
3) Turn on the power.
   (The voltage is outputted in the grid bias High output mode during warming up, and in the grid bias Low output mode when warming up is completed.)



<Specification>

Mode	Specification
Grid bias LOW	DC - 380±8V
Grid bias HIGH	DC - 525±10V

B.Mechanism section

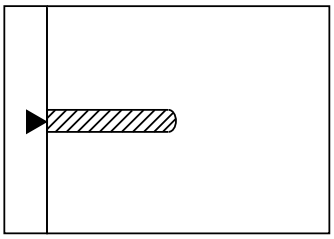
Note: If a jam error or paper empty occurs during copying in the adjustment by the simulation, the image data is not saved, and therefore recopying is required.

(1) Image position adjustment

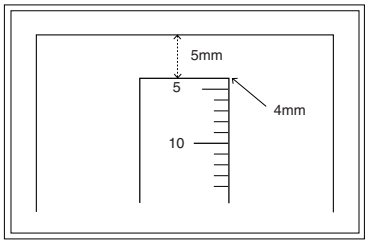
a.OC image lead edge position adjustment (SIM 50-1)

Note: In advance to this adjustment, the sub scanning magnification ratio adjustment must be performed.

1) Set a scale on the OC table as shown below.



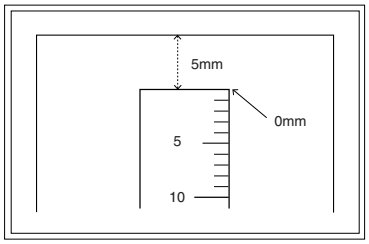
2) Make a copy.
3) Check the copy output. If necessary, perform the following adjustment procedures.
4) Execute SIM 50-1.
5) Set the OC lead edge position set value (PHOTO indicator ON) to [1]
   The OC image scanning start position is shifted inside the document edge.
6) Set the 1st tray lead edge void adjustment value (TEXT indicator ON) * to [1]
   The lead edge void becomes the minimum.
7) Set the 1st tray print start position value (AUTO, 1st tray indicator ON) to [1] and make a copy.
   The print start position is shifted inside the document edge.



*The dimension varies depending on the model.

8) Measure the image loss R of the copied image. Enter the set value of the image scanning lead edge position (PHOTO indicator ON) again.

•1 step of the set value corresponds to about 0.1mm shift.
•Calculate the set value from the formula below.
R/0.1(mm) = Image loss set value
<R: Image loss measurement value (mm)>



* The scanning edge is set.
(A line may be printed by scanning the document edge.)

Example: 4/0.1 = 40 = about 40

Note: If the set value is not obtained from the above formula, perform the fine adjustment.

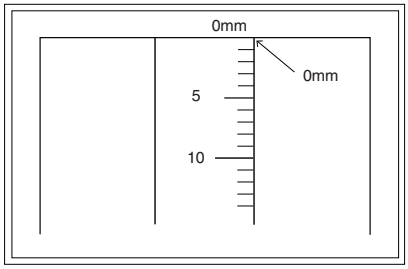
9) Measure the distance H between the paper lead edge and the image print start position. Set the image print start position set value (AUTO, 1st tray indicator ON) again.

•1 step of the set value corresponds to about 0.1mm shift.

•Calculate the set value from the formula below.

H/0.1(mm) = Image print start position set value

<H: Print start position measurement value (mm)>



*Fit the print edge with the paper edge, and perform the lead edge adjustment.

Example: 5/0.1 = 50 = about 50

Note: If the set value is not obtobtained from the above formula, perform the fine adjustment.

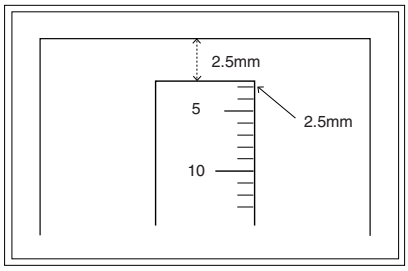
10) Set the lead edge void adjustment value (TEXT indicator ON)* again.

•1 step of the set value corresponds to about 0.1mm shift.

•Calculate the set value from the formula below.

B/0.05 (mm) = Lead edge void adjustment value

<B: Lead edge void (mm)>



Example: When setting the lead edge void to 2.5mm

:2.5 /0.05 = about 50

Note: If the set value is not obtained from the above formula, perform the fine adjustment.

* 2nd tray lead edge void adjustment: Exposure display <<AUTO + TEXT + PHOTO>>

Bypass tray lead edge void adjustment: (TEXT indicator and PHOTO indicator ON)

<Duplex mode adjustment>

OC 2nd print surface (Auto duplex) lead edge position adjustment: SIM50-19 <<PHOTO>>

* For the adjustment procedure, set to S → D mode before execution.

Note: Before performing the 2nd print surface lead edge position adjustment and the lead edge void adjustment, be sure to perform the 1st print surface lead edge position adjustment in advance, and be sure to perform the 2nd print surface lead edge position adjustment and then the lead edge void adjustment in this sequence.

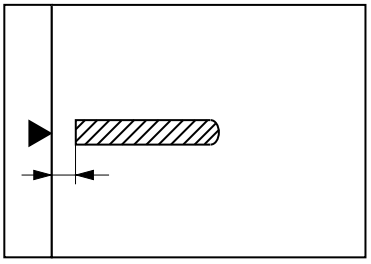
<Adjustment specification>

Adjustment mode	SIM	LED	Set value	Spec value	Set range
OC image lead edge position	SIM 50-1	PHOTO	R/0.1	Lead edge void: 1 - 4mm Image loss: 3mm or less	1 ~ 99
1st tray print start position		AUTO + 1st tray	B/0.1		
2nd tray print start position		AUTO + 2nd tray			
Bypass tray print start position		AUTO + Bypass tray			
Lead edge void		TEXT	B/0.05		
OC 2nd print surface lead edge position adjustment	SIM 50-19*	PHOTO	1 step: 0.1mm shift		

* (Set to S → D mode for before execution)

b.SPF image lead edge position adjustment (SIM50-6)

1) Set a scale on the OC table as shown below.



Note: Since the printed copy is used as a test chart, put the scale in paralled with the edge lines.

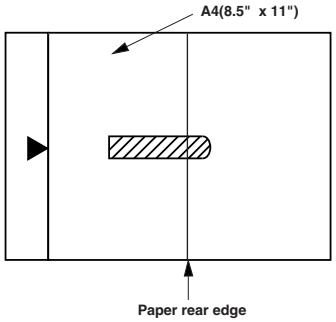
2) Make a copy, Then use the copy output as an original to make an SPF copy again.
3) Check the copy output. If necessary, perform the following adjustment procedures.
4) Execute SIM 50-6.
5) Set the SPF lead edge position set value (AUTO indicator ON) so that the same image is obtained as that obtained in the previous OC image lead edge position adjustment.

<Adjustment specification>

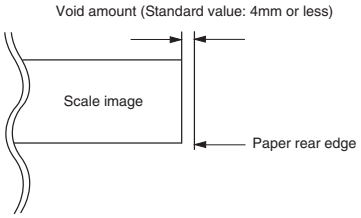
Adjustment mode	SIM	LED	Set value	Spec value	Set range
SPF image lead edge position (1st print surface)	SIM 50-6	AUTO	1 step: 0.1mm shift	Lead edge void: 1 - 4mm Image loss: 3mm or less	1 ~ 99
(2nd print surface)		TEXT			

c.Rear edge void adjustment (SIM50-1, SIM50-19)

1) Set a scale as shown in the figure below.



2) Set the document size to A4 (8.5" x 11"), and make a copy at 100%.
3) If necessary, perform the following adjustment procedure.



4) Execute SIM 50-1 and set the density mode to AUTO + TEXT + PHOTO (Rear edge void).The currently set adjustment value is displayed.
5) Enter the set value and press the [START] key. The correction value is stored and a copy is made.

<Duplex mode adjustment>

* 1st print surface (auto duplex) rear edge void adjustment: SIM50-19 <<AUTO>>
* 2nd print surface (auto duplex) rear edge void adjustment: SIM50-19<<TEXT>>
* Set to S → D mode before execution.

Note: Before performing the 2nd print surface rear edge void adjustment, be sure to perform the 2nd print surface lead edge position adjustment. Never reverse the sequence.

<Adjustment specification>

Mode	SIM	LED	Set value	Specification	Set range
Rear edge void	SIM 50-1	AUTO + TEXT + PHOTO	1 step: 0.1mm shift	4mm or less	1 ~ 99
1st print surface rear edge void	SIM 50-19*	AUTO			
2nd print surface rear edge void	SIM 50-19*	TEXT			

* Set to S → D mode before execution

d. Paper off center adjustment (SIM50-10)

1) Set a test chart (UKOG-0089CSZZ) on the document table.
2) Select a paper feed port and make a copy. Compare the copy and the test chart. If necessary, perform the following adjustment procedure.
3) Execute SIM 50-10. After completion of warm-up, shading is performed and the currently set off center adjustment value of each paper feed port is displayed.
4) Enter the set value and press the [START] key. The correction value is stored and a copy is made.

<Duplex mode adjustment>

* 2nd print surface (auto duplex) off-center adjustment: SIM50-10 (TEXT, 1st tray indicator)

<Adjustment specification>

Mode	SIM	LED	Set value	Specification	Set range
Paper off center	SIM 50-10	AUTO + Selected tray ON	Add 1: 0.1mm shift to R side.	Single: Center ±2.0mm	1 ~ 99
2nd print surface off-center	SIM 50-10	TEXT + 1st tray	Reduce 1: 0.1mm shift to L side.	Duplex: Center ±2.5mm	

e.Side edge void area adjustment (SIM26-43)

Note: Before performing this adjustment, be sure to check that the paper off center adjustment (SIM 50-10) is completed.

1) Set a test chart (UKOG-0089CSZZ) on the document table.
2) Select a paper feed port and make two copies. Compare the 2nd copy and the test chart. If necessary, perform the following adjustment procedure.

* The 1st copy does not show the void. Be sure to check the 2nd copy.

3) Execute SIM 26-43 and set the density mode to AUTO(right edge void) + TEXT (Left edge void).
   The currently set adjustment value is displayed.
4) Enter the set value and press the [START] key. The correction value is stored.

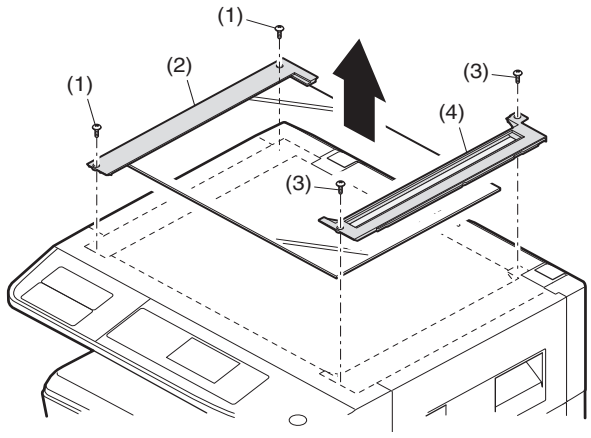
<Adjustment specification>

ode	SIM	LED	Set value	Specification	Set range
Left edge void	SIM 26-43	AUTO (right edge) + TEXT (left edge)	1 step: 0.5mm shift	0 ~ 10mm	0 ~ 10

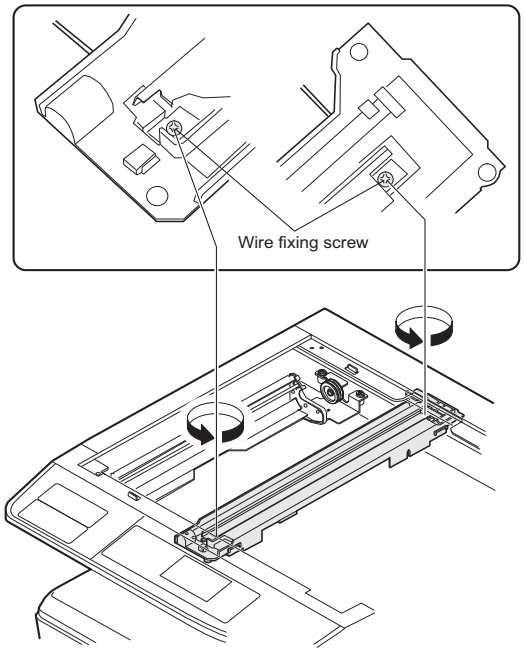
* The void adjustment values on the right and the left must be the same.

(2) Main scanning direction(FR direction) distortion balance adjustment

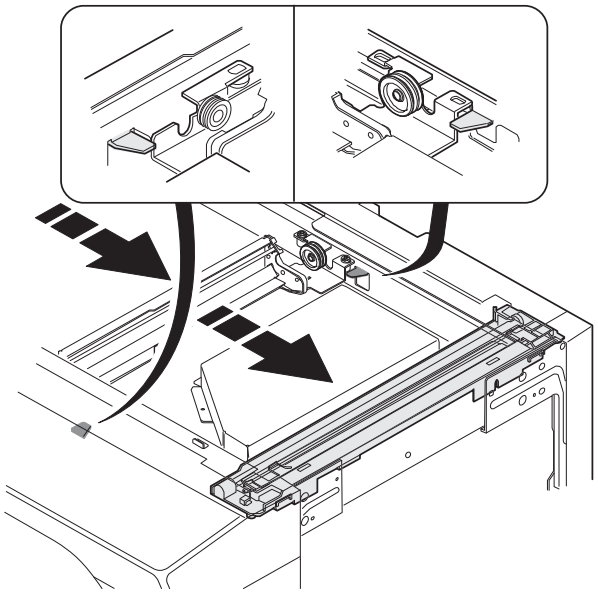
1) Remove the OC glass and the right cabinet.



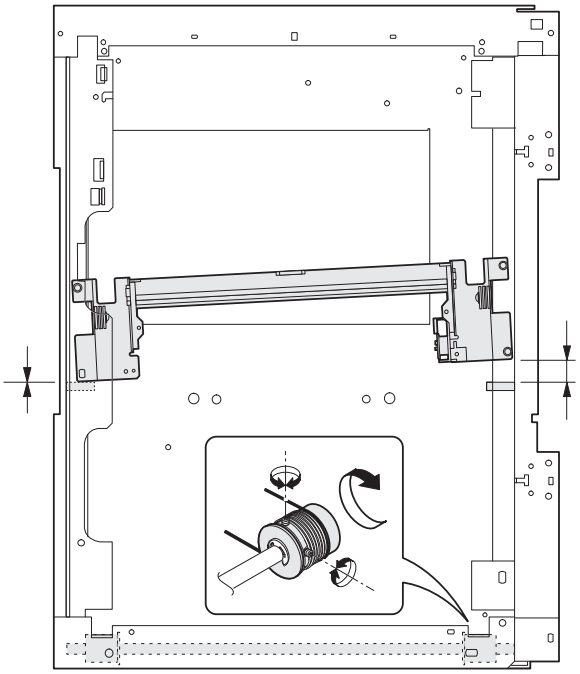
2) Loosen the copy lamp unit wire fixing screw.



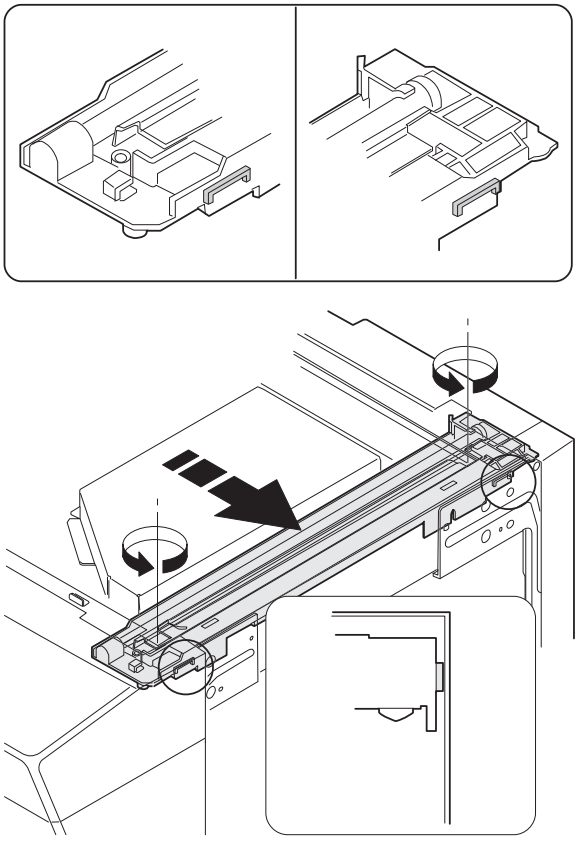
3) Manually turn the mirror base drive pulley and bring No. 2/3 mirror base unit into contact with the positioning plate. At that time, if the front frame side and the rear frame side of No. 2/3 mirror base unit are brought into contact with the positioning plate at the same time, the mirror base unit parallelism is proper. If one of them is in contact with the positioning plate, perform the adjustment of 4).



4) Loosen the set screw of the scanner drive pulley which is not in contact with No. 2/3 mirror base unit positioning plate.
5) Without moving the scanner drive pulley shaft, manually turn the scanner drive pulley until the positioning plate is brought into contact with No. 2/3 mirror base unit, then fix the scanner drive pulley.

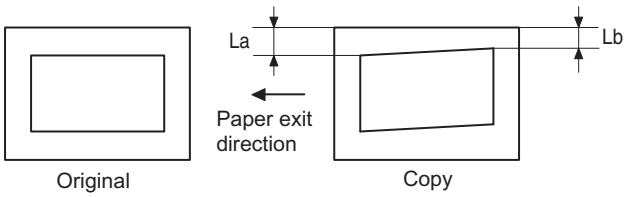


6) Put No. 2/3 mirror base unit on the positioning plate again, push the projections on the front frame side and the rear frame side of the copy lamp unit to the corner frame, and tighten the wire fixing screw.

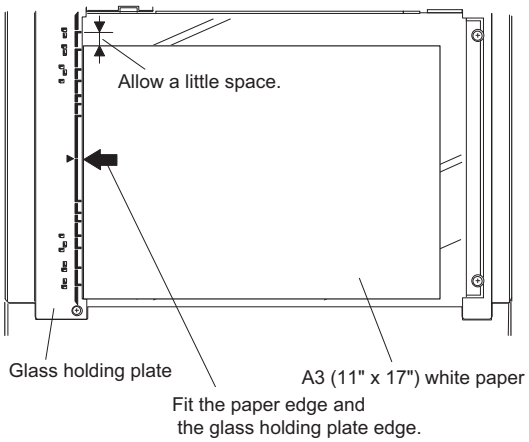


(3)Main scanning direction (FR direction) distortion adjustment

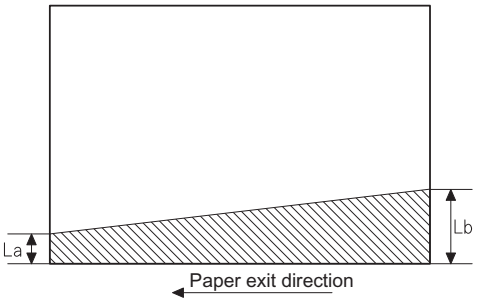
This adjustment must be performed in the following cases:
•When the mirror base drive wire is replaced.
•When the lamp unit, or No. 2/3 mirror holder is replaced.
•When a copy as shown is made.



1) Set A3 (11" x 17") white paper on the original table as shown below.



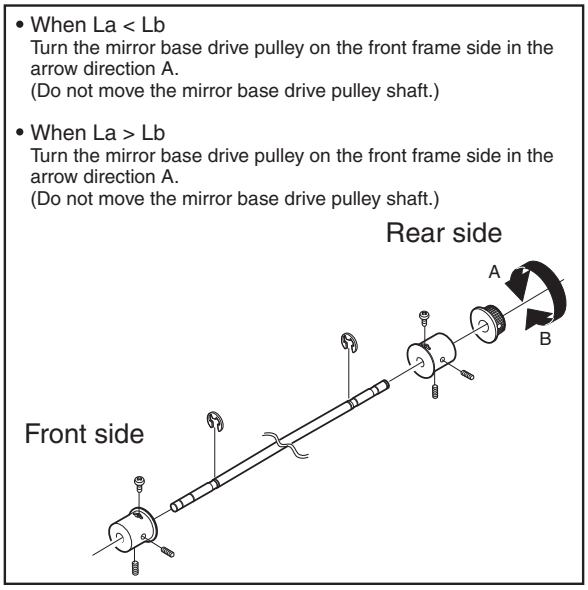
2) Open the original cover and make a normal (100%) copy.
3) Measure the width of the black background at the lead edge and at the rear edge.



La: Lead edge black background width
Lb: Rear edge black background width

If the width (La) of the black background at the lead edge is equal that (Lb) at the rear edge, there is no need to execute the following procedures of 4) ~ 7).

4) Loosen the mirror base drive pulley fixing screw on the front frame side or on the rear frame side.



5)Tighten the mirror base drive pulley fixing screw.

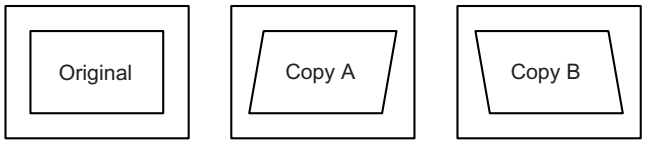
<Adjustment specification>

La = Lb

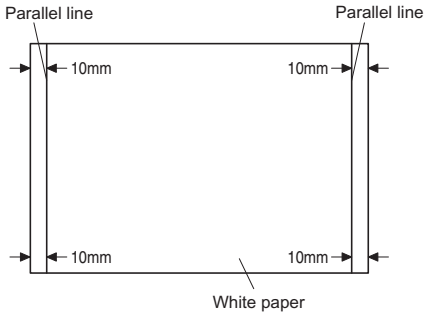
6) Execute the main scanning direction (FR) distartion balance adjustment previously described in 2) again.

(4) Sub scanning direction (scanning direction) distortion adjustment

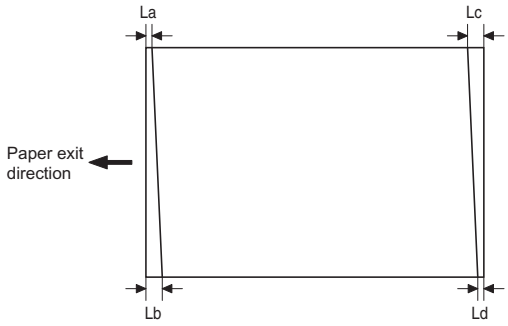
When there is no skew copy in the mirror base scanning direction and there is no horizontal error (right angle to the scanning direction), the adjustment can be made by adjusting the No. 2/3 mirror base unit rail height.
Before performing this adjustment, be sure to perform the horizontal image distortion adjustment in the laser scanner section.
This adjustment must be performed in the following cases:
•When the mirror base wire is replaced.
•When the copy lamp unit or No. 2/3 mirror unit is replaced.
•When the mirror unit rail is replaced or moved.
•When a following copy is made.



1) Making of a test sheet
Make test sheet by drawing parallel lines at 10mm from the both ends of A3 (11" x 17") white paper as shown below. (These lines must be correctly parallel to each other.)

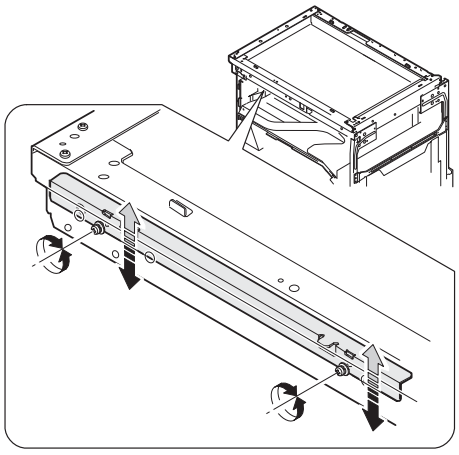


2) Make a normal (100%) copy of the test sheet on A3 (11" x 17") paper. (Fit the paper edge with the glass holding plate edge.)
3) Measure the distances (La, Lb, Lc, Ld) at the four corners as shown below.



When La = Lb and Lc = Ld, no need to perform the procedures 4) and 5).

4) Move the mirror base F rail position up and down (in the arrow direction) to adjust.



Note: Do not adjust the rail on the rear side.
If the rail on the rear side is adjusted, an error may occur.
Only the rail on the front side can be adjusted.

- When La > Lb
  Shift the mirror base B rail upward by the half of the difference of La - Lb.
- When La < Lb
  Shift the mirror base B rail downward by the half of the difference of Lb - La.
  Example: When La = 12mm and Lb = 9mm, shift the mirror base B rail upward by 1.5mm.
- When Lc > Ld
  Shift the mirror base B rail downward by the half of the difference of Lc - Ld.
- When Lc < Ld
  Shift the mirror base B rail downward by the half of the difference of Ld - Lc.

* When moving the mirror base rail, hold the mirror base rail with your hand.

<Adjustment specification>

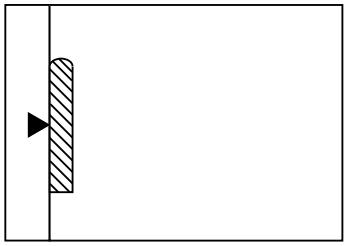
La = Lb, Lc = Ld

5) After completion of adjustment, manually turn the mirror base drive pulley, scan the mirror base A and mirror base B fully, and check that the mirror bases are not in contact with each other.
* If the mirror base rail is adjusted to extreme, the mirror base may contact the frame or original glass. Be careful to avoid this.

(5) Main scanning direction (FR direction) magnification ratio adjustment (SIM 48-1)

Note: Before performing this adjustment, be sure the CCD unit is within specification.

1) Put a scale on the original table as shown below.



2) Execute SIM 48-1.
3) After warm-up, shading is performed and the current set value of the main scanning direction magnification ratio is displayed on the display section in 2 digits.
4) Select the mode and press the [START] key again.
5) Manual correction mode (TEXT indicator ON)
Enter the set value and press the [START] key.
The set value is stored and a copy is made.

<Adjustment specification>

Note: A judgment must be made with 200mm width, and must not be made with 100mm width.

Mode	Specification	SIM	Set value	Set range
Main scanning direction magnification ratio	At normal: ±1.0%	SIM 48-1	Add 1:0.1% increase Reduce 1: 0.1% decrease	1 ~ 99

(6) Sub scanning direction (scanning direction) magnification ratio adjustment (SIM 48-1, SIM 48-5)

a. OC mode in copying (SIM48-1)

Note: Before performing this adjustment, be sure the CCD unit is within specification.

1) Put a scale on the original table as shown below, and make a normal (100%) copy.
2) Compare the scale image and the actual image. If necessary, perform the following adjustment procedures.
3) Execute SIM 48-1.<<PHOTO>>
4) After warm-up, shading is performed and the current set value of the main scanning direction magnification ratio is displayed on the display section in 2 digits.
5) When the photo indicator is lighted by pressing the AUTO/TEXT/PHOTO key, the current magnification ratio correction value in the sub scanning direction is displayed in lower 2 digits of the display section.
6) Enter the set value and press the [START] key.
   The set value is stored and a copy is made.

<Adjustment specification>

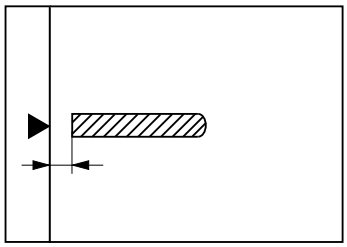
Mode	Specification	SIM	Set value	Set range
Sub scanning direction magnification ratio (OC mode)	Normal ±1.0%	SIM 48-1 (PHOTO)	Add 1:0.1% increase Reduce 1: 0.1% decrease	1 ~ 99

b. RSPF sub scanning direction magnification ratio (SIM48-5)

Note:

- Before performing this adjustment, be sure the CCD unit is within specification.
- Before performing this adjustment, the OC mode adjustment in copying must be completed.

1) Put a scale on the original table as shown below, and make a normal (100%) copy to make a test chart.



Note: Since the printed copy is used as a test chart, put the scale in parallel with the edge lines.

2) Set the test chart on the SPF and make a normal (100%) copy.
3) Compare the scale image and the actual image. If necessary, perform the following adjustment procedures.
4) Execute SIM 48-5.
5) After warm-up, shading is performed.
   The AUTO indicator lights up and the current front surface sub scanning direction magnification ratio correction value is displayed in two digits on the display section.
6) Enter the set value and press the [START] key.
   The set value is stored and a copy is made.
7) Change the mode from the duplex original mode to the simplex original mode.
   TEXT indicator lights up and the current back surface sub scanning direction magnification ratio is displayed in two digits on the display section.
8) Enter the set value and press the [START] key.
   The set value is stored and a copy is made.

<Adjustment specification>

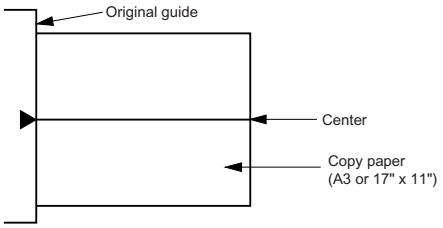
Mode	Specification	SIM	Set value	Set range
Sub scanning direction magnification ratio (SPF mode)	Normal ±1.0%	SIM 48-5	Add 1:0.1% increase Reduce 1: 0.1% decrease	1 ~ 99

(7) Off center adjustment (SIM 50-12)

a. OC mode (SIM50-12)

1) Make a test chart as shown below and set it so that its center line is fit with the original guide center mark.

* To make a test chart, draw a line on A3 or 11" x 17" paper at the center in the paper transport direction.



2) Make a normal copy from the bypass tray, and compare the copy and the test chart.
   If necessary, perform the following adjustment procedures.
3) Execute SIM 50-12.
4) After warm-up, shading is performed and the current set value of the off center adjustment is displayed on the display section in 2 digits.
5) Enter the set value and press the [START] key.
   The set value is stored and a copy is made.

<Adjustment specification>

Mode	Specification	SIM	Set value	Set range
Original off center mode (OC mode)	Single: Center ±2.0mm	SIM 50-12 (AUTO indicator ON)	Add 1: 0.1mm shift to R side Reduce 1: 0.1mm shift to L side	1 ~ 99

b. SPF original off-center adjustment (SIM50-12)

Note: Before performing this adjustment, be sure to check that the paper off center is properly adjusted.

1) Make a test chart for the center position adjustment and set it on the SPF.

<Adjustment specification>

Draw a line on a paper in the scanning direction.

2) Make a normal copy from the bypass tray, and compare the copy and the original test chart.
   If necessary, perform the following adjustment procedures.
3) Execute SIM 50-12.
4) After warm-up, shading is performed and the current set value of the off center adjustment at each paper feed port is displayed on the display section in 2 digits.
5) Enter the set value and press the [START] key.
   The set value is stored and a copy is made.

<Adjustment specification>

Mode	Specification	SIM	Set value	Set range
Original off center mode (SPF mode)	Single: Center ±3.0mm(TEXT indicator)	SIM 50-12	Add 1: 0.1mm shift to R side Reduce 1: 0.1mm shift to L side	1 ~ 99
	Duplex: Center ±3.5mm(PHOTO indicator)			

(8) SPF white correction pixel position adjustment(SIM63-7) (required in an SPF model when replacing the lens unit)

1) Fully open the SPF.
2) Execute SIM 63-7.
   If the value is 93 - 229, it is displayed on the display and written into the EEPROM.
   If the value is 0 - 92 or 230 - 999, it is displayed on the display but not written into the EEPROM.
   If the value is 1000 or above, "--" is displayed on the display and it is not written into the EEPROM.

•When the display is 0:

Check that the SPF is open.

Check that the lamp is ON.(If the lamp is OFF,check the MCU connector.)

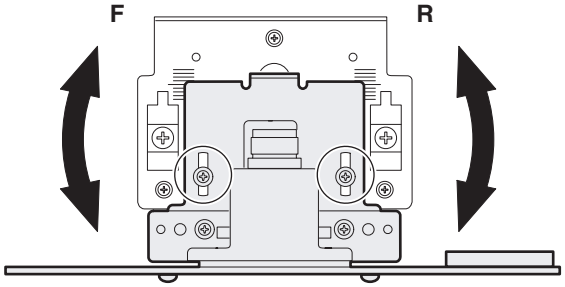
Check that the CCD harness is properly inserted into the MCU connector.

•When the display is 281 or above:

1) Remove the table glass.
2) Remove the dark box.
3) Slide the lens unit toward the front side and attach it,then execute SIM.

•When the display is 143 or below:

1) Remove the table glass.
2) Remove the dark box.
3) Slide the lens unit toward the rear side and attach it,then execute SIM.



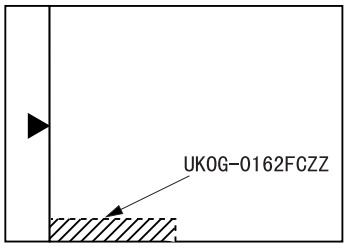
* When the lens unit is moved,execute the OC main scanning magnification ratio auto adjustment,SIM 48-1-1,SIM48-3 and the PF original off-center adjustment.

* This adjustment is basically O.K.with SIM 63-7.

C.Image density adjustment

(1)Copy mode (SIM 46-1)

1)Set a test chart (UKOG-0162FCZZ) on the OC table as shown below.



2) Put several sheets of A3 or 11" x 17" white paper on the test chart.
3) Execute SIM 46-1.
4) After warm-up, shading is performed and the current set value of the density level is displayed on the display section in 2 digits.
   For mode selection, use the AUTO/TEXT/PHOTO key.
5) Change the set value with the numeric keys to adjust the copy image density.
6) Make a copy and check that the specification below is satisfied.

<Adjustment specification>

Density mode	LED	Exposure level	Sharp Gray Chart output	Set value	Set range
Auto	Auto	-	"2" is slightly copied.	The greater the set value is the greater the density is The smaller the set value is the smaller the density is.	1 ~ 99
Text	Text	3	"3" is slightly copied.		
Photo (Error diffusion)	Photo	3	"2" is slightly copied.		
Toner save	Auto/ Photo	-	"2" is slightly copied		
Toner save	Text/ Photo	3	"3" is slightly copied		
Photo (Dither)	Auto/ Text/ Photo	3	"2" is slightly copied		

[7] SIMULATIONS

1. Entering the simulation mode

Perform the following procedure to enter the simulation mode.
[#] key → [⚹] key → [C] key → [⚹] key →
Main code → [START] key → Sub code → [START] key

2. Canceling the simulation mode

When the [CA] key is pressed, the simulation mode is cancelled.
When the interruption key is pressed, the process is interrupted and the screen returns to the sub code entering display.

* After canceling the simulation mode, be sure to turn OFF/ON the power and check the operation.

Note: If the machine is terminated by a jam error or paper empty during copying in the adjustment by the simulation, recopying is required.

Note: The values in the simulation columns are not default values but sample values.

3. List of simulations

Main code	Sub code	Contents
01	01	Mirror scanning operation
	02	Mirror home position sensor (MHPS) status display
02	01	Single paper feeder (SPF)/Reversing single pass feeder(RSPF) aging *2
	02	SPF/RSPF sensor status display *2
	03	SPF/RSPF motor operation check *2
	08	SPF/RSPF paper feed solenoid operation check *2
	09	RSPF reverse solenoid operation check *2 *3
	11	SPF/RSPF PS release solenoid operation check *2
03	02	Shifter/job separator sensor status display
	03	Shifter operation check
	04	Job separator operation check *4
	11	Shifter home position check
05	01	Operation panel display check
	02	Fusing lamp and cooling fan operation check
	03	Copy lamp lighting check
06	01	Paper feed/transport solenoid operation check
	02	Resist roller solenoid (RRS) operation check
	10	Main cassette pickup roller cleaning
07	01	Warm-up display and aging with jam detection
	06	Intermittent aging
	08	Shifting with warm-up display
08	01	Developing bias output
	02	Main charger output (Grid = HIGH)
	03	Main charger output (Grid = LOW)
	06	Transfer charger output
09	01	Duplex motor forward rotation check *6
	02	Duplex motor reverse rotation check *6
	04	Duplex motor RPM adjustment *6
	05	Duplex motor switchback time adjustment
10	-	Toner motor operation
14	-	Trouble cancel (except for U2)
16	-	U2 trouble cancel
20	01	Maintenance counter clear
21	01	Maintenance cycle setting
22	01	Counters display
	03	Jam memory display
	04	Jam total counter display
	07	Key operator code display
	09	Paper feed counter display
	13	CRUM destination display *5
	14	P-ROM version display
	15	Trouble memory display
	22	SPF/RSPF jam counter display *2
24	01	Jam total counter clear
	02	Trouble memory clear
	04	SPF/RSPF counter clear *2
	05	Duplex print counter clear *6
	06	Paper feed counter clear
	07	Drum counter clear
	08	Copy counter clear
	09	Printer counter clear
	13	Scanner counter clear
	14	SPF/RSPF jam total counter clear *2
	15	Scanner mode counter clear
25	01	Main motor operation check (Cooling fan motor rotation check)

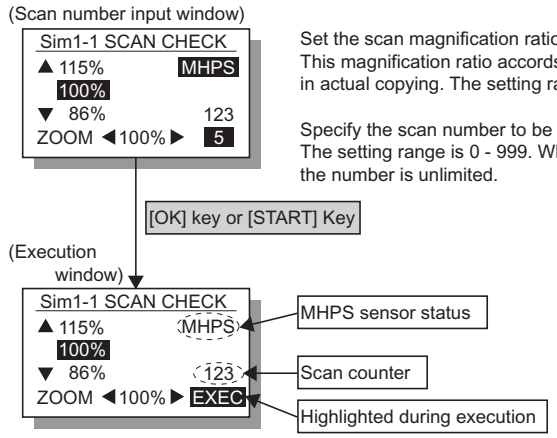
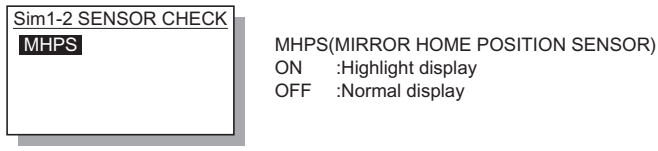
Main code	Sub code	Contents
25	02	Toner density reference control level setting (automatic development adjustment)
	10	Polygon motor operation check
26	01	Job separator setting
	02	Size setting
	03	Auditor setting
	04	Copier duplex setting
	05	Count mode setting
	06	Destination setting
	07	Machine condition check
	18	Toner save mode setting
	20	Job separator paper exit mode setting
	22	Language setting clear
	30	CE mark conformity control ON/OFF
	31	Auditor mode exclusive setup
	36	Cancel of stop at maintenance life over
	37	Cancel of stop at developer life over
	38	Cancel of stop at drum life over
	39	Memory capacity check
	42	Transfer ON/OFF timing control setting
	43	Side void amount setting
	51	Copy temporary stop function setting
	54	LCD contrast PWM duty setting
	56	Life correction ON/OFF setting
	60	[FAX] key Enable/Disable setting
	73	Toner save setting display/non-display
	74	Total counter display change setting
30	01	Paper sensor status display
41	01	Document size detection photo sensor check
	02	Document size detection photo sensor detection level adjustment
	03	Document size detection photo sensor light receiving/ detection level check
	04	Detection level adjustment when the document size is settled(15degrees - 20degrees)
42	01	Developing counter clear
43	01	Fusing temperature setting (Normal copy)
	12	Standby mode fusing fan rotation setting
	13	Paper interval control allow/inhibit setting
44	01	Enable/Disable setting of toner density control correction
	16	Toner density control data check and toner density correction quantity display
	34	Transfer current setting
46	01	Copy density adjustment (300dpi)
	02	Copy density adjustment (600dpi)
	09	Copy exposure level adjustment, individual setting (Text) 300dpi
	10	Copy exposure level adjustment, individual setting (Text) 600dpi
	11	Copy exposure level adjustment, individual setting (Photo) 600dpi
	18	Image contrast adjustment (300dpi)
	19	Exposure mode setting (Gamma table setting/AE operation mode setting/ Photo image process setting)
	20	SPF/RSPF exposure correction *2
	29	Image contrast adjustment (600dpi)
	30	AE limit setting
46	31	Image sharpness adjustment

Main code	Sub code	Contents
48	01	Main/sub scanning magnification ratio adjustment
	05	SPF/RSPF mode sub scanning magnification ratio adjustment in copying *2
49	01	Flash ROM program writing mode
50	01	Image lead edge adjustment
	06	Copy lead edge position adjustment (SPF/RSPF) *2
	10	Paper off-center adjustment
	12	Document off-center adjustment
	18	Memory reverse position adjustment in duplex copy *1
	19	Rear edge void adjustment in duplex copy *6
51	02	Resist amount adjustment
53	08	SPF/RSPF scanning position automatic adjustment *2
	10	SPF/RSPF scanning position setting
61	02	Laser power correction ON/OFF
	03	HSYNC output check
63	01	Shading check
	07	SPF/RSPF automatic correction *2
64	01	Self print
65	10	Key reception time setting display/non-display setting
	11	Info lamp setting
67	50	USB reception speed adjustment

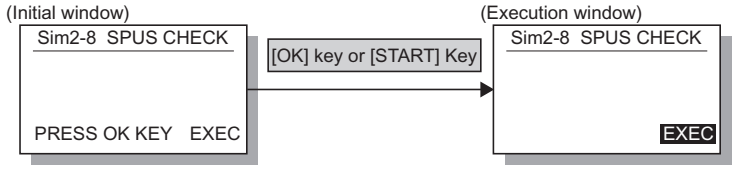
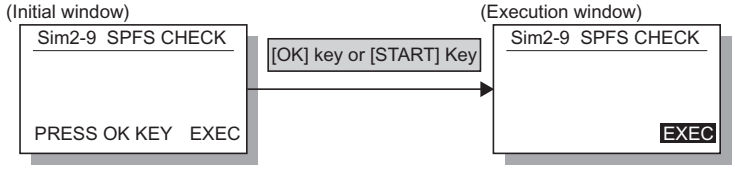
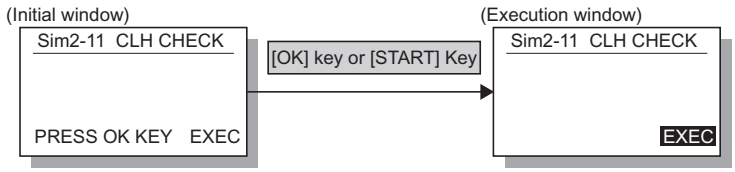
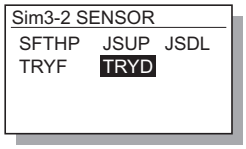
<Execution inhibit conditions>

*1) Execution is inhibited when the duplex setup is OFF and other than RSPF is set.
*2) Execution is inhibited when OC.
*3) Execution is inhibited when SPF. (Not RSPF)
*4) Execution is inhibited when the job separator is not installed.
*5) Execution is inhibited when the model is not provided with the CRUM.
*6) Execution is inhibited when the duplex setup is OFF.

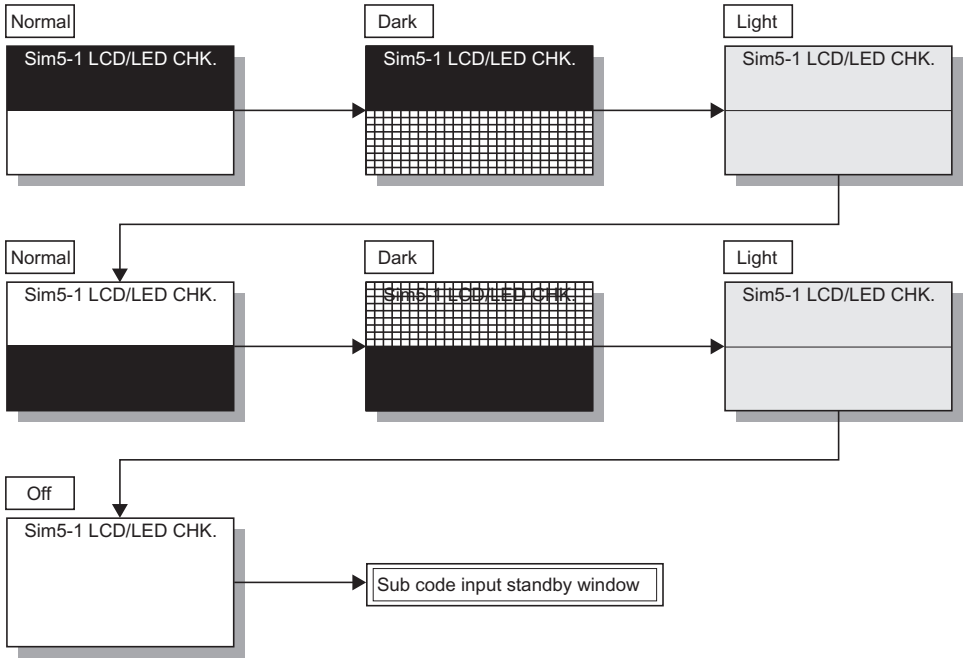
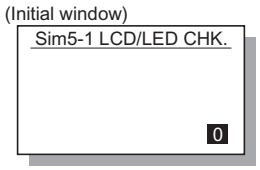
4. Contents of simulations

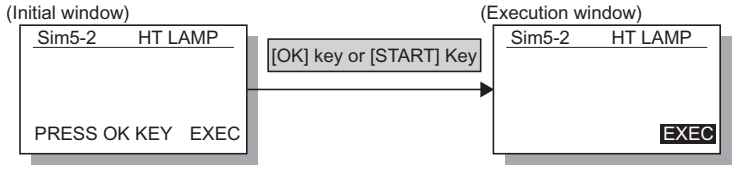
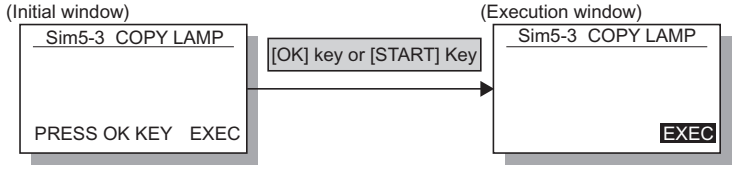
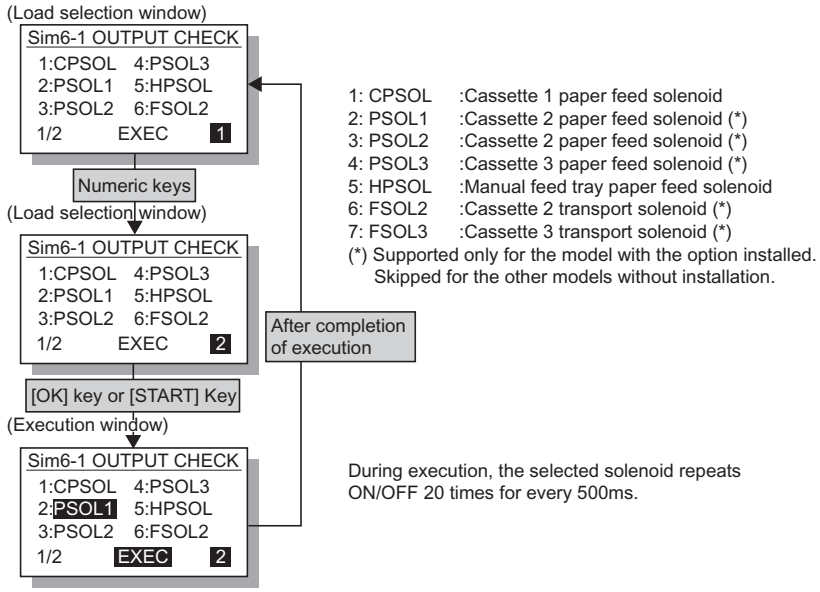
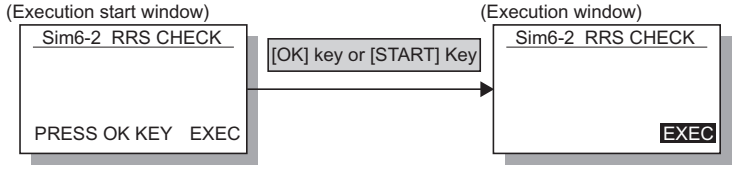
Main code	Sub code	Contents	Remark
01	01	**Mirror scanning operation** Used to check the operations of the scanner unit and its control circuit. Enter the number of times and the magnification ratio, and press [OK] key to operate the scanner unit. The speed is variable according to the specified magnification ratio. The number of scanning can be specified by entering a value to the right lower section of the LCD. •Setting range of magnification ratio: 25%-400% •Setting range of the number of scanning: 0-999 (When 0 is set, it means unlimited.)  Used to display the status (ON/OFF) of the mirror HP sensor on the LCD during scanning. (Highlighted at ON) "EXEC" is displayed to indicate execution is in process. The scan counter is displayed above "EXEC." This counter is counted up even in simulation. The copy lamp is lighted during scanning. [CA] key: Exits the simulation mode. [INTERRUPT] key: Returns to the sub code input window. [C] key: Input value clear Numeric keys: Input of the number of scanning	
	02	**Mirror home positions sensor (MHPS) status display** Used to monitor the mirror home position sensor and display the ON/OF status of the sensor on the LCD.  [CA] key: Exits the simulation mode. [INTERRUPT] key: Returns to the sub code input window.	

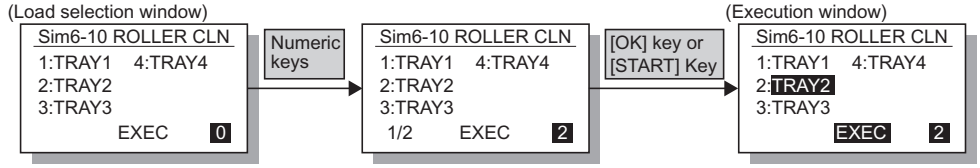
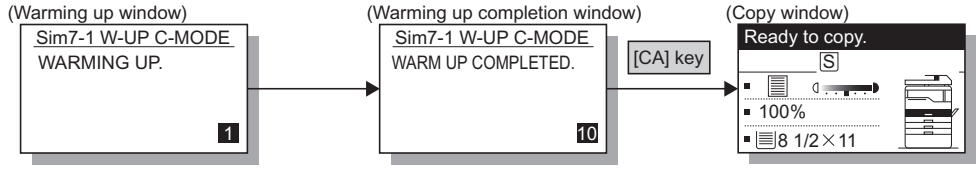
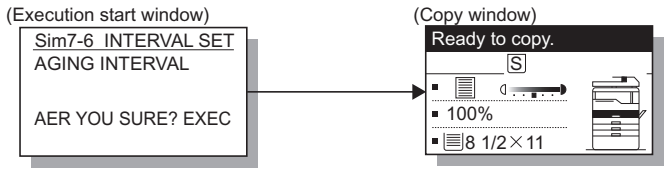
Main code	Sub code	Contents	Remark
02	01	**Single Paper Feeder(SPF)/Reversing single pass feeder(RSPF)aging** Used to check the operations of the SPF/RSPF unit and its control circuit. Enter the magnification ratio and press[OK] key or [START] key to drive the SPF/RSPF unit at the speed corresponding to the setting. (Magnification ratio selection window) Sim2-1 SPF AGING ▲115% 1SIDE 100% 2SIDE ▼ 86% ZOOM ◀100%▶EXEC Select the scan magnification ratio (drive speed). This also accords with the magnification ratio and the speed in copying similarly to the OC. The setting range is 50% - 200%. [OK] key or [START] Key (Execution window) Sim2-1 SPF AGING ▲115% 1SIDE 100% 2SIDE ▼ 86% ZOOM ◀100%▶EXEC "EXEC" is highlighted during execution. * When [INTERRUPT] key is press, the simulation is terminated and the machine returns to the sub code input window. * When [CA] key is pressed, the simulation is terminated and the machine exits the simulation mode.	
	02	**SPF/RSPF sensor status display** Used to display the sensor status in the SPF/RSPF section. An active sensor is highlighted. Sim2-2 SENSOR CHECK SPFP L1 W2 OCCV L2 W3 POUT W0 SPFC W1 Displayed name : Sensor name SPFP :SPF document transportation sensor OCCV :SPF unit (OC cover) open/close sensor POUT :SPF paper exit sensor SPFC :SPF paper feed cover open/close sensor L1 :SPF paper length sensor 1 L2 :SPF paper length sensor 2 W0 :SPF document set sensor W1 :SPF paper width sensor (small) W2 :SPF paper width sensor (middle) W3 :SPF paper width sensor (large) [CA] key: Exits the simulation mode. [INTERRUPT] key: Returns to the sub code input window.	Only when the SPF/RSPF is installed.
	03	**SPF/RSPF motor operation check** Used to check the operation of the SPF/RSPF motor and its control circuit. When this simulation is executed, the initial menu shown below is displayed. Select the magnification ratio to drive the motor. (Initial window = Magnification ratio selection window) Sim2-3 OUTPUT CHECK ▲115% 100% ▼ 86% ZOOM ◀100%▶EXEC Select the scan magnification ratio (drive speed). This also accords with the magnification ratio and the speed in copying. The setting range is 50% - 200%. [OK] key or [START] Key (Execution window) Sim2-3 OUTPUT CHECK ▲115% 100% ▼ 86% ZOOM ◀100%▶EXEC "EXEC" is highlighted during execution. [CA] key: The SPF/RSPF motor is stopped, and the machine exits the simulation mode. [INTERRUPT] key: The SPF/RSPF motor is stopped, and the machine returns to the sub code input window.	Only when the SPF/RSPF is installed.

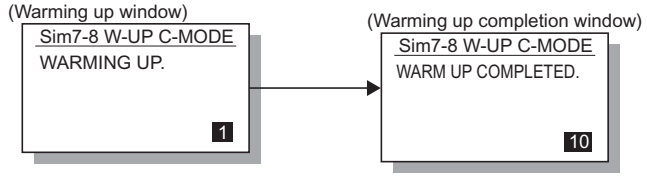
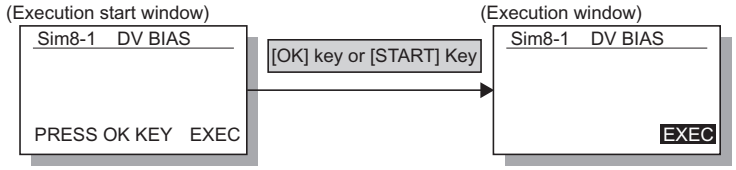
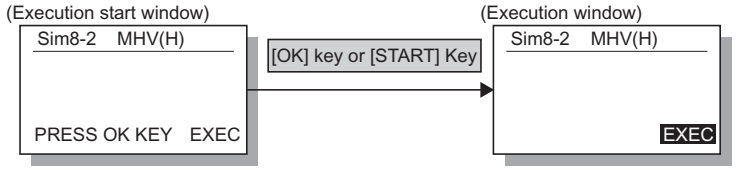
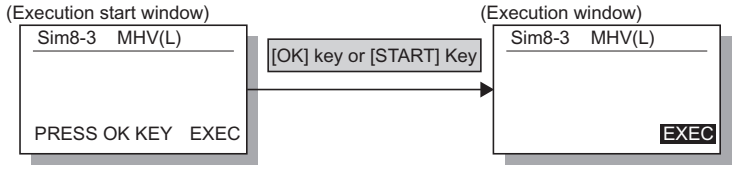
Main code	Sub code	Contents	Remark
02	08	**SPF/RSPF paper feed solenoid operation check** Used to drive the SPF/RSPF paper feed solenoid (PSOL) 20 times in the cycle of 500msec of "ON" and 500msec of "OFF." After completion of the process, the machine returns to the sub code input window.  When [INTERRUPT] key is pressed, the machine returns to the sub code input window. When [CA] key is pressed, the machine exits the simulation mode.	(Only when the SPF/RSPF is installed.}
	09	**RSPF reverse solenoid operation check** Used to drive the RSPF reverse solenoid (RSOL) 20 times in the cycle of 500msec of "ON" and 500msec of "OFF." After completion of the process, the machine returns to the sub code input window.  When [INTERRUPT] key is pressed, the machine returns to the sub code input window. When [CA] key is pressed, the machine exits the simulation mode.	(Only when the RSPF is installed.)
	11	**SPF/RSPF PS release solenoid operation check** Used to drive the SPF/RSPF PS release solenoid (CLH) 20 times in the cycle of 500msec of "ON" and 500msec of "OFF." After completion of the process, the machine returns to the sub code input window.  When [INTERRUPT] key is pressed, the machine returns to the sub code input window. When [CA] key is pressed, the machine exits the simulation mode.	(Only when the SPF/RSPF is installed.)
03	02	**Shifter/job separator sensor status display** Used to monitor the sensors related to the shifter and the job separator and display the sensor status on the LCD. An active sensor is highlighted.  Displayed name :Sensor name SFTHP :Shifter home position sensor JSUP :Job separator upper limit sensor JSDL :Job separator lower limit sensor TRYF :Tray full sensor TRYD : Paper exit sensor * Displayed only when the job separator is installed except for SFTH.	(Sensor of shifter is Japan only) (Only when the job separator is installed.)

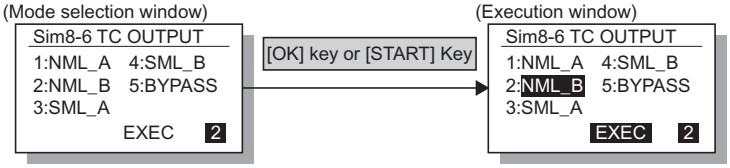
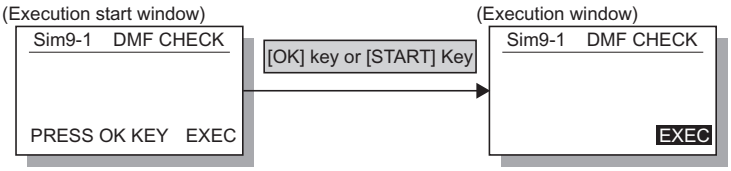
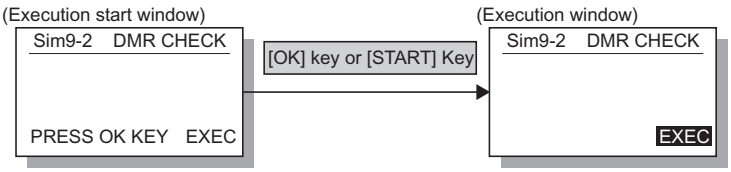
Main code	Sub code	Contents	Remark
03	03	**Shifter operation check** Used to reciprocate the shifter 4 times. During execution, the status of the shifter HP sensor is displayed on the right upper section of the screen. (When the sensor is detected, the display is highlighted.) [CA] key: Exits the simulation mode. [INTERRUPT] key: Returns to the sub code input window. * When the above [CA] key or [INTERRUPT] key is pressed during operation of the shifter, the shifter is returned to the home position before terminating the operations. (Initial window) Sim3-3 SHIFTER CHK / PRESS OK KEY EXEC → [OK] key or [START] Key → (Execution window) Sim3-3 SHIFTER CHK / SFTHP / EXEC	Japan only
	04	**Job separator operation check** Used to operate the job separator up and down for 30sec. During operation, the status of the upper limit sensor and the lower limit sensor is displayed on the right upper section of the display. [CA] key: Exits the simulation mode. [INTERRUPT] key: Returns to the sub code input window. When the operation is interrupted, the job separator is shifted to the home position before terminating the simulation similarly to the shifter. (Initial window) Sim3-4 JOBSEPA CHK / PRESS OK KEY EXEC → [OK] key or [START] Key → (Execution window) Sim3-4 JOBSEPA CHK / JSUP / JSDL / EXEC Display name: JSUP — Sensor name: Job separator upper limit sensor Display name: JSDL — Sensor name: Job separator lower limit sensor	(Only when the job separator is installed.)
	11	**Shifter home position check** Used to check the operations of the shifter HP sensor and the shifter. When this simulation is executed, the initial menu is displayed. By the following key operations, the left operation and the right operation of the home position sensor and the shifter can be executed separately. [◂] key: Shifts to R side by the specified steps. [▸] key: Shifts to F side by the specified steps. [▲] key: Shift to the home position. [SFTHP] is highlighted when the HP sensor is detected. (Initial window) Sim3-11 SHIFTER CHK / SFTHP / [◀]:R [▲]:HP [▶]:F [CA] key: Exits the simulation mode. [INTERRUPT] key: Returns to the sub code input window.	Japan only

Main code	Sub code	Contents	Remark
05	01	**Operation panel display check** <LED/LCD check mode> Used to check the operations (ON, display) of the LED and the LCD on the operation panel. When this simulation is executed, all LED's on the operation panel (including 7SEG) are lighted and checking LCD is started. For the operation check of LCD, the area is divided into two sections; upper section and lower section, and the display cycle of Normal → Dark → Light → Off is repeated in each section. Each display period is 2sec.  When [INTERRUPT] key is pressed in the LED check mode, the machine returns to the sub code input window. When [CA] key is pressed, the machine exits the simulation mode. When [START] key is pressed during LCD display, the machine goes to the key input check mode. <Key input check mode> Used to check that the keys on the operation panel are properly detected. When the machine enters the key input check mode, the initial menu is displayed.  When any key is pressed, the value on the right lower side is counted up. If a key is pressed once, it is not counted again. When [CA] key is pressed for the first time, it is counted. When it is pressed for the second time, the simulation mode is terminated. When [INTERRUPT] key is pressed for the first time, it is counted. When it is pressed for the second time, the window returns to the sub code input standby window. * Note for the key input check mode [START] key must be pressed at the end. If it is pressed midway, the simulation judges that the last key is pressed and terminates the check mode. Multi input of tow or more keys is ignored.	

Main code	Sub code	Contents	Remark
05	02	**Fusing lamp and cooling fan operation check** Used to check the operations of the heater lamp and the cooling fan and the peripheral circuits. When this simulation is executed, the following initial menu is displayed.  When this simulation is executed, the fusing lamp repeats ON/OFF 5 times in the cycle of 500ms. The cooling fan motor is rotated during that period. (The cooling fan, however, is rotated for about 8sec.) After completion of the operation, the machine returns to the sub code input window.	
	03	**Copy lamp lighting check** Used to check the operations of the copy lamp and its peripheral circuit. When this simulation is executed, the following initial menu is displayed.  When [OK] key or [START] key is pressed, the copy lamp is lighted for about 5sec. After passing for 5sec, the machine returns to the sub code input window.	
06	01	**Paper feed/transport solenoid operation check** When this simulation is executed, the names of the solenoids which can be operated are displayed. Select a load to be operated with the numeric keys. 	
	02	**Resist roller solenoid (RRS) operation check** When this simulation is executed, the machine goes to the execution start window. When [OK] key or [START] key is pressed, the resist roller solenoid (RRS) repeats ON of 500ms and OFF of 500ms 20 times.  When the operation is completed, the machine returns to the sub code input window. When [INTERRUPT] key is pressed, the machine returns to the sub code input window. When [CA] key is pressed, the machine exits the simulation mode.	

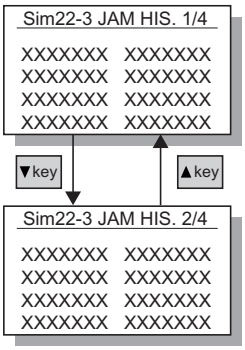
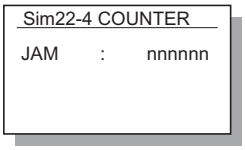
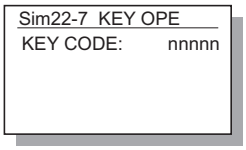
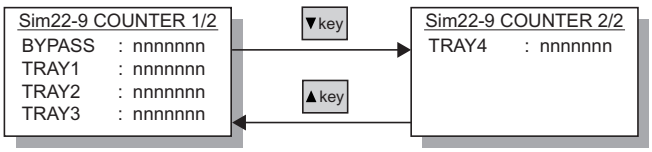
Main code	Sub code	Contents	Remark
06	10	**Main cassette pickup roller cleaning** Before execution of this simulation, remove the developing cartridges. When this simulation is executed, the load select menu is displayed as shown below. Select a roller cassette to be cleaned with the numeric keys. When [OK] key or [START] key is pressed, the paper feed roller of the specified cassette is rotated halfway round and stopped with the roller facing downward.  When [INTERRUPT] key is pressed after cleaning, the machine returns to the sub code input window and the paper feed roller returns to the original position. * When TRAY2 - TRAY4 are not installed, they are not displayed. * When another cassette roller is cleaned continuously, press [INTERRUPT] key to return the roller to the original position and restart the simulation. * When the simulation mode is terminated by pressing [CA] key, the roller returns to the original position by the initializing operation.	
07	01	**Warm-up display and aging with jam detection** Used to measure the warm-up time and execute aging with jam detection. When this simulation is executed, the following warm-up window is displayed. The time required for starting the warm-up and completing the initializing operation and shifting to the stand-by state is displayed. After completion of warm-up, press [CA] key to exit the simulation mode, allowing normal copy operations. The copy mode at that time is the aging mode with 0sec of intermittent aging.  Canceled by turning off the power or executing a simulation which makes the hardware reset. When the interruption is pressed to shift to the input standby window, the machine does not enter the aging mode.	
	06	**Intermittent aging** Used to execute intermittent aging of 3sec. The set quantity and the mode are optionally selected. When this simulation is executed, the following execution start window is displayed. When [OK] key or [START] key is pressed, the machine exits the simulation mode. Enter a desired coy mode and a desired copy quantity. Press [START] key, and intermittent aging will be started.  It is canceled by turning off the power or executing a simulation with the hard reset.	

Main code	Sub code	Contents	Remark
07	08	**Shifting with warm-up display** Used to measure the warm-up time. When this simulation is executed, the following warm-up window is displayed. The time required for starting the warm-up and completing the initializing operation and shifting to the stand-by state is displayed. * Though [CA] key is pressed, the machine does not enter the aging mode of intermission 0 sec.  Press [CA] key to exit the simulation mode. (The aging function is omitted from SIM 07-01.) Note: Toner supply operation is not performed during this simulation.	
08	01	**Developing bias output** Used to check the developing bias output. When this simulation is executed, the following execution start window is displayed. When [OK] key or [START] key is pressed, the developing bias signal is turned ON for 30sec. When measuring the actual output value, however, use SIM 25-01. After completion of the process, the machine returns to the sub code input window.  [CA] key: Exits the simulation mode. [INTERRUPT] key: Interrupts output operation and shifts to the sib code input window.	
	02	**Main charger output (Grid = HIGH)** Used to check the main charger output. When this simulation is executed, the following execution start window is displayed. When [OK] key or [START] key is pressed, the main charger is turned on for 30 sec in the grid voltage HIGH mode. After completion of the process, the machine returns to the sub code input window.  [CA] key: Exits the simulation mode. [INTERRUPT] key: Interrupts output operation and shifts to the sub code input window.	
	03	**Main charger output (Grid = LOW)** Used to check the main charger output. When this simulation is executed, the following execution start window is displayed. When [OK] key or [START] key is pressed, the main charger is turned on for 30 sec in the grid voltage LOW mode. After completion of the process, the machine returns to the sub code input window.  [CA] key: Exits the simulation mode. [INTERRUPT] key: Interrupts output operation and shifts to the sub code input window.	

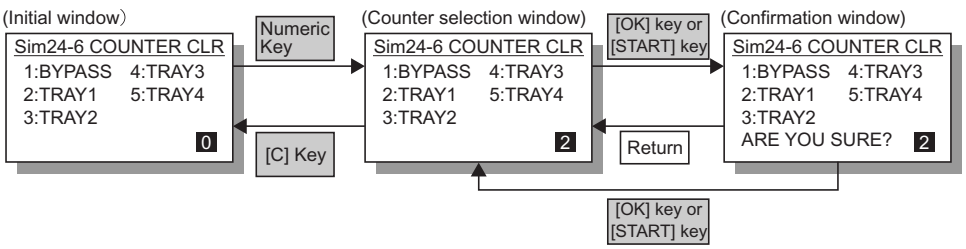
Main code	Sub code	Contents	Remark
08	06	**Transfer charger output** When this simulation is executed, the machine shifts to the following mode select window, and the list of the modes to be outputted is displayed. Select an output mode with numeric keys and press [OK] key or [START] key, and the transfer charger output is made for about 30sec in the specified mode.  Window display → Output mode 1:NML_A → Normal size width (front) 2:NML_B → Normal size width (back) 3:SML_A → Small size width (front) 4:SML_B → Small size width (back) * The items of (back) is not displayed when DUPLEX setting is OFF or when MX-M160. * Small size paper is Letter R (A4R) width or below. When an output is completed, the machine shifts to the mode select window. [CA] key: Exits the simulation mode. [INTERRUPT] key: Interrupts the output operation, and shifts to the sub code input window.	
09	01	**Duplex motor forward rotation check** Used to check the duplex motor rotation. The duplex motor is rotated in the normal direction (paper exit direction) for 30sec. After completion of the process, the machine shifts to the sub code input window.  [CA] key: Exits the simulation mode. [INTERRUPT] key: Interrupts the output operation, and shifts to the sub code input window.	(MX-M200D/MX-M160D only) (Execution is not allowed when DUPLEX setting is OFF.)
	02	**Duplex motor reverse rotation check** Used to check the duplex motor reverse rotation. The duplex motor is rotated in the reverse direction for 30sec. After completion of the process, the machine shifts to the sub code input window.  [CA] key: Exits the simulation mode. [INTERRUPT] key: Interrupts the output operation, and shifts to the sub code input window.	(MX-M200D/MX-M160D only) (Execution is not allowed when DUPLEX setting is OFF.)

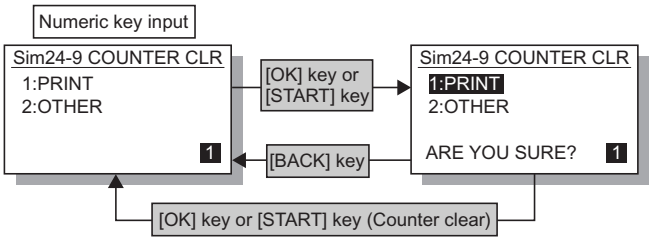
Main code	Sub code	Contents	Remark
09	04	**Duplex motor RPM adjustment** Used to adjust the duplex motor rotation speed. When this simulation is executed, the following setting window is displayed. Enter an input value with numeric keys and press [OK] key or [START] key. The setting range is in 1-13 steps. (Setting window) Sim9-4 MOTOR SPEED 1:MOTOR SPEED 4 [1-13] 4 Set value : Speed (PPS) 01 : 637.2PPS(Slow) 02 : 640.4PPS 03 : 643.6PPS 04 : 646.9PPS(Default) 05 : 650.1PPS 06 : 653.3PPS 07 : 656.5PPS 08 : 659.8PPS 09 : 662.9PPS 10 : 666.2PPS 11 : 669.4PPS 12 : 672.6PPS 13 : 675.8PPS(Fast) When a value outside the setting range is inputted, it is ignored. [CA] key: Exits the simulation mode. [INTERRUPT] key: Shift to the sub code input window.	(MX-M200D/MX-M160D only) (Execution is not allowed when DUPLEX setting is OFF.) Default: 4
	05	**Duplex motor switchback time adjustment** Used to adjust the duplex motor switchback time when the motor reverse rotation is controlled. When this simulation is executed, the following setting window is displayed. Enter an input value with numeric keys and press [OK] key or [START] key. The setting range is 50-76. When the adjustment value is increased by 1, the distance up to reverse start is increased by 3 steps in 1-2 phase excitement. Sim9-5 SW BACK TIME 1:SW BACK TIME 50 [50-76] 50 When a value outside the setting range is inputted, it is ignored. [CA] key: Exits the simulation mode. [INTERRUPT] key: Shift to the sub code input window.	(MX-M200D/MX-M160D only) (Execution is not allowed when DUPLEX setting is OFF.) Default: 50
10	-	**Toner motor operation** Used to check the operation of the toner motor. When this simulation is executed, the following execution start window is displayed. Press [OK] key or [START] key, and the toner motor is rotated for about 30sec. After completion of the process, the machine shifts to the sub code input window. (Execution start window) Sim10 TONER MOTOR PRESS OK KEY EXEC [OK] key or [START] Key (Execution window) Sim10 TONER MOTOR EXEC [CA] key: Exits the simulation mode. [INTERRUPT] key: Interrupts the output operation, and shifts to the sub code input window.	
14	-	**Trouble cancel (except for U2)** * Used to cancel EEPROM writing troubles such as H trouble and execute the hard reset. When this simulation is executed, the following execution start window is displayed. Press [OK] key or [START] key to clear the trouble other than U2. (Execution start window) Sim14 TROUBLE CLEAR TROUBLE CLEAR (WITHOUT U2) AER YOU SURE? EXEC	

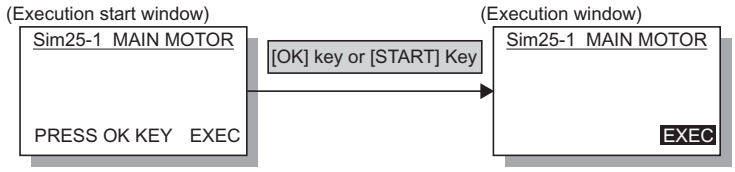
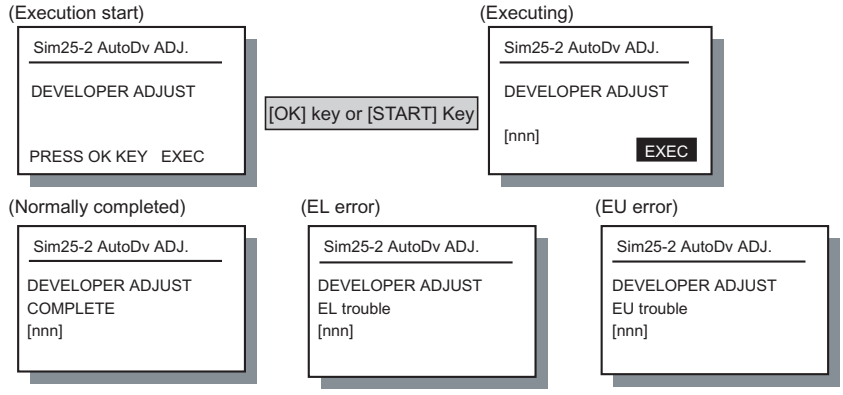
Main code	Sub code	Contents	Remark
16	-	**U2 trouble cancel** * Used to cancel the U2 trouble and execute the hard reset. When this simulation is executed, the following execution start window is displayed. Press [OK] key or [START] key to clear the U2 trouble. (Execution start window) Sim16 TROUBLE CLEAR U2 TROUBLE CLEAR AER YOU SURE? EXEC	
20	01	**Maintenance counter clear** Used to clear the maintenance counter. Press [OK] key or [START] key on the following window, the maintenance counter is cleared and the machine returns to the sub code input window. Sim20-1 COUNTER CLR MAINTENANCE COUNTER CLEAR AER YOU SURE? EXEC	
21	01	**Maintenance cycle setting** Used to set the maintenance cycle. When this simulation is executed, the current set value is displayed. Enter a desired code with numeric keys and press [START] key. The set value is saved in the EEPROM and the machine returns to the sub code input window. Sim21-1 CYCLE SET. 1:MAINTE CYCLE 4 [0- 5] 4 0: 5K (5,000 sheets) 1: 7.5K (7,500 sheets) 2: 10K (10,000 sheets) 3: 25K (25,000 sheets) 4: 50K (50,000 sheets) 5: FREE (999,999 sheets) (Setting range: 0 - 5) [CA] key: Exits the simulation mode. [INTERRUPT] key: Returns to the sub code input window.	Default: 4
22	01	**Counters display** Sim22-1 COUNTER 1/4 TOTAL :nnnnnnn MAINTE :nnnnnnn DEV :nnnnnnn(*) MIN_MNT :nnnnnnn(*) DRUM :nnnnnnn ▼key ▲key Sim22-1 COUNTER 2/4 CPY JOB : nnnnnnn PRT JOB : nnnnnnn SCN JOB : nnnnnnn OC SCN : nnnnnnn ▼key ▲key Sim22-1 COUNTER 3/4 SPF : nnnnnnn DUPLEX : nnnnnnn OTHERS : nnnnnnn MNTCYC : nnnnnnn ▼key ▲key Sim22-1 COUNTER 4/4 DRM TTL : nnnnnnn MMTCYC : nnnnnnn Counter display TOTAL : Total counter MAINTE : Maintenance counter DEV : Development counter DRUM : Drum counter CPY JOB : Copy job counter PRT JOB : Print job counter SCN JOB : Scan job counter OC SCN : OC scan counter SPF : SPF/RSPF counter DUPLEX : DUPLEX counter OTHERS : Other counter MNTCYC : Maintenance cycle DRM TTL :Drum rotation accumulated time Though SIM26-74 is set to "1: Scan counter is added," the count is not added to SIM22-01 total counter display. The setting affects only the total counter display in the system settings.	

Main code	Sub code	Contents	Remark
22	03	**Jam memory display** Used to check the jam kind occurred in the main unit and the SPF/RSPF. The kinds of jams up to 30 items are displayed sequentially from the latest one. (The oldest one is deleted sequentially.) This display is used for troubleshooting. (If there are extremely many troubles in a position, it may be judged that a repair must be executed.) The kinds and contents of jams to be displayed are as follows.  Kinds of jams and display contents SPPD_ON : SPF paper entry sensor (Not reached) SPPD_OFF : SPF paper entry sensor (Remaining) SOUT_ON : SPF paper exit sensor (Not reached) SOUT_OFF : SPF paper exit sensor (Remaining) POUT_ON : Paper exit sensor (Not reached) POUT_OFF : Paper exit sensor (Remaining) DPX_ON : DUP sensor (Not reached) DPX_OFF : DUP sensor (Remaining) PIN_ON : Paper feed sensor (Not reached) PIN_OFF : Paper feed sensor (Remaining) PIN2_ON : Cassette 2 paper feed sensor (Not reached) PIN3_ON : Cassette 3 paper feed sensor (Not reached) PIN4_ON : Cassette 4 paper feed sensor (Not reached) [CA] key: Exits the simulation mode. [INTERRUPT] key: Shifts to the sub code input window. ▲ key, ▼ key: Switches to another page.	
	04	**Jam total counter display** Used to display the jam total counter. 	
	07	**Key operator code display** Used to display the key operator code. 	
	09	**Paper feed counter display** Used to display the paper feed quantity of each paper feed tray. This simulation shows the use frequency of each paper feed section. [CA] key: Exits the simulation mode. [INTERRUPT] key: Shifts to the sub code input window. ▲ key, ▼ key: Switches to another page.  * TRAY2-TRAY4 are displayed only when they are installed.	

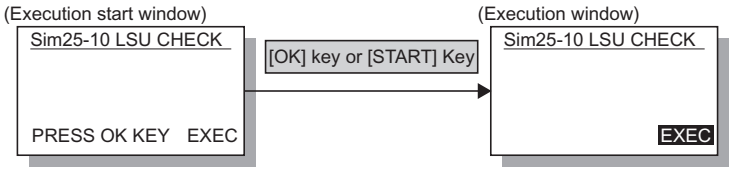
Main code	Sub code	Contents	Remark
22	13	**CRUM destination display** Used to display the CRUM chip destination code saved in the EEPROM. If the display does not match the destination code saved in the CRUM chip, it is judged as an error. * This simulation is valid only for the model with the CRUM chip. Sim22-13 CRUM CRUM TYPE nn Number : Setting (Destination) 00 : Not set. 04 : CHN-A 05 : JPN-A 07 : BTA-A 08 : BTA-B 09 : BTA-C 99 : Conversion	
	14	**P-ROM version display** Sim22-14 ROM VER1/2 S/N : ---------- MCU : --.-- IMC : --.-- PNL : --.-- Sim22-14 ROM VER2/2 FAX : --.-- S/N :Production serial number MCU :Main unit program version IMC :IMC program version PNL :Panel program version FAX :FAX program version The version of the option board which is not installed is not displayed.	
	15	**Trouble memory display** The latest 20 troubles are displayed. (The oldest one is overwritten sequentially.) [CA] key: Exits the simulation mode. [INTERRUPT] key: Shifts to the sub code input window. ▲ key, ▼ key: Switches to another page. Sim22-15 TROUBLE 1/2 XX-XX XX-XX XX-XX XX-XX XX-XX XX-XX XX-XX XX-XX XX-XX XX-XX XX-XX XX-XX ▼key ▲key Sim22-15 TROUBLE 2/2 XX-XX XX-XX XX-XX XX-XX XX-XX XX-XX XX-XX XX-XX The display sequence is as shown below. Sim22-15 TROUBLE 1/2 ① ⑤ ⑨ ② ⑥ ⑩ ③ ⑦ ⑪ ④ ⑧ ⑫ In this case, (1) is the latest one and (12) is the oldest.	
	22	**SPF/RSPF jam counter display** Used to display the SPF/RSPF JAM counter. When [INTERRUPT] key is pressed, the machine goes to the sub code input window. When [CA] key is pressed, the machine exits the simulation mode. Sim22-22 JAM CNT SPF : nnnnnnn	(Only when the SPF/RSPF is installed.)
24	01	**Jam total counter clear** When this simulation is executed, the clear confirmation window is displayed as shown below. When [OK] key or [START] key is pressed, the jam total count and the jam memory are cleared and the machine shifts to the sub code input window. Sim24-1 COUNTER CLR JAM COUNTER CLEAR AER YOU SURE? EXEC	

Main code	Sub code	Contents	Remark
24	02	**Trouble memory clear** Used to clear the trouble memory and the trouble history data in the EEPROM. When [INTERRUPT] key is pressed, the machine shifts to the sub code input window. When [CA] key is pressed, the machine exits the simulation mode. Sim24-2 COUNTER CLR TROUBLE COUNTER CLEAR AER YOU SURE? EXEC	(Only when the SPF/RSPF is installed.)
	04	**SPF/RSPF counter clear** Used to clear the SPF/RSPF paper feed counter. Sim24-4 COUNTER CLR SPF COUNTER CLEAR AER YOU SURE? EXEC [CA] key: Exits the simulation mode. [INTERRUPT] key: Shifts to the sub code input window.	
	05	**Duplex print counter clear** Used to clear the duplex print counter. Sim24-5 COUNTER CLR DUPLEX COUNTER CLEAR AER YOU SURE? EXEC [CA] key: Exits the simulation mode. [INTERRUPT] key: Shifts to the sub code input window.	(MX-M200D/MX-M160D only) (Execution is not allowed when DUPLEX setting is OFF.)
	06	**Paper feed counter clear** Used to clear the paper feed counter data in each paper feed section.  * TRAY2-TRAY4 are displayed only when they are installed. [CA] key: Exits the simulation mode. [INTERRUPT] key: Shifts to the sub code input window.	
	07	**Drum counter clear** Used to clear the drum counter and the drum rotating time. Sim24-7 COUNTER CLR DRUM COUNTER CLEAR AER YOU SURE? EXEC [CA] key: Exits the simulation mode. [INTERRUPT] key: Shifts to the sub code input window.	

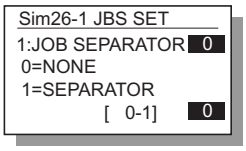
Main code	Sub code	Contents	Remark
24	08	**Copy counter clear** Used to clear the copy counter. Sim24-8 COUNTER CLR COPIES COUNTER CLEAR AER YOU SURE? EXEC [OK] key or [START] key: Clears the copy counter and shifts to the sub code input window. [CA] key: Exits the simulation mode. [INTERRUPT] key: Shifts to the sub code input window.	
	09	**Printer counter clear** Used to clear the printer counter and other counters. Select a counter to be cleared and press [OK] key or [START] key. The confirmation window is displayed. Press [OK] key or [START] key again, and the specified counter is cleared and the machine returns to the initial window.  [CA] key: Exits the simulation mode. [INTERRUPT] key: Shifts to the sub code input window.	
	13	**Scanner counter clear** Used to clear the scanner counter. Sim24-13 COUNTER CLR SCAN COUNTER CLEAR AER YOU SURE? EXEC [OK] key or [START] key: Clears the scanner counter and shifts to the sub code input window. [CA] key: Exits the simulation mode. [INTERRUPT] key: Shifts to the sub code input window.	
	14	**SPF/RSPF jam total counter clear** Used to clear the SPF/RSPF jam total counter. Sim24-14 COUNTER CLR SPF JAM COUNTER CLEAR AER YOU SURE? EXEC [OK] key or [START] key: Clears the SPF/RSPF jam total counter and shifts to the sub code input window. [CA] key: Exits the simulation mode. [INTERRUPT] key: Shifts to the sub code input window.	(Only when the SPF/RSPF is installed.)
	15	**Scanner mode counter clear** Used to clear the scanner mode counter. Sim24-15 COUNTER CLR SCANNER MODE COUNTER CLEAR AER YOU SURE? EXEC [OK] key or [START] key: Clears the scanner mode counter and shifts to the sub code input window. [CA] key: Exits the simulation mode. [INTERRUPT] key: Shifts to the sub code input window.	

Main code	Sub code	Contents	Remark
25	01	**Main motor operation check (Cooling fan motor rotation check)** When [OK] key or [START] key is pressed, the main motor (as well as the duplex motor in the case of the duplex model) is rotated for 30 sec. If the developing unit is installed to save toner consumption at that time, the developing bias, the main charger, and the grid are also outputted. In addition, since laser discharge is required when the motor is stopped, the polygon motor is also operated. Check if the developing unit is installed or not. If it is not installed, the previous high voltage is not outputted and only the motor is rotated. After completion of 30sec operation, the machine shifts to the sub code input window. * This simulation must not be executed with the door open/close switch forcibly turned ON.  After completion of the process, the machine shifts to the sub code input window. [CA] key: Exits the simulation mode. [INTERRUPT] key: Interrupts the output operation, and shifts to the sub code input window.	
	02	**Toner density reference control level setting (automatic development adjustment)** To execute this simulation, perform the following procedures. **[Procedures]** 1) Check to confirm that the machine power is turned OFF. Install the DV unit. 2) With the cover open, turn ON the machine power. 3) The machine goes to the SIM25-02 mode. ("Cover open MSG" is displayed. Start LED: OFF.) 4) Close the side cover. (Start LED:ON) 5) Press [OK] key or [START] key. When [OK] key or [START] key is pressed, the main motor rotates for 3 minutes to determine the toner sensor reference value and clear the developer rotation time, in addition, the developer counter is cleared. When the procedures are completed normally, the ATC sensor reference value is displayed on the value display section. In case of an error, the following screen is displayed.  Note: When the machine is not in the simulation mode, if the front cover is closed and the machine power is turned ON, toner may be supplied from the toner cartridge to the developer cartridge. Under this state, the toner density reference control level adjustment cannot be performed properly. If, therefore, the front cover is closed and the machine power is turned ON when the machine is not in the simulation mode, dispose developer, supply new developer, and adjust the toner density reference level. It takes about 3 minutes to complete the SIM25-02. Never open the front cover or turn OFF the machine power during execution of this simulation.	

<table>
<tr><th>Main code</th><th>Sub code</th><th>Contents</th><th>Remark</th></tr>
<tr><td>25</td><td>10</td><td>Polygon motor operation check

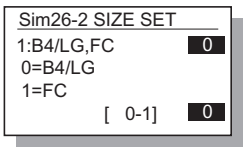
When [OK] key or [START] is pressed, the polygon motor is rotated for 30sec.
 

After completion of the process, the machine shifts to the sub code input window.
[CA] key: Exits the simulation mode.
[INTERRUPT] key: Interrupts the output operation, and shifts to the sub code input window.</td><td></td></tr>
<tr><td rowspan="3">26</td><td>01</td><td>Job separator setting

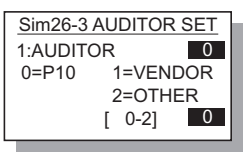
Used to set YES/NO of installation of the hob separator.
After installation of the job separator, setting must be manually set to YES.
 

0 : No job separator
1 : Job separator provided

[CA] key: Exits the simulation mode. (When setting is changed, the machine exits the simulation mode and performs the hard reset.)
[INTERRUPT] key: Shifts to the sub code input window. (When setting is changed, it is invalid.)
[START] key: Setting contents are saved in the EEPROM and the machine shifts to the code input window. (When setting is changed, the machine does not shift to the code input window.)</td><td></td></tr>
<tr><td>02</td><td>Size setting

Used to set Enable/Disable of FC (8.5" x 13") size detection.
Detection size when FC (8.5" x 13") size document is used.
<table>
<tr><th></th><th>Unit to be used</th><th>Destination</th><th>Document size</th><th colspan="2">Set value</th></tr>
<tr><th></th><th></th><th></th><th></th><th>0(Disable)</th><th>1(Enable)</th></tr>
<tr><td rowspan="4">Document</td><td rowspan="4">SPF/ RSPF</td><td rowspan="2">EX Japan AB series(FC)</td><td>FC(8.5"x13")</td><td>B4</td><td>FC(8.5"x13")</td></tr>
<tr><td>B4</td><td>B4</td><td>FC(8.5"x13")</td></tr>
<tr><td rowspan="2">Inch series(FC)</td><td>FC(8.5"x13")</td><td>LG(8.5"x14")</td><td>FC(8.5"x13")</td></tr>
<tr><td>LG(8.5"x14")</td><td>LG(8.5"x14")</td><td>FC(8.5"x13")</td></tr>
</table>
* For destinations other than the above, this setting is invalid.
 

Code: Setting
0 : Detection disabled
1 : FC detection enabled</td><td>Default:
0: (Default for destinations other than below)
1: Australia, New Zealand, Philippines</td></tr>
<tr><td>03</td><td>Auditor setting

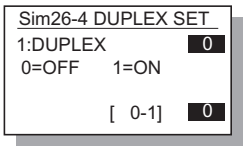
Used to set the auditor.
 

Code: Mode
0 : Built-in auditor mode
1 : Coin vendor
2 : Other

* When the coin vendor mode is selected:
1. Sort auto select is OFF.
2. For Japan, the duplex copy use inhibition setting is ON (inhibited).
3. When the auditor mode exclusive-setting is ON (manual paper feed inhibited) and the standard tray is set to the manual feed tray, the standard tray setting is set to the main tray.</td><td>Default:
0</td></tr>
</table>

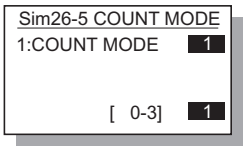
<table>
<tr><th>Main code</th><th>Sub code</th><th>Contents</th><th>Remark</th></tr>
<tr><td>26</td><td>04</td><td>Copier duplex setting

Used to set YES/NO of duplex setting.
This must be set to ON when the duplex unit is installed. If this setting is set to OFF on the duplex machine, the duplex motor dose not rotate and paper is not discharged normally, resulting in a paper jam.

Code: Duplex setting
0 : OFF
1 : ON</td><td>Default:
0: MX-M160
1: MX-M160D /MX-M200D</td></tr>
<tr><td></td><td>05</td><td>Count mode setting

Used to set the count-up number of the total counter, the developer counter, and the maintenance counter individually when a special paper (A3/WLT/8K) is passed.
When this simulation is executed, the current set value is displayed.

<table><tr><th>Setting</th><th>Total/Developer</th><th>Maintenance</th></tr><tr><td>0</td><td>+2</td><td>+2</td></tr><tr><td>1</td><td>+1</td><td>+2</td></tr><tr><td>2</td><td>+2</td><td>+1</td></tr><tr><td>3</td><td>+1</td><td>+1</td></tr></table>
[1]-[3] (Default:[0])
Enter a value with numeric keys, and press [OK] key or [START] key to save the current adjustment value to the EEPROM. The machine returns to the sub code input window.</td><td>Default:
0</td></tr>
<tr><td></td><td>06</td><td>Destination setting

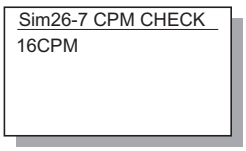
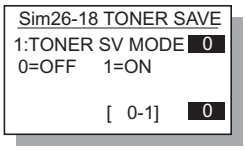
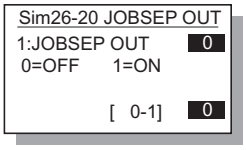
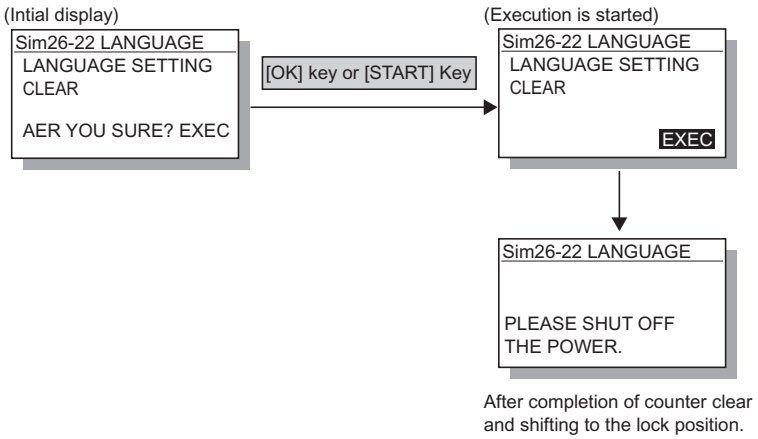
Used to set the destination of the main unit.
When this simulation is executed, the code number of currently set destination is displayed.

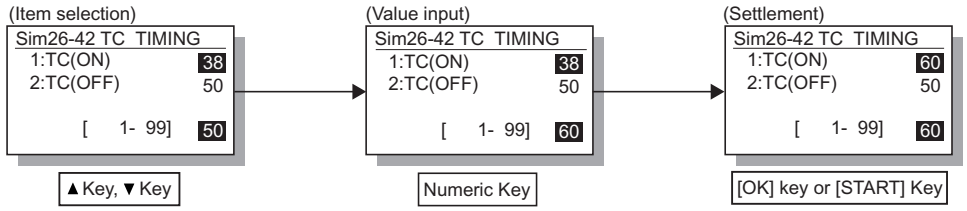
Code :Setting
0=JAPAN : Japan AB series
1=INCH : Inch series
2=AB : Ex Japan AB series
3=INCH(FC) : Ex Japan inch series (FC)
4=AB(FC) : Ex Japan AB series (FC)
5=CHINESE : China (EX Japan AB series + Chinese paper support)
6=TAIPEI : Taiwan (EX Japan AB series + Chinese paper support)
(Setting range 0 - 6)

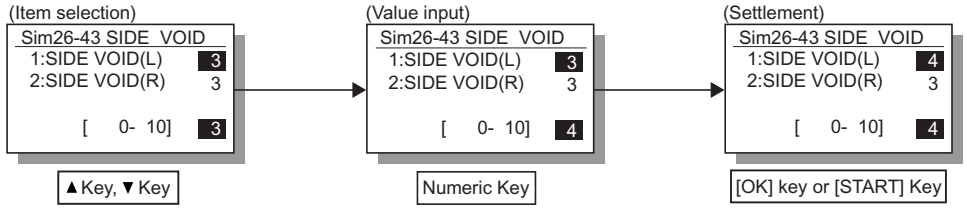
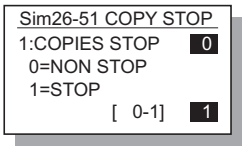
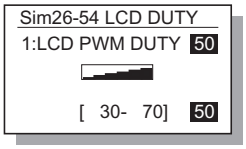
[0] - [6] (Default: Depends on the model.)
Enter a value with numeric keys, and press [OK] key or [START] key, and the current adjustment value is saved in the EEPROM.
[CA] key: Exits the simulation mode. (When setting is changed, the machine exits the simulation mode and performs the hard reset.)
[INTERRUPT] key: Shifts to the sub code input window. (When setting is changed, it is invalid.)
[START] key: Setting contents are saved in the EEPROM and the machine shifts to the code input window. (When setting is changed, the machine does not shift to the code input window.)

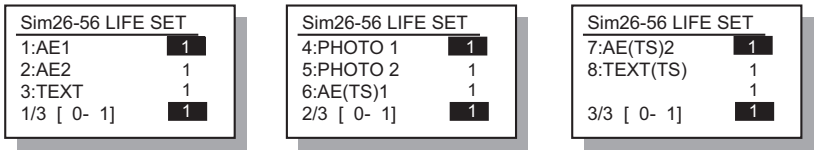
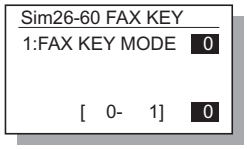
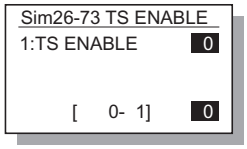
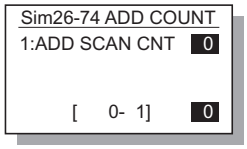
* When this setting is changed, the following adjustment values and the set values are automatically changed according to the set destination.
O SIM46-19 (γ table setting)
O SIM46-30 (AE limit setting)
O Paper size (A4 for AB series, LT for inch series)
O Maintenance cycle (Returns to the default (Japan/Ex Japan).)
O Mini maintenance cycle (Only when setting is changed to Japan.)</td><td>Default:
Differs depending on each destination.</td></tr>
</table>

Main code	Sub code	Contents	Remark
26	07	**Machine condition check** When this simulation is executed, the copy speed of the machine is displayed.  Displayed CPM list 14CPM 16CPM 20CPM [CA] key: Exits the simulation mode. [INTERRUPT] key: Shifts to the sub code input window.	
	18	**Toner save mode setting** Used to switch ON/OFF of the toner save mode. When this simulation is executed, the current set value is displayed. Enter a set value with numeric keys and press [OK] key or [START] key. The set value is saved in the EEPROM. * When this setting is changed, the toner save setting of the system settings is also changed accordingly.  Code: Setting 0: Toner save OFF 1: Toner save ON [CA] key: Exits the simulation mode. [INTERRUPT] key: Shifts to the sub code input window.	Default: 0
	20	**Job separator paper exit mode setting** Used to set the paper exit mode of the job separator. * The purpose is to allow the simplified check when the job separator option is installed. It is valid only during the adjustment simulation. Without installing a printer or a FAX machine, paper is discharged to the upper stage to check if there is no problem or not. If SIM26-01 is set to "Job separator not installed," paper is discharged to the lower stage regardless of this setting.  Code: Setting 0: Lower tray 1: Upper tray [CA] key: Exits the simulation mode. [INTERRUPT] key: Shifts to the sub code input window.	Default: 0
	22	**Language setting clear** Used to clear the language setting. The scanner head is shifted to the fixing lock position.  After completion of counter clear and shifting to the lock position.	

Main code	Sub code	Contents	Remark
26	30	**CE mark conformity control ON/OFF** Used to set Yes/No of CE mark conformity. When this simulation is executed, the current set value is displayed. Enter a value with numeric keys and press [OK] key or [START] key. The set value is saved to EEPROM and the machine returns to the sub code input window. Sim26-30 CE MARK 1:CE MARK CTRL 0 0=OFF 1=ON [0-1] 0 Code: Setting 0 : CE mark support control OFF 1 : CE mark support control ON [CA] key: Exits the simulation mode. [INTERRUPT] key: Shifts to the sub code input window.	Default: 0: 100V series 1: 200V series
	31	**Auditor mode exclusive setup** Used to set whether paper feed is allowed from the manual paper feed tray of not when the auditor is set to the coin vendor mode. Sim26-31 AUDITOR 1:AUDITOR 1 [0-2] 1 Code: Setting 0 : Exclusive setting OFF (Manual paper feed enable) 1 : Exclusive setting ON (Manual paper feed disable) 2 : Exclusive setting OFF (Manual paper feed enable) + A3/WLT charge * When this setting is set to ON, if the auditor mode is the coin vendor mode and the standard tray setting is set to the manual paper feed tray, the standard tray setting is set to the main tray. [CA] key: Exits the simulation mode. [INTERRUPT] key: Shifts to the sub code input window.	Default: 1
	36	**Cancel of stop at maintenance life over** "Stop" or "Cancel of stop" can be selected when the maintenance counter reaches the life over. Sim26-36 MAINTESTOP 1:MAINTE OVER 1 [0-1] 1 Code: Setting 0 : Stop 1 : Cancel of stop [CA] key: Exits the simulation mode. [INTERRUPT] key: Shifts to the sub code entry menu.	Default: 1
	37	**Cancel of stop at developer life over** "Stop" or "Cancel of stop" can be selected when the developer counter reaches the life over.. Sim26-37 DEVE STOP 1:DEV LIFE OVER 1 [0 - 1] 1 Code: Setting 0 : Stop 1 : Cancel of stop [CA] key: Exits the simulation mode. [INTERRUPT] key: Shifts to the sub code entry menu.	Default: 1
	38	**Cancel of stop at drum life over** "Stop" or "Cancel of stop" can be selected when the drum counter reaches the life over. Sim26-37 DEVE STOP 1:DRM LIFE OVER 1 [0-1] 1 Code: Setting 0 : Stop 1 : Cancel of stop [CA] key: Exits the simulation mode. [INTERRUPT] key: Shifts to the sub code entry menu.	Default: 1

Main code	Sub code	Contents	Remark
26	39	**Memory capacity check** Used to check the capacity of the image memory (SDRAM) installed to the MCU PWB and the capacity of the IMC compression memory. Sim26-39 MEMORY CHK MCU : 32Mbyte IMC : 16Mbyte There are two kinds of the displayed image memory capacity: 16MB and 32MB. The standard capacity of the IMC compression memory is 16B. * It is not displayed when IMC is not installed. [CA] key: Exits the simulation mode. [INTERRUPT] key: Shifts to the sub code input window.	
	42	**Transfer ON/OFF timing control setting** Used to set the ON/OF timing of the transfer charger (TC) individually. Select an item to be changed with the arrow keys, and change the set value to a desired value, and press [OK] key or [START] key. The entered value is saved to the EEPROM and the machine shifts to the sub code input window.  Variation in the adjustment value 1:TC(ON) — PS release → TC ON 2:TC(OFF) — PIN OFF → TC OFF | Set value | Time (ms) | Difference (ms) | Set value | Time (ms) | Difference (ms) | | 99 | 442 | +122 | 99 | 402 | +98 | | • • • | • • • | • • • | • • • | • • • | • • • | | 50 | 344 | +24 | 51 | 306 | +2 | | • • • | • • • | • • • | 50 | 304 | 0 | | 38 | 320 | 0 | 49 | 302 | -2 | | • • • | • • • | • • • | • • • | • • • | • • • | | 1 | 246 | -74 | 1 | 206 | -98 | * Setting range is 1 - 99. When the set value is increased by 1, the timing is increased by 2ms. * The default (38) of transfer ON timing means 320ms from PS release. The default (50) of the transfer OFF timing means304ms from P-IN OFF. [CA] key: Exits the simulation mode. [INTERRUPT] key: Shifts to the sub code input window.	Default: 38 (TC ON) 50 (TC OFF)

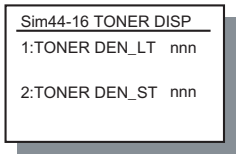
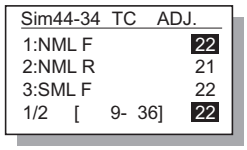
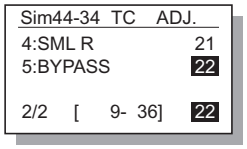
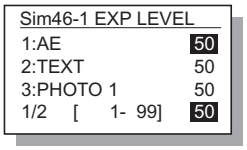
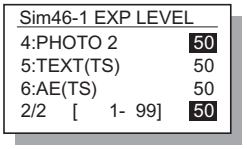
Main code	Sub code	Contents	Remark
26	43	**Side void amount setting** Used to set the left and right side void amounts. The left side void amount and the right side void amount can be set individually. Select an item to be changed with the arrow keys and change the set value to a desired value. The setting range is 0-10. When the value is increased by 1, the void amount is increased by 0.5mm. The default is 5 (= 2.5mm).  Display: Set item 1:SIDE BOID(L) : Left side void amount setting 2:SIDE VOID(R) : Right side void amount setting [CA] key: Exits the simulation mode. [INTERRUPT] key: Shifts to the sub code input window.	Default: 5 (Voide amount: 2.5mm)
	51	**Copy temporary stop function setting** Used to set whether copying is stopped temporarily when the paper exit tray full is detected. When the electronic sort function is used, paper exit of 250 sheets (*1) or more can be used for one copy job. If, at that time, copying (paper discharge) is continued with the tray full, a paper exit jam may occur. To avoid this, copying is temporarily stopped by this setting.  Display: Setting 0 : Temporary stop cancel 1 : Temporary stop (*1) 150 sheets when the job separator is installed. [CA] key: Exits the simulation mode. [INTERRUPT] key: Shifts to the sub code input window.	Default: 1
	54	**LCD contrast PWM duty setting** Used to set the PWM duty (brightness) at the center value of LCD contrast. * Setting range: 30-70 * When [OK] key or [START] key is pressed, the set value of LCD contrast is immediately reflected.  [CA] key: Exits the simulation mode. [INTERRUPT] key: Shifts to the sub code input window.	Default: 50

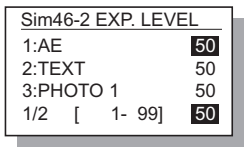
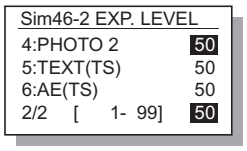
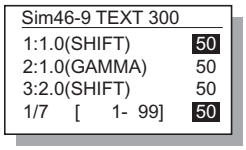
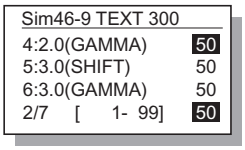
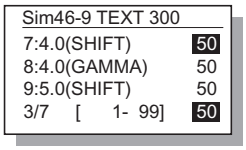
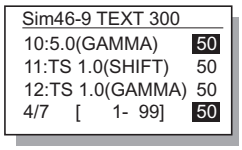
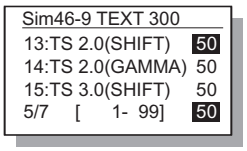
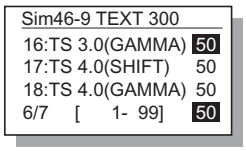
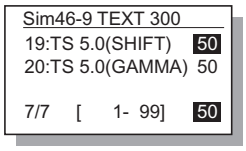
Main code	Sub code	Contents	Remark
26	56	**Life correction ON/OFF setting** The image correction ON/OFF setting is made according to the usage level (life) of developer. When this simulation is executed, the list of the modes and the current set value are displayed on the LCD. Select an item to be changed with the arrow keys, and change the set value to the required value. (1=ON [Enable], 0=OFF [Disable]) When [OK] key or [START] key is pressed, the setting is saved to the EEPROM.  Screen display : adjustment mode 1: AE1 : AE1 life correction 2: AE2 : AE2 life correction 3: TEXT : TEXT life correction 4: PHOTO 1 : PHOTO (Error diffusion) life correction Screen display : Adjustment mode 5:PHOTO 2 : PHOTO(Dither) life correction 6:AE(TS)1 : TSAE1 life correction 7:AE(TS)2 : TSAE2 life correction 8:TEXT(TS) : TSTEXT life correction [CA] key: Exits the simulation mode. [INTERRUPT] key: Shifts to the sub code input window.	Default: 1: 0 2: 0 3: 0 4: 0 5: 0 6: 0 7: 0 8: 0
	60	**[FAX] key Enable/Disable setting** Used to set Enable/Disable of the [FAX] key when the FAX PWB is not installed. Though this setting is set to Enable, if the FAX PWB is not installed, a message of "FAX PWB is not installed" is displayed. * When the FAX PWB is installed, the display shifts to the FAX window regardless of this setting.  | | FAX PWB | | |---|---|---| | Setting | Yes | No | | 0 (Enable) | FAX window display | FAX not-installed display | | 1 (Disable) | FAX window display | Error beep sound | [CA] key: Exits the simulation mode. [INTERRUPT] key: Shifts to the sub code input window.	Default: 0
	73	**Toner save setting display/non-display** Used to set Enable/Disable of the toner save setting in the system settings. If this setting is set to Enable (1), the toner save setting appears in the system settings to allow setting.  Display: Setting 0 : Disable 1 : Enable [CA] key: Exits the simulation mode. [INTERRUPT] key: Shifts to the sub code input window.	Default: 0
	74	**Total counter display change setting** Used to set whether the scanner counter value is added to the total counter display in the system settings.  0 : Scan counter not added 1 : Scan counter added [CA] key: Exits the simulation mode. [INTERRUPT] key: Shifts to the sub code input window.	Default: 0

Main code	Sub code	Contents	Remark
30	01	**Paper sensor status display** Used to display the list of paper sensor status on the LCD. An active sensor is highlighted. The display items and corresponding sensors are shown below. Sim30-1 SENSOR POUT DPX PIN MBEMP C1EMP C2EMP C3EMP C4EMP C2PSS C3PSS C4PSS DRST Display : Corresponding sensor POUT : Paper exit sensor DPX : DUPLEX sensor PIN : Paper entry sensor MBEMP : Manual feed paper sensor C1EMP : No. 1 tray paper sensor C2EMP : No. 2 tray paper sensor C3EMP : No. 3 tray paper sensor C4EMP : No. 4 tray paper sensor C2PSS : No. 2 tray paper feed sensor C3PSS : No. 3 tray paper feed sensor C4PSS : No. 4 tray paper feed sensor When a multi-stage cassette is not installed as an option, the corresponding sensor name is not displayed.	
41	01	**Document size detection photo sensor check** Used to check the operation of the document sensor. When this simulation is executed, the status of the document sensor is displayed. An active sensor display is highlighted. Sim41-1 PD SENSOR OCSW PD1 PD2 PD3 PD4 PD5 OC cover open/close sensor status: OCSW — Open: Highlighted; Close: Normal display Document sensor status: PD1 - PD5 — Document NO: Normal display; Document YES: Highlighted * For AB series, PD1-PD5; for inch series, PD1 - PD4.	
	02	**Document size detection photo sensor detection level adjustment** When this simulation is executed, the detection level of the OC document size detection sensor is displayed. (Real time display) Place white paper of A3 or WLT on the document table and press [OK] key or [START] key with the OC cover open. When [START] key is pressed, "EXEC" is highlighted and the document detection level at that moment is saved in the EEPROM. (The saved value is used as the reference for the following document size detection control.) Execution window Sim41-2 PD SENSOR OCS 1[128] 200 2[128] 200 3[128] 200 4[128] 200 5[128] 200 Sensor position for AB series 5 4 1 2 3 Sensor position for Inch series 4 3 1 2 The values are displayed in the range of 0 - 255. 0 (Black) - 255 (White) The value in [ ] indicates the adjustment threshold value. "EXEC" is highlighted during execution. OCSW: Original cover status — Open: Highlighted; Close: Normal display 1 - 5: PD sensor detection level	

Main code	Sub code	Contents	Remark
41	03	**Document size detection photo sensor light receiving/detection level check** When this simulation is executed, the light receiving level of the document detection photo sensor is displayed. (Real time display) The values in parentheses of sensor 4 and 5 are the threshold values of adjustment at SIM41-04. Since sensors 1 and 3 are not provide with the threshold value of detection at SIM41-04, "0" is always displayed. Sim41-3 PD SENSOR OCS 1[000] 200 2[000] 200 3[000] 200 4[050] 200 5[050] 200	
	04	**Detection level adjustment when the document size is settled (15 degrees - 20 degrees)** Set the OC cover to the document size settled state (15 degrees - 20 degrees), and press [OK] key. ①Initial window Sim41-4 20°SENSOR PRESS OK KEY EXEC ②After-execution window Sim41-4 20°SENSOR OCS 1[000] 163 2[000] 148 3[001] 167 4[0C6] 180 5[197] 179 The detection level under the document size settled state is saved in the EEPROM, and the value is displayed in [ ]. * The document size settled state means the point when the open/close sensor (OCSW) is switched from ON (highlighted) to OFF (normal display).	
42	01	**Developing counter clear** Used to clear the developing counter. When this simulation is executed, the confirmation window is displayed to confirm to clear or not. To clear, press [OK] key or [START] key. Not to clear, press [INTERRUPT] key or [CA] key to exit the simulation mode. Sim42-1 COUNTER CLR DEVELOPER COUNTER CLEAR ARE YOU SURE? EXEC [CA] key: Exits the simulation mode. [INTERRUPT] key: Shifts to the sub code input window.	
43	01	**Fusing temperature setting (Normal copy)** Used to set the fusing temperature in normal copy. When this simulation is executed, the current set value is displayed. Every time when [▸] key is pressed, the set value is increased by 5°C from the current display temperature. Every time when [◂] key is pressed, the set value is decreased by 5°C from the current display temperature. Enter a desired set value (temperature), and press [OK] key or [START] key. The set value is caved in the EEPROM. Setting can be made in the range of 160°C to 200°C in the increment of 5°C. Sim43-1 FUSER TEMP. 1:FUSER TEMP 170 [160- 200] 170 0 : 160℃ 1 : 165℃ 2 : 170℃ 3 : 175℃ 4 : 180℃ 5 : 185℃ 6 : 190℃ 7 : 195℃ 8 : 200℃ [CA] key: Exits the simulation mode. [INTERRUPT] key: Shifts to the sub code input window.	Default: 2

Main code	Sub code	Contents	Remark
43	12	**Standby mode fusing fan rotation setting** When this simulation is executed, the currently set code number is displayed. Select a mode to be changed with the arrow keys and enter a set value with numeric keys. Enter the mode number to be selected with numeric keys and press [OK] key or [START] key. The set value is saved in the EEPROM. Sim43-12 FAN SPEED 1:LOW 0 2:HIGH 1 [0-1] 0 FAN rotation speed 0 : Low speed rotation 1 : High speed rotation Setting mode LOW: Setting in normal temperature adjustment (190°C or below) Default = 0 (Low speed rotation) HIGH: When the fusing temperature is 190°C or above,Default = 1 (High speed rotation)	Default: LOW:0 HIGH:1
	13	**Paper interval control allow/inhibit setting** Used to change the paper feed timing of 21st sheet or later to A3 or WLT (depending on the destination setting) when in multi copy/print of narrow width sheets. When this simulation is executed, the current set number is displayed. Enter a code number and press [START] key. The entered number is saved in the EEPROM and the machine returns to the sub code input window. Sim43-13 PICK INTVL 1:PICK INTVL 0 [0-1] 0 Code: Setting 0: Disable (Default) 1: Enable <Applicable paper> 1) Cassette paper feed: A4R,B5R,8-1/2"x14",8-1/2"x13",8-1/2"x11",A5,INV 2) Manual paper feed: A4R,B5R,8-1/2"x14",8-1/2"x13",8-1/2"x11",A5,INV,16KRÅ * A5 is applicable to manual paper fed only in EX Japan AB series.	Default: 0
44	1	**Enable/Disable setting of toner density control correction** Enable/Disable of toner density control correction is set. When this simulation is executed, the list of the modes and the current set value are displayed on the LCD. "Select an item to be changed with the cross key, and change the set value to the required value. (1=ON [Enable], 0=OFF [Disable])" When [OK] key or [START] key is pressed, the setting is saved to the EEPROM. Sim44-1 TONER CONT 1:COV 0 2:LIFE 0 3:DRIP 0 1/2 [0- 1] 0 Sim44-1 TONER CONT 4:BETA 0 5:UNCONDITIONAL 0 0 2/2 [0- 1] 0 Display mode : Setting mode COV : Print ratio correction LIFE : Life correction DRIP : Drip supply★ BETA : Purge process★ UNCONDITIONAL : Unconditional toner supply Display : Setting 0 : Disable 1 : Enable <Descriptions of each correction> Print ratio correction In this correction, the toner supply interval is determined according to the print ratio to prevent against over-toner. Note for corrections marked with ⋆ Since "Drip supply" and "Purge process" are simulations for analysis, do not set them to "1" [Enable]. If they are set to "1" [Enable], the toner density rises or falls abnormally and developer failure or toner dispersion occurs. If they are set to "1" [Enable] erroneously, developer must be replaced, and the inside of the machine and the process unit must be cleaned. Unconditional toner supply When the developing unit and the drum unit are rotating, a small quantity of toner is consumed. For assuring this operation, toner is supplied according to the rotation time of the developing unit.	Default: COV: 1 LIFE: 0 DRIP: 0 BETA: 0 UNCONDITIONAL: 1

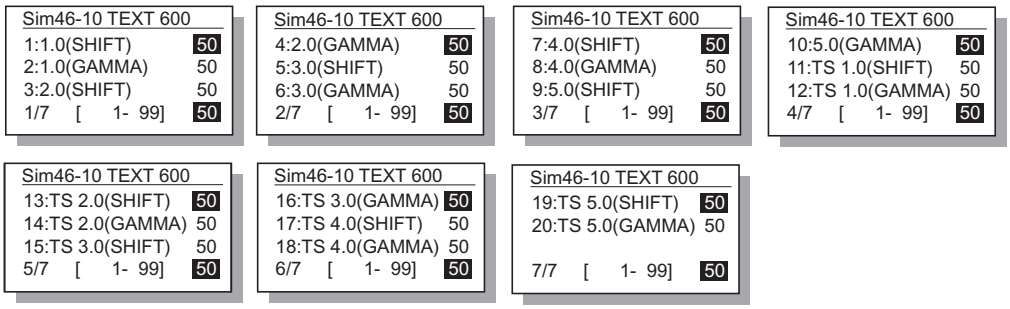
Main code	Sub code	Contents	Remark
44	16	**Toner density control data check and toner density correction quantity display** The output value of the ATC sensor is checked, and the toner density control correction quantity is displayed on the LCD.  Name :Display content TONER DEN_LT :Current ATC sensor value TONER DEN_ST :ATC reference value with life correction quantity added [CA] key: Exits the simulation mode. [INTERRUPT] key: Shifts to the sub code input window.	
	34	**Transfer current setting** Used to set the transfer current value. When this simulation is executed, the list of modes and the current set value are displayed on the LCD.   Select a set item with the arrow keys and enter a set value with numeric keys. Press [OK] key or [START] key, and the set value is saved in the EEPROM. The setting range is 90µA - 360µA. The calculation formula is "Set value x 10 (µA)." For example, in order to set the transfer current value to 200µA, set the adjustment value to "20." Display mode : Setting mode NML F : Normal size paper (Front) NML R : Normal size paper (Back) SML F : Small size paper (Front) SML R : Small size paper (Back) BYPASS : Manual paper pass * Small size paper means A4R (Letter R) width or less. * When selecting the special size of tray, the normal size width setting is made.	Default: NML F: 22 NML R: 21 SML F: 22 SML R: 21 BYPASS: 22
46	01	**Copy density adjustment(300dpi)** Used to set the copy density foe each exposure mode. When this simulation is executed, the list of the setting items and the current set value are displayed. Select an item to be changed with [▲] key and [▼] key and enter the adjustment value with numeric keys. The setting range is 1 - 99. When [◀] key or [▶] key is pressed, the page is changed. Enter the adjustment value with numeric keys and press [OK] key. The entered value is saved in the EEPROM and the machine shifts to the copy window. Sample copying can be performed during the simulation   Window display : Adjustment mode 1:AE : AE MODE (300dpi) 2:TEXT : TEXT MODE (300dpi) 3:PHOTO 1 : PHOTO MODE (Error diffusion) 4:PHOTO 2 : PHOTO MODE (Dither) 5:TEXT (TS) : TS MODE (TEXT) (300dpi) 6:AE (TS) : TS MODE (AE) (300dpi)	

Main code	Sub code	Contents	Remark
46	02	**Copy density adjustment (600dpi)** Used to set the copy density for each mode.   Window display : Adjustment mode 1:AE : AE MODE (600dpi) 2:TEXT : TEXT MODE (300dpi) 3:PHOTO 1 : PHOTO MODE (Error diffusion) 4:PHOTO 2 : PHOTO MODE (Dither) 5:TEXT (TS) : TS MODE (TEXT) (600dpi) 6:AE (TS) : TS MODE (AE) (600dpi) Used to set the copy density for each mode. When this simulation is executed, the list of the setting items and the current set value are displayed. Select an item to be changed with [▲] key and [▼] key and enter the adjustment value with numeric keys. The setting range is 1 - 99. When [◄] key or [►] key is pressed, the page is changed. Enter the adjustment value with numeric keys and press [OK] key. The entered value is saved in the EEPROM and the machine shifts to the copy window. Sample copying can be performed during the simulation.	
	09	**Copy exposure level adjustment, individual setting (Text) 300dpi** Used to adjust the shift amount and the slanting value for each density level of 1-5 when the exposure mode is TEXT (including TS). • For the shift amount, the gamma (gradation) is common. The whole sections are made brighter or darker. When the shift amount is increased, the brightness is decreased. When the shift amount is decreased, the brightness is increased. • The slanting value changes the gamma (gradation). When the set value is increased, the gamma is increased to provide a higher contrast. (Clear black and white) When the set value is decreased, the gamma is decreased to provide a lower contrast. (Higher gradation) Select an adjustment mode with the arrow keys, and enter the set value with numeric keys. The adjustment range is 1 - 99. When [◄] key or [►] key is pressed, the page is changed. The shift amount and the slanting value can be individually set for each of five levels of density for each of TEXT/TS and TEXT. Therefore, there are 20 patterns of adjustment modes.       	The value on the example (50) is not the default value.

<table>
<tr><th>Main code</th><th>Sub code</th><th>Contents</th><th>Remark</th></tr>
<tr><td>46</td><td>09</td><td>
<table>
<tr><td>1</td><td>1.0(SHIFT)</td><td>TEXT density 1 shift amount</td></tr>
<tr><td>2</td><td>1.0(GAMMA)</td><td>TEXT density 1 gamma value</td></tr>
<tr><td>3</td><td>2.0(SHIFT)</td><td>TEXT density 2 shift amount</td></tr>
<tr><td>4</td><td>2.0(GAMMA)</td><td>TEXT density 2 gamma value</td></tr>
<tr><td>5</td><td>3.0(SHIFT)</td><td>TEXT density 3 shift amount</td></tr>
<tr><td>6</td><td>3.0(GAMMA)</td><td>TEXT density 3 gamma value</td></tr>
<tr><td>7</td><td>4.0(SHIFT)</td><td>TEXT density 4 shift amount</td></tr>
<tr><td>8</td><td>4.0(GAMMA)</td><td>TEXT density 4 gamma value</td></tr>
<tr><td>9</td><td>5.0(SHIFT)</td><td>TEXT density 5 shift amount</td></tr>
<tr><td>10</td><td>5.0(GAMMA)</td><td>TEXT density 5 gamma value</td></tr>
<tr><td>11</td><td>TS 1.0(SHIFT)</td><td>TS TEXT density 1 shift amount</td></tr>
<tr><td>12</td><td>TS 1.0(GAMMA)</td><td>TS TEXT density 1 gamma value</td></tr>
<tr><td>13</td><td>TS 2.0(SHIFT)</td><td>TS TEXT density 2 shift amount</td></tr>
<tr><td>14</td><td>TS 2.0(GAMMA)</td><td>TS TEXT density 2 gamma value</td></tr>
<tr><td>15</td><td>TS 3.0(SHIFT)</td><td>TS TEXT density 3 shift amount</td></tr>
<tr><td>16</td><td>TS 3.0(GAMMA)</td><td>TS TEXT density 3 gamma value</td></tr>
<tr><td>17</td><td>TS 4.0(SHIFT)</td><td>TS TEXT density 4 shift amount</td></tr>
<tr><td>18</td><td>TS 4.0(GAMMA)</td><td>TS TEXT density 4 gamma value</td></tr>
<tr><td>19</td><td>TS 5.0(SHIFT)</td><td>TS TEXT density 5 shift amount</td></tr>
<tr><td>20</td><td>TS 5.0(GAMMA)</td><td>TS TEXT density 5 gamma value</td></tr>
</table>
Select an item to be changed and set a desired adjustment value. Press [OK] key, and the machine shifts to the copy window.
When [START] key is pressed at that time, copying is performed with the previous adjustment value and the result can be checked.
</td><td></td></tr>
<tr><td></td><td>10</td><td>Copy exposure level adjustment, individual setting (Text) 600dpi

Used to adjust the shift amount and the slanting value for each density level (1-5) when the exposure model is TEXT (including TS).

• For the shift amount, the gamma (gradation) is common. The whole sections are made brighter or darker. When the shift amount is increased, the brightness is decreased. When the shift amount is decreased, the brightness is increased.
• The slanting value changes the gamma (gradation).

When the set value is increased, the gamma is increased to provide a higher contrast. (Clear black and white)
When the set value is decreased, the gamma is decreased to provide a lower contrast. (Higher gradation)
Select an adjustment mode with the arrow keys, and enter the set value with numeric keys.
The adjustment range is 1 - 99. When [◂] key or [▸] key is pressed, the page is changed.
The shift amount and the slanting value can be individually set for each of five levels of density for each of TEXT/TS and TEXT. Therefore, there are 20 patterns of adjustment modes.


</td><td>The value on the example (50) is not the default value.</td></tr>
</table>

<table>
<tr><th>Main code</th><th>Sub code</th><th>Contents</th><th>Remark</th></tr>
<tr><td>46</td><td>10</td><td>
<table>
<tr><td>1</td><td>1.0(SHIFT)</td><td>TEXT density 1 shift amount</td></tr>
<tr><td>2</td><td>1.0(GAMMA)</td><td>TEXT density 1 gamma value</td></tr>
<tr><td>3</td><td>2.0(SHIFT)</td><td>TEXT density 2 shift amount</td></tr>
<tr><td>4</td><td>2.0(GAMMA)</td><td>TEXT density 2 gamma value</td></tr>
<tr><td>5</td><td>3.0(SHIFT)</td><td>TEXT density 3 shift amount</td></tr>
<tr><td>6</td><td>3.0(GAMMA)</td><td>TEXT density 3 gamma value</td></tr>
<tr><td>7</td><td>4.0(SHIFT)</td><td>TEXT density 4 shift amount</td></tr>
<tr><td>8</td><td>4.0(GAMMA)</td><td>TEXT density 4 gamma value</td></tr>
<tr><td>9</td><td>5.0(SHIFT)</td><td>TEXT density 5 shift amount</td></tr>
<tr><td>10</td><td>5.0(GAMMA)</td><td>TEXT density 5 gamma value</td></tr>
<tr><td>11</td><td>TS 1.0(SHIFT)</td><td>TS TEXT density 1 shift amount</td></tr>
<tr><td>12</td><td>TS 1.0(GAMMA)</td><td>TS TEXT density 1 gamma value</td></tr>
<tr><td>13</td><td>TS 2.0(SHIFT)</td><td>TS TEXT density 2 shift amount</td></tr>
<tr><td>14</td><td>TS 2.0(GAMMA)</td><td>TS TEXT density 2 gamma value</td></tr>
<tr><td>15</td><td>TS 3.0(SHIFT)</td><td>TS TEXT density 3 shift amount</td></tr>
<tr><td>16</td><td>TS 3.0(GAMMA)</td><td>TS TEXT density 3 gamma value</td></tr>
<tr><td>17</td><td>TS 4.0(SHIFT)</td><td>TS TEXT density 4 shift amount</td></tr>
<tr><td>18</td><td>TS 4.0(GAMMA)</td><td>TS TEXT density 4 gamma value</td></tr>
<tr><td>19</td><td>TS 5.0(SHIFT)</td><td>TS TEXT density 5 shift amount</td></tr>
<tr><td>20</td><td>TS 5.0(GAMMA)</td><td>TS TEXT density 5 gamma value</td></tr>
</table>
Select an item to be changed and set a desired adjustment value. Press [OK] key, and the machine shifts to the copy window.
When [START] key is pressed at that time, copying is performed with the previous adjustment value and the result can be checked.
</td><td></td></tr>
<tr><td></td><td>11</td><td>Copy exposure level adjustment, individual setting (Photo) 600dpi

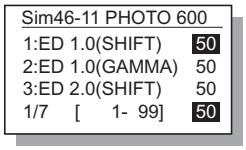
Used to adjust the shift amount and the slanting value for each density level (1-5) when the exposure model is PHOTO (error diffusion and dither).

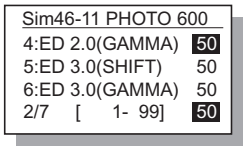
• For the shift amount, the gamma (gradation) is common. The whole sections are made brighter or darker. When the shift amount is increased, the brightness is decreased. When the shift amount is decreased, the brightness is increased.
• The slanting value changes the gamma (gradation).
When the set value is increased, the gamma is increased to provide a higher contrast. (Clear black and white)
When the set value is decreased, the gamma is decreased to provide a lower contrast. (Higher gradation)

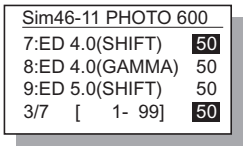
Select an adjustment mode with the arrow keys, and enter the set value with numeric keys.
The adjustment range is 1 - 99. When [◂] key or [▸] key is pressed, the page is changed.
The shift amount and the slanting value can be individually set for each of five levels of density for each of PHOTO mode (error diffusion and dither). Therefore, there are 20 patterns of adjustment modes.</td><td>The value on the example (50) is not the default value.</td></tr>
</table>

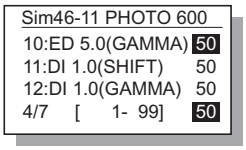
Main code	Sub code	Contents	Remark
46	11		

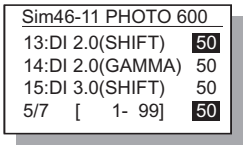
1	ED 1.0(SHIFT)	PHOTO (Error diffusion) density 1 shift amount
2	1.0(GAMMA)	PHOTO (Error diffusion) density 1 gamma value
3	ED 2.0(SHIFT)	PHOTO (Error diffusion) density 2 shift amount
4	ED 2.0(GAMMA)	PHOTO (Error diffusion) density 2 gamma value
5	ED 3.0(SHIFT)	PHOTO (Error diffusion) density 3 shift amount
6	ED 3.0(GAMMA)	PHOTO (Error diffusion) density 3 gamma value
7	ED 4.0(SHIFT)	PHOTO (Error diffusion) density 4 shift amount
8	ED 4.0(GAMMA)	PHOTO (Error diffusion) density 4 gamma value
9	ED 5.0(SHIFT)	PHOTO (Error diffusion) density 5 shift amount
10	ED 5.0(GAMMA)	PHOTO (Error diffusion) density 5 gamma value
11	DI 1.0(SHIFT)	PHOTO (Dither) density 1 shift amount
12	DI 1.0(GAMMA)	PHOTO (Dither) density 1 gamma value
13	DI 2.0(SHIFT)	PHOTO (Dither) density 2 shift amount
14	DI 2.0(GAMMA)	PHOTO (Dither) density 2 gamma value
15	DI 3.0(SHIFT)	PHOTO (Dither) density 3 shift amount
16	DI 3.0(GAMMA)	PHOTO (Dither) density 3 gamma value
17	DI 4.0(SHIFT)	PHOTO (Dither) density 4 shift amount
18	DI 4.0(GAMMA)	PHOTO (Dither) density 4 gamma value
19	DI 5.0(SHIFT)	PHOTO (Dither) density 5 shift amount
20	DI 5.0(GAMMA)	HOTO (Dither) density 5 gamma value

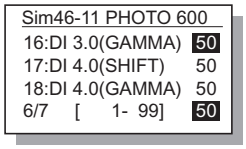


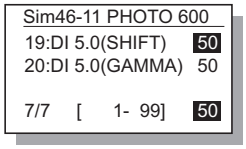










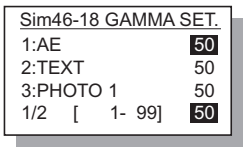


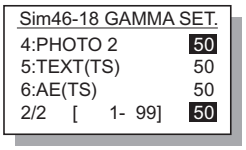
Select an item to be changed and set a desired adjustment value. Press [OK] key, and the machine shifts to the copy window.
When [START] key is pressed at that time, copying is performed with the previous adjustment value and the result can be checked.

	18	**Image contrast adjustment (300dpi)**	

Used to set the contrast for each mode.
When this simulation is executed, the list of the setting items and the current set value are displayed.
Select an item to be changed with [▲] key and [▼] key, and enter an adjustment value with numeric keys.
The setting range is 1 - 99. When [▶] key or [◀] key is pressed, the page can be changed.
When the set value is increased, the contrast becomes higher. When the set value is decreased, the contrast becomes lower. Though copying is made only at density 3, the contrast levels at density 1 from density 5 are also changed accordingly.

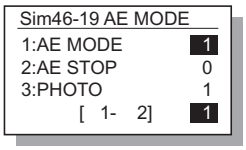
Window display	: Adjustment mode
1:AE	: AE MODE (300dpi)
2:TEXT	: TEXT MODE (300dpi)
3:PHOTO 1	: PHOTO MODE (Error diffusion)
4:PHOTO 2	: PHOTO MODE (Dither)
5:TEXT (TS)	: TS MODE (TEXT) (300dpi)
6:AE (TS)	: TS MODE (AE) (300dpi)





Enter an adjustment value and press [OK] key. The entered value is saved to the EEPROM and the machine shifts to the copy window.
Sample copying can be performed during this simulation.

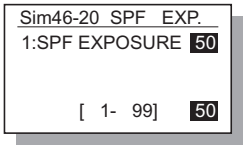
<table>
<tr><th>Main code</th><th>Sub code</th><th>Contents</th><th>Remark</th></tr>
<tr><td>46</td><td>19</td><td>Exposure mode setting (γ table setting/AE operation mode setting/Photo image process setting)

Used to set the following three items. Select an item with the [▲] key or [▼] key and enter a set value with numeric keys.
(1) : γ table setting
(2) : AE operation mode
(3) : PHOTO image process setting
When this simulation is executed, the current set code number of the above three modes are displayed.
 

(1) AE MODE(γ table setting)
Used to set the priority operation mode of the AE mode. When the image takes priority regardless of the toner consumption, set to 1. When the toner consumption must be suppressed regardless of image quality, set to 2.
<table><tr><th>Code number</th><th>γ table setting</th></tr><tr><td>1</td><td>Priority on image quality</td></tr><tr><td>2</td><td>Priority on toner consumption</td></tr></table>* If this setting is changed, SIM 46-30 returns to the default.
(2) AE STOP (AE operation mode)
Used to set the area for automatic exposure correction in image process.
<table><tr><th>Code number</th><th>AE operation mode</th></tr><tr><td>0</td><td>Lead edge stop</td></tr><tr><td>1</td><td>Real time process (All areas)</td></tr></table>(3) PHOTO (PHOTO image process setting)
Used to set the image process when the PHOTO mode is selected. Selection is available in the following two modes:
<table><tr><th>Code number</th><th>Image process mode</th></tr><tr><td>1</td><td>Error diffusion process</td></tr><tr><td>2</td><td>Dither process</td></tr></table></td><td>Default:
2

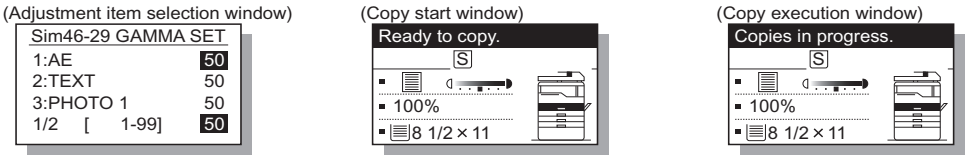
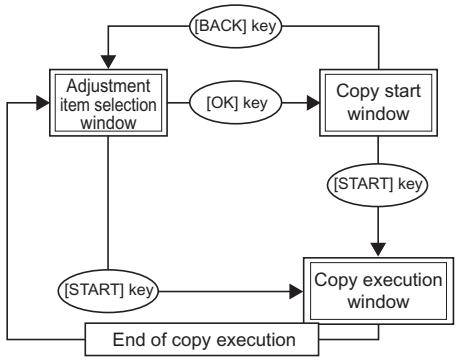
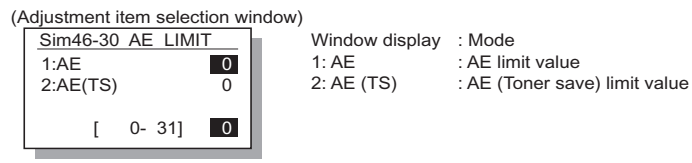
Default:
0

Default:
2</td></tr>
<tr><td></td><td>20</td><td>SPF/RSPF exposure correction

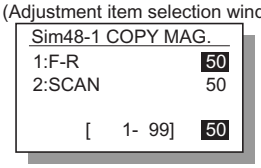
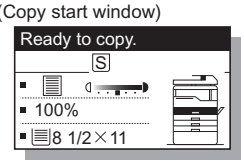
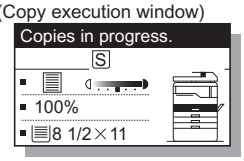
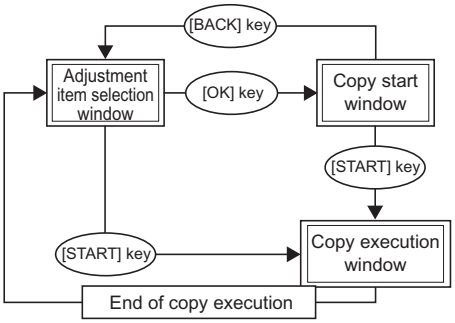
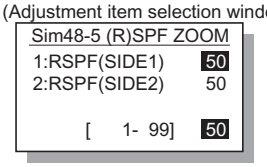
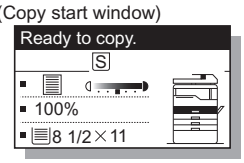
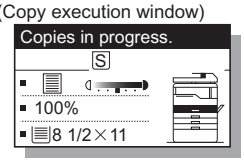
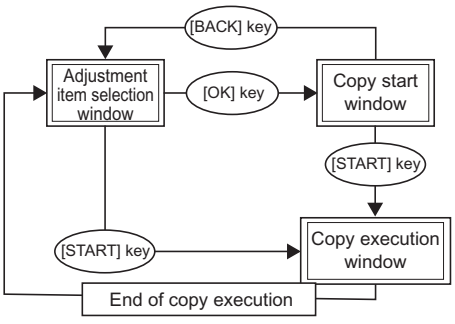
Used to set the exposure correction amount in the SPF/RSPF mode. (Since a slightly darker image is outputted in the SPF/RSPF mode compares to the OC mode, the difference from the OC mode is corrected with this simulation. When, therefore, the exposure in the OC mode is corrected, the SPF/RSPF exposure is also changed accordingly.)
Enter a correction value with numeric keys and press [OK] key. The adjustment value is saved in the EEPROM and the machine shifts to the adjustment copy window. Since this simulation is used to make up for the exposure difference from the OC mode regardless of the exposure mode, the adjustment is fixed to TEXT mode and the exposure mode cannot be changed. After completion of copying for check, the machine returns to the setting window.
 

The adjustment value is in the range of 1 - 99.
Adjustment value (Image change) 99 (Dark) • • • 50 (Default) • • • 1 (Light)</td><td>(Only when the SPF/RSPF is installed.)

Default:
50</td></tr>
</table>

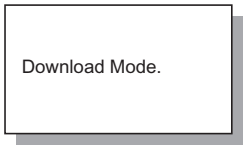
Main code	Sub code	Contents	Remark
46	29	**Image contrast adjustment (600dpi)** Used to adjust the image contrast for each mode. When this simulation is executed, the current set value of each mode is displayed in two digits. (Default: 50)  Display text — Copy mode 1:AE — AE mode (600dpi) 2:TEXT — TEXT mode (600dpi) 3:PHOTO 1 — PHOTO mode (Error diffusion) 4:PHOTO 2 — PHOTO mode (Dither) 5:TEXT (TS) — TONER SAVE mode (TEXT)(600dpi) 6:AE (TS) — TONER SAVE mode (AE)(600dpi) Select an adjustment item (mode) with the arrow keys and enter a desired value with numeric keys. When [OK] key is pressed, the entered value is saved to the EEPROM and the machine shifts to the copy execution window. After completion of copying, the machine returns to the adjustment value input window. When [START] key is pressed instead of [OK] key, the machine shifts to the copy execution window and performs copying.  	Default: AE: 50 TEXT: 50 PHOTO1: 50 PHOTO2: 50 TEXT (TS): 50 AE (TS): 50
	30	**AE limit setting** Used to set the limit value in AE and AE (toner save) mode. When this simulation is executed, the selection window of the adjustment items and the current set value are displayed.  Select an item to be changed with [▲] key and [▼] key and enter a desired value with numeric keys. The entered value is saved to the EEPROM. The adjustment value is in the range of 0 - 31. * Note: When SIM26 - 06 (Destination setting) and SIM46 - 19 (Auto exposure mode) are changed, this setting returns to the default accordingly.	Default: 0

Main code	Sub code	Contents	Remark
46	31	**Image sharpness adjustment** Used to adjust sharpening/shading of image for each mode. When this simulation is executed, the selection window of the adjustment items and the current set value are displayed. (Adjustment item selection window) Sim46-31 SHARPNESS 1:AE 1 2:TEXT 1 3:PHOTO 1 1 1/2 [0- 2] 1 Sim46-31 SHARPNESS 4:PHOTO 2 1 5:TEXT(TS) 1 6:AE(TS) 1 2/2 [0- 2] 1 Display text — Copy mode 1:AE — AE mode 2:TEXT — TEXT mode 3:PHOTO 1 — PHOTO mode (Error diffusion) 4:PHOTO 2 — PHOTO mode (Dither) 5:TEXT (TS) — TONER SAVE mode 6:AE (TS) — TONER SAVE mode Set value / Image quality 0 — Shading 1 — Standard 2 — Sharpening The adjustment range is in the range of 0 - 2. Select an adjustment item (mode) with the arrow keys and enter a desired value with numeric keys. When [OK] key is pressed, the entered value is saved to the EEPROM and the machine shifts to the copy execution window. After completion of copying, the machine returns to the adjustment value input window. When [START] key is pressed instead of [OK] key, the machine shifts to the copy execution window and performs copying. (Copy start window) Ready to copy. 100% 8 1/2×11 (Copy execution window) Copies in progress. 100% 8 1/2×11 [BACK] key Adjustment item selection window [OK] key Copy start window [START] key [START] key Copy execution window End of copy execution	Default: AE: 1 TEXT: 1 PHOTO1: 1 PHOTO2: 1 TEXT (TS): 1 AE (TS): 1

Main code	Sub code	Contents	Remark
48	01	**Main/sub scanning magnification ratio adjustment** Used to adjust the magnification ratio in the main scanning (front/rear) direction and the sub scanning direction. When this simulation is executed, the selection window of the adjustment items and the current set value are displayed (Adjustment item selection window)  Display text array : Adjustment mode 1: F-R : Main scan direction magnification ratio (OC/SPF/RSPF) 2: SCAN : Sub scan direction magnification ratio (OC) The adjustment value is in the range of 1 - 99. When the adjustment value is increased by 1, the ratio is increased by 0.1%. Select an adjustment item (mode) with the arrow keys and enter a desired value with numeric keys. When [OK] key is pressed, the entered value is saved to the EEPROM and the machine shifts to the copy execution window. After completion of copying, the machine returns to the adjustment value input window. When [START] key is pressed instead of [OK] key, the machine shifts to the copy execution window and performs copying. (Copy start window)  (Copy execution window)  	Default: F-R: 50 SCAN: 50
	05	**SPF/RSPF mode sub scanning magnification ratio adjustment in copying** Used to adjust the sub scanning magnification ratio in the SPF/RSPF mode. When this simulation is executed, the selection window of the adjustment items and the current set value are displayed. (Adjustment item selection window)  Display text array : Adjustment mode 1: RSPF (SIDE1) : SPF/RSPF sub scan direction magnification ratio adjustment on the front of document 2: RSPF (SIDE2) : RSPF sub scan direction magnification ratio setting on the back of document The adjustment value is in the range of 1 - 99. When the adjustment value is increased by 1, the ratio is increased by 0.1%. Select an adjustment item (mode) with the arrow keys and enter a desired value with numeric keys. When [OK] key is pressed, the entered value is saved to the EEPROM and the machine shifts to the copy execution window. After completion of copying, the machine returns to the adjustment value input window. When [START] key is pressed instead of [OK] key, the machine shifts to the copy execution window and performs copying. To adjust the sub scanning magnification ratio on the back of the document, shift the window to the copy start window and select "Duplex → Simplex" or "Duplex → Duplex" mode with the [DUPLEX] key. (Copy start window)  (Copy execution window)   * The exposure mode is fixed to "TEXT" with density 3, and cannot be changed. * For the model without RSPF, the adjustment item of document back is not displayed.	(Only when the SPF/RSPF is installed.) Default: RSPF(SIDE1): 50 RSPF(SIDE2): 50

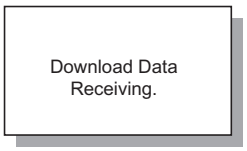
Main code	Sub code	Contents	Remark
49	01	**Flash Rom program writing mode** Used to download the programs and data sections of the main unit MCU/IMC board, the FAX board, and the operation panel. When this simulation is executed, the machine immediately shifts to the download mode and the following display is shown.	

(When entering the download mode)

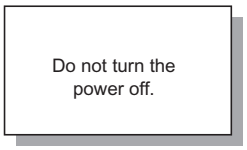


Connect the main unit and the download PC with a USB cable, and start downloading with the maintenance tool.
When downloading is started, the display is changed as follows:

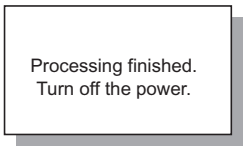
(Receiving download data)



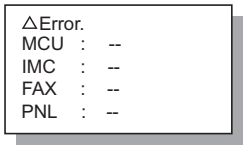
(Processing download data)



(When downloading is completed)



(When an error occurs)



Used to display an error code at the error position in downloading of MCU/IMC/FAX/PANEL.
The error codes to be displayed are shown below.

	MCU	IMC	PANEL
0xFF	No process	No process	No process
0x00	OK	OK	OK
0x01	Data receive error (Protocol error 1)	IMC sum check error	Flash Rom delete error
0x02	Data receive error (Command error)	IMC verify error	Flash Rom write error Boot
0x03	Data receive error (Protocol error 2)		Flash Rom write error (Program section)
0x04	Loader transfer error		Flash Rom write error (Common window data)
0x05	Flash Rom delete error (Boot)		Flash Rom write error (Copy window data)
0x06	Flash Rom delete error (Program)		Flash Rom write error (Scan window data)
0x07	Flash Rom write error (Boot)		Flash Rom write error (Print window data)
0x08	Flash Rom write error (Program)		Flash Rom write error (Fax window data)
0x09	Flash Rom LOCK error (Boot)		
0x0A	Flash Rom LOCK error (Program)		Data writing start address illegal error
0x0B	Sum check error (Loader)		FROM size error
0x0C	Sum check error (Boot)		Destination error
0x0D	Sum check error (Program)		Download file structure error
0x0E	Sum check error (EEPROM)		
0x0F	EEPROM read error		
0x10	EEPROM write error		Sum check error (Boot not-written)
0x11	EEPROM verify error		Sum check error (Loader)
0x12	Download data length error		Sum check error (After Boot writing)
0x13		IMC communication error (Message test send error)	Sum check error (Program)
0x14		IMC communication error (Message test send error)	Sum check error (Common window data)
0x15		IMC communication error (Download request send error)	Sum check error (Copy window data)
0x16		IMC communication error (Download request parameter send error)	Sum check error (Scan window data)
0x17		MCU receive error (Overrun, Fleming, parity)	Sum check error (Print window data)
0x18		MCU receive time-out	Sum check error (Fax window data)
0x19	FAX communication error		Panel-MCU communication error
0x1A	PANEL communication error		
0x1B	Download file error	Download file error	

<table>
<tr><th>Main code</th><th>Sub code</th><th>Contents</th><th>Remark</th></tr>
<tr><td>49</td><td>01</td><td>
<table>
<tr><th colspan="4">FAX</th></tr>
<tr><td>0xFF</td><td>No process</td><td>0x44</td><td>FONT Flash write error</td></tr>
<tr><td>0x00</td><td>OK</td><td>0x45</td><td>FONT Flash sum check error</td></tr>
<tr><td>0x01</td><td>Download impossible</td><td>0x52</td><td>Registration data work sum check error</td></tr>
<tr><td>0x02</td><td>Total data size error</td><td>0x56</td><td>Registration data format error</td></tr>
<tr><td>0x03</td><td>LOADER no file</td><td>0x57</td><td>Registration data items insufficient error</td></tr>
<tr><td>0x04</td><td>DWLD no file</td><td>0x58</td><td>Registration data items overlap error</td></tr>
<tr><td>0x05</td><td>BOOT no file</td><td>0x61</td><td>BOOT data size error</td></tr>
<tr><td>0x06</td><td>MAIN no file</td><td>0x62</td><td>BOOT work sum check error</td></tr>
<tr><td>0x07</td><td>FONT download impossible</td><td>0x63</td><td>BOOT Flash erase error</td></tr>
<tr><td>0x08</td><td>Option FLASH connection error</td><td>0x64</td><td>BOOT Flash write error</td></tr>
<tr><td>0x09</td><td>Option FLASH no match</td><td>0x65</td><td>BOOT Flash sum check error</td></tr>
<tr><td>0x11</td><td>LOADER data size error</td><td>0x71</td><td>MAIN data size error</td></tr>
<tr><td>0x12</td><td>LOADER work sum check error</td><td>0x72</td><td>MAIN work sum check error</td></tr>
<tr><td>0x21</td><td>BOOT data size error</td><td>0x73</td><td>MAIN Flash erase error</td></tr>
<tr><td>0x22</td><td>BOOT work sum check error</td><td>0x74</td><td>MAIN Flash write error</td></tr>
<tr><td>0x23</td><td>BOOT Flash erase error</td><td>0x75</td><td>MAIN Flash sum check error</td></tr>
<tr><td>0x24</td><td>BOOT Flash write error</td><td>0x81</td><td>FONT data size error</td></tr>
<tr><td>0x25</td><td>BOOT Flash sum check error</td><td>0x82</td><td>FONT work sum check error</td></tr>
<tr><td>0x31</td><td>MAIN data size error</td><td>0x83</td><td>FONT Flash erase error</td></tr>
<tr><td>0x32</td><td>MAIN work sum check error</td><td>0x84</td><td>FONT Flash write error</td></tr>
<tr><td>0x33</td><td>MAIN Flash erase error</td><td>0x85</td><td>FONT Flash sum check error</td></tr>
<tr><td>0x34</td><td>MAIN Flash write error</td><td>0x91</td><td>DWLD data size error</td></tr>
<tr><td>0x35</td><td>MAIN Flash sum check error</td><td>0x92</td><td>DWLD work sum check error</td></tr>
<tr><td>0x41</td><td>FONT data size error</td><td>0x93</td><td>DWLD Flash erase error</td></tr>
<tr><td>0x42</td><td>FONT work sum check error</td><td>0x94</td><td>DWLD Flash write error</td></tr>
<tr><td>0x43</td><td>FONT Flash erase error</td><td>0x95</td><td>DWLD Flash sum check error</td></tr>
</table>
</td><td></td></tr>
<tr><td>50</td><td>01</td><td>
Image lead edge adjustment

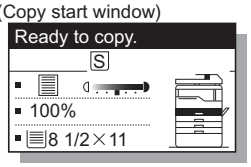
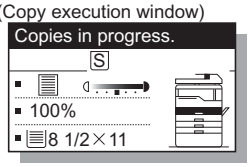
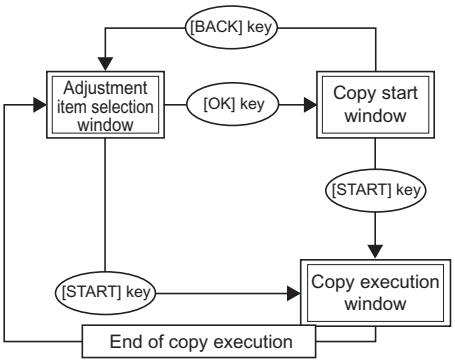
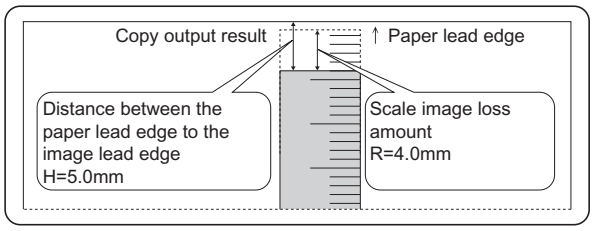
Used to adjust the following items related to the lead edge adjustment.
1.Print start position (Offset between output image and paper → Adjusted for each tray.)
2.Image lead edge void (Margin on the output image lead edge)
3.Document scanning start position (Image scanning start position in the sub scanning direction)
When this simulation is executed, the selection window of the adjustment items and the set value are displayed.

(Adjustment item selection window)
Sim50-1 LEAD EDGE
1:TRAY1 50
2:TRAY2 50
3:MFT 50
1/2 [1- 99] 50

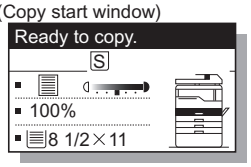
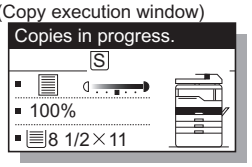
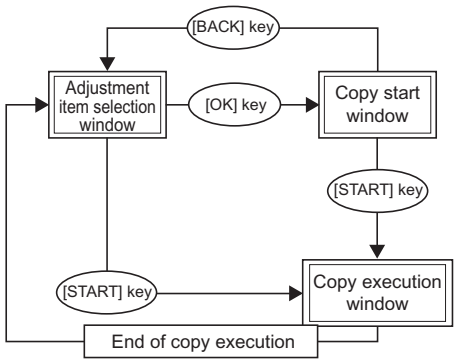
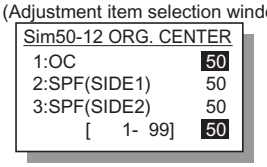
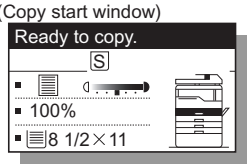
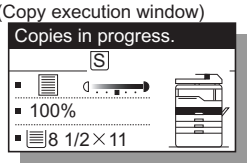
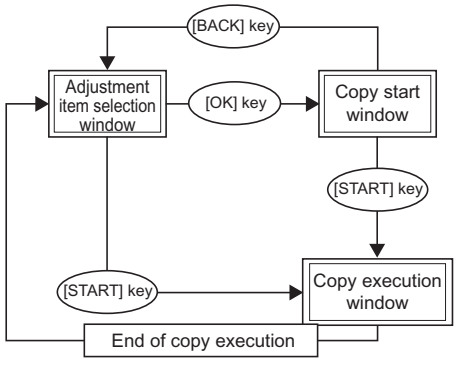
Sim50-1 LEAD EDGE
4:DEN-A 50
5:RRC-A 50
6:DEN-B 50
2/2 [1- 99] 50

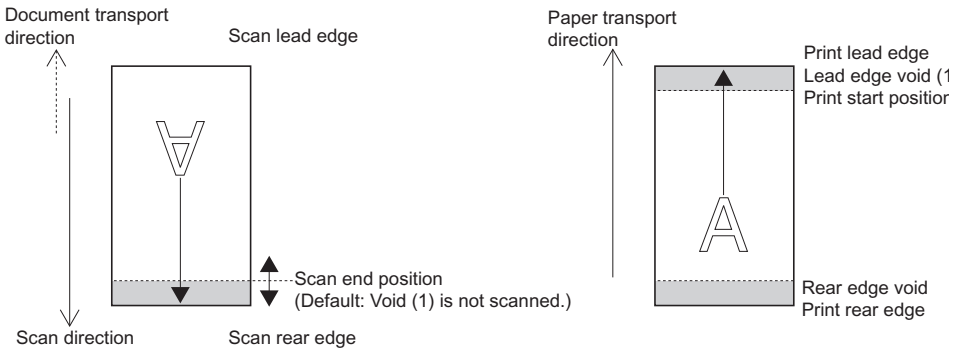
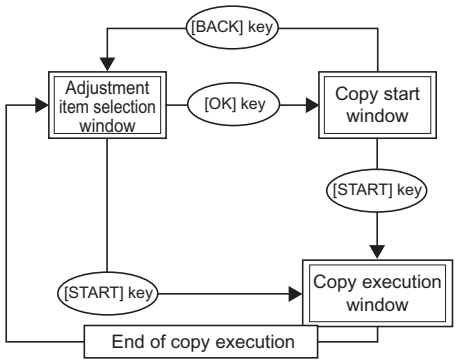
Display text :Adjustment mode
1:TRAY1 :Print start position (TRAY1)
2:TRAY2 (*) :Print start position (TRAY2 - TRAY4)
3:MFT :Print start position (MULTI BYPASS)
4:DEN-A :Image lead edge void amount
5:RRC-A :Document scanning start position
6:DEN-B :Image rear edge void amount

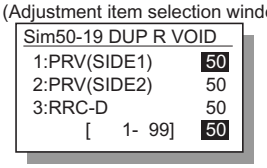
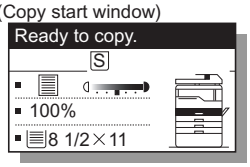
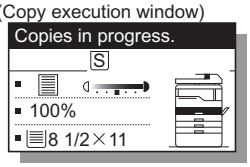
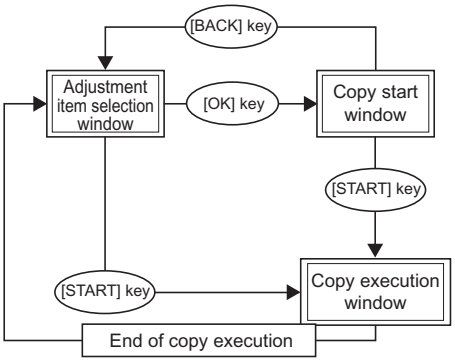
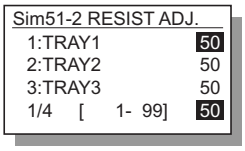
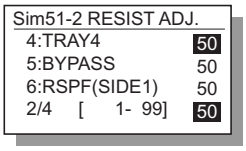
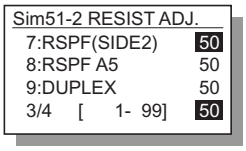
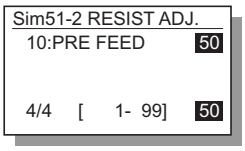
Note 1: Items marked with (*) are displayed when TRAY2 and following options are not installed.
Note 2: When executing an adjustment copy from the manual paper feed tray, set the following paper.
AB series → A3 paper
Inch series → Double Letter paper
Note 3: When the adjustment value of the print start position adjustment is increased by 1, the ON timing of the resist roller is delayed and the print result is shifted to the lead edge by 0.1mm.
Note 4: When the adjustment value of the image scanning start position is increased by 1, the scanning start position is shifted to the home position by about 0.1mm, increasing the image loss amount.
Note 5: When the print start position (TRAY1) is changed, the print start positions (TRAY2 - TRAY4) and the print start position (MULTI BYPASS) are also changed accordingly.
</td><td>Default:
TRAY1: 50
TRAY2: 50
MFT: 50
DEN-A: 50
RRC-A: 50
DEN-B: 50</td></tr>
</table>

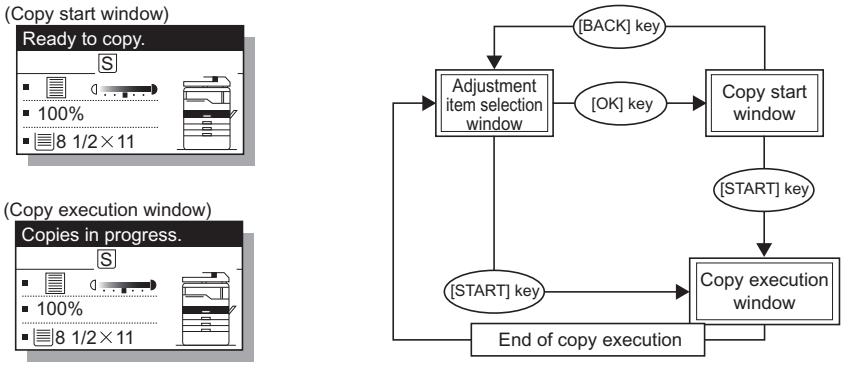
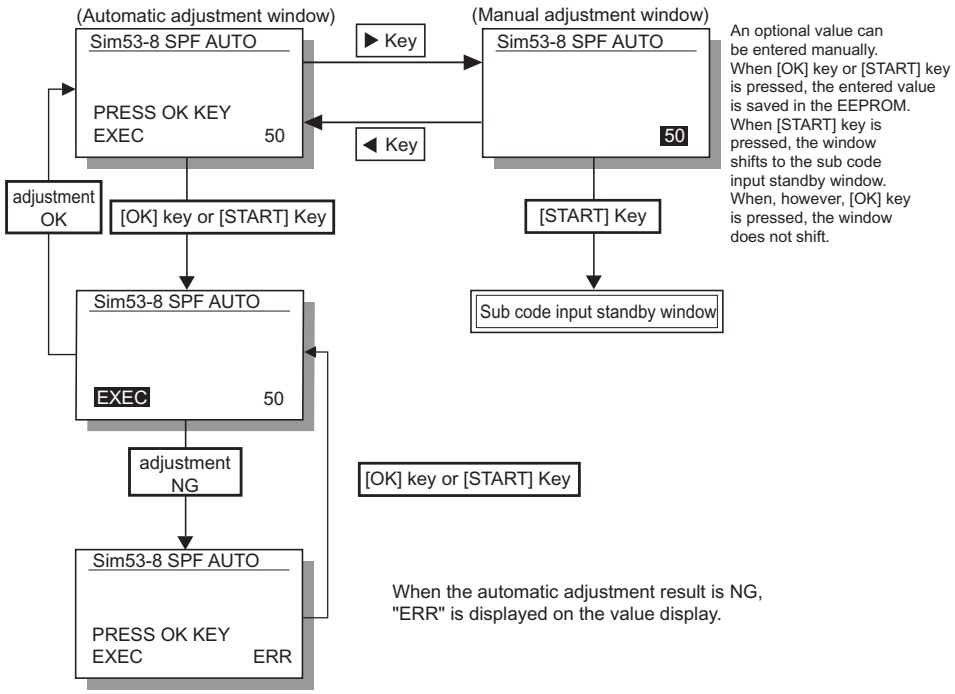
Main code	Sub code	Contents	Remark
50	01	The adjustment value is in the range of 1 - 99. Select an adjustment item (mode) with the arrow keys, and enter the set value with numeric keys. When [OK] key is pressed, the entered value is saved to the EEPROM and the machine shifts to the copy execution window. After completion of copying, the machine returns to the adjustment value input window. When [START] key is pressed instead of [OK] key, the machine shifts to the copy execution window and performs copying. (Copy start window)  (Copy execution window)   (Adjustment procedure) (1) Set the print start position (1: TRAY1), the lead edge void amount (4: DEN - A), and the scanning start position (5: RRC - A) to "1" and make a copy of 100%. (2) Measure the image loss amount (R mm) of the scale. Set [5:RRC - A] = 10xR(mm). (Example. Set 40.) When the value of [5: RRC - A] is increased by 10, the image loss is decreased by1mm. (3) Measure the distance (H mm) from the paper lead edge to the image print start position. Set [1:TRAY1] = 10xH(mm). (Example: Set 50.) When the value of [1:TRAY1] is increased by 10, the image lead edge shifts to the paper lead edge by 1mm. (4) Set the lead edge void amount to B = 50(2.5mm). When the value of [4:DEN - A] is increased by 10, the void amount is increased by about 1mm. (For 25 or less, the void amount is zero.) [Example] 	

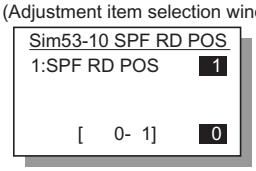
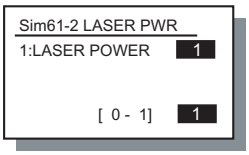
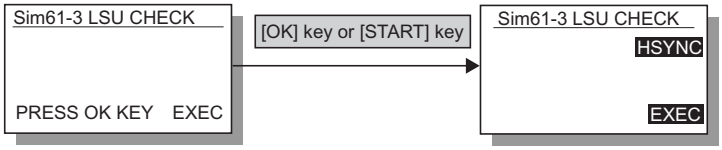
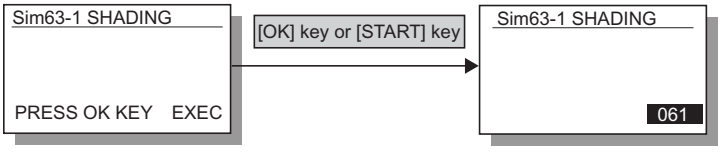
Main code	Sub code	Contents	Remark
50	06	**Copy lead edge position adjustment (SPF/RSPF)** Used to perform the image lead edge adjustment in the SPF/RSPF copy. When this simulation is executed, the selection window of the adjustment items and the current set value are displayed. (Adjustment item selection window) Sim50-6 SPF EDGE 1:SIDE1 50 2:SIDE2 50 3:END EDGE 50 [1- 99] 50 Display text array : Adjustment mode 1: SIDE1 : Document (front) scan start position adjustment 2: SIDE2 : Document (back) scan start position adjustment 3: END EDGE : Document rear edge image loss adjustment The adjustment value is in the range of 1 - 99. When the adjustment value of the document scanning start position is increased by 1, the scanning timing is advanced, resulting in a smaller image loss. Select an adjustment item (mode) with the arrow keys and enter a desired value with numeric keys. When [OK] key is pressed, the entered value is saved to the EEPROM and the machine shifts to the copy execution window. After completion of copying, the machine returns to the adjustment value input window. When [START] key is pressed instead of [OK] key, the machine shifts to the copy execution window and performs copying. (Copy start window) Ready to copy. 100% 8 1/2×11 (Copy execution window) Copies in progress. 100% 8 1/2×11 [BACK] key Adjustment item selection window [OK] key Copy start window [START] key [START] key Copy execution window End of copy execution	(Only when the SPF/RSPF is installed.) Default: SIDE1: 50 SIDE2: 50 END EDGE: 50
	10	**Paper off-center adjustment** Used to adjust the output area (main scanning direction) of scanned image data on paper. When this simulation is executed, the selection window of the adjustment items and the current set value are displayed. (Adjustment item selection window) Sim50-10 PRT. CENTER 1:TRAY1 50 2:TRAY2 50 3:TRAY3 50 1/2 [1- 99] 50 Sim50-10 PRT. CENTER 4:TRAY4 50 5:BYPASS 50 6:DUPLEX 50 2/2 [1- 99] 50 Display text :Adjustment mode 1:TRAY1 :Print center offset (TRAY1) 2:TRAY2 (*) :Print center offset (TRAY2) 3:TRAY3 (*) :Print center offset (TRAY3) 4:TRAY4 (*) :Print center offset (TRAY4) 5:BYPASS :Print center offset (BYPASS) 6:DUPLEX (*) :Print center offset (DUPLEX 2nd print surface) Note 1: Items marked with (*) are displayed when TRAY2 and following options are not installed. Note 2: When executing an adjustment copy from the manual paper feed (BYPASS) tray, set the following paper according to the destination specification. AB series → A3 paper Inch series → Double Letter paper The adjustment value is in the range of 1 - 99. When the adjustment value is increased, the output image is shifted to the right. When the adjustment value is increased by 1, the image is shifted to the right by about 0.1mm. Select an adjustment item (mode) with the arrow keys, and enter the set value with numeric keys.	Default: TRAY1: 50 TRAY2: 50 TRAY3: 50 TRAY4: 50 BYPASS: 50 DUPLEX: 50

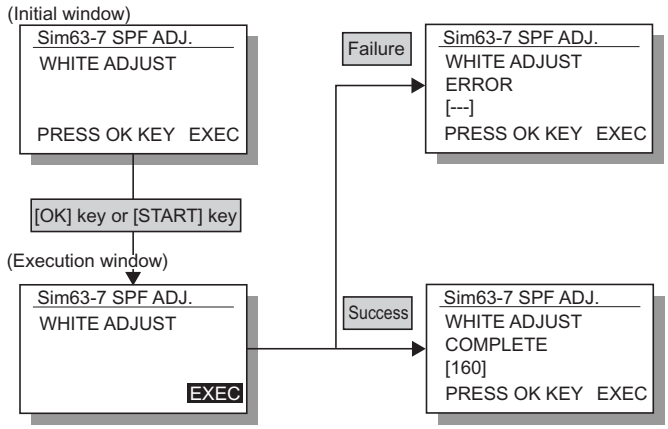
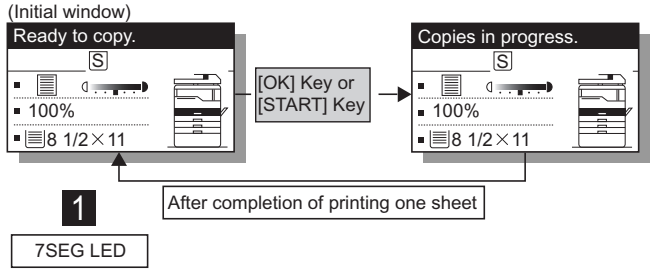
Main code	Sub code	Contents	Remark
50	10	When [OK] key is pressed, the entered value is saved to the EEPROM and the machine shifts to the copy execution window. After completion of copying, the machine returns to the adjustment value input window. When [START] key is pressed instead of [OK] key, the machine shifts to the copy execution window and performs copying. (Copy start window)  (Copy execution window)  	
	12	**Document off-center adjustment** Used to adjust the scanning start position in the main scanning direction of the document. When this simulation is executed, the selection window of the adjustment items and the current set value are displayed. (Adjustment item selection window)  Display text array : Adjustment mode 1: OC : OC document off-center adjustment 2: SPF (SIDE1) : SPF/RSPF document (front) off-center adjustment 3: SPF (SIDE2) : RSPF document (back) off-center adjustment (Note) 2:SPF(SIDE1) is available only for the model with the SPF/RSPF. (Note) 3:SPF(SIDE2) is available only for the model with RSPF. The adjustment value is in the range of 1 - 99. When the adjustment value is increased, the document scanning position is shifted to the right and the image is shifted to the left as a result. When the adjustment value is increased by 1, the scanning area is shifted by 0.1mm. Select an adjustment item (mode) with the arrow keys, and enter the set value with numeric keys. When [OK] key is pressed, the entered value is saved to the EEPROM and the machine shifts to the copy execution window. After completion of copying, the machine returns to the adjustment value input window. When [START] key is pressed instead of [OK] key, the machine shifts to the copy execution window and performs copying. (Copy start window)  (Copy execution window)  	Default: OC: 50 SPF(SIDE1): 50 SPF(SIDE2): 50

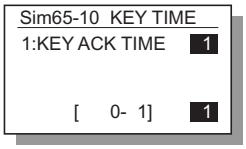
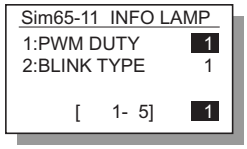
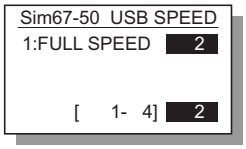
Main code	Sub code	Contents	Remark
50	18	**Memory reverse position adjustment in duplex copy** Used to adjust the reverse point (scanning end position) on the reversed surface in duplex copy. When this simulation is executed, the selection window of the adjustment items and the current set value are displayed (Adjustment item selection window) Sim50-18 DUP REV. 1:OC 50 2:SPF 50 [1- 99] 50 Display text array : Adjustment mode 1: OC : OC memory reverse output position 2: SPF : RSPF memory reverse output position The adjustment value is in the range of 1 - 99. Front surface print in S-D mode and even page print in D-S mode are reverse memory copy operations from the document rear edge. When, therefore, the print start position adjustment of the output image is required, adjust as follows: The image in the reverse memory copy is printed from the scanning rear edge when the document scanning direction is in the arrow direction as shown below. If, therefore, the print lead edge is shifted, set the reference chart with the rear edge on the reference position, and adjust the simulation set value with this simulation so that the print image lead edge matches. Since printing is started at the print start position from the last memory image data to the head data, the end data position saved in the memory is changed by changing the scanning end position with the simulation, adjusting the image lead edge position.  Select an adjustment item (mode) with the arrow keys, and enter the set value with numeric keys. When [OK] key is pressed, the entered value is saved to the EEPROM and the machine shifts to the copy execution window. After completion of copying, the machine returns to the adjustment value input window. When [START] key is pressed instead of [OK] key, the machine shifts to the copy execution window and performs copying. (Copy start window) Ready to copy. 100% 8 1/2×11 (Copy execution window) Copies in progress. 100% 8 1/2×11  	(MX-M200D/MX-M160D only) (Execution is allowed when DUPLEX setting is ON, and RSPF is installed.) Default: OC: 50 SPF: 50

Main code	Sub code	Contents	Remark
50	19	**Rear edge void adjustment in duplex copy** Used to adjust the rear edge void amount in duplex copy. When this simulation is executed, the selection window of the adjustment items and the current set value are displayed. (Adjustment item selection window)  Display text array : Adjustment mode 1: PRV (SIDE1) : Paper rear edge void amount (1st print surface) 2: PRV (SIDE2) : Paper rear edge void amount (2nd print surface) 3: RRC-D : Print start position (2nd print surface) The adjustment value is in the range of 1 - 99. When the adjustment value is increased by 1, the rear edge void amount is increased by about 0.1mm. Select an adjustment item (mode) with the arrow keys, and enter the set value with numeric keys. When [OK] key is pressed, the entered value is saved to the EEPROM and the machine shifts to the copy execution window. After completion of copying, the machine returns to the adjustment value input window. When [START] key is pressed instead of [OK] key, the machine shifts to the copy execution window and performs copying (Copy start window)  (Copy execution window)  	(MX-M200D/MX-M160D only) (Execution is allowed when DUPLEX setting is ON, and RSPF is installed.) Default: PRV(SIDE1): 50 PRV(SIDE2): 50 RRC-D: 50
51	02	**Resist amount adjustment** Used to adjust the contact pressure (warp amount) of paper against the resist roller of the main unit resist roller and the SPF/RSPF. When this simulation is executed, the selection window of the adjustment items and the current set value are displayed. (Adjustment item selection window)     Display text :Adjustment mode 1:TRAY1 :Resist amount in paper feed from TRAY1 2:TRAY2 :Resist amount in paper feed from TRAY2 (*1) 3:TRAY3 :Resist amount in paper feed from TRAY3 (*1) 4:TRAY4 :Resist amount in paper feed from TRAY4 (*1) 5:BYPASS :Resist amount in paper feed from manual tray 6:RSPF(SIDE1) :Resist amount on SPF/RSPF document surface (*1) 7:RSPF(SIDE2) :resist amount on RSPF document back (*1) 8:RSPF A5 :Document resist amount in A5 document back transport (*1) 9:DUPLEX :Resist amount in DUPLEX print (Second print surface) (*1) 10: PRE FEED :Pre-feed time of the manual feed tray paper feed. (*2)	Default: TRAY1: 50 TRAY2: 50 TRAY3: 50 TRAY4: 50 BYPASS: 50 RSPF(SIDE1): 50 RSPF(SIDE2): 50 RSPF A5: 50 DUPLEX: 50 PRE FEED: 32

Main code	Sub code	Contents	Remark
51	02	(*1) Valid only when an option is installed. (If an option is not installed, it is not displayed on the adjustment window.) (*2) When heavy paper slips in manual feed copy, or when a paper jam occurs in thin paper copy, adjust this set value to remove the problem. •Heavy paper slips. → Increase the set value. • Thin paper jams. → Decrease the set value. The adjustment range is 1 - 99. Select an adjustment item (mode) with the arrow keys, and enter the set value with numeric keys. When [OK] key is pressed, the entered value is saved to the EEPROM and the machine shifts to the copy execution window. After completion of copying, the machine returns to the adjustment value input window. When [START] key is pressed instead of [OK] key, the machine shifts to the copy execution window and performs copying. 	
53	08	**SPF/RSPF scanning position automatic adjustment** Used to adjust the SPF/RSPF stop position of the mirror unit in the SPF/RSPF copy. The scanning position is basically determined by the automatic adjustment. It can be also adjusted manually. 	Default: 50

Main code	Sub code	Contents	Remark
53	10	**SPF/RSPF scanning position setting** Used to change setting depending on whether the SPF/RSPF unit and the SPF/RSPF document glass holder section are anti-dirt glass or not. When this simulation is executed, the selection window of the adjustment items and the current set value are displayed. (Adjustment item selection window)  Setting value: Adjustment mode 0: SPF/RSPF scan position setup for model which is not provided with dirt prevention 1: Scan position setting for dirt prevention SPF/RSPF Though this setting is changed, the other adjustment values are not changed. When replacing or installing the SPF/RSPF unit, use this simulation to set the position and perform the scanning position automatic adjustment.	Default: 1
61	02	**Laser power correction ON/OFF** Enable/Disable of the LSU laser power correction during the operation is set. When [START] key is pressed, the entered set value is saved and the machine enters the sub code input standby mode.  Code number : Mode 0 : Correction Enable 1 : Correction Disable	Default: 1
	03	**HSYNC output check** When this simulation is executed, the polygon motor is rotated for 30sec together with the LEND signal. "EXEC" (indicating execution) and "HSYNC" (HSYNC sensor detecting status) are displayed. Every time when the HSYNC signal is detected, "HSYNC" display is highlighted for 100ms. (Initial window) (Execution window) 	
63	01	**Shading check** Used to display the detection level when the lamp of the white plate for shading correction is lighted. When the simulation code is entered, the initial window is displayed to urge execution. Press [OK] key or [START] key to start the simulation. The contents of the operations are as follows: 1. The mirror base unit is shifted to the white plate for shading correction. 2. The copy lamp is lighted. 3. "0" is displayed until the copy lamp light quantity is stabilized. 4. When the light quantity is stabilized, the level of 1 pixel on the CCD center which is not corrected is displayed in hexadecimal. * The white level is displayed for about 10sec. The data update cycle is about 1sec. 5. After passing 10sec, the machine returns to the sub code input window. 	

Main code	Sub code	Contents	Remark
63	07	**SPF/RSPF automatic correction** Used to adjust the SPF/RSPF white correction start pixel position. When the carriage or the platen glass is replace, this simulation must be executed. When this simulation is executed, the initial window as shown below is displayed. When [OK] key or [START] key is pressed with the OC cover open, the automatic adjustment is executed and the position (which pixel from the CCD edge) of the exposure correction sheet (white Mylar) in the SPF/RSPF position is displayed. After completion of adjustment, the result is saved to the EEPROM. When the result is in the range of 93 - 299, it is judged as a success. If not, it is judged as an error. In case of an error, the result is not saved to the EEPROM.  * Since this simulation detects the border line between the white Mylar (white) edge and the sky-shot (black), if the simulation is executed with the SPF/RSPF unit (OC cover) open, it is judged as an error. * Since the adjustment value is the position of the border line, in order to execute white correction in an actual SPF/RSPF copy, the point is "Adjustment value - 34th pixel."	(Only when the SPF/RSPF is installed.)
64	01	**Self print** Used to perform printing of one page disregarding the optical system status. Also when the print command is issued from the host, printing is performed. When this simulation is executed, warm-up is performed and the ready lamp is lighted. (Since, however, the optical system is invalid, initializing is not performed.) There are following four self-printable patterns.Use numeric keys to select a pattern. The selected pattern is displayed on 7-segment LED. 7SEG LED Print pattern 0 1BY2 mode (*1) 1 Grid pattern (*2) 2 White paper 3 Black background (4 - 99: Input invalid) (*1) After outputting 1 line black data, white data of 2 line is outputted. (*2) The grid pattern of about 1cm square is outputted. (*3) Data are always made for A3 size. If printing is made on paper smaller than A3, the remaining data are not outputted. (Images are not formed on the drum.)  	

Main code	Sub code	Contents	Remark
65	10	**Key reception time setting display/non-display setting** Used to set Enable/Disable of the key reception time setting in the system settings. When this setting is set to Enable (1), the key reception time is displayed in the system settings, allowing setting.  Display: Setting 0: Disable 1: Enable [CA] key: Exit the simulation mode. [INTERRUPT] key: Shifts to the sub code input window.	Default: 1
	11	**Info lamp setting** Used to set the Info lamp brightness (PWM duty) and the kind of flashing.  Lamp brightness 1: 100% 2: 80% 3: 60% 4: 40% 5: 20% Kind of flashing 1: Flashing 2: Flashing 10 times, and lighting thereafter. 3: Lighting During this simulation, Info lamp is lighted to allow checking of the brightness. [CA] key: Exit the simulation mode. [INTERRUPT] key: Shifts to the sub code input window.	Default: Lamp brightness: 1 Kind of flashing: 1
67	50	**USB reception speed adjustment** Used to set an limitation on the print data reception speed when the USB transfer speed is at full speed.  ↑ Fast ↓ Slow Display : Setting 1 : FAST 2 : NORMAL 1 3 : NORMAL 2 4 : SAFE * When images are disturbed in printing through USB, change the setting and try again. [CA] key: Exits from the simulation mode. [INTERRUPT] key: Shifts to the sub code entry window.	Default: 3

[8] SYSTEM SETTINGS

The user programs allow the parameters of certain functions to be set, changed, or canceled as desired.

1. List of user programs

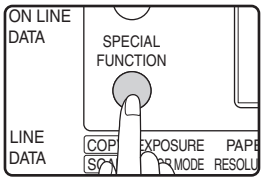
This copier has the following user programs.

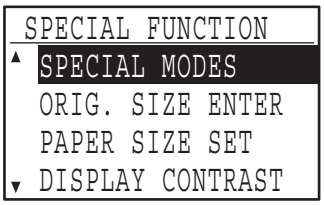
Custom setting

SYSTEM SETTINGS			Set value(Default)	Remark
ADMINISTRATOR PASSWORD CHANGE	ADMINISTRATOR PASSWORD CHANGE		00000	
ACCOUNT CONTROL	AUDITING MODE	Copy, Printer and Scanner		
	TOTAL/ACCOUNT			
	RESET ACCOUNT	Reset 1 Account, Reset All Account		
	ACCOUNT NUMBER CONTROL	Enter, Delete, Change Account Number		
	ACCOUNT LIMIT	Single Account Limit, All Account Limit		
	ACCOUNT NUMBER SECURITY		No (No warning)	
	CANCEL JOBS OF INVALID ACCOUNT		Cancel (Not inhibited)	
DEVICE CONTROL	WAITING COPY LAMP SETTING		ON*/OFF	
	OFFSET FUNCTION	UPPER TRAY, CENTER TRAY	Enable (The function works.)	
	MEMORY FOR PRINTER		30, 40, 50*, 60, 70%	
	USB2.0 MODE		Full speed mode*/High speed mode	
	RETURN FROM COPY MODE TIMING		0, 10, 30*, 60sec	
OPERATION SETTINGS	AUTO CLEAR		0, 10, 20, 60*, 90, 120sec	
	DISABLE DISPLAY TIMEOUT		Unchecked	
	LANGUAGE SETTING			
	MESSAGE TIME		Short (3sec), Normal (6sec)*, Long (9sec)	
	KEY TOUCH SOUND		Low*, High, Off	
	KEY TOUCH SOUND AT INITIAL POINT		Off (Check box unchecked)	
	KEY PRESS TIME		Minimum* 0.5, 1.0, 1.5, 2.0sec	
	DISABLE AUTO KEY REPEAT		OFF (The auto repeat functions.)	
	DISABLE PAPER SIZE SET		OFF (Paper size setting can be made.)	
ENERGY SAVE	AUTO POWER SHUT-OFF		On (Check box is checked)	
	AUTO POWER SHUT-OFF TIMER		5*, 30, 60, 120, 240min	
	PREHEAT MODE		1*, 5, 30, 60, 120, 240min	
	TONER SAVE MODE			excluding U.K
COPY SETTING	EXPOSURE ADJUST	Original glass, Document feeder	Level 1, 2, 3*, 4, 5	
	MARGIN DEFAULT		AB system: 0, 5, 10*, 15, 20mm Inch system: 0, 1/4, 1/2*, 3/4, 1inch	
	ERASE ADJUST		AB system: 0, 5, 10*, 15, 20mm Inch system: 0, 1/4, 1/2*, 3/4, 1inch	
	CARD SHOT DEFAULT		AB system Y: 54mm, X: 86mm Inch system Y: 2 1/8inch, X: 3 3/8inch	
	DEFAULT TRAY SET		Tray 1*, 2, 3, 4, BYPASS TRAY	
	DEFAULT EXPOSURE		Auto*, TEXT, PHOTO	
	STREAM FEEDING		Check box unchecked	
	ROTATION COPY		Check box checked	
	SORT AUTO SELECT		No sort, Sort*	
	RESOLUTION IN AUTO/TEXT MODE		300*, 600dpi	
	PHOTO MODE DEFAULT		Pattern 1*, 2	
	LIMIT OF COPIES		99, 999*copies	
	DISABLE AUTO PAPER SELECTION		Check box unchecked	
	DISABLE 2-SIDED COPY		Check box unchecked	

2. Using the system settings

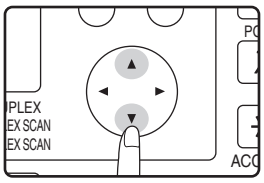
1) Press the [SPECIAL FUNCTION] key.

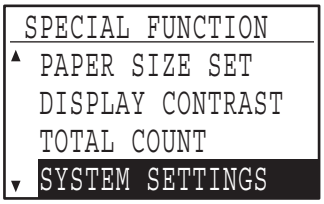




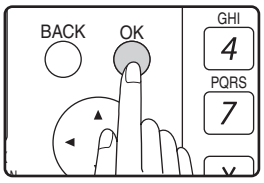
The special function screen will appear.

2) Select "SYSTEM SETTINGS" with the [▼] or [▲] key.



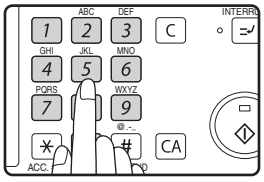


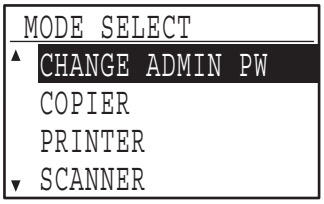
3) Press the [OK] key.



The administrator password entry screen appears.

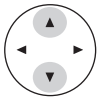
4) Enter the administrator password with the numeric keys.

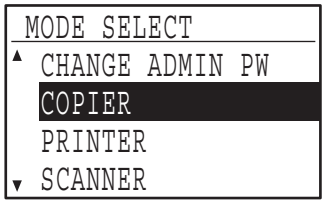




- "✳" appears for each digit that you enter.
- The mode selection screen appears.

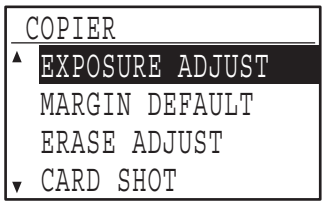
5) Select the desired mode with the [▼] or [▲] key.





Example: The screen when "COPIER" is selected.

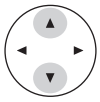
6) Press the [OK] key.



The settings of the selected mode appear.

Several programs will have checkboxes in front of them. To enable a function (make a checkmark appear), press the [OK] key. To disable the function, press the [OK] once again to remove the checkmark. To configure a program that has a checkbox, go to step 9.

7) Select the desired program with the [▼] or [▲] key.



8) Press the [OK] key and follow the instructions in the program screen.

9) To use another program for the same mode, select the desired program with the [▼] or [▲] key.

To use a program for a different mode, press the [BACK] key and select the desired mode. To exit the system settings, press the [CA] key.

[9] TROUBLE CODE LIST

1. Trouble code list

Main code	Sub code	Content
E1	00	IMC PWB communication trouble
	10	IMC PWB trouble
	11	IMC ASIC error
	13	IMC PWB flash ROM error
	16	IMC PWB DIMM memory read/write check error
	81	Interface error in communication with IMC PWB (Parity)
	82	Interface error in communication with IMC PWB (Overrun)
	84	Interface error in communication with IMC PWB (Framing)
E7	01	Duplex model memory error
	02	LSU trouble
	10	Shading trouble (Black correction)
	11	Shading trouble (White correction)
	12	Shading trouble
	16	Abnormal laser output
F2	02	Toner supply abnormality
	04	Improper cartridge (destination error, life cycle error)
	40	ATC sensor abnormality
F5	02	Copy lamp lighting abnormality
F6	00	FAX board communication trouble
	10	FAX board trouble
	80	FAX board communication trouble (Protocol)
	81	FAX board communication trouble (Parity)
	82	FAX board communication trouble (Overrun)
	84	FAX board communication trouble (Framing)
	88	FAX board communication trouble (Time out)
	99	Machine - FAX language error
F9	00	MX-NB10 communication trouble
H2	00	Thermistor open
H3	00	Heat roller high temperature detection
H4	00	Heat roller low temperature detection
H5	01	5-time continuous detections of POUT not-reached jam
L1	00	Scanner feed trouble
L3	00	Scanner return trouble
L4	01	Main motor lock detection
	11	Shifter motor trouble
L6	10	Polygon motor lock detection
L8	01	No full wave signal
U1	03	FAX board battery error
U2	04	EEPROM read/write error (serial communication error)
	11	Counter check sum error (EEPROM)
	40	CRUM chip communication error
U9	00	Panel board communication trouble
	80	Panel board communication trouble (Protocol)
	81	Panel board communication trouble (Parity)
	82	Panel board communication trouble (Overrun)
	84	Panel board communication trouble (Framing)
	88	Panel board communication trouble (Time out)
	99	Panel language error
--		Auditor NOT READY
CH ON	None	Door open
CH Blink	None	Developing cartridge installed

2. Details of trouble codes

Main code	Sub code		Details of trouble
E1	00	Content	IMC PWB communication trouble.
		Detail	An abnormality occurs in communication between the MCU PWB and the IMC PWB.
		Cause	IMC PWB-MCU PWB harness abnormality. MCU PWB connector disconnection. IMC PWB ROM defect/data abnormality.
		Check and remedy	Check connection of the connector and the harness between the IMC PWB and the MCU PWB. Check the ROM of the IMC PWB.
	10	Content	IMC PWB trouble.
		Detail	An abnormality occurs in the IMC PWB.
		Cause	USB chip error/CODEC error on the IMC PWB.
		Check and remedy	Replace the IMC PWB with a new one.
	11	Content	IMC ASIC error.
		Detail	An abnormality occurs in the IMC PWB.
		Cause	Abnormality in ASIC on the IMC PWB.
		Check and remedy	Replace the IMC PWB with a new one.
	13	Content	IMC PWB flash ROM error.
		Detail	An abnormality occurs in the IMC flash ROM.
		Cause	IMC PWB abnormality.
		Check and remedy	Replace the IMC PWB with a new one. If downloading of the program is abnormally terminated, it may cause an error. Download the program again to avoid this.
	16	Content	IMC PWB DIMM memory read/write check error.
		Detail	An installation error occurs in the IMC expansion compression memory module. An error occurs during access to the IMC expansion compression memory.
		Cause	Improper installation of the IMC expansion memory module. IMC expansion memory module abnormality. IMC expansion memory contact abnormality. IMC PWB abnormality.
		Check and remedy	Check installation of the expansion memory module. Replace the expansion memory module. Replace the IMC PWB with a new one.
	81	Content	Interface error in communication with IMC PWB (Parity).
		Detail	A parity error occurs in communication between the MCU PWB and the IMC PWB.
		Cause	IMC PWB-MCU PWB harness defect. Improper connection of the MCU PWB connector. IMC PWB ROM defect/data abnormality.
		Check and remedy	Check connection of the connector/harness between the IMC PWB and the MCU PWB. Check the ROM of the IMC PWB.

Main code	Sub code		Details of trouble
E1	82	Content	Interface error in communication with IMC PWB (Overrun).
		Detail	An overrun error occurs in communication between the MCU PWB and the IMC PWB.
		Cause	IMC PWB-MCU PWB harness defect. Improper connection of the MCU PWB connector. IMC PWB ROM defect/data abnormality.
		Check and remedy	Check connection of the connector/harness between the IMC PWB and the MCU PWB. Check the ROM of the IMC PWB.
	84	Content	Interface error in communication with IMC PWB (Framing).
		Detail	A framing error occurs in communication between the MCU PWB and the IMC PWB.
		Cause	IMC PWB-MCU PWB harness defect. Improper connection of the MCU PWB connector. IMC PWB ROM defect/data abnormality.
		Check and remedy	Check connection of the connector/harness between the IMC PWB and the MCU PWB. Check the ROM of the IMC PWB.
E7	01	Content	Duplex model memory error.
		Detail	The memory capacity for the duplex model machine is improper. Insufficient memory capacity.
		Cause	The memory capacity of the MCU PWB is improper.
		Check and remedy	Use SIM 26-39 to check that the memory capacity is 32MB. If it is not 32MB, replace the MCU PWB with a suitable one.
	02	Content	LSU trouble.
		Detail	The BD signal from the LSU cannot be detected in a certain cycle. (Always OFF or always ON)
		Cause	LSU connector or LSU harness defect or disconnection. Polygon motor rotation abnormality. Laser beams are not generated. MCU PWB abnormality.
		Check and remedy	Check connection of the LSU connector. Execute SIM 61-03 to check the LSU operations. Check that the polygon motor rotates normally. Check that the laser emitting diode generates laser beams. Replace the LSU unit. Replace the MCU PWB.
	10	Content	Shading trouble (Black correction).
		Detail	The CCD black scan level is abnormal when the shading.
		Cause	Improper connection of the CCD unit flat cable CCD unit abnormality. MCU PWB abnormality.
		Check and remedy	Check connection of the CCD unit flat cable. Check the CCD unit.

Main code	Sub code		Details of trouble
E7	11	Content	Shading trouble (White correction).
		Detail	The CCD white scan level is abnormal when the shading.
		Cause	Improper connection of the CCD unit flat cable Dirt on the mirror, the lens, and the reference white plate. Copy lamp lighting abnormality. CCD unit abnormality. MCU PWB abnormality(When occurred in the SPF scan position). Improper installation of the mirror unit.
		Check and remedy	Clean the mirror, lens, and the reference white plate. Check the light quantity and lighting status of the copy lamp (SIM 05-03). Check the MCU PWB.
	12	Content	Shading trouble.
		Detail	White correction is not completed in the specified number of operations.
		Cause	CCD unit flat cable connection failure. Dirt on mirrors, lenses, and the reference white plate. Copy lamp lighting abnormality. CCD unit abnormality. MCU PWB abnormality .
		Check and remedy	Clean mirrors, lenses, and the reference white plate. Check the copy lamp light quantity (SIM 05-03) and lighting. Check the CCD unit. Check the MCU PWB.
	16	Content	Abnormal laser output.
		Detail	When the laser output is stopped, HSYNC is detected.
		Cause	Laser abnormality. MCU PWB abnormality.
		Check and remedy	Check the laser emitting diode operation. Replace the MCU PWB.
F2	02	Content	Toner supply abnormality
		Detail	When toner near end is detected with the toner supply time of 50% or less. When the toner supply time exceeds 300%.
		Cause	ATC sensor abnormality Toner supply abnormality
		Check and remedy	Replace the toner cartridge. Replace the developing unit.

Main code	Sub code		Details of trouble
F2	04	Content	Improper cartridge (destination error, life cycle error)
		Detail	The destination of the machine differs from that of the CRUM. The life cycle information is other than "Not used (FFh)".
		Cause	CRUM chip defect. Improper developing unit .
		Check and remedy	Replace the CRUM chip. Replace the developing unit.
		Identification error	The trade mark code of the CRUM differs. The company code of the CRUM differs.
		Model error	The boot program model code does not coincide with the CRUM model code.
		Type error	When the CRUM type is other than genuine/ conversion/production rotation.
		Destination error	The machine destination differs from the CRUM destination.
		Data abnormality	When an error value is included in the initial check information. When the max. toner supply time is 00. When the print hard stop is 00.
		Misc error	When the Misc information is other than "Not used (FFh)".
	40	Content	ATC sensor abnormality
		Detail	ATC sensor value abnormality
		Cause	Connector connection trouble Toner cartridge installation trouble Sensor breakdown
		Check and remedy	Connect the connector again. Install the developing unit again. Replace the developing unit with a normal one.
F5	02	Content	Copy lamp lighting abnormality.
		Detail	The copy lamp does not turn on.
		Cause	Copy lamp abnormality. Copy lamp harness abnormality. CCD PWB harness abnormality.
		Check and remedy	Use SIM 5-3 to check the copy lamp operations. **When the copy lamp lights up.** Check the harness and the connector between the CCD unit and the MCU PWB. **When the copy lamp does not light up.** Check the harness and the connector between the copy lamp unit and the MCU PWB. Replace the copy lamp unit. Replace the MCU PWB.
F6	00	Content	FAX board communication trouble.
		Detail	FAX board communication error.
		Cause	No command can be sent from the MCU to the FAX.
		Check and remedy	Check connection of the FAX board. Replace the FAX board.
	10	Content	FAX board trouble.
		Detail	FAX board abnormality detection.
		Cause	FAX controller and FAX board memory abnormality.
		Check and remedy	Replace the FAX board.

Main code	Sub code		Details of trouble
F6	80	Content	FAX board communication trouble (Protocol).
		Detail	A break error occurs in communication between the MCU and the FAX board.
		Cause	MCU PWB connector connection failure/ Garbled data.
		Check and remedy	Check connection of the FAX board. Replace the FAX board. Reset the machine (Power OFF/ON).
	81	Content	FAX board communication trouble (Parity).
		Detail	A parity error occurs in communication. between the MCU and the FAX board.
		Cause	MCU PWB connector connection failure/ Garbled data.
		Check and remedy	Check connection of the FAX board. Replace the FAX board. Reset the machine (Power OFF/ON).
	82	Content	FAX board communication trouble (Overrun).
		Detail	An overrun error occurs in communication between the MCU and the FAX board.
		Cause	MCU PWB connector connection failure/ Garbled data
		Check and remedy	Check connection of the FAX board. Replace the FAX board. Reset the machine. (Power OFF/ON).
	84	Content	FAX board communication trouble (Framing).
		Detail	A framing error occurs in communication between the MCU and the FAX board.
		Cause	MCU PWB connector connection failure/ Garbled data.
		Check and remedy	Check connection of the FAX board. Replace the FAX board. Reset the machine (Power OFF/ON).
	88	Content	FAX board communication trouble (Time out).
		Detail	FAX board communication error.
		Cause	There is no respond command from the FAX for 30sec or more.
		Check and remedy	Check connection of the FAX board. Replace the FAX board. Reset the machine (Power OFF/ON).
	97	Content	Combination error between the FAX unit and the main unit
		Detail	Combination error between the FAX unit and the main unit
		Cause	When this fax unit is installed to the machine that can not install this.
		Check and remedy	Check the model name of the main unit
	99	Content	Machine - FAX language error.
		Detail	Discrepancy of the destination of the machine and the FAX board.
		Cause	The destination of the machine differs from that of the FAX board. When installing to the machine that can install only AR-FX11.
		Check and remedy	Change the destination setting with SIM26-6. Replace the FAX board with one which. conforms to the destination of the machine.
F9	00	Content	MX-NB10 board communication trouble.
		Detail	MX-NB10 print data reception error.
		Cause	Print data cannot be received from the MX-NB10 for 3 min or more.
		Check and remedy	Reset the machine (Power OFF/ON).

Main code	Sub code		Details of trouble
H2	00	Content	Thermistor open.
		Detail	The thermistor is open. The fusing unit is not installed.
		Cause	Thermistor abnormality. Control PWB abnormality. Fusing section connector disconnection. The fusing unit is not installed.
		Check and remedy	Check the harness and the connector between the thermistor and the PWB. Use SIM 14 to clear the self diagnostic display.
H3	00	Content	Heat roller high temperature detection.
		Detail	The fusing temperature exceeds 240C°.
		Cause	Thermistor abnormality. Control PWB abnormality. Fusing section connector disconnection.
		Check and remedy	Use SIM 5-02 to check the heater lamp blinking operation. **When the lamp blinks normally.** Check the thermistor and its harness. Check the thermistor input circuit on the control PWB. **When the lamp keeps ON.** Check the power PWB and the lamp control circuit on the MCU PWB. Use SIM 14 to clear the self diagnostic display.
H4	00	Content	Heat roller low temperature detection.
		Detail	When the fusing temperature is lower than 150C° after 55sec from the start of warming up. When the warming up complete temperature is not reached in 30sec from reaching 150C°. When the fusing temperature is lower than 100C° after 20sec from ready start. When the fusing temperature is lower than 145C° when printing.
		Cause	Thermistor abnormality. Heater lamp abnormality. Thermostat abnormality. Control PWB abnormality.
		Check and remedy	Use SIM 5-02 to check the heater lamp blinking operation. **When the lamp blinks normally.** Check the thermistor and its harness. Check the thermistor input circuit on the control PWB. **When the lamp does not light up.** Check for disconnection of the heater lamp and the thermostat. Check the interlock switch. Check the power PWB and the lamp control circuit on the MCU PWB. Use SIM 14 to clear the self diagnostic display.
H5	01	Content	5-time continuous detections of POUT not-reached jam.
		Detail	Paper not-reached jams are detected 5 times or more continuously by the paper exit sensor (POUT). The jam counter is backed up and used for jobs after turning on the power.
		Cause	A fusing jam is not canceled completely. (A jam paper remains in the machine.) Paper exit sensor trouble or harness connection trouble Defective installation of the fusing unit.
		Check and remedy	Check the fusing section jam (for winding, etc.). Check the POUT sensor harness. Check installation of the fusing unit. Use SIM14 to clear the self diag display.

Main code	Sub code		Details of trouble
L1	00	Content	Scanner feed trouble.
		Detail	The scanner does not complete feeding in the specified time.
		Cause	Mirror unit abnormality. The scanner wire is disconnected. The origin detection sensor abnormality. Mirror motor harness abnormality.
		Check and remedy	Use SIM 1-1 to check the mirror reciprocating operations. **When the mirror does not feed.** Check for disconnection of the scanner wire. Check the harness and the connector between the mirror motor and the MCU PWB. Replace the mirror unit. Replace the MCU PWB. **When the mirror does feed.** Use SIM 1-2 to check the mirror home position sensor.
L3	00	Content	Scanner return trouble.
		Detail	The scanner does not complete returning in the specified time. The mirror is not in the home position when OC copying is started with the mirror standby in the home position.
		Cause	Mirror unit abnormality. Scanner wire disconnection. Origin detection sensor abnormality. Mirror motor harness abnormality.
		Check and remedy	Use SIM 1-1 to check the mirror reciprocating operations. **When the mirror does not return.** Check for disconnection of the scanner wire. Check the harness and the connector between the mirror motor and the MCU PWB. Replace the mirror unit. Replace the MCU PWB. **When the mirror does feed.** Use SIM 1-2 to check the mirror home position sensor.
L4	01	Content	Main motor lock detection.
		Detail	The main motor does not rotate. The motor lock signal is detected for 1sec or more after rotation of the main motor. The motor lock signal is detected for 1sec during rotation of the main motor.
		Cause	Main motor unit abnormality. Improper connection or disconnection the main motor and the harness. MCU PWB abnormality.
		Check and remedy	Use SIM 25-01 to check the main motor operations. Check connection of the main motor harness/ connector. Replace the main motor. Replace the MCU PWB.
	11	Content	Shifter motor trouble.
		Detail	The shifter home position detection signal is not detected when initializing the shifter.
		Cause	Shifter motor abnormality, improper connection or disconnection of the harness, shifter home position sensor abnormality.
		Check and remedy	Use SIM 03-11 to check the shifter motor operations. Check connection of the harness/connector of the shifter motor. Replace the shifter motor. Replace the MCU PWB.

Main code	Sub code		Details of trouble
L6	10	Content	Polygon motor lock detection.
		Detail	The polygon motor does not rotate. The motor lock signal is detected for 6sec after rotation of the polygon motor. The motor lock signal is detected for 1sec during rotation of the polygon motor.
		Cause	Polygon motor unit abnormality. Improper connection or disconnection of the polygon motor and the harness. MCU PWB abnormality.
		Check and remedy	Use SIM 61-1 to check the polygon motor operations. Check connection of the polygon motor harness/connector. Replace the polygon motor. Replace the MCU PWB.
L8	01	Content	No full wave signal.
		Detail	The zero cross signal is not detected.
		Cause	Power unit abnormality. MCU PWB abnormality.
		Check and remedy	Check connection of the harness and connectors. Replace the MCU PWB. Replace the power unit.
U1	03	Content	FAX board battery error.
		Detail	FAX board backup battery error.
		Cause	The voltage of the backup battery of SRAM which is installed to the FAX board falls below a certain level.
		Check and remedy	Replace the battery.
U2	04	Content	EEPROM read/write error (serial communication error).
		Detail	EEPROM access process error.
		Cause	EEPROM abnormality.
		Check and remedy	Check that the EEPROM is properly set. Use SIM 16 to cancel the trouble. Replace the MCU PWB.
	11	Content	Counter check sum error (EEPROM).
		Detail	Check sum error of the counter area in the EEPROM.
		Cause	EEPROM abnormality.
		Check and remedy	Check that the EEPROM is properly set. Use SIM 16 to cancel the trouble. Replace the MCU PWB.
	40	Content	CRUM chip communication error.
		Detail	An error occurs during communication between the MCU and the CRUM chip.
		Cause	CRUM chip abnormality. Developing unit disconnection. MCU PWB abnormality.
		Check and remedy	Replace the chip. Check installation of the developing unit. Use SIM 16 to cancel the trouble. Replace the MCU PWB.

Main code	Sub code		Details of trouble
U9	00	Content	Panel board communication trouble.
		Detail	Communication trouble with the panel board.
		Cause	No command can be sent from the MCU to the panel.
		Check and remedy	MCU PWB - Panel PWB harness trouble. Replace the panel or the MCU PWB. Machine reset (Power OFF/ON).
	80	Content	Panel board communication trouble (Protocol).
		Detail	An error occurs in communication between MCU -Panel PWB.
		Cause	MCU PWB - Panel PWB harness trouble/ Garbled data.
		Check and remedy	MCU PWB - Panel PWB harness trouble. Replace the panel or the MCU PWB. Machine reset (Power OFF/ON).
	81	Content	Panel board communication trouble (Parity).
		Detail	A parity error occurs in communication between the MCU and the Panel PWB.
		Cause	MCU PWB - Panel PWB harness trouble/ Garbled data.
		Check and remedy	MCU PWB - Panel PWB harness trouble. Replace the panel or the MCU PWB. Machine reset (Power OFF/ON).
	82	Content	Panel board communication trouble (Overrun).
		Detail	An overrun error occurs in communication between the MCU and the panel board.
		Cause	MCU PWB - Panel PWB harness trouble/ Garbled data.
		Check and remedy	MCU PWB - Panel PWB harness trouble. Replace the panel or the MCU PWB. Machine reset (Power OFF/ON).
	84	Content	Panel board communication trouble (Framing).
		Detail	A framing error occurs in communication between the MCU and the Panel PWB.
		Cause	MCU PWB - Panel PWB harness trouble/ Garbled data.
		Check and remedy	MCU PWB - Panel PWB harness trouble. Replace the panel or the MCU PWB. Machine reset (Power OFF/ON).
	88	Content	Panel board communication trouble (Time out).
		Detail	A time-out error occurs in communication between the MCU and the Panel PWB.
		Cause	A command is completely sent from the MCU to the panel.
		Check and remedy	MCU PWB - Panel PWB harness trouble. Replace the panel or the MCU PWB. Machine reset (Power OFF/ON).
	99	Content	Panel language error.
		Detail	Language discrepancy error.
		Cause	Discrepancy between the machine language and the panel language.
		Check and remedy	Replace the panel or the MCU PWB. Reset the machine. (Power OFF/ON).

[10] MAINTENANCE

1. Maintenance table

X:Check(Clean, adjust, or replace when required.) O:Clean ▲:Replace △:Adjust ☆:Lubricate

Unit name	Part name		When calling	50K	100K	150K	Remark
Drum peripheral	OPC drum		-	▲	▲	▲	
	Cleaning blade		-	▲	▲	▲	
	Side seal F/R		X	X	X	X	
	MC unit		X	▲	▲	▲	
	(MC charging electrode)		-	(▲)	(▲)	(▲)	
	(MC grid)		-	(▲)	(▲)	(▲)	
	(MC case)		-	(▲)	(▲)	(▲)	
	Transfer wire		O	O	O	O	
	Transfer paper guide		O	O	O	O	
	MC guide sheet (Cleaning blade attached)		-	▲	▲	▲	
	Drum fixing plate B		X	▲	▲	▲	
	Separation pawl		X	▲	▲	▲	
	Star ring N2						
	Star ring ϕ 5						
	Pawl holder						
	Process frame unit		X	X	X	▲	
	Discharge holder		O	O	O	O	
Developing section	Developer		X	▲	▲	▲	
	DV seal		X	X	X	▲	
	Toner density sensor		X	X	X	X	Check the sensor head surface.
	DV side sheet		X	X	X	X	
Optical section	Lamp unit	Reflector	O	O	O	O	
		Mirror	-	O	O	O	
	No.2/3 mirror unit	Mirror	-	O	O	O	
		Pulley	-	X	X	X	
	CCD peripheral	Lens	-	O	O	O	
	Glass	Table glass	O	O	O	O	
		White Plate	O	O	O	O	
	Other	Drive wire	-	X	X	X	
		Rail	-	X ☆	X ☆	X ☆	
		Document cover	O	O	O	O	
LSU	Dust-proof glass		O	O	O	O	
Paper feed section	Multi paper feed section	Take-up roller(manual / SPF)	O	O	O	O	
		Paper feed roller	O	O	O	▲	
		Spring clutch	-	O ☆	O ☆	O ☆	
Paper transport section	PS roller		O	O	O	O	
	Transport (paper exit) rollers		O	O	O	O	
	Spring clutch		O ☆	O ☆	O ☆	O ☆	
Fusing section	Upper heat roller		X	O	O	▲	
	Pressure roller		X	O	O	O	
	Pressure roller bearing		-	X	X	O ☆	
	Upper separation pawl		X	X	X	O	
	Lower separation pawl		X	X	X	O	
	Cleaning pad		X	X	X	▲	
Drive section	Gears		-	X ☆	X ☆	X ☆	
	Belts		-	X	X	O	
Paper exit section	VOC filter		-	▲	▲	▲	*1

*1:Recommendable replacement time:50K(A4/Letter,6%print)

2. Maintenance display system

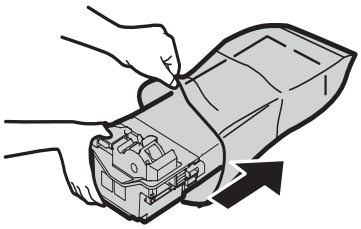
Toner	Life,	16K	
	Remaining quantity check *1	a. Press and hold the [Light] keys ([Light and Dark] keys) for more than 5 sec, and the machine will enter the user program mode. b. Press and hold the [%] key for more than 5 sec, and the remaining quantity will be displayed on the copy quantity display in one of the following levels: (Remaining quantity display levels: 100%, 75%, 50%, 25%, 10%, LO) c. Press the [Light] keys ([Light and Dark] keys) to cancel.	
	Remaining quantity	NEAR EMPTY Approx. 50 sheets at Area Coverage 6%	EMPTY
	LED	ON	Flash
	Machine	Operation allowed	Stop
Developer	Life	50K	
	LED	ON at 50K of the developer count	
	Machine	Selection is available between Not Stop and Stop by Service Simulation (SIM 26-37) Setup. (If Stop is selected, the LED will flash and stop at 50K.) * Default: Not Stop * Clear: SIM 42-1	
Maintenance	LED	Selection is available among 50K, 25K, 10K, 7.5K, 5K, and free (no lighting) with SIM 21-1. * Default: 50K * Clear: SIM 20-1	
	Machine	Not stop	

*1: Installation of a new toner cartridge allows to display the remaining quantity.

3. Note for replacement of consumable parts

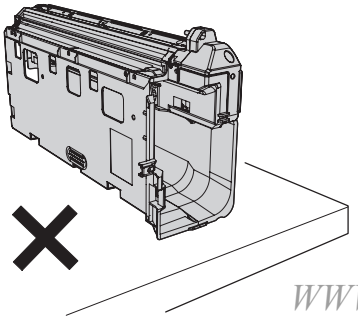
A. Toner cartridge

When a waste toner cartridge is removed from the machine, it must be put in a polyethylene bag to avoid scattering of toner.

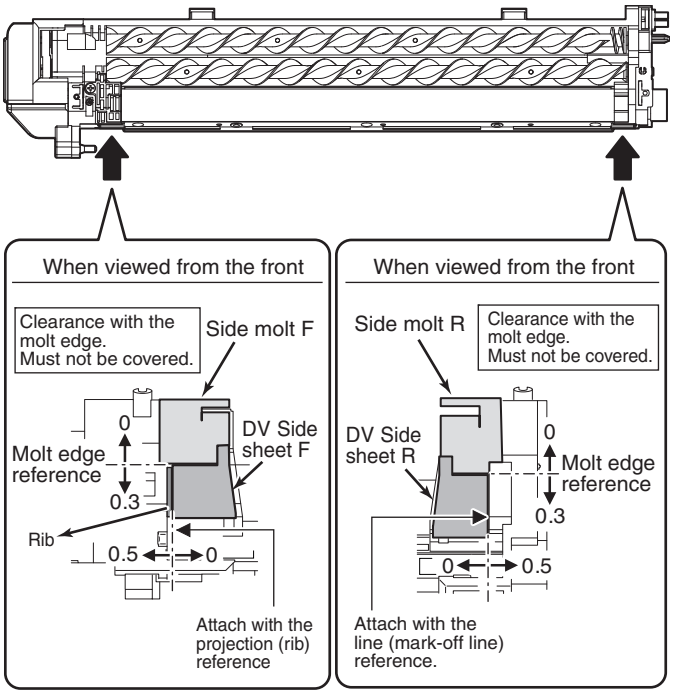


B. DV cartridge

Do not shake or put up the developer cartridge. Otherwise developer may scatter.



C. DV seal attachment procedure



[11]DISASSEMBLY AND ASSEMBLY

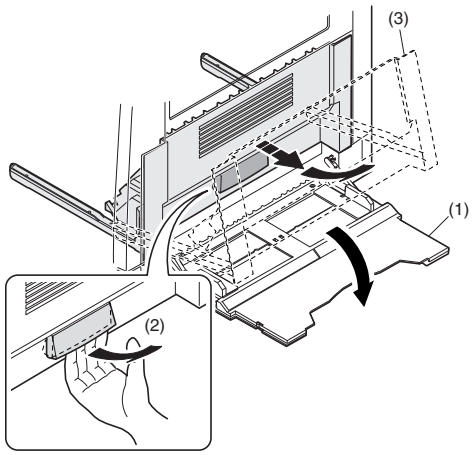
WARNING Before performing the disassembly procedure, be sure to remove the power cord to prevent against an electric shock.

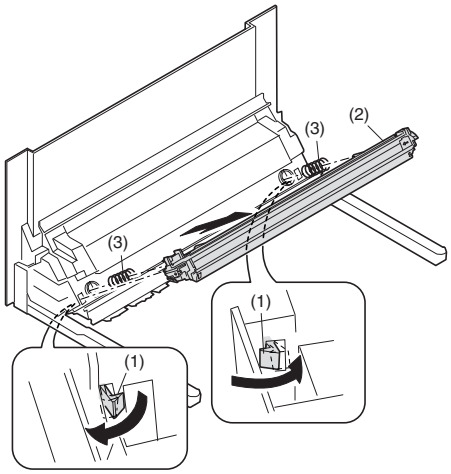
No.	Item
1	High voltage section/Duplex transport section
2	Optical section
3	Fusing section
4	Paper exit section
5	MCU
6	Optical frame unit
7	LSU
8	Tray paper feed section/Paper transport section
9	Bypass tray section
10	Power section
11	Developing section
12	Process section
13	Others

1. High voltage section/Duplex transport section

No.	Content
A	Transfer charger unit
B	Charger wire
C	Duplex transport section

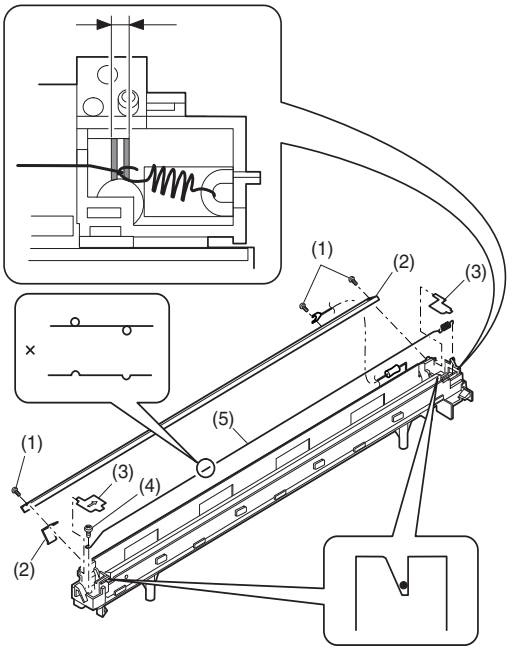
A.Transfer charger unit



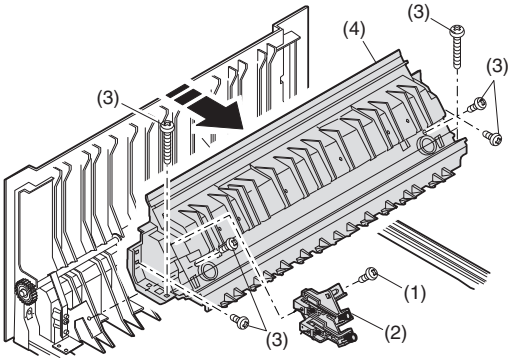


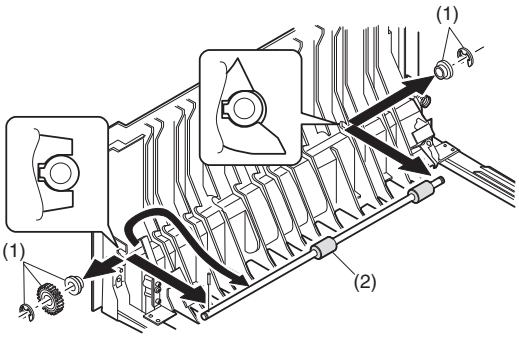
B.Charger wire

Installation: The spring tip must be between two reference ribs.
•The charger wire must be free from twists or bending.
•Be sure to put the charger wire in the V groove.



C.Duplex transport section



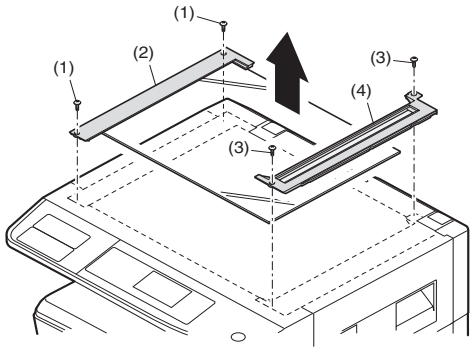


2.Optical section

Note: When disassembling or assembling the optical unit, be careful not to touch the mirror and the reflector.

No.	Content
A	Table glass
B	Copy lamp unit
C	Inverter PWB for copy lamp
D	Copy lamp
E	Lens unit
F	Wire
G	Document detection

A.Table glass

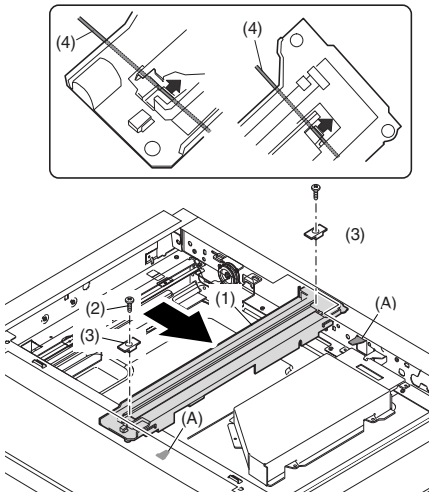


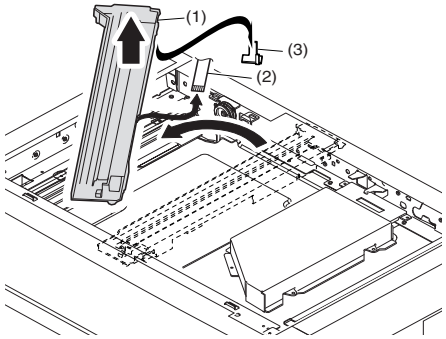
B.Copy lamp unit

Disassembly: Be sure to put No. 2/3 mirror unit to the positioning plate (A).

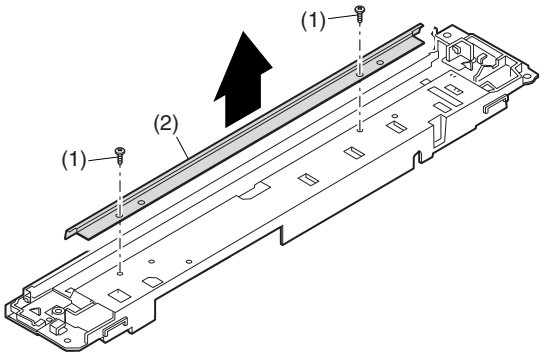
Assembly: Put the notched surface of wire holder (3) downward, tighten temporarily, and install.

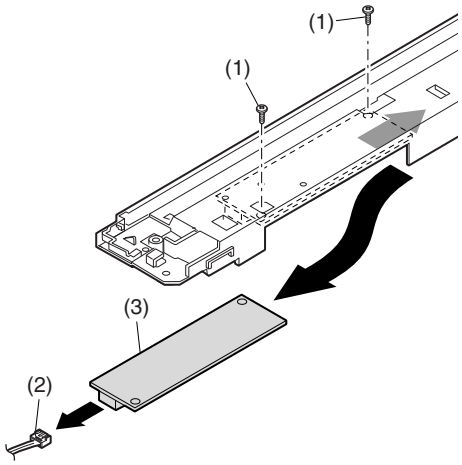
Adjustment: Main scanning direction distortion balance adjustment



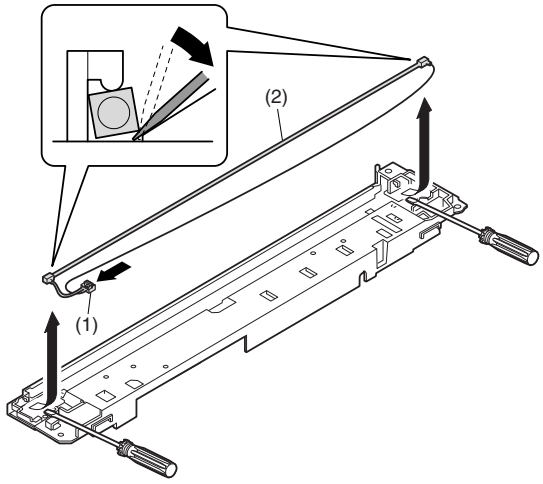


C.Inverter PWB for copy lamp





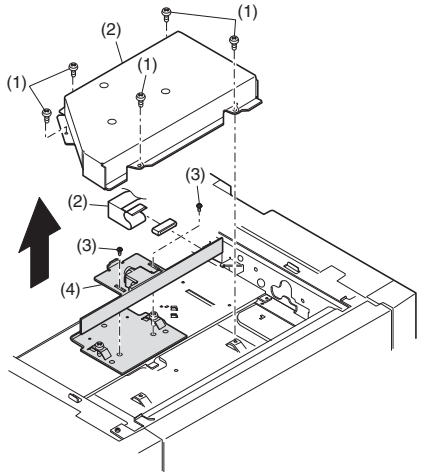
D.Copy lamp



E.Lens unit

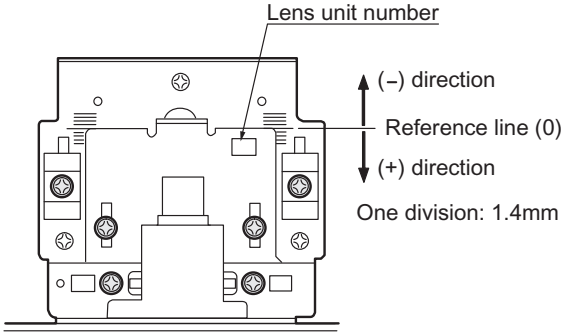
Note: Do not remove screws which are not indicated in the figure. If the height of the base plate is changed, it cannot be adjusted in the market.

Note: The CCD/lens unit is factory-adjusted before shipping. Since these adjustments cannot be performed in the market. Never touch the screws other than screw 2) of the CCD/lens unit.



Lens unit attachment

<1>Attach the lens unit so that the lens unit number on the lens adjustment plate is aligned with the scribe line on the base plate.



	CCD adjustment value
+4 scales	5.0~
+3 scales	3.6~4.9
+2 scales	2.2~3.5
+1 scale	0.8~2.1
Reference	-0.6~0.7
-1 scale	-2.0~ -0.7
-2 scales	-3.4~ -2.1
-3 scales	-4.8~ -3.5
-4 scales	~ -4.9

<2>Make a sample copy at the above position, and measure the magnification ratio.

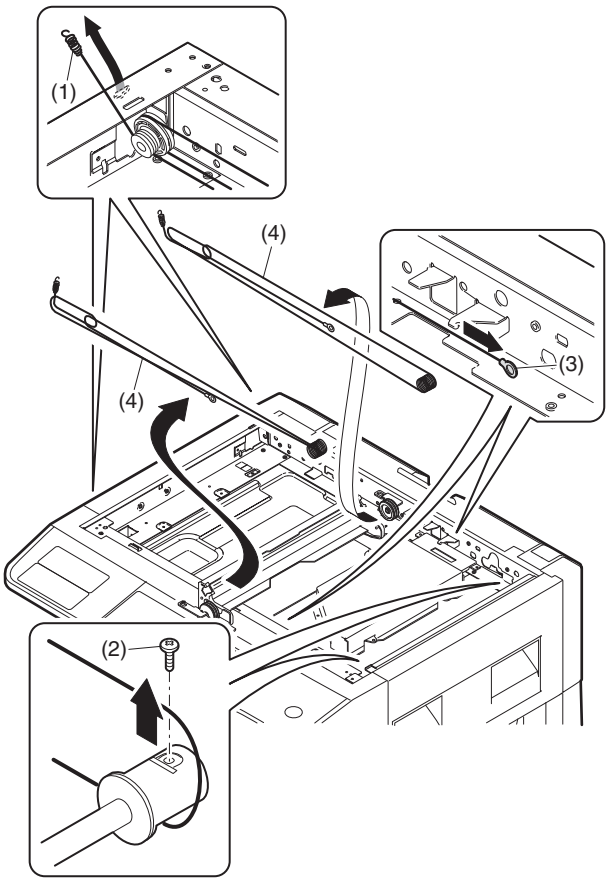
<3>Change the installing position in the horizontal direction to adjust the magnification ratio.

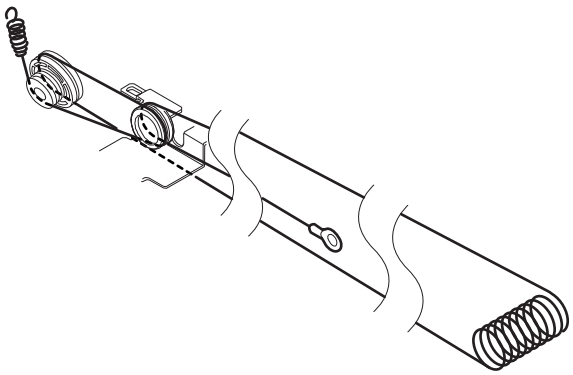
- When the copy image is longer than the original, shift to the positive (+) direction.
- When the copy image is shorter than the original, shift to the negative (-) direction.

* 1 scale of the scribed line corresponds to 0.34% of magnification ratio.

* If this adjustment is not satisfactory, make a fine adjustment with SIM 48-2.

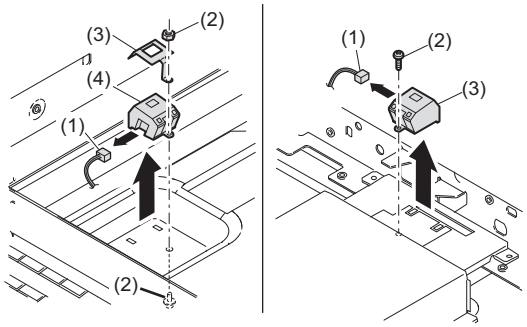
F.Wire



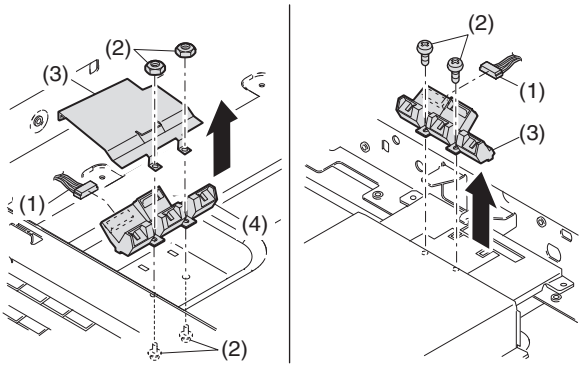


G. Document detection

- For inch series



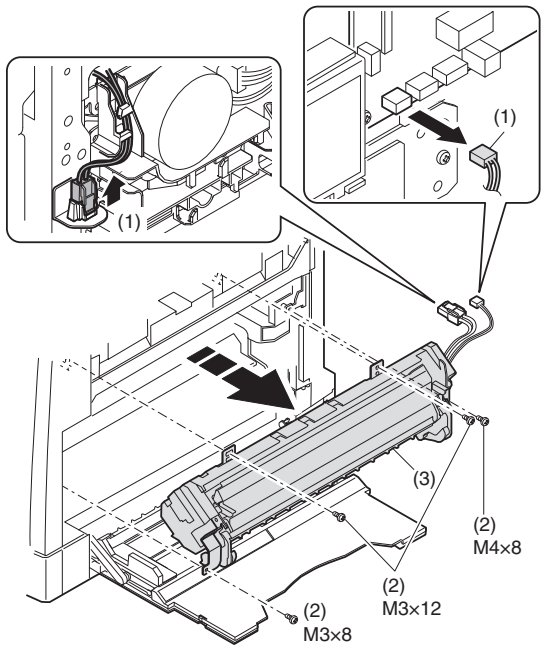
• For AB series



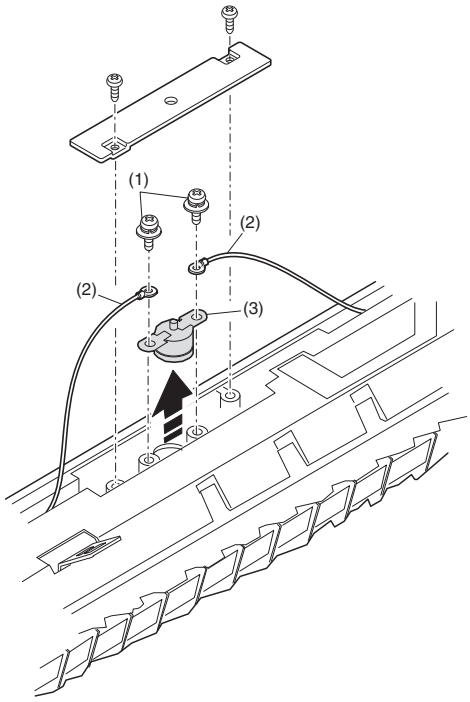
3.Fusing section

No.	Contents
A	Fusing unit
B	Thermostat
C	Thermistor
D	Heater lamp
E	Upper heat roller
F	Separation pawl
G	Lower heat roller
H	Separation pawl

A.Fusing unit removal

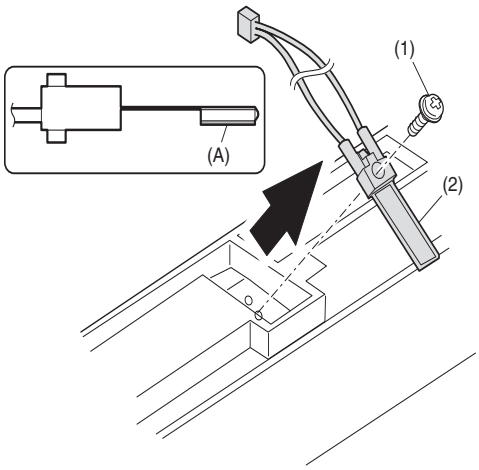


B.Thermostat



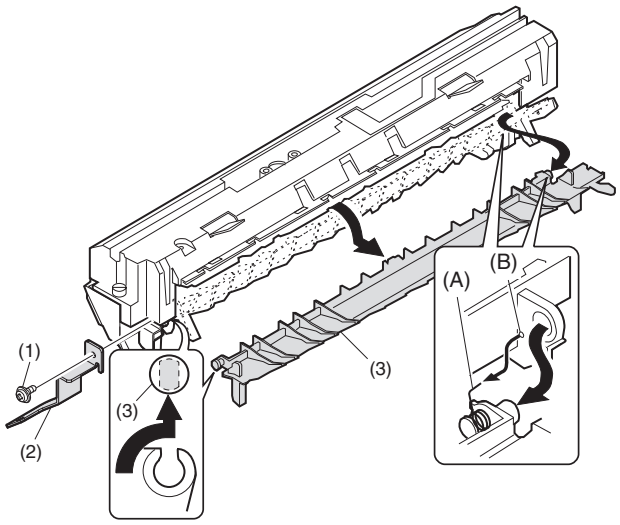
C.Thermistor

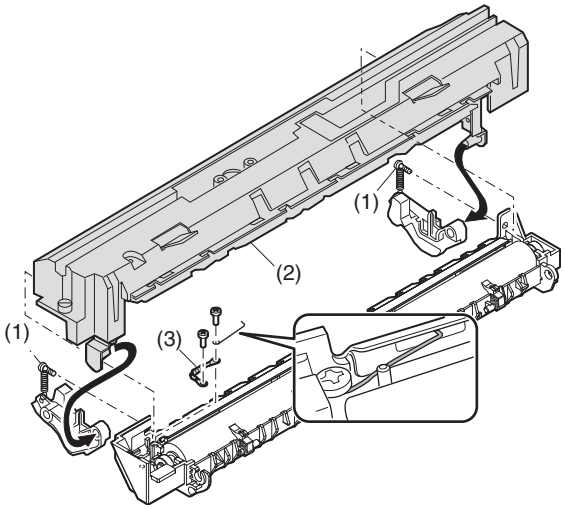
Installation: Install in direction that the sponge side (A) of the thermistor comes in contact with heat roller.
Check that the thermistor is in contact with the upper heat roller.

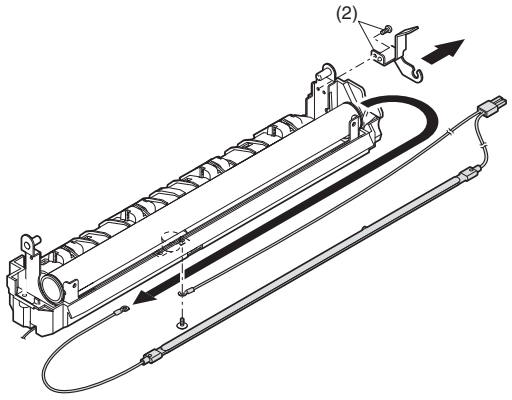


D.Heater lamp

Assembly: Insert the spring (A) into the hole (B) in the fusing frame.



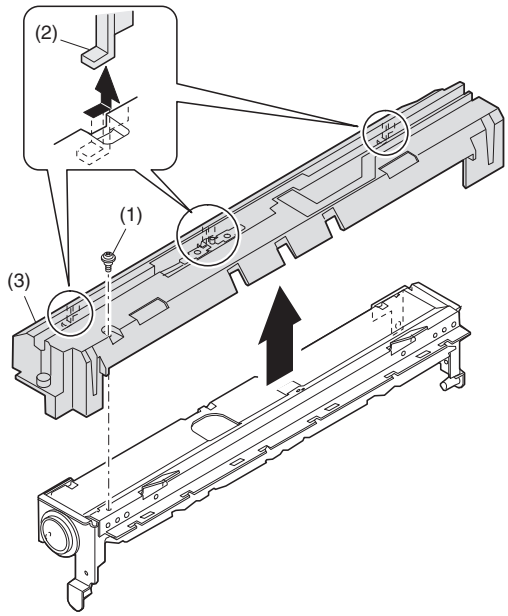


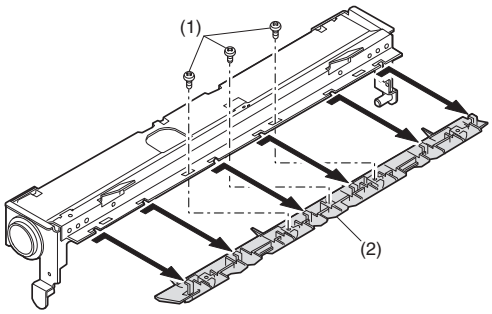


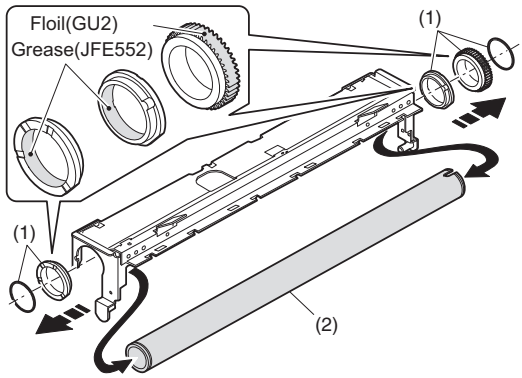
Assembly: Put the fusing harness (A) on the heater lamp (B) as shown in the figure and fix them together.
Place the fusing harness inside the rib (C).

E.Upper heat roller

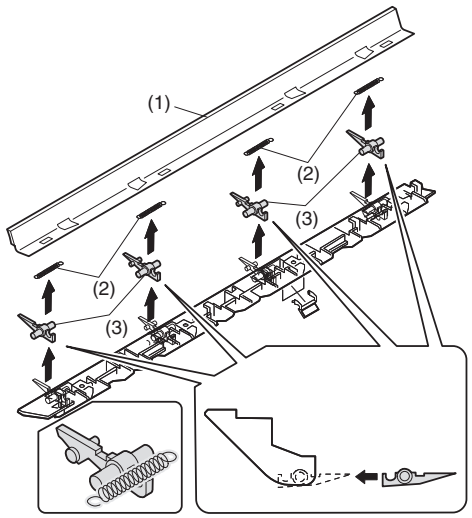
Disassembly: There are three pawls on the fusing cover. Remove the screws and slide the fusing cover to the right to remove.
The heater lamp is fixed on the fusing cover with a screw. Slide the fusing cover to the front and remove the screw, then remove the heater lamp.



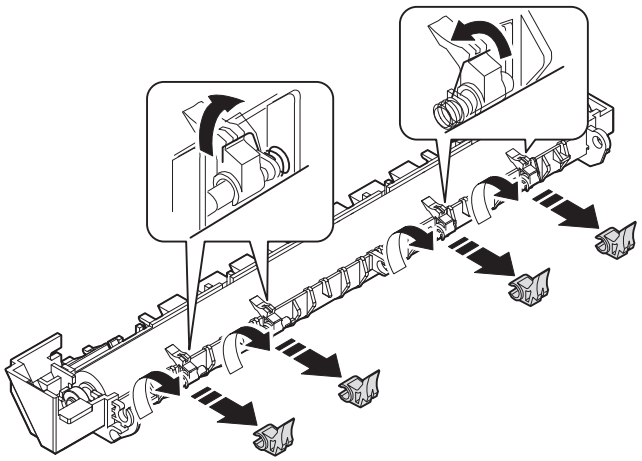




F.Separation pawl



H.Separation pawl

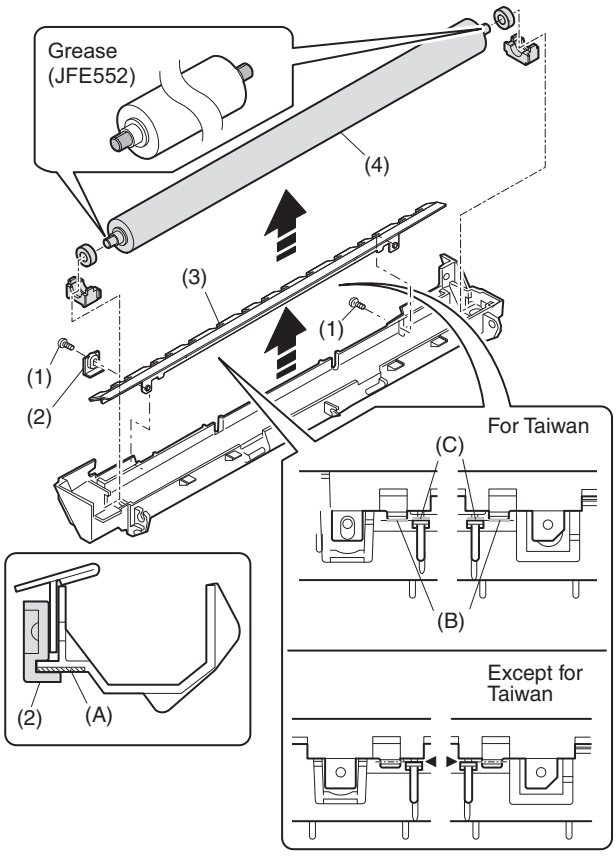


4.Paper exit section

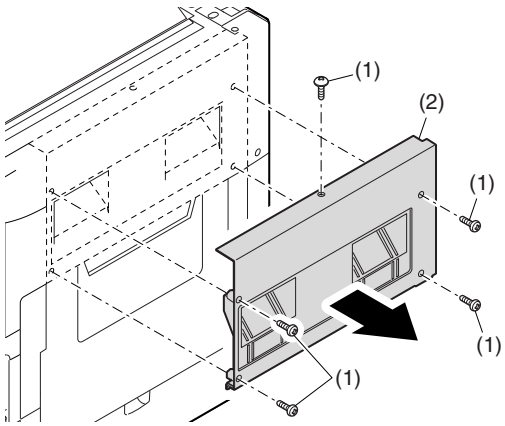
No.	Content
A	Ozone filter
B	Cooling fan
C	Paper exit unit
D	Paper exit sensor / duplex sensor
E	Transport roller
F	Paper exit roller
G	Paper exit interface PWB

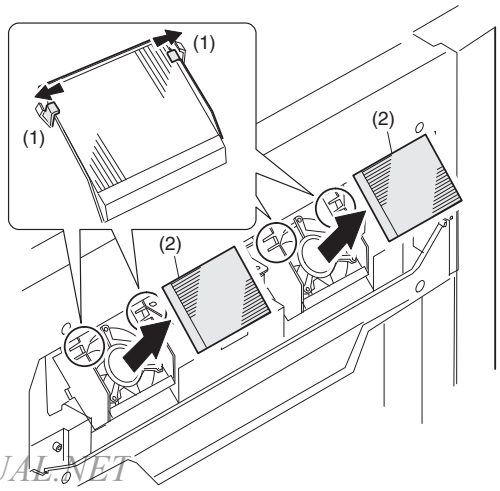
G.Lower heat roller

Assembly: When assembling the fusing front paper guide (3), temporarily fix the paper guide fixing plate with the screw so that the paper guide fixing plate (2) is in contact with the fusing lower frame bottom (A).
For Taiwan:
Align the edge (B) of the fusing front paper guide (3) and the top (C) of the rib on a line, and tighten the screw firmly.
Except for Taiwan:
Lower the fusing front paper guide to the bottom of the adjustment width, and tighten the screw firmly.

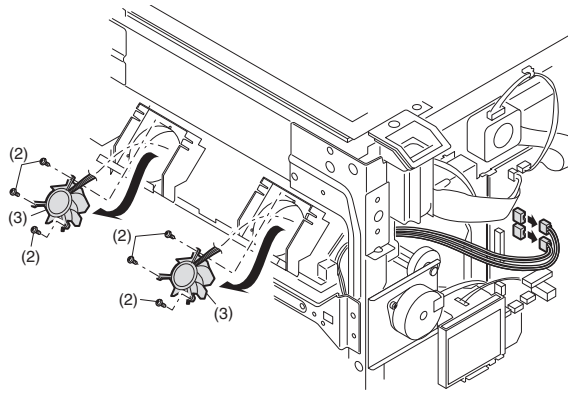


A.Ozone filter

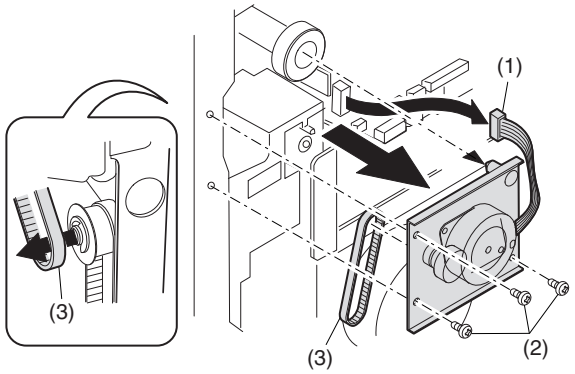




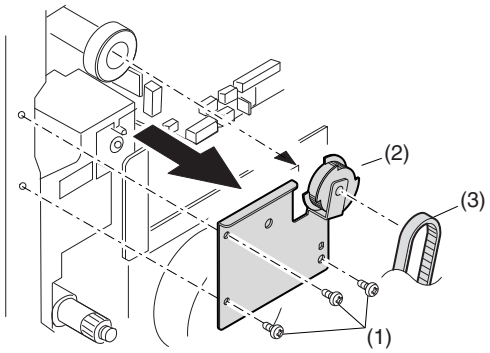
B.Cooling fan



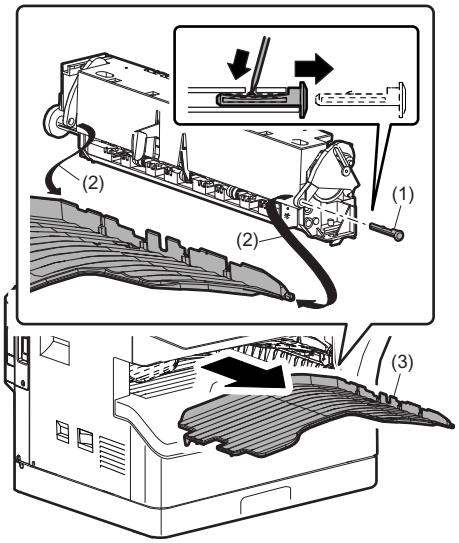
MX-M160D/M200D

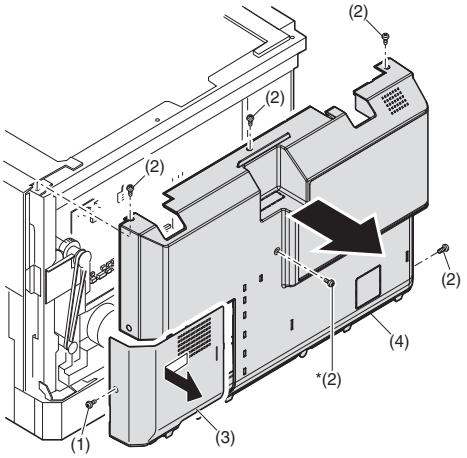


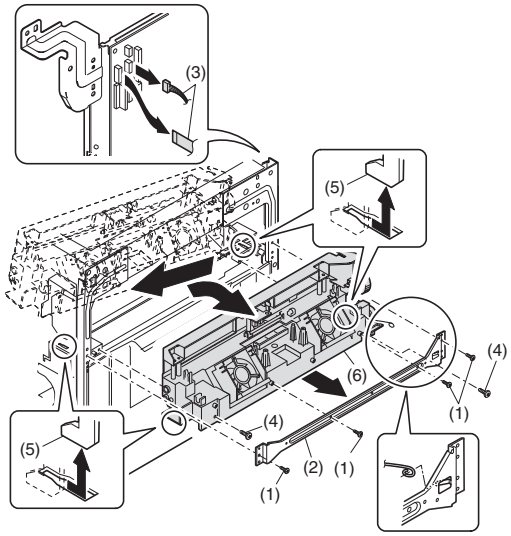
MX-M160



C.Paper exit unit



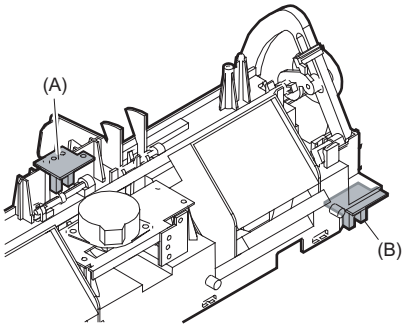




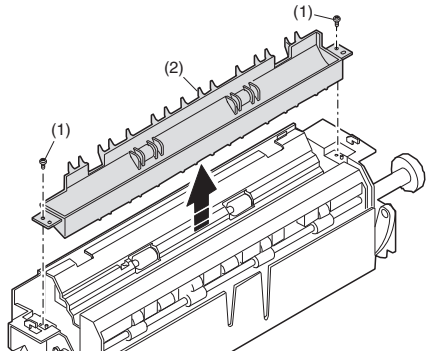
D.Paper exit sensor / duplex sensor

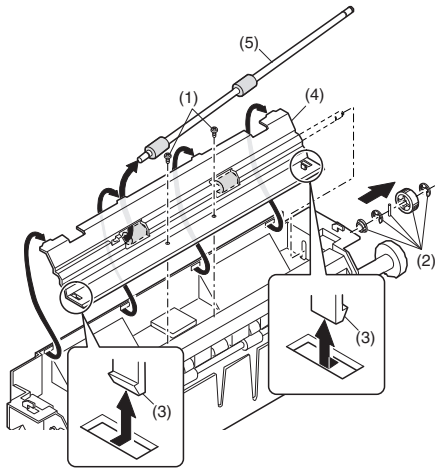
(A)Exit sensor

(B)Duplex sensor



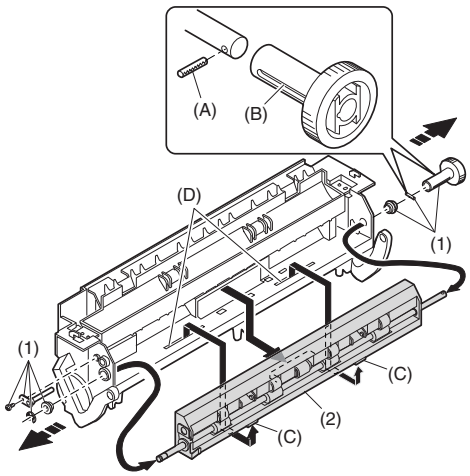
E.Transport roller

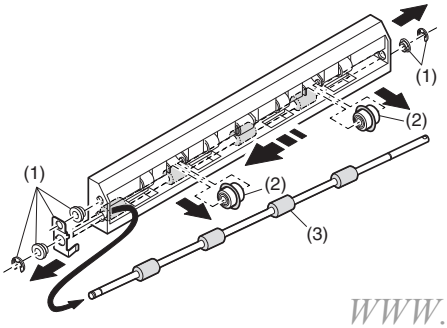




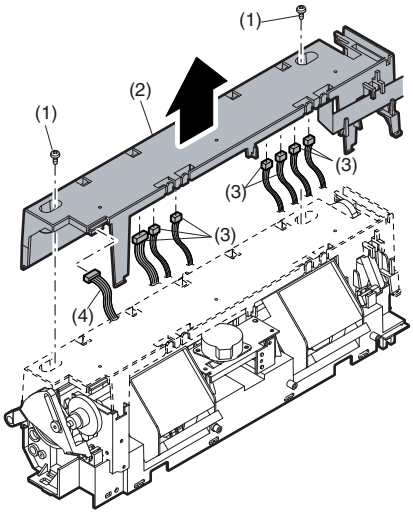
F.Paper exit roller

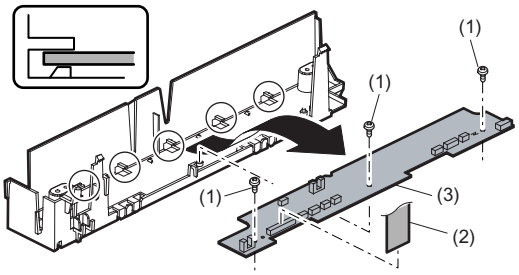
Assembly: Insert the spring pin so that the waveform (A) of the spring pin faces in the longitudinal direction of the paper exit drive gear long hole (B).
Be sure to insert two ribs (C) into the groove (D).





G.Paper exit interface PWB



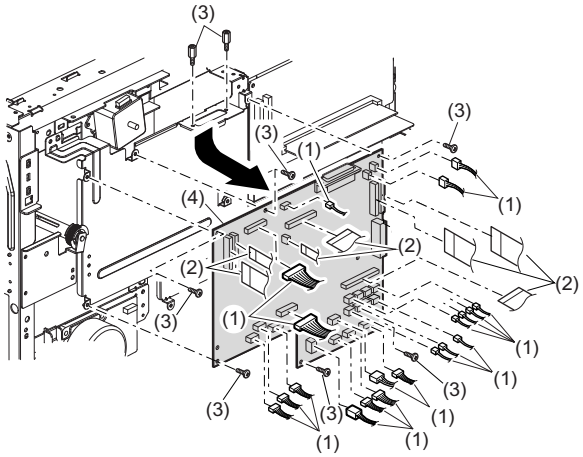


5.MCU

No.	Content
A	MCU

A.MCU disassembly

Note: When replacing the MCU PWB, be sure to replace the EEPROM of the MCU PWB to be replaced.

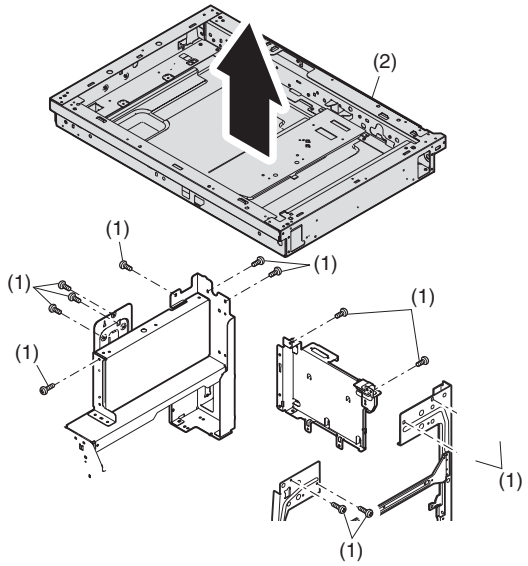


6.Optical frame unit

No.	Content
A	Optical frame unit

A.Optical frame unit

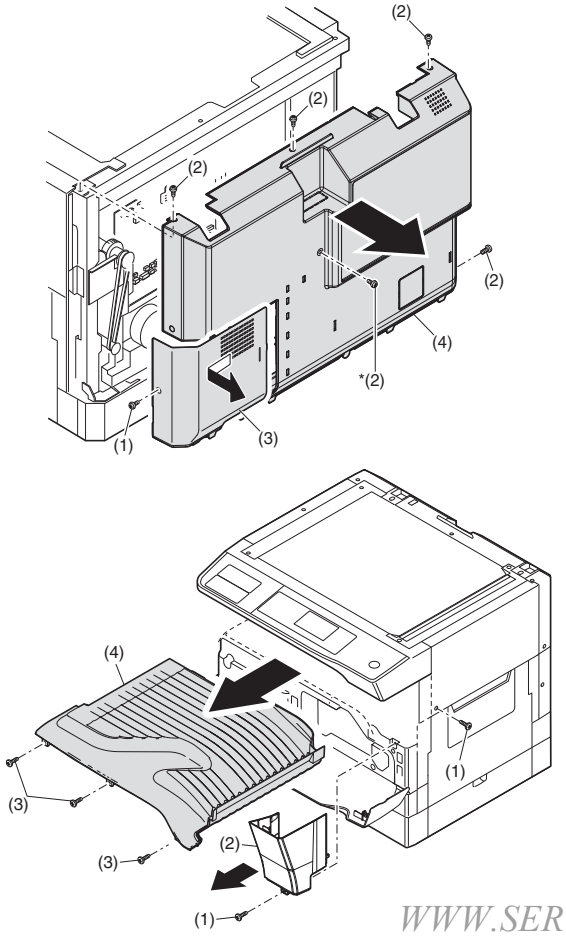
Installation: Install the optical unit in the sequence shown above.

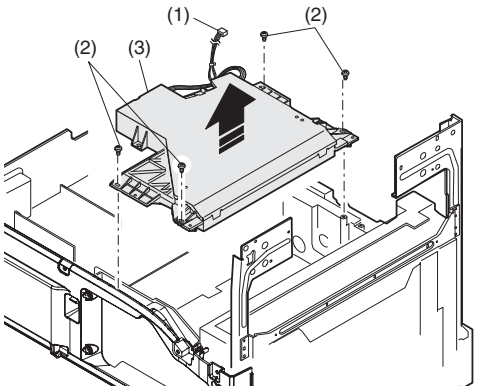


7. LSU

No.	Content
A	LSU unit

A. LSU unit





Note: Do not disassemble the LSU.

Note: When replacing the LSU, be careful not to touch the dust-shield glass.

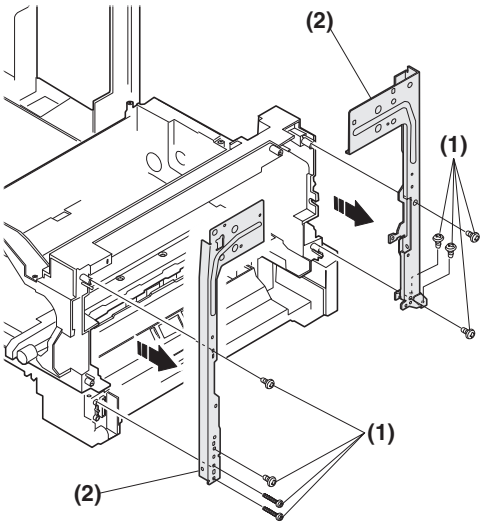
Adjustment:

- Image lead edge position adjustment
- Image left edge position adjustment
- Paper off-center adjustment

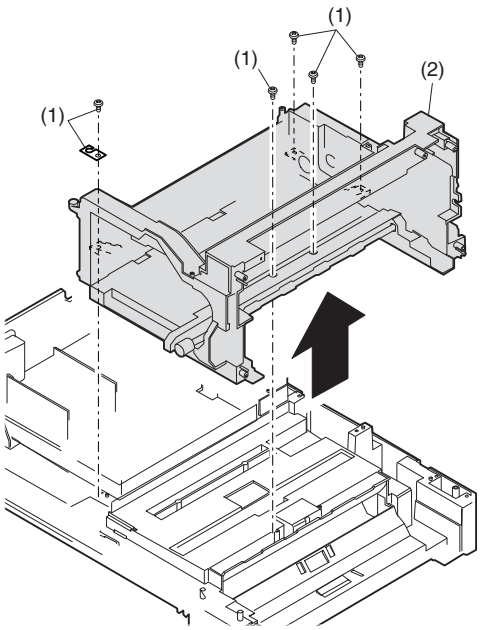
8. Tray paper feed section/Paper transport section

No.	Content
A	Middle frame unit
B	Drive unit
C	Solenoid (paper feed solenoid,, resist roller solenoid)
D	Resist roller clutch / Resist roller
E	Paper feed clutch/Paper feed roller

A. Middle frame unit

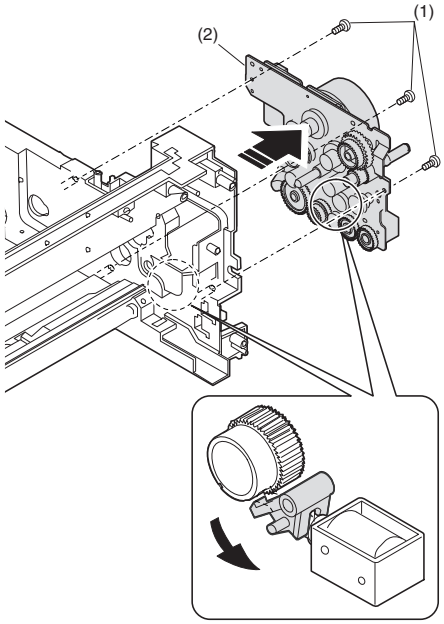


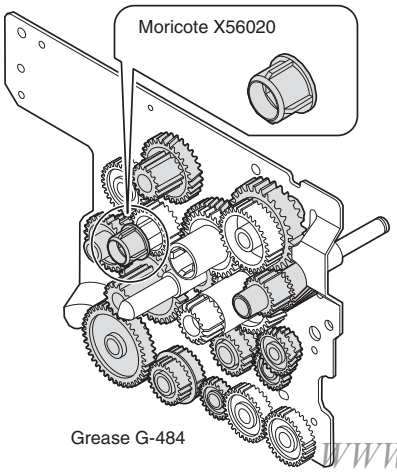
Assembly: Do not miss the door lock pawl.



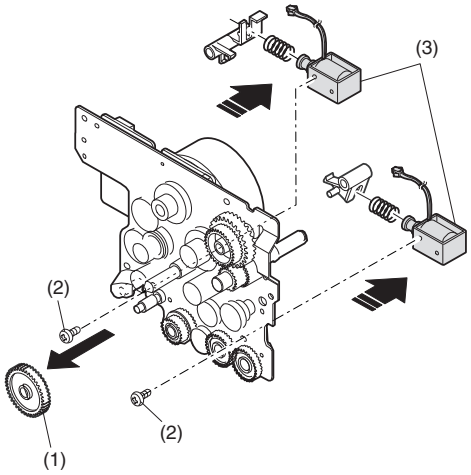
B. Drive unit

Assembly: Move down the clutch pawl as shown below, and avoid the clutch and install.

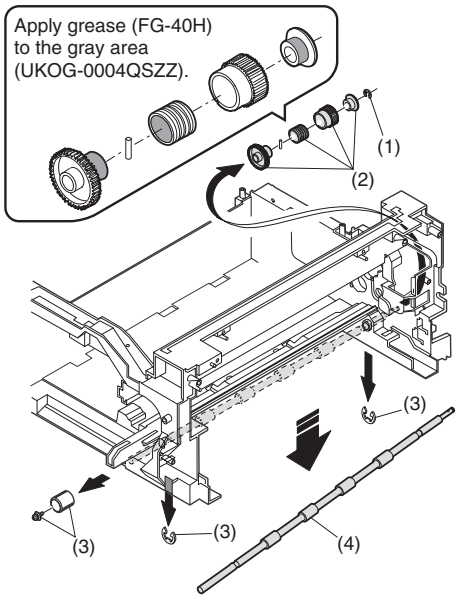




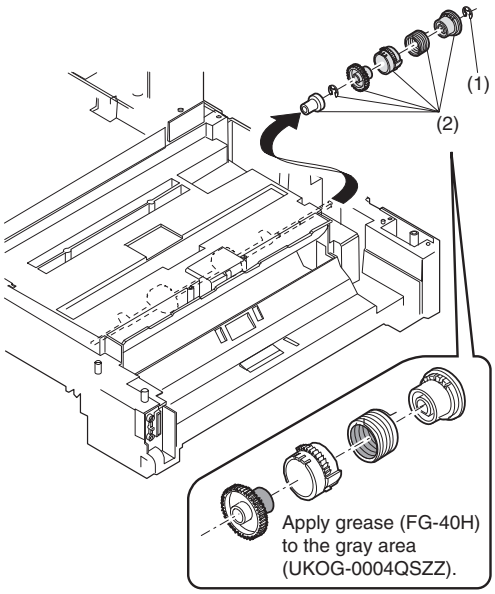
C. Solenoid (paper feed solenoid, resist roller solenoid)



D. Resist roller clutch/Resist roller



E. Paper feed clutch/Paper feed roller

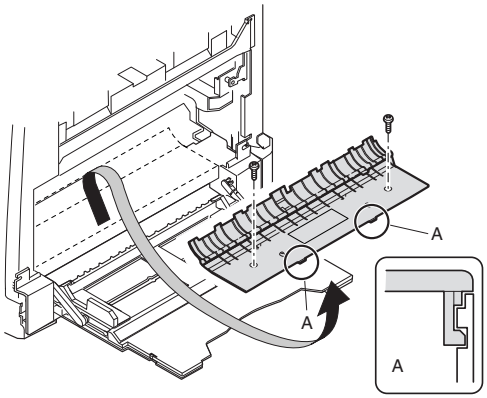


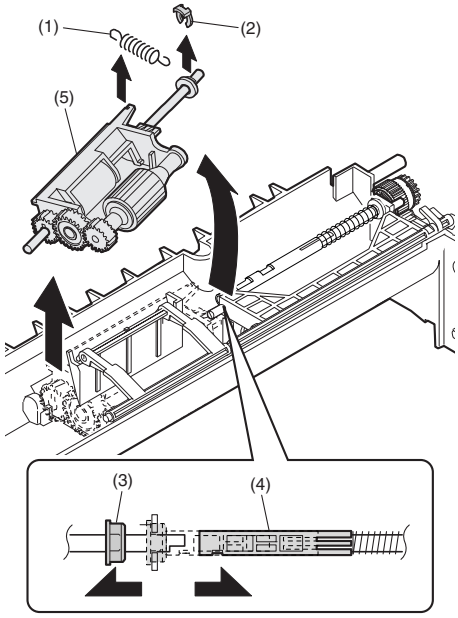
9.Bypass tray section

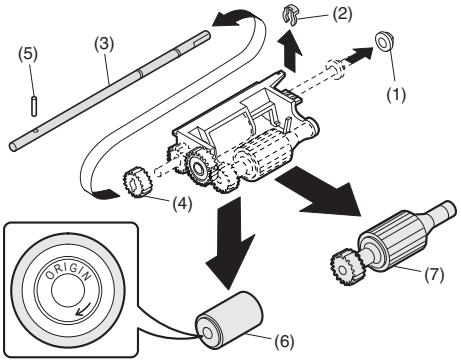
No.	Content
A	Bypass tray transport roller/Bypass tray paper feed roller
B	Bypass tray paper feed
C	Bypass tray solenoid
D	Bypass tray transport clutch
E	Pressure plate unit
F	Bypass tray paper feed clutch

A. Bypass tray transport roller/Bypass tray paper feed roller

Note: Push the lever at the right edge of the multi frame cover to the right upper side and remove it.

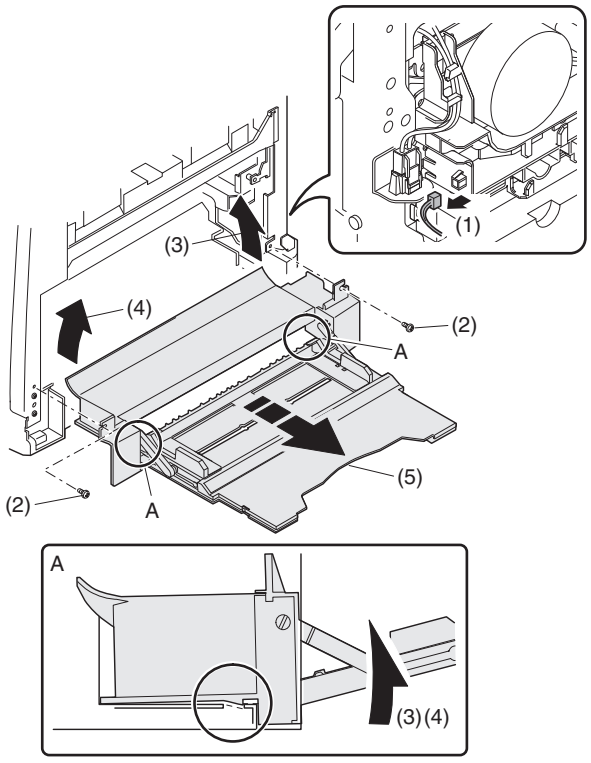




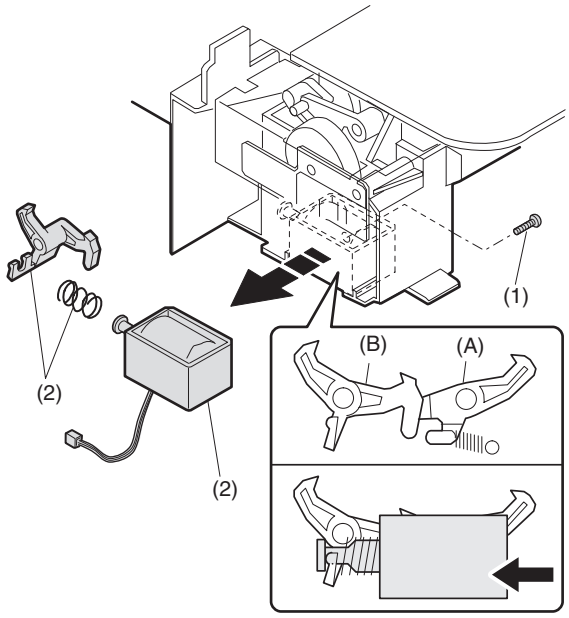


Installation: Be careful of the installing direction of the bypass tray transport roller (6)

B. Bypass tray paper feed

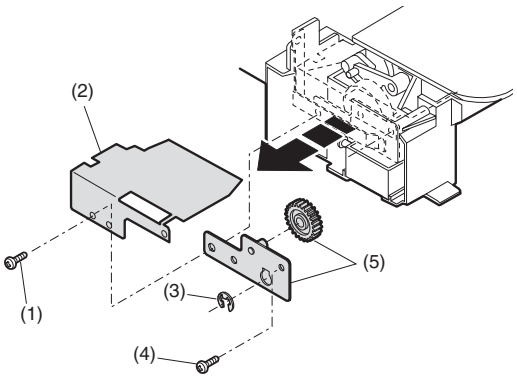


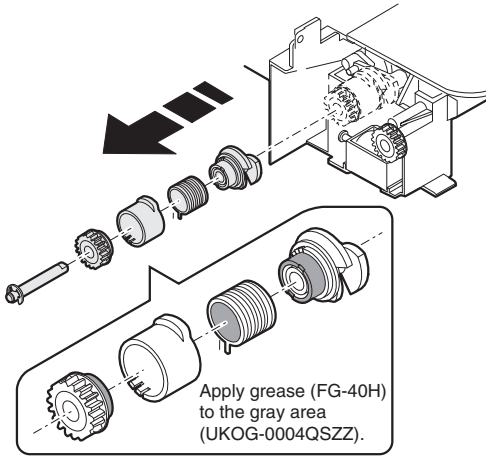
C. Bypass tray solenoid



When installing the solenoid, shift it in the arrow direction and install.

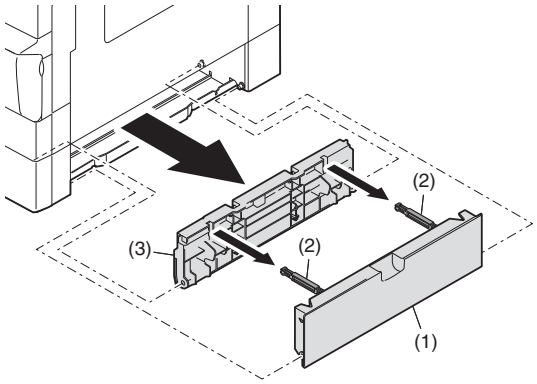
D. Bypass tray transport clutch

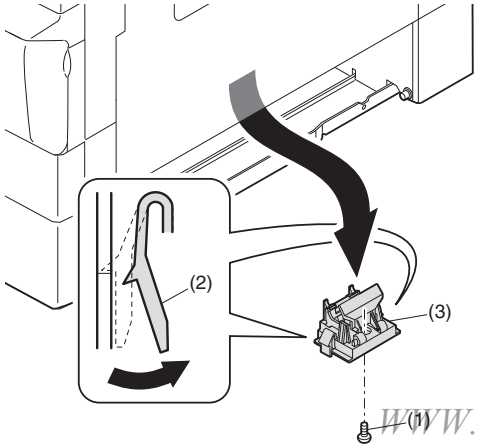




Apply grease (FG-40H) (UKOG-0004QSZZ).

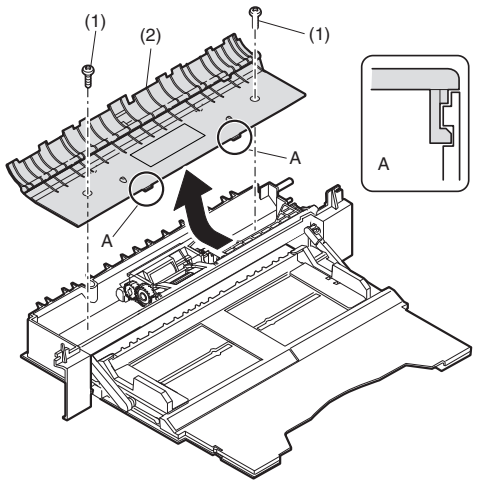
E.Pressure plate unit

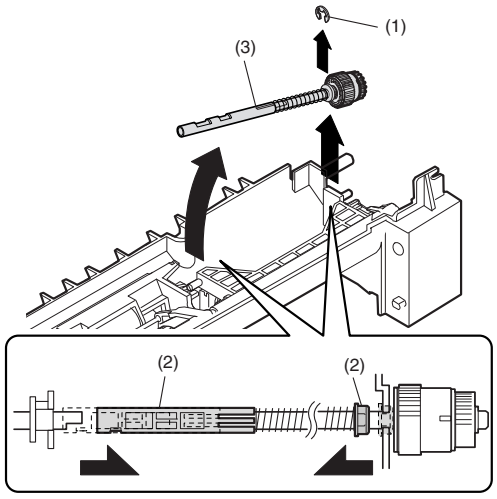


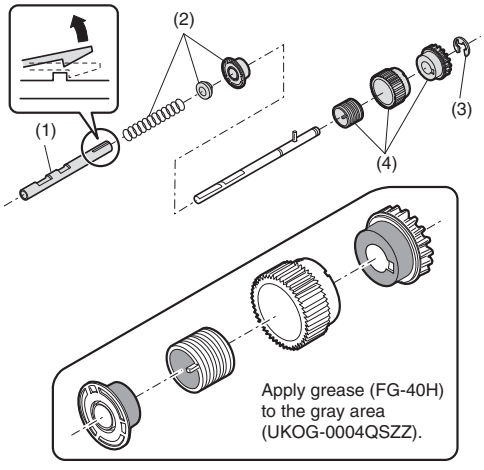


F. Bypass tray paper feed clutch

Note: Push the lever at the right edge of the multi frame cover to the right upper side and remove it.



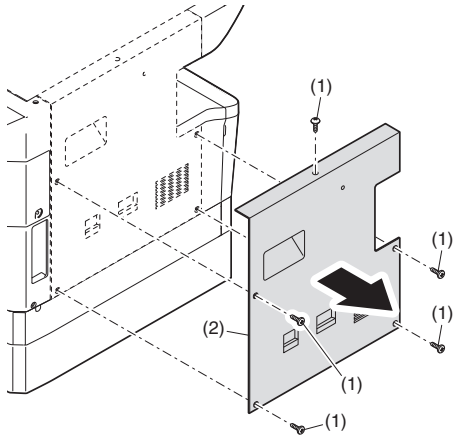


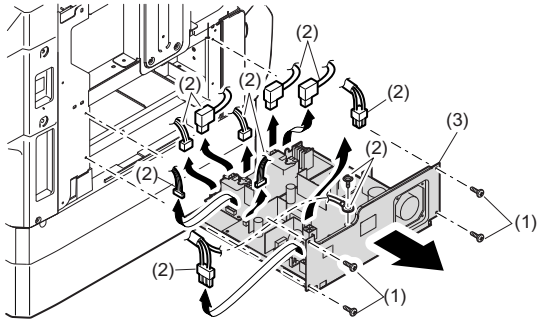


10.Power section

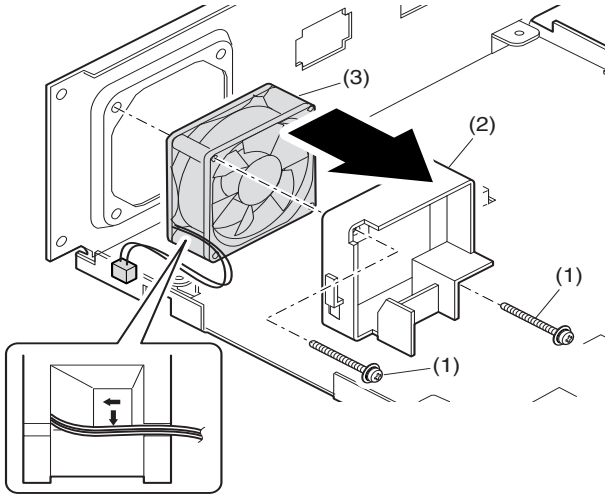
No.	Content
A	Power unit
B	Power fan
C	High voltage P.W.B.
D	Power P.W.B.
E	Power switch

A.Power unit

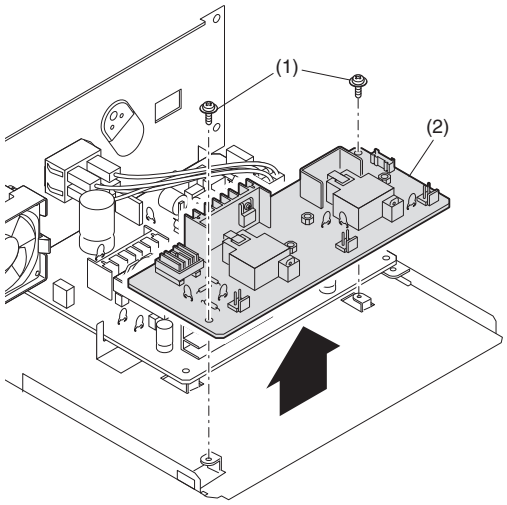




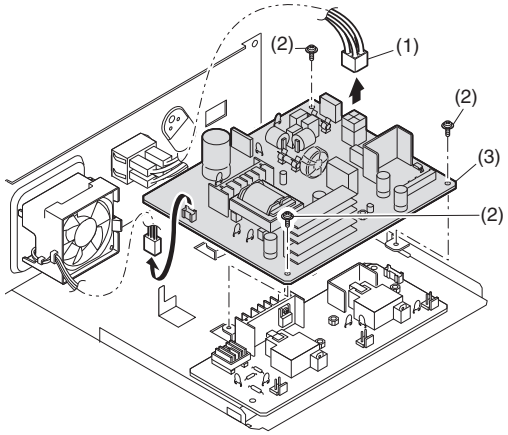
B. Power fan



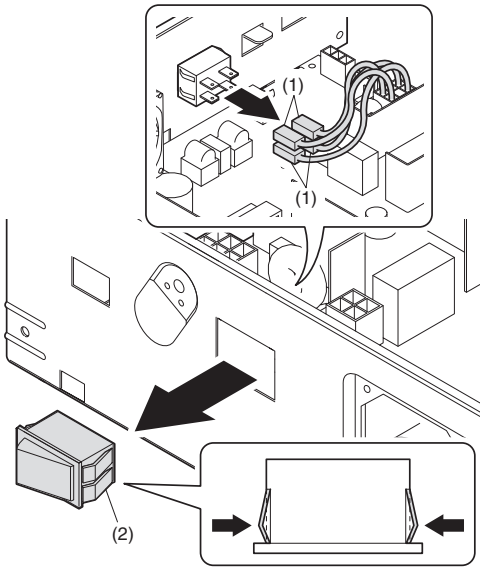
C. High voltage P.W.B.



D. Power P.W.B.



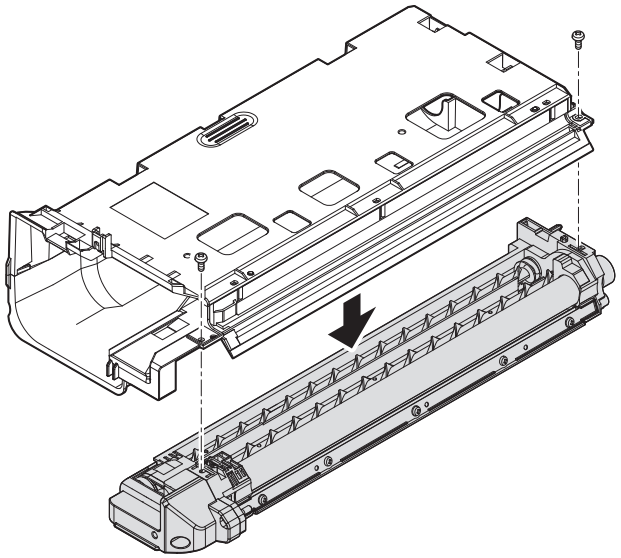
E. Power switch



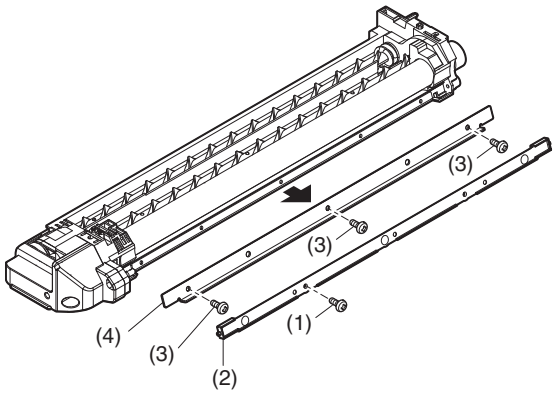
11.Developing section

No.	Contents
A	Developing box
B	Developing doctor
C	MG roller

A.Developing box

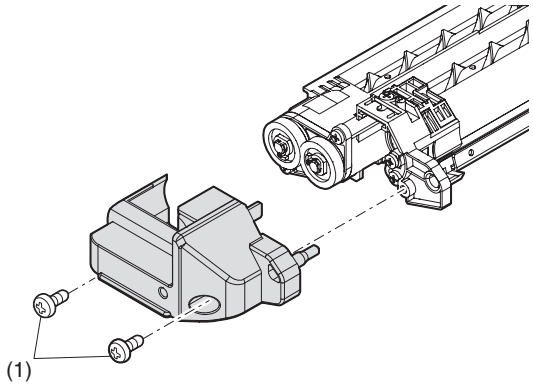


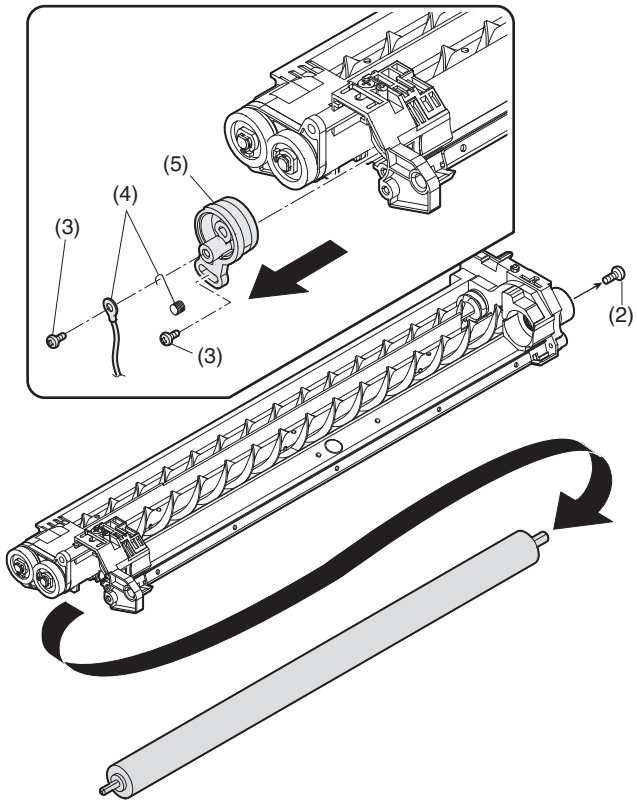
B.Developing doctor



Adjustment: Developing doctor gap adjustment

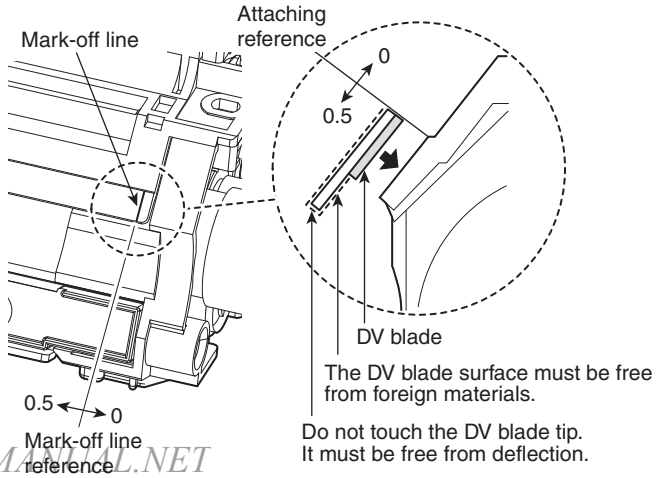
C.MG roller





Adjustment: MG roller main pole position adjustment

Note: Attach it to fit with the attachment reference when replacing the DV blade.

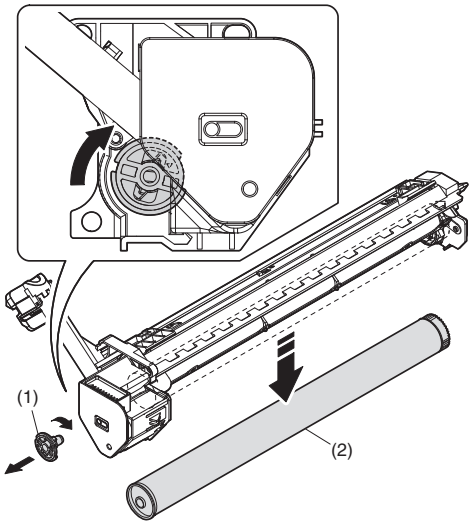


12.Process section

No.	Contents
A	Drum unit
B	Main charger unit
C	Cleaning blade

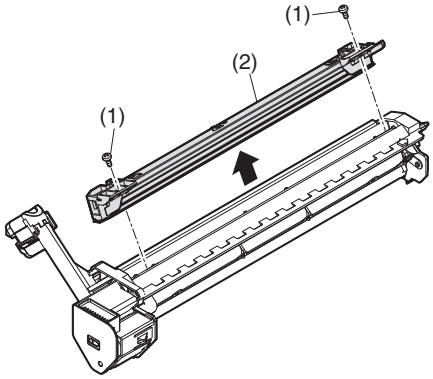
A.Drum unit

When removing the drum, put the drum unit upside down to prevent waste toner from spilling.

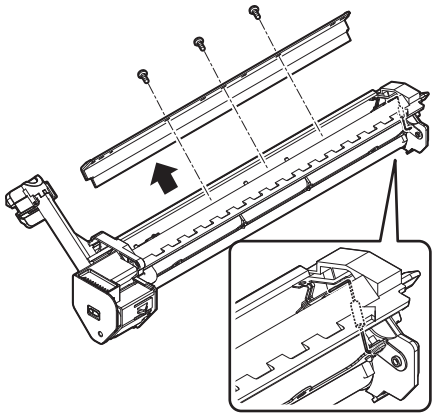


When the drum is replaced, be sure to replace the drum positioning boss with a new one, too.

B. Main charger unit



C.Cleaning blade

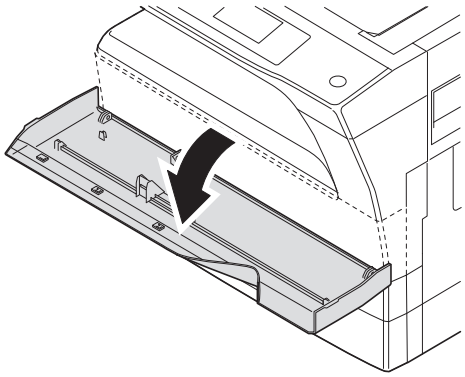


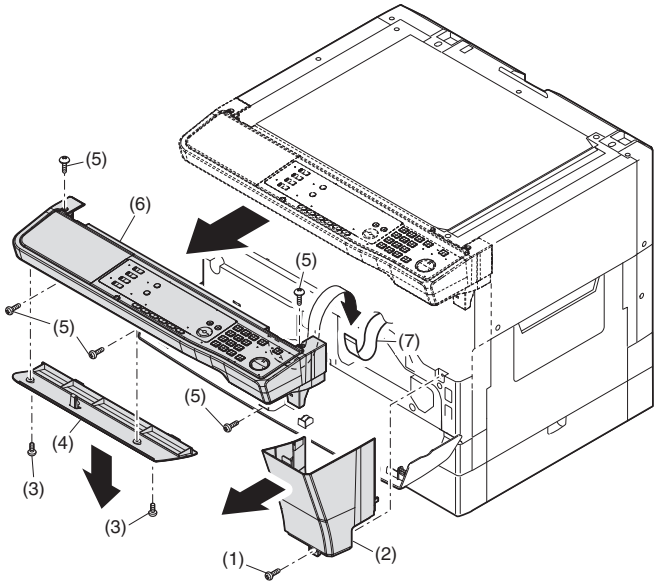
When installing a resistor, check to confirm that the terminal section is in contact with the metal section of the cleaning blade.

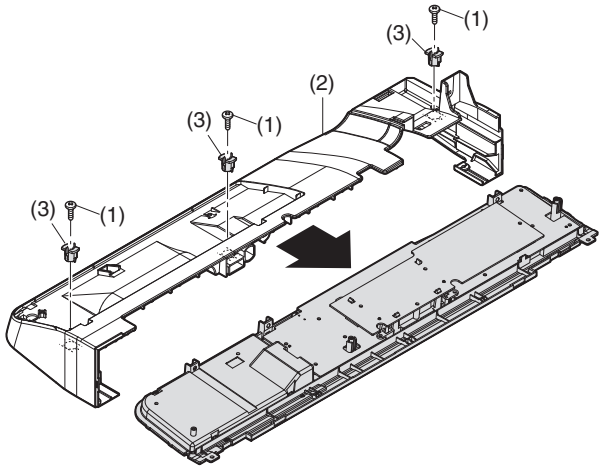
13.Others

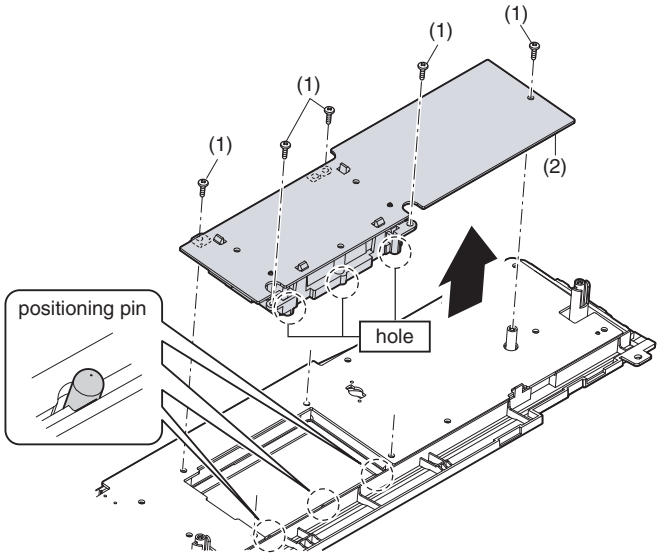
No.	Contents
A	Operation P.W.B.
B	Tray interface P.W.B.
C	2nd tray paper entry sensor / Paper empty sensor
D	2nd tray paper feed solenoid / Transport solenoid
E	2nd tray transport clutch
F	2nd tray transport roller
G	2nd tray paper feed clutch
H	2nd tray paper feed roller
I	Main motor
J	I/F P.W.B.
K	Paper entry sensor
L	Paper empty sensor
M	Paper feed roller

A. Operation P.W.B.

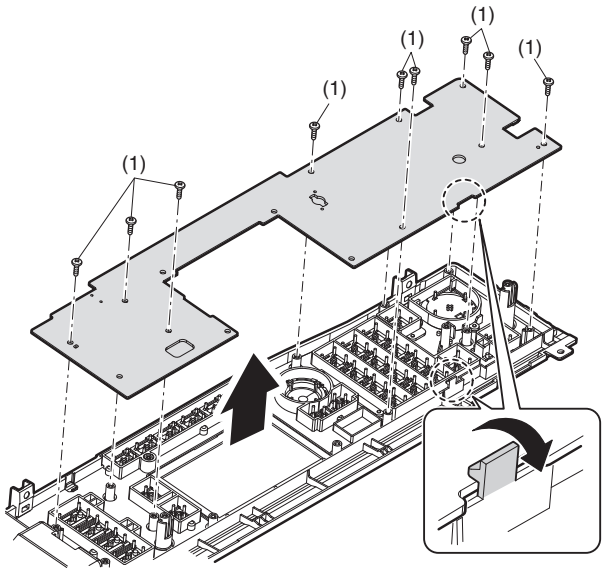




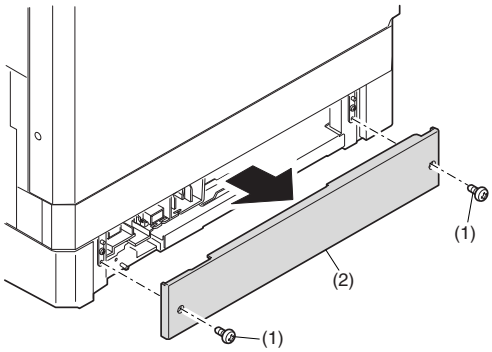


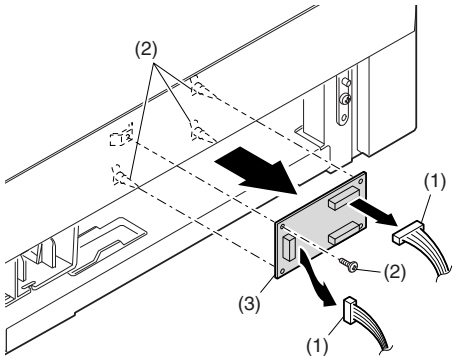


[Note for installation] When installing, engage the hole of the LCD box unit with the positioning pin.

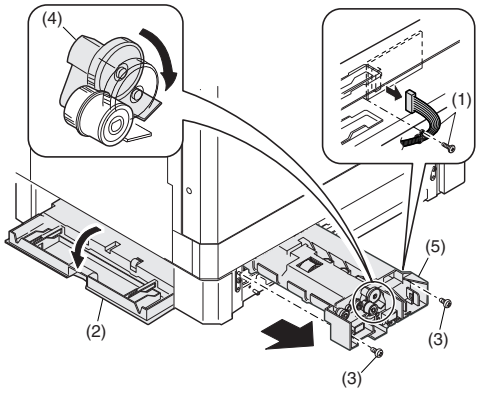


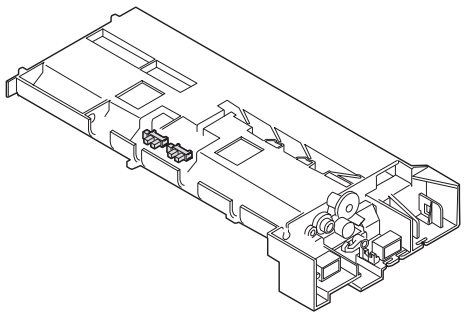
B. Tray interface P.W.B.



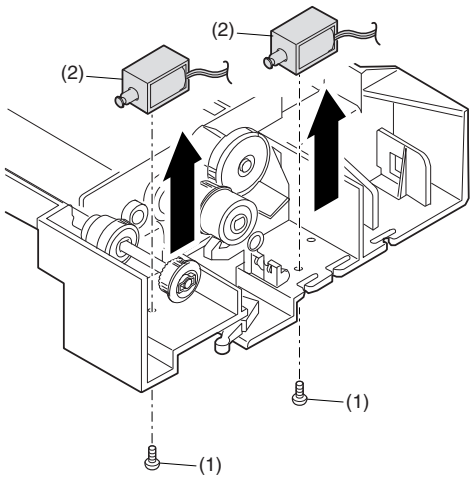


C. 2nd tray paper entry sensor / Paper empty sensor

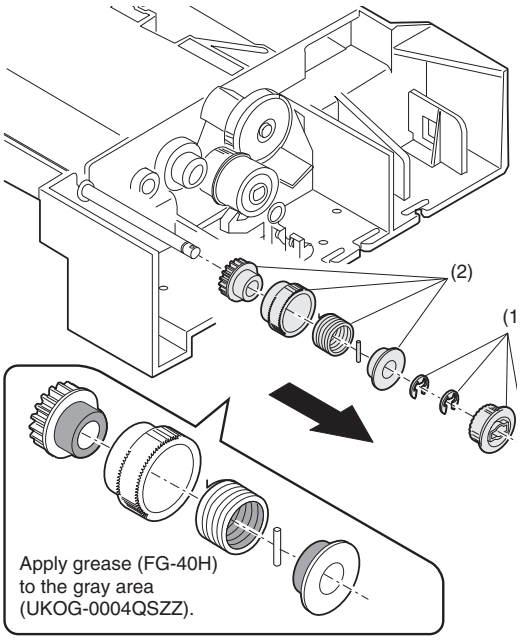




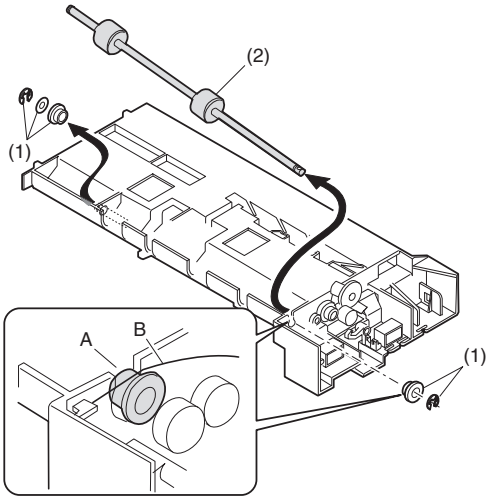
D. 2nd tray paper feed solenoid / Transport solenoid



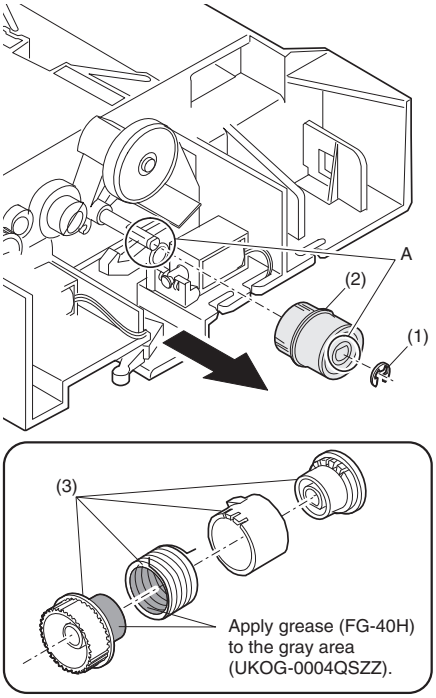
E.2nd tray transport clutch



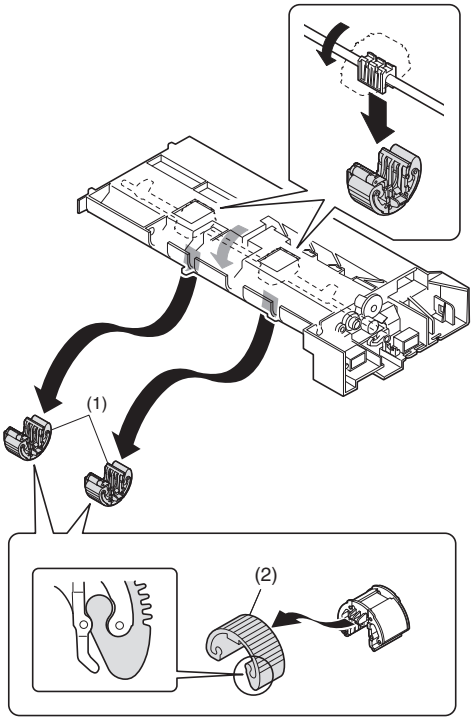
F. 2nd tray transport roller



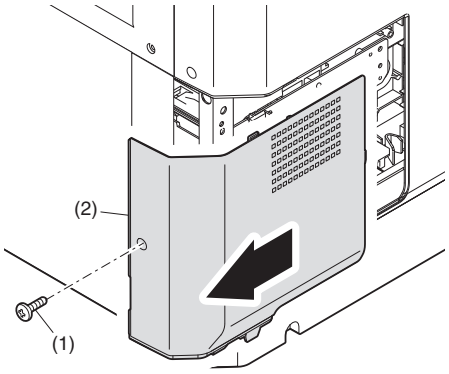
G. 2nd tray paper feed clutch

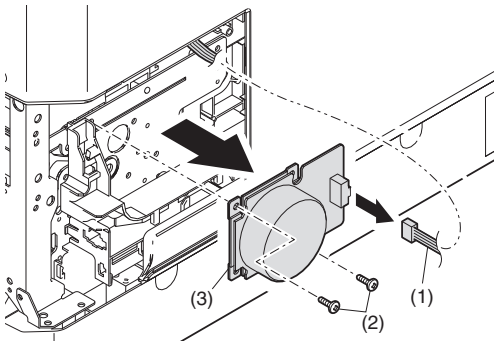


H. 2nd tray paper feed roller

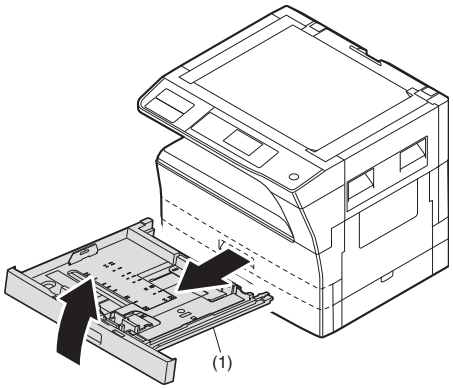


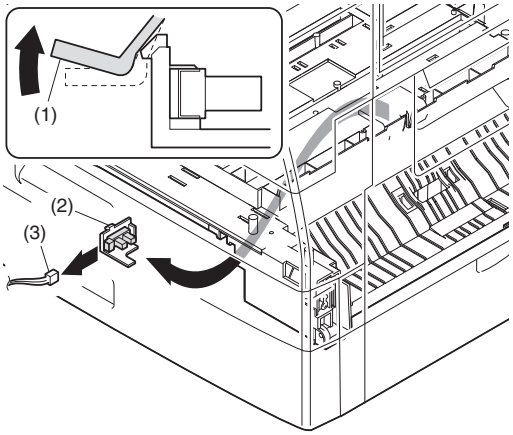
I. Main motor



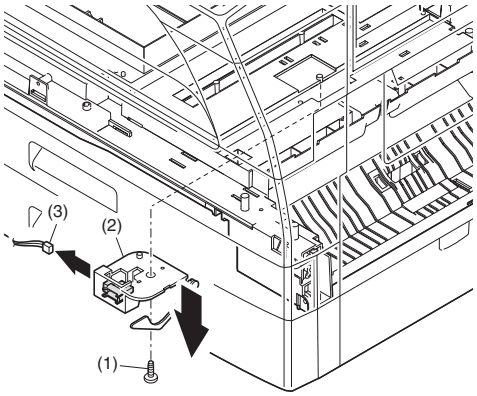


J. Paper entry sensor

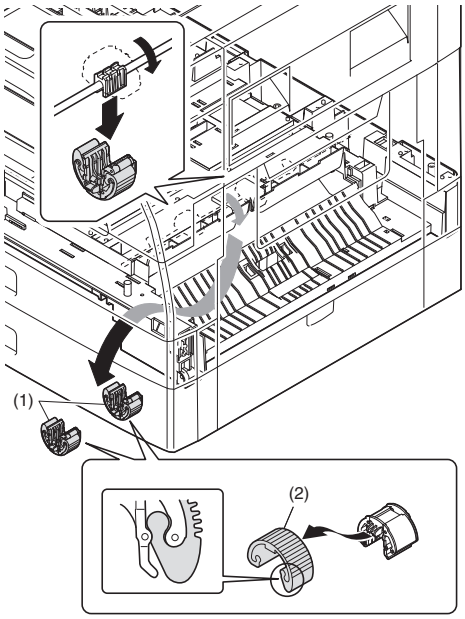




K. Paper empty sensor



L. Paper feed roller



* When removing the paper feed roller, operate the paper feed clutch with SIM 6-1, and keep the paper feed roller down as shown in the figure above for operation.

[12]FLASH ROM VERSION UP PROCEDURE

1.Preparation

Items to be prepared

- Utility tool
- USB driver
- PC
- USB cable
- Data file of Firmware

The utility tool and USB driver are included to Maintenance_toolV****.zip. (**** = Version no.)

When "Maintenance_toolV****.zip" is extracted, "Service" and "Drivers" folder are created.
The utility tool is preserved in the "Service" folder, and the USB driver is preserved in the "Drivers" folder.

The extension of the firmware data file is ".dwl", for example like "ARM207_162_0206_AF_all.dwl".
For the "Maintenance_toolV****.zip" and the firmware data file, contact the local distributor of SHARP to obtain the latest file.

2. Installation procedure

When the USB driver is not installed in PC, installation of the USB driver to PC is required before the firmware update.
When the USB driver has already been installed in PC, the firmware update is possible even if following procedure is not executed.

A. USB joint maintenance program installation

The driver is installed by plug and play.

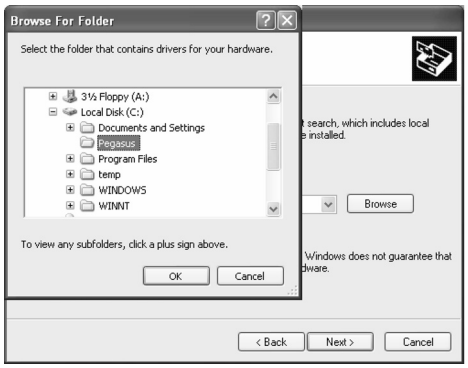
B. Installation procedure

The installation procedure in Windows XP is described as follows.
The installation procedure in other OS is same procedure as XP basically.

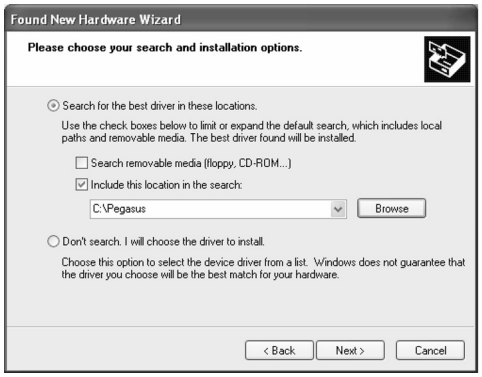
1) Machine side:
   Executable by performing the Service Simulation No. 49-01 (Flash Rom program-writing mode).
   (A word "d" appears on the operation panel to denote the download mode status.)
2) Connect the machine and the PC with a USB cable.
3) Check that the following display is shown.
   Select "Install from a list or the specific location" and press the NEXT button.

4) Select "Include this location in the serch". If the retrieval area does not include the folder which includes the maintenance tool driver (Mainte.inf), select "Browse"
   If the folder path is properly shown, press the NEXT button to go to procedure 7).

5) Select the folder which includes the maintenance tool driver (Mainte.inf), and press the OK button.
   (When the driver is included in the "C:\Pegasus" folder:)



6) Check that the path to the folder which includes the maintenance tool driver (Mainte.inf) is shown, and press the NEXT button.



7)) Check that the following display is shown. Press the Continue Anyway button.

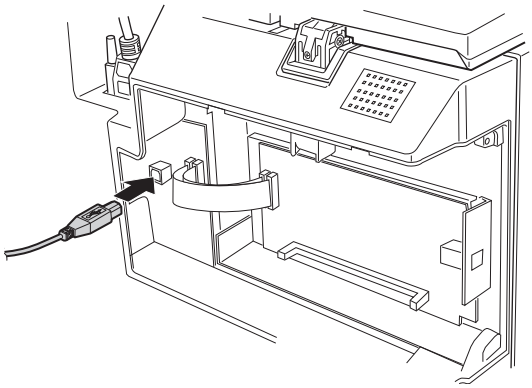
8) When installation is completed, the following display is shown. Press the Finish button.

The installation procedure is completed with the above operation.

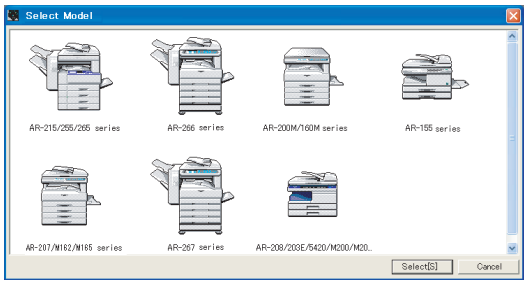
3.Firmware update procedure

1) Main body side:
Executable by performing the Service Simulation No. 49-01 (Flash Rom program-writing mode).
(A word "d" appears on the operation panel to denote the download mode status.)

2) Connect the PC and the main body with the download cable (USB cable).



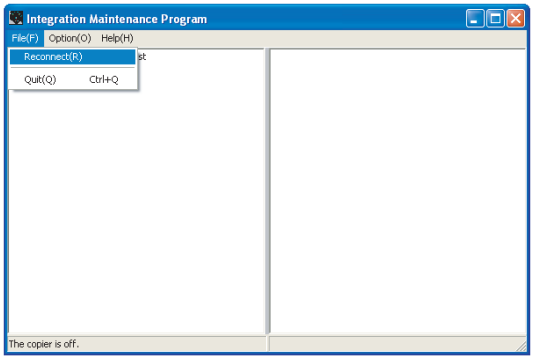
3) PC side:
Execute the “Maintenance.exe”, and select [AR-M207/M162/M165 Series] on the model selection menu.



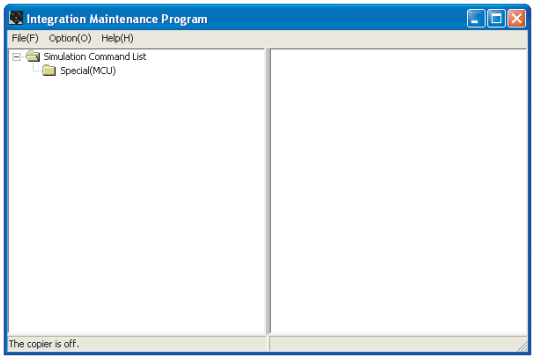
<Sample display>

4) PC side:
Confirm that the "Simulation Command List" tree is displayed on the maintenance program.

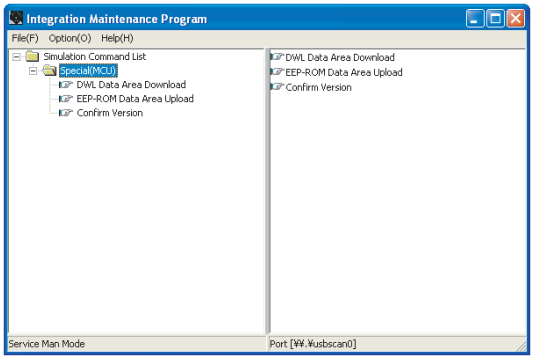
5) PC side:
When the message "the main body has not got started running" is displayed on the lowest area of the figure below after the "maintenance program" is started up, select the "File" and then "Reconnect" in the menu bar.



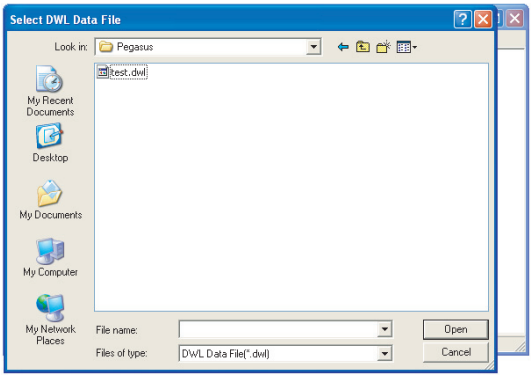
6) PC side:
Confirm a tree is displayed under the "Special (MCU)" on the maintenance program". (If no tree is displayed, confirm that the USB is connected and select the "Reconnect" (the above 5) again.)



7) PC side:
Double click "Special (MCU)" in the main tree item to develop the sub tree items, and double click "DWL Download" in the sub tree items.

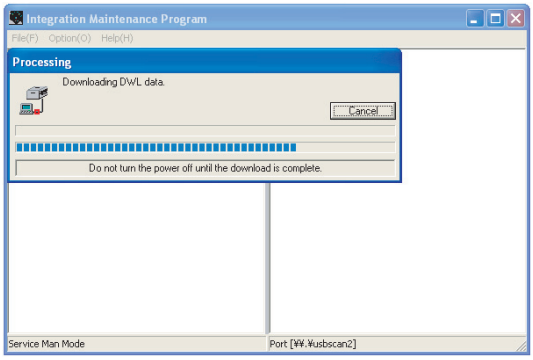


8) PC side:
Specify the download file (*.dwl).



9) PC side:
The download file is specified, download is automatically performed.
The AUTO PAPER SELECT indicator and START indicator will blink approximately 15 seconds after the download file is specified.

10) PC side:
When the message below is displayed, download is completed.
Completion message: DOWNLOAD COMPLETED



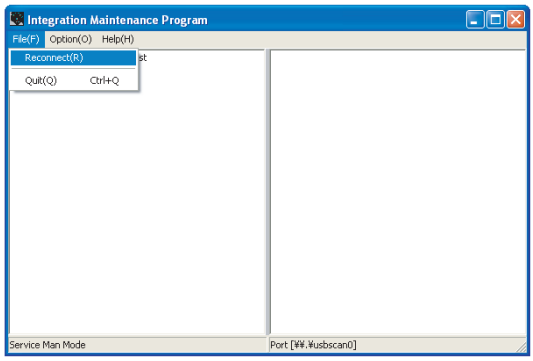
NOTE (Important):
•Be sure that the power is not turned off and the USB cable is not removed until the word "OFF" appears.

11) Main body side:
Wait until the word "OFF" appears on the operation panel.
The appearance of "OFF" indicates the completion of the download (writing into ROM).
Turn the power off.

12) After-process: Terminate the maintenance program, and turn on the power of the main body.

After the download (data transmission) has been completed, exit the software program. The USB cable can be removed at this point.

NOTE:
•For making a second connection with another machine, select the "File" and "Reconnect" in the menu bar on the maintenance program at the time of the USB being re-connected. Repeat the previous procedures from the above 5).



*** Forbidden actions while downloading (Important)**

Failure in the download concerned may not allow you to conduct the subsequent download procedures. Added care should be taken to avoid having the situation below arise while downloading.
•Switching off the main body.
•Disconnecting the download cable (USB cable).

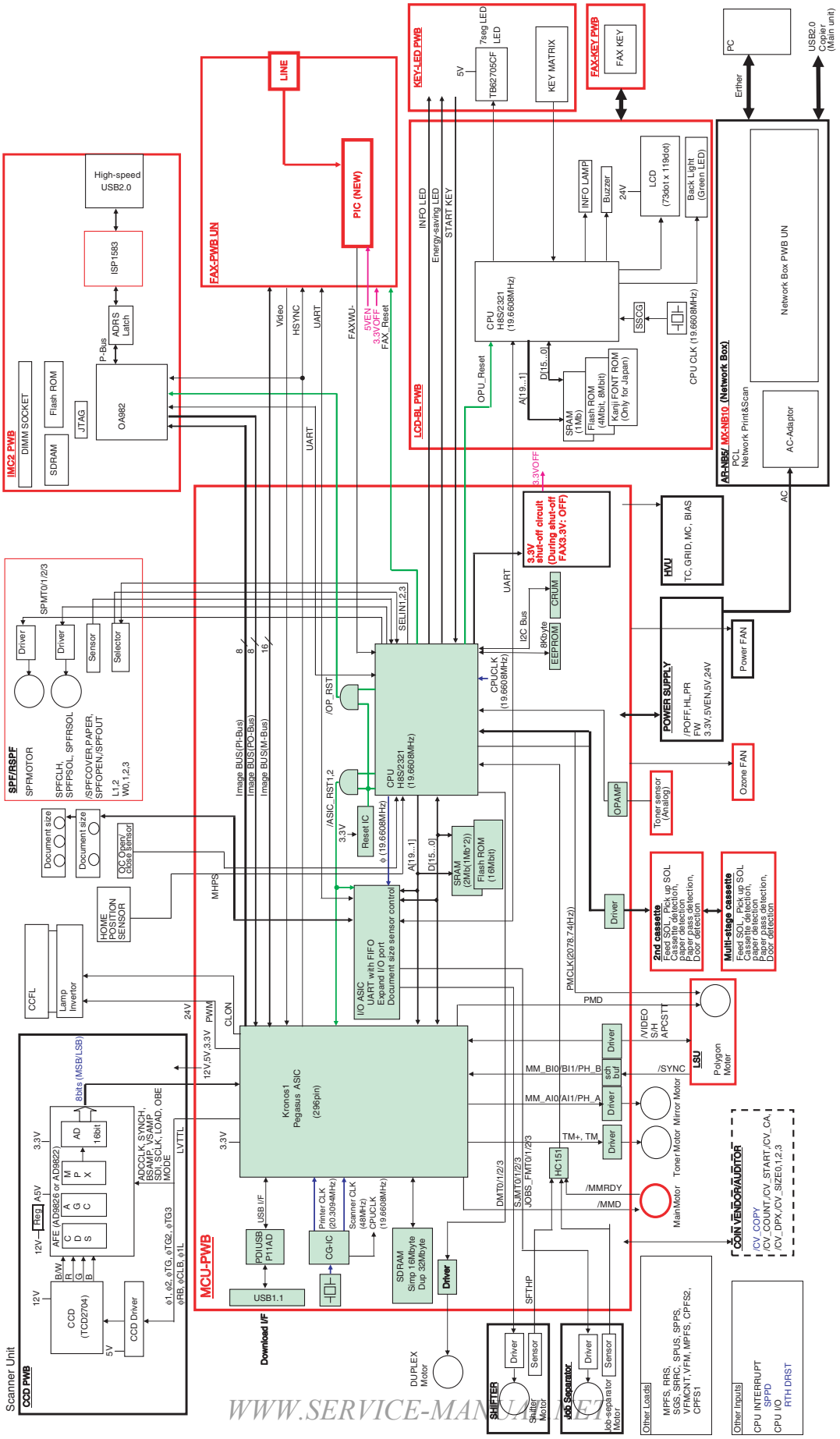
*** If the above inhibit item occurs during downloading:**

Turn OFF and ON the power.

1) If "d" (which means downloading) is displayed on the operation panel LED of the machine, perform downloading again.
2) If "d" (which means downloading) is not displayed on the operation panel LED of the machine, turn OFF the power, and press and hold the [Copy ratio display] key and the [PAPER SELECT] key and turn ON the power. If, then, "d" (which means downloading) is displayed on the operation panel LED of the machine, perform downloading again.
If "d" is still not displayed, the MCU must be replaced.

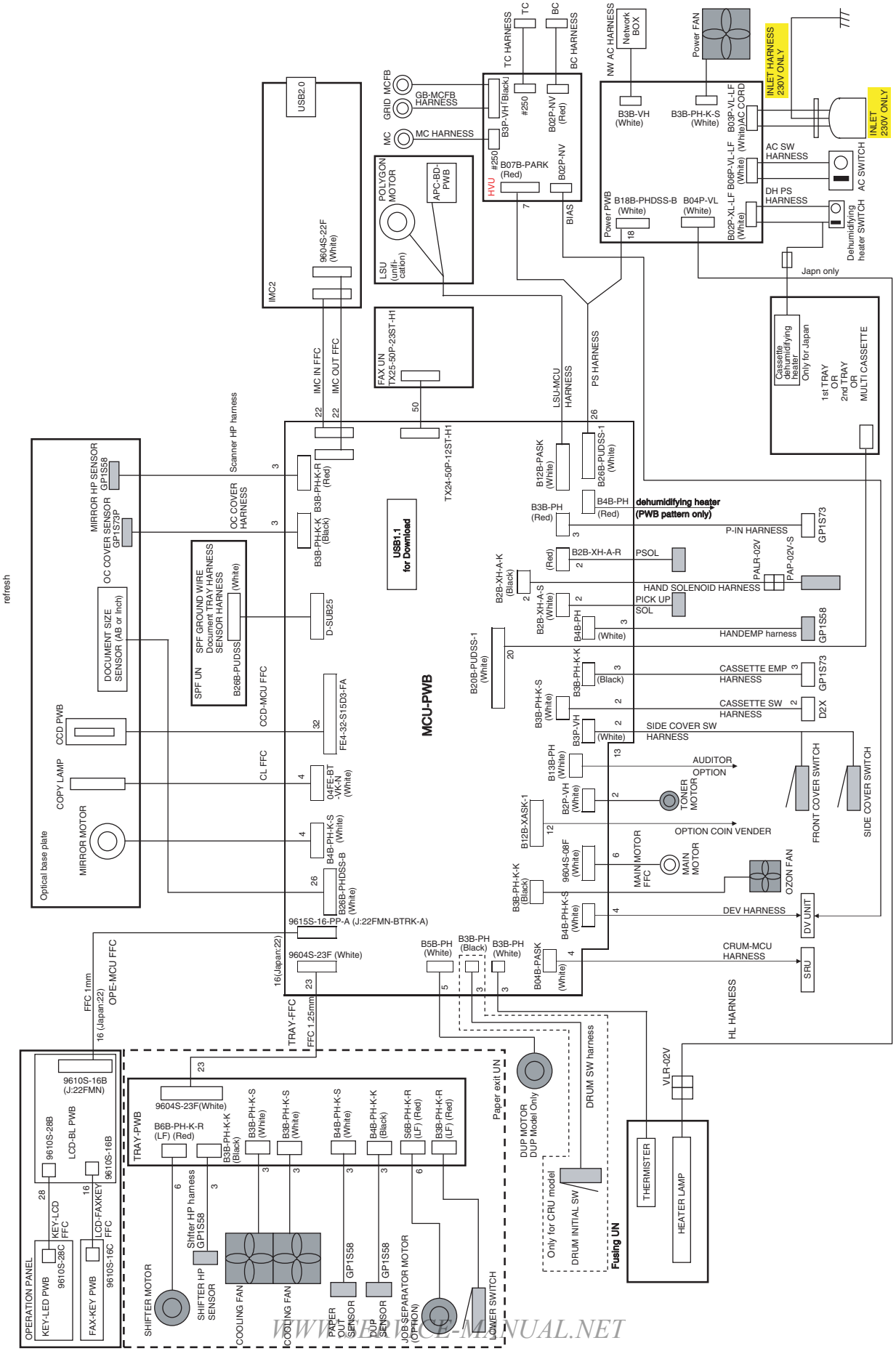
[13] ELECTRICAL SECTION

1.Block diagram

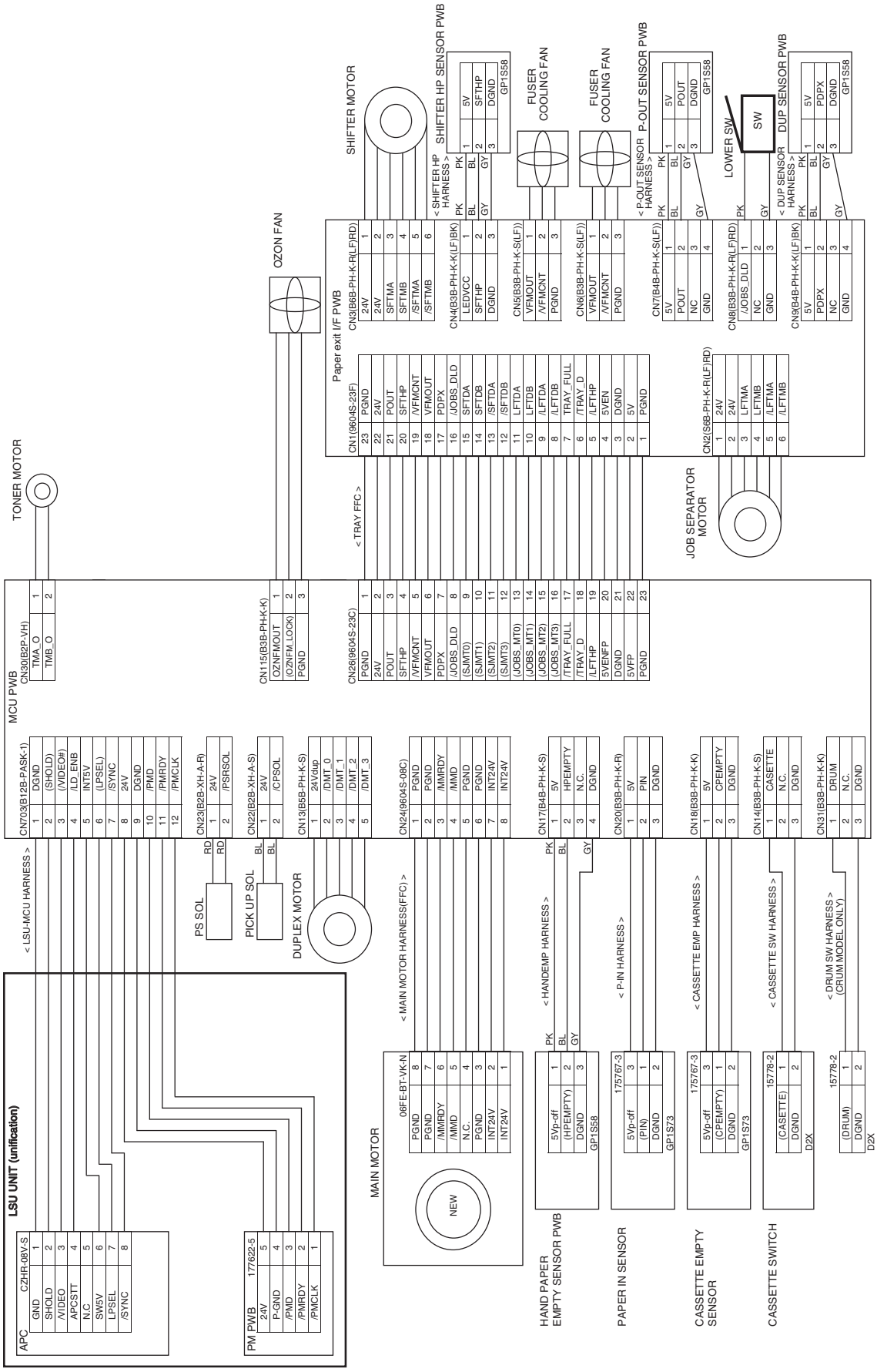


2.Actual wiring diagram

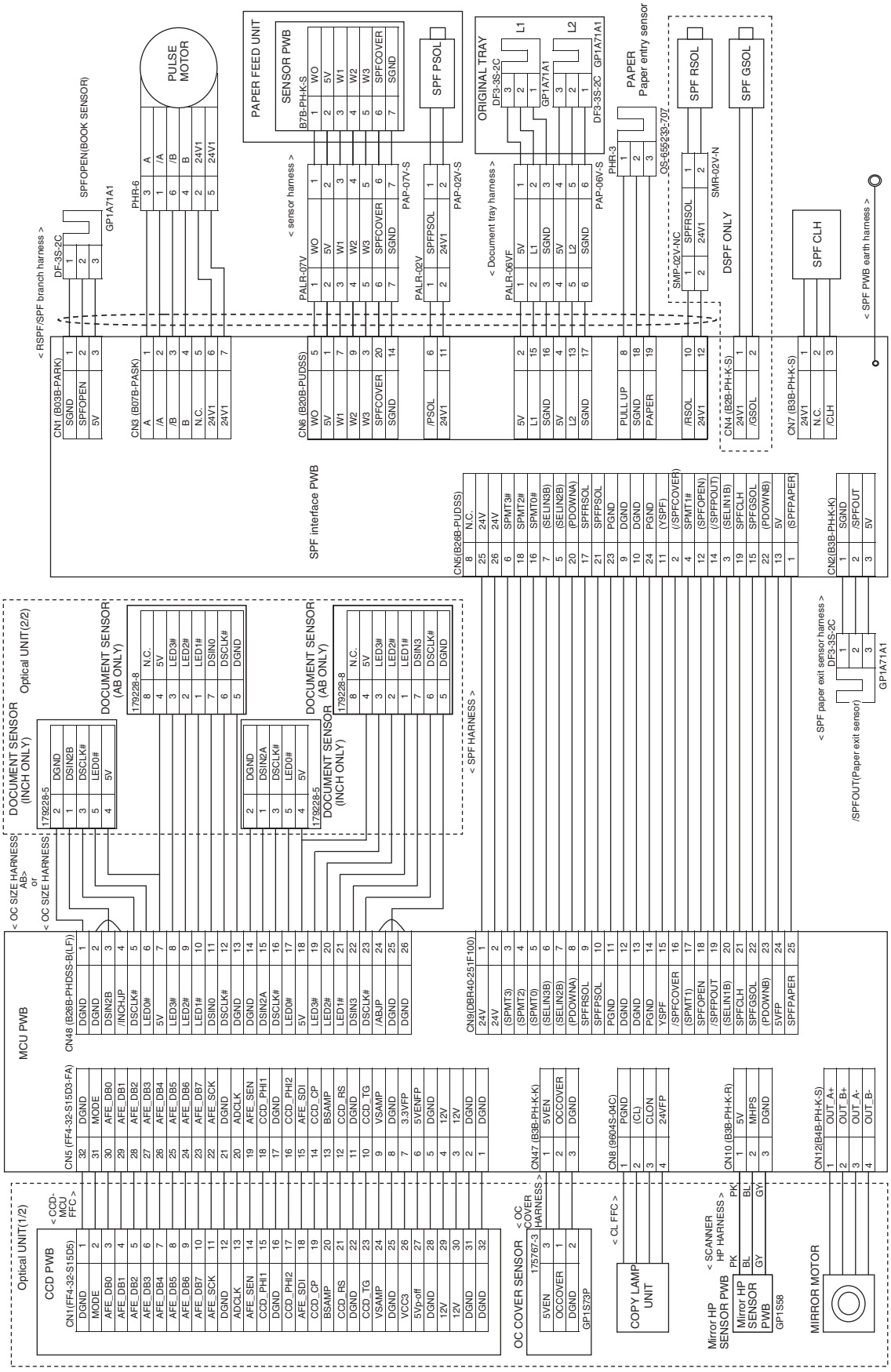
ACTUAL WIRING DIAGRAM 1/7



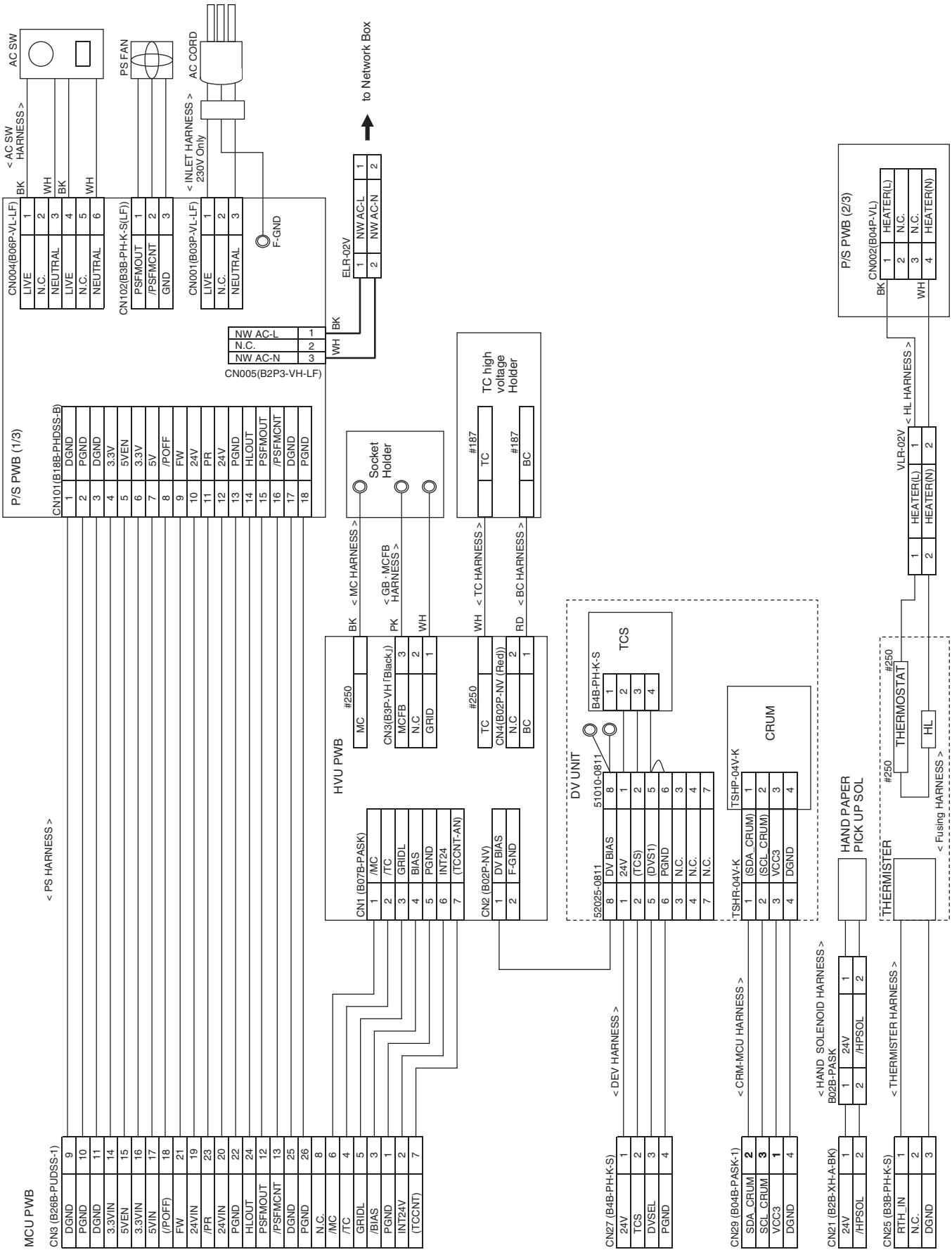
ACTUAL WIRING DIAGRAM 2/7



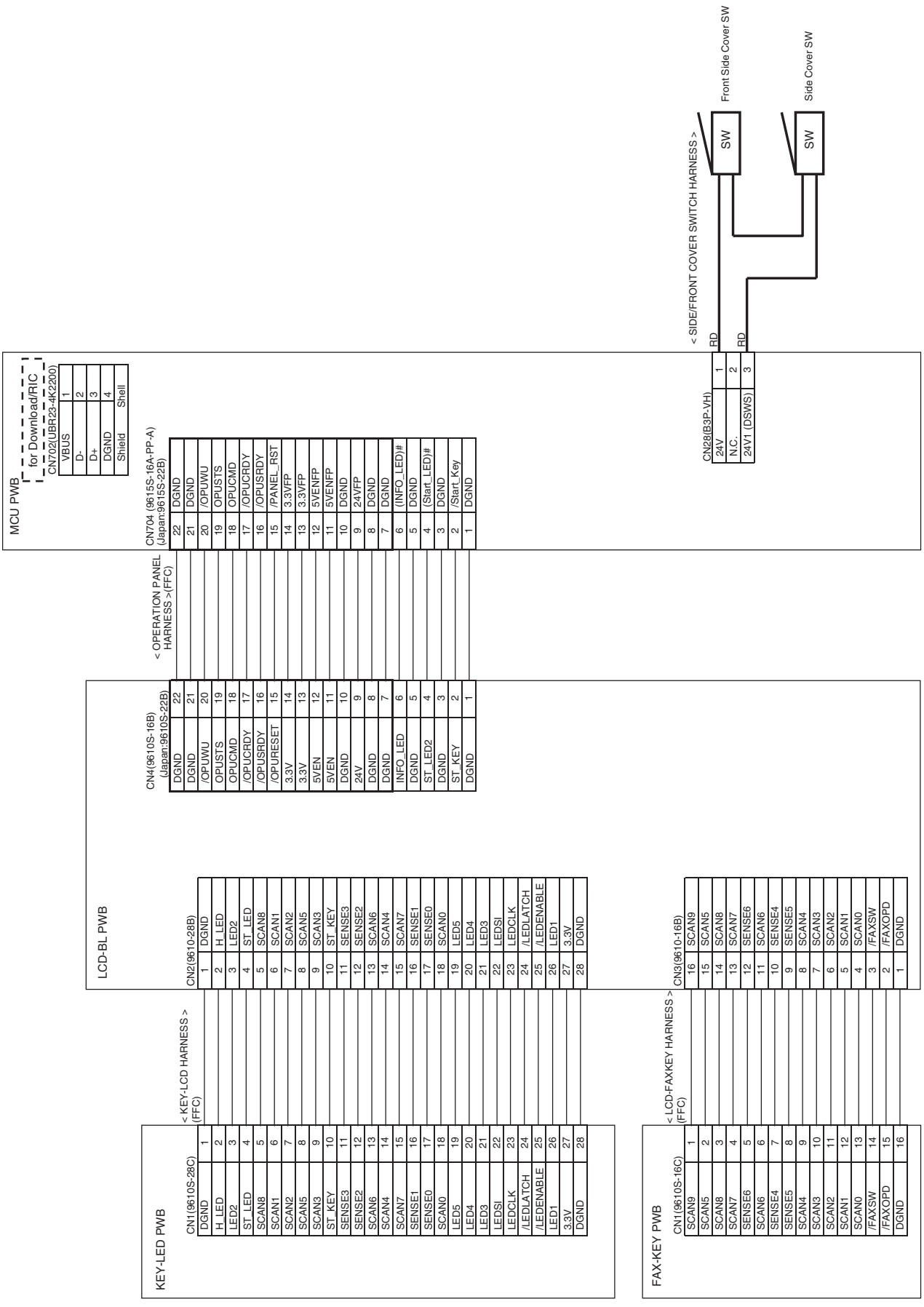
ACTUAL WIRING DIAGRAM 3/7



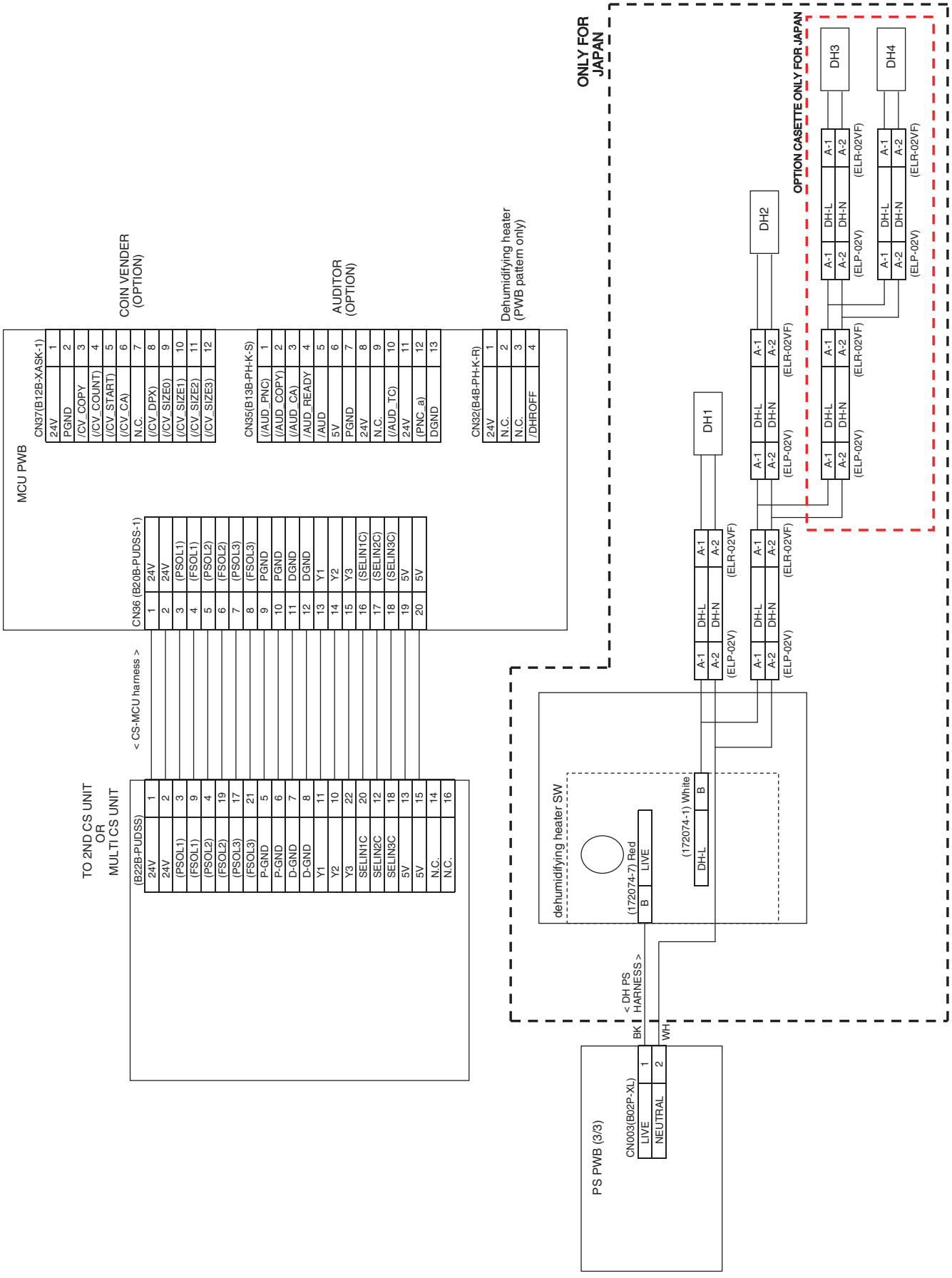
ACTUAL WIRING DIAGRAM 4/7



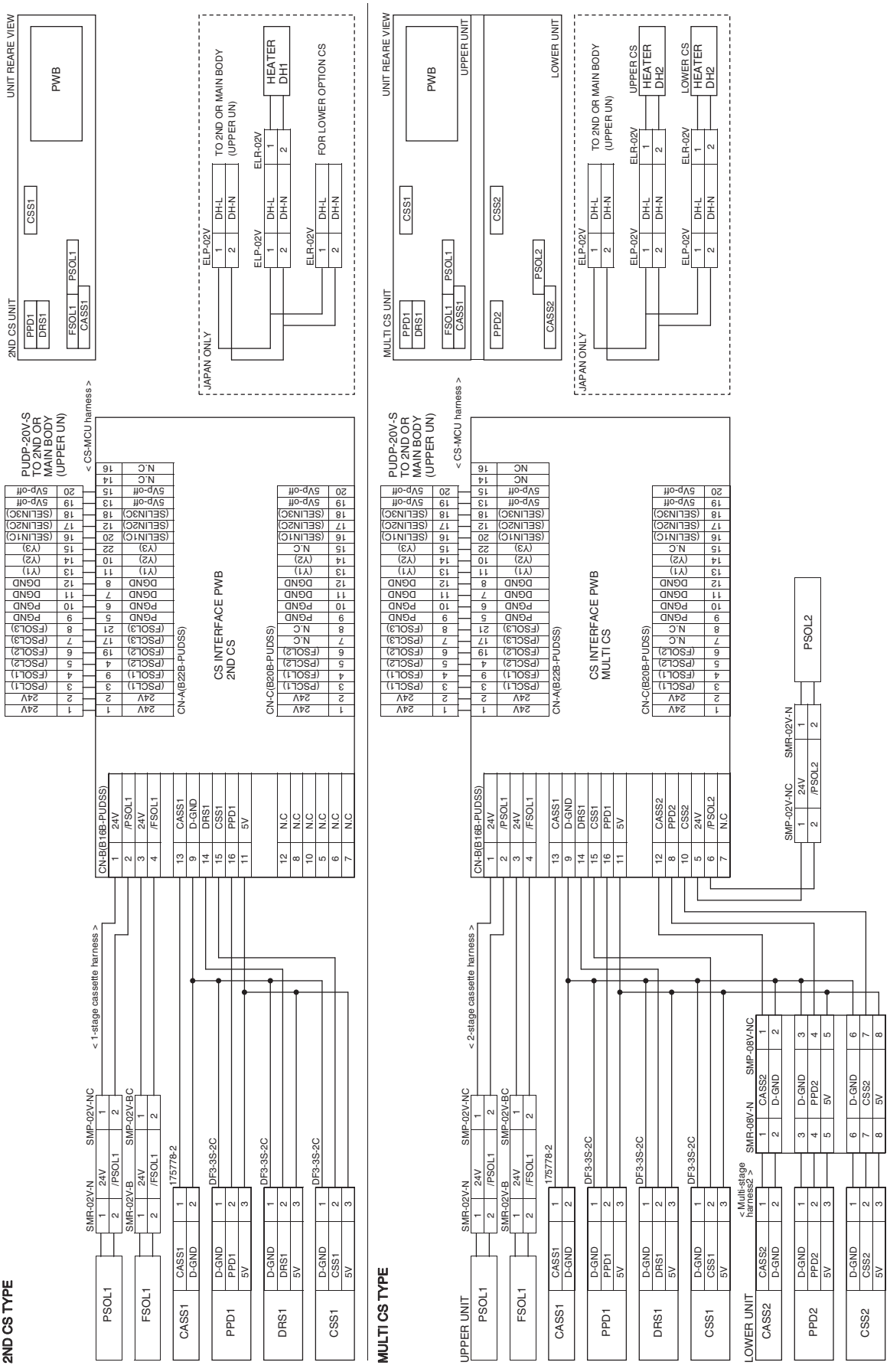
ACTUAL WIRING DIAGRAM 5/7



ACTUAL WIRING DIAGRAM 6/7



ACTUAL WIRING DIAGRAM 7/7



3. Signal name list

Category	Signal name	Name(Type)	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	Note
				"L"	"H"				
LD	INT5V	Interlock 5V power	LSU PWB power that turns off electricity when interlock SW is OFF	—	—	CN703	5	MCU	
LD	/SYNC	LSU horizontal sync signal	Horizontal sync detection signal of LSU laser (481uS cycle)	Detection	—	CN703	7	MCU	
Sensor	TCS	Toner density sensor (Magnetic sensor)	Detects the toner density	—	—	CN27	2	MCU	Analog
DEV	DVSEL	Pprocess unit detection	Detects installation of the process unit	Yes	No	CN27	3	MCU	
FAX	/FAXDET	FAX option installation detection	Detects installation of the FAX option	With FAX	No FAX	CN41	26	MCU	
FAX	/FAX_RST	FAX option hard reset	Resets FAX PWB	Reset	—	CN41	20	MCU	
FAX	/FAXWU	FAX activate request signal	Activate request signal of return from energy-saving by FAX incoming	Activate request	—	CN41	29	MCU	
IMC	/OP_RST	IMC hard reset signal	Detects installation of the IMC2	With IMC	No IMC	CN33	5	MCU	
IMC	/ESDET	IMC installation detection signal	Resets IMC2 PWB	Reset	—	CN34	6	MCU	
LD	/LD_ENB	Laser control signal	ON/OFF for APC control	ON	OFF	CN703	4	MCU	
Clutch	SPFCLH	SPF clutch	SPF paper feed clutch control	OFF	ON	CN9	21	MCU	
Sensor	/SPFCOVER	SPF cover open/close sensor (Transmission type)	Detects open/close of SPF document transport cover	OPEN	CLOSE	CN9	16	MCU	
Sensor	SPFOPEN	SPF book sensor (Transmission type)	Detects unfinished closing (separation) of SPF	OPEN	CLOSE	CN9	18	MCU	
Sensor	POUT	Entry port sensor (Transmission type)	Detects paper transport	—	Paper no empty	CN26	3	MCU	
Sensor	PDPX	Duplex sensor (Transmission type)	Detects paper transport	Paper no empty	—	CN26	7	MCU	
Sensor	/LFTHP	Job separator home position sensor	Job separator home position sensor	Home position	—	CN26	19	MCU	
Sensor	/TRAY_D	Tray full space sensor (Transmission type)	Detects full space of paper tray	Paper no empty	—	CN26	18	MCU	
Sensor	/TRAY_FULL	Upper tray full space sensor (Transmission type)	Detects full space of paper tray	Full	—	CN26	17	MCU	
Sensor	/JOBS_DLD	Job separator lower limit position detection switch (SW)	Detects lower limit position of job separator	Detection	—	CN26	8	MCU	
Sensor	SFTHP	Shifter home position sensor (Transmission type)	Home position sensor of shifter	Home position	—	CN26	4	MCU	
Sensor	/SPFPOUT	SPF paper exit sensor (Transmission type)	Paper pass sensor of document exit in SPF	Paper no empty	—	CN9	19	MCU	
Sensor	SPFPAPER	SPF paper pass sensor (Transmission type)	Paper pass sensor of SPF	—	Paper no empty	CN9	25	MCU	
Sensor	MHPS	Mirror home position sensor (Transmission type)	Home position sensor of scanner mirror unit	—	Home position	CN10	2	MCU	
Sensor	CASETTE	1st tray open/close switch (SW)	Detects open/close of 1st tray	OPEN	CLOSE	CN14	1	MCU	
Sensor	PIN	Paper entry sensor (Transmission type)	Detects paper transport	—	Paper no empty	CN20	2	MCU	
Sensor	HPEMPTY	Manual paper tray paper empty sensor (Transmission type)	Detects manual paper	Paper no empty	—	CN17	2	MCU	
Sensor	CPEMPTY	1st tray paper empty sensor (Transmission type)	Detects paper empty of 1st tray	—	Paper no empty	CN18	2	MCU	
Sensor	RTH_IN	Fusing thermistor (Thermistor)	Thermistor signal for fusing temperature detection	—	—	CN25	1	MCU	Analog

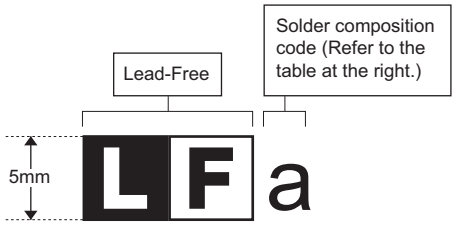
Category	Signal name	Name(Type)	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	Note
				"L"	"H"				
Sensor	OCCOVER	OC cover open/close sensor (Transmission type)	Detects open/close of OC cover and SPF	CLOSE	OPEN	CN47	2	MCU	
Operation panel	/PANEL_RST	Operation panel hard reset	Resets LCD PWB	Reset	—	CN704	8	MCU	
Operation panel	/OPUWU	Operation panel activate request signal	Activate request signal of return from energy-saving by user operation	Activate request	—	CN704	3	MCU	
Dehumi-difying	/DHROFF	Dehumidifying heater control	Controls ON/OFF of the dehumidifying heater	ON	—	CN32	4	MCU	
Solenoid	SPFRSOL	SPF pressure release solenoid	SPF pressure release solenoid	—	ON	CN9	9	MCU	
Solenoid	SPFGSOL	SPF gate solenoid	SPF gate solenoid	—	ON	CN9	22	MCU	
Solenoid	SPFPSOL	SPF pickup solenoid	SPF pickup solenoid	—	ON	CN9	10	MCU	
Solenoid	/HPSOL	Manual paper feed solenoid	Manual paper feed solenoid	ON	—	CN21	2	MCU	
Solenoid	/PSRSOL	Resist roller solenoid	Resist roller solenoid	ON	—	CN23	2	MCU	
Solenoid	/CPSOL	1st tray paper feed solenoid	Paper feed solenoid for 1st tray	ON	—	CN22	2	MCU	
Solenoid	(PSOL1)	2nd tray paper feed solenoid	Paper feed solenoid for 2nd tray	—	ON	CN36	3	MCU	
Solenoid	(FSOL1)	2nd tray transport solenoid	Transport solenoid for 2nd tray	—	ON	CN36	4	MCU	
Solenoid	(PSOL2)	3rd tray paper feed solenoid	Paper feed solenoid for 3rd tray	—	ON	CN36	5	MCU	
Solenoid	(FSOL2)	3rd tray transport solenoid	Transport solenoid for 3rd tray	—	ON	CN36	6	MCU	
Solenoid	(PSOL3)	4th tray paper feed solenoid	Paper feed solenoid for 4th tray	—	ON	CN36	7	MCU	
Solenoid	(FSOL3)	4th tray transport solenoid	Transport solenoid for 4th tray	—	ON	CN36	8	MCU	
Power supply	3.3VIN	3.3V logic power	Power	—	—	CN3	14	MCU	
Power supply	5VEN	5V energy-saving power	Power	—	—	CN3	15	MCU	
Power supply	5VIN	5V power	Power (OFF when shutoff)	—	—	CN3	17	MCU	
Power supply	24VIN	24V power	Power (OFF when shutoff)	—	—	CN3	19	MCU	
Power supply	24V1(DSWS)	Interlock circuit power	Power via interlock SW	—	—	CN28	3	MCU	
Power supply control	(/POFF)	Power off signal	Controls to power shutoff mode	shutoff	—	CN3	18	MCU	
Power supply control	FW	AC zero cross signal	AC zero cross detection signal	—	—	CN3	21	MCU	100/120Hz
Power supply control	/PR	Power relay control	Controls ON/OFF of the power relay of power UN	ON	—	CN3	23	MCU	
Power supply control	HLOUT	Heater control	Controls ON/OFF of fusing heater	OFF	ON	CN3	24	MCU	
Fan	PSFMOUT	Power/Ozone fan	Drives power fan and ozone fan	Stop	Driving	CN3	12	MCU	
Fan	/PSFMCNT	Power fan speed	Controls power fan speed	—	—	CN3	13	MCU	Two-speed control
Fan	VFMOUT	Paper exit fan	Drives paper exit fan	Stop	Driving	CN26	6	MCU	
Fan	/VFMCNT	Paper exit fan speed	Controls paper exit fan speed	—	—	CN26	5	MCU	Two-speed control
Fan	(OZNFN_LOCK)	Ozone fan lock	Detects lock of ozone fan	—	Lock detection	CN115	2	MCU	
Motor	/PMD	Polygon motor (Brushless motor)	Controls polygon motor (LSU) driving	Driving	Stop	CN703	10	MCU	
Motor	/PMRDY	Polygon motor ready	Detects standby of polygon motor	Standby	Stop	CN703	11	MCU	

Category	Signal name	Name(Type)	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	Note
				"L"	"H"				
Motor	/PMCLK	Polygon motor clock (CL)	Polygon motor driving clock	—	—	CN703	12	MCU	
Motor	(SPMT0) (SPMT1) (SPMT2) (SPMT3)	SPF motor dirving signal (Four-phase stepping motor)	Drives SPF motor driver (SPF PWB)	—	—	CN9		MCU	Constant voltage
Motor	OUT_A+ OUT_B+ OUT_A- OUT_B-	Mirror motor (Bipolar stepping motor)	Drives mirror motor	—	—	CN12		MCU	Constant current motor
Motor	/DMT_0 /DMT_1 /DMT_2 /DMT_3	Duplex motor (Four-phase stepping motor)	Dirves duplex motor	—	—	CN13		MCU	Constant voltage
Motor	/MMD	Main motor (Brushless motor)	Main motor drive control	Drive	Stop	CN24	4	MCU	
Motor	/MMRDY	Main motor ready	Detects main motor standby	Standby	Stop	CN24	3	MCU	
Motor	TMA_O TMB_O	Toner motor (Synchronous motor)	Drives toner motor	—	—	CN30		MCU	
Motor	(JOBS_MT0) (JOBS_MT1) (JOBS_MT2) (JOBS_MT3)	Job separator motor driving signal (Four-phase stepping motor)	Drives job separator motor dirver (TRAY PWB)	—	—	CN26		MCU	Constant voltage
Motor	(SJMT0) (SJMT1) (SJMT2) (SJMT3)	Shifter motor driving signal (Four-phase stepping motor)	Drives shifter motor driver (TRAY PWB)	—	—	CN26		MCU	

LEAD-FREE SOLDER

The PWB's of this model employs lead-free solder. The "LF" marks indicated on the PWB's and the Service Manual mean "Lead-Free" solder.
The alphabet following the LF mark shows the kind of lead-free solder.

Example:



<Solder composition code of lead-free solder>

Solder composition	Solder composition code
Sn-Ag-Cu	a
Sn-Ag-Bi Sn-Ag-Bi-Cu	b
Sn-Zn-Bi	z
Sn-In-Ag-Bi	i
Sn-Cu-Ni	n
Sn-Ag-Sb	s
Bi-Sn-Ag-P Bi-Sn-Ag	p

(1) NOTE FOR THE USE OF LEAD-FREE SOLDER THREAD

When repairing a lead-free solder PWB, use lead-free solder thread.

Never use conventional lead solder thread, which may cause a breakdown or an accident.

Since the melting point of lead-free solder thread is about 40°C higher than that of conventional lead solder thread, the use of the exclusive-use soldering iron is recommendable.

(2) NOTE FOR SOLDERING WORK

Since the melting point of lead-free solder is about 220°C, which is about 40°C higher than that of conventional lead solder, and its soldering capacity is inferior to conventional one, it is apt to keep the soldering iron in contact with the PWB for longer time. This may cause land separation or may exceed the heat-resistive temperature of components. Use enough care to separate the soldering iron from the PWB when completion of soldering is confirmed.

Since lead-free solder includes a greater quantity of tin, the iron tip may corrode easily. Turn ON/OFF the soldering iron power frequently.

If different-kind solder remains on the soldering iron tip, it is melted together with lead-free solder. To avoid this, clean the soldering iron tip after completion of soldering work.

If the soldering iron tip is discolored black during soldering work, clean and file the tip with steel wool or a fine filer.

CAUTION FOR BATTERY REPLACEMENT

(Danish) ADVARSEL !
Lithiumbatteri – Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri
af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandoren.

(English) Caution !
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type
recommended by the manufacturer.
Dispose of used batteries according to manufacturer's instructions.

(Finnish) VAROITUS
Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan
tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden
mukaisesti.

(French) ATTENTION
Il y a danger d'explosion s' il y a remplacement incorrect
de la batterie. Remplacer uniquement avec une batterie du
même type ou d'un type équivalent recommandé par
le constructeur.
Mettre au rebut les batteries usagées conformément aux
instructions du fabricant.

(Swedish) VARNING
Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent
typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens
instruktion.

(German) Achtung
Explosionsgefahr bei Verwendung inkorrekter Batterien.
Als Ersatzbatterien dürfen nur Batterien vom gleichen Typ oder
vom Hersteller empfohlene Batterien verwendet werden.
Entsorgung der gebrauchten Batterien nur nach den vom
Hersteller angegebenen Anweisungen.

CAUTION FOR BATTERY DISPOSAL

(For USA, CANADA)
"BATTERY DISPOSAL"
THIS PRODUCT CONTAINS A LITHIUM PRIMARY (MANGANESS DIOXIDE) MEMORY BACK-UP BATTERY THAT MUST BE DISPOSED OF PROPERLY. REMOVE THE BATTERY FROM THE PRODUCT AND CONTACT YOUR LOCAL ENVIRONMENTAL AGENCIES FOR INFORMATION ON RECYCLING AND DISPOSAL OPTIONS.

"TRAITEMENT DES PILES USAGÉES"
CE PRODUIT CONTIENT UNE PILE DE SAUVEGARDE DE MÉMOIRE LITHIUM PRIMAIRE (DIOXYDE DE MANGANÈSE) QUI DOIT ÊTRE TRAITÉE CORRECTEMENT. ENLEVEZ LA PILE DU PRODUIT ET PRENEZ CONTACT AVEC VOTRE AGENCE ENVIRONNEMENTALE LOCALE POUR DES INFORMATIONS SUR LES MÉTHODES DE RECYCLAGE ET DE TRAITEMENT.

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SHARP CORPORATION
Business Solutions Group
CS Promotion Center
Yamatokoriyama, Nara 639-1186, Japan
2009 August Printed in Japan