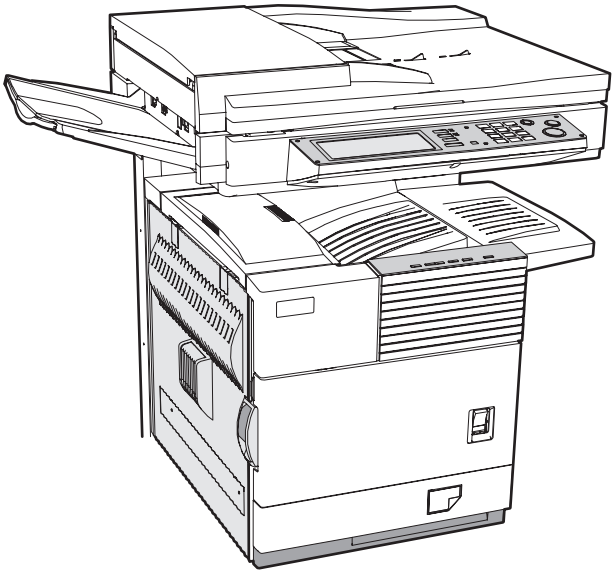
SHARP SERVICE MANUAL

CODE : 00ZARM350/A1E



LASER PRINTER

MODEL AR-M350 AR-M450

OPTIONS AR-EF1 / AR-M11 / AR-RK1

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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

CAUTION

This product is a class 1 laser product that complies with 21CFR 1040.10 and 1040.11 of the CDRH standard and IEC825. 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.

Cautions on laser

Wave length	785 nm +10 nm –15 nm
Pulse times	North America: 35 cpm model: (4.1 µs ± 4.1 ns)/7 mm 45 cpm model: (5.7 µs ± 5.7 ns)/7 mm Europe: 35 cpm model: (3.8 µs ± 3.8 ns)/7 mm 45 cpm model: (4.4 µs ± 4.4 ns)/7 mm
Output power	0.2 mW - 0.4 mW

At the production line, the output power of the scanner unit is adjusted to 0.4 MILLIWATT PLUS 8 % and is maintained constant by the operation of the Automatic Power Control (APC).

Caution
This product contains a low power laser device. To ensure safety do not remove any cover or attempt to gain access to the inside of the product. Refer all servicing to qualified personnel.

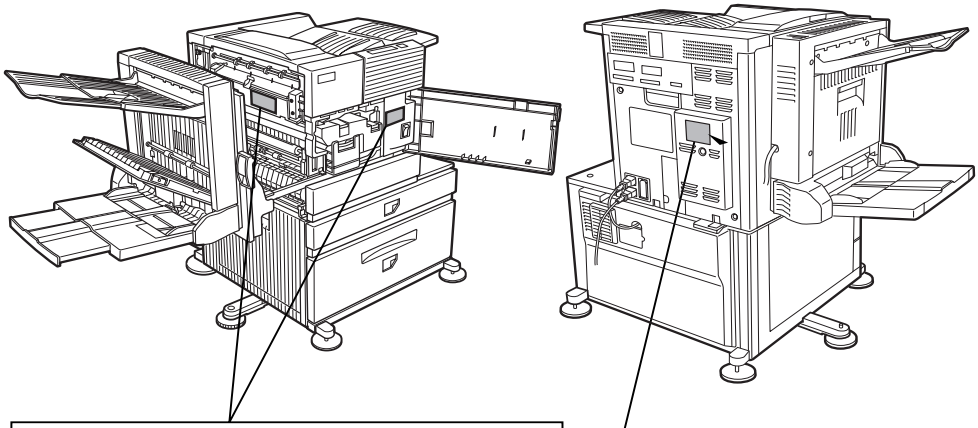
For North America:

SAFETY PRECAUTIONS

This Digital Equipment is rated Class 1 and complies with 21 CFR 1040.10 and 1040.11 of the CDRH standards. This means that the equipment does not produce hazardous laser radiation. For your safety, observe the precautions below.

- Do not remove the cabinet, operation panel or any other covers.
- The equipment's exterior covers contain several safety interlock switches. Do not bypass any safety interlock by inserting wedges or other items into switch slots.

Caution
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.



For Europe:

CLASS 1 LASER PRODUCT
LASER KLASSE 1
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

CAUTION
INVISIBLE LASER RADIATION WHEN OPEN INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.

VORSICHT
UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET UND SICHERHEITSVERRIEGELUNG ÜBERBRÜCKT. NICHT DEM STRAHL AUSSETZEN.

ADVARSEL
USYNLIG LASERSTRÅLNING VED ÅBNING, NÅR SIKKERHEDSBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSAETTELSE FOR STRÅLNING.

VAROITUS!
LAITTEEN KÄYTTÄMINEN MUULLA KUIN TÄSSÄ KÄYTTÖOHJEESSA MAINITULLA TAVALLA SAATTAA ALTISTAA KÄYTTÄJÄN TURVALLISUUSLUOKAN 1 YLITTÄVÄLLE NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE.

VARNING
OM APPARATEN ANVÄNDS PÅ ANNAT SÄTT ÄN I DENNA BRUKSANVISNING SPECIFICERATS, KAN ANVÄNDAREN UTSÄTTAS FÖR OSYNLIG LASERSTRÅLNING, SOM ÖVERSKRIDER GRÄNSEN FÖR LASERKLASS 1.

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[1] PRODUCT OUTLINE

* For the items which are not specified in this Service Manual, refer to the AR-P350/P450 Service Manual.

A. Scanner unit with duplex SPF (AR-EF1)

This unit is an option scanner unit for the laser printer AR-P350/P450/M350/M450.
By installing this unit to the above laser printer (installation of the AR-RK1 is also required), the printer can work as a digital multi-function device with the following functions:

1) Copy function
2) Network scanner function
   (The AR-NS2, network scanner kit, is required.)
3) Fax function (The AR-FX5, fax extending kit, is required.)

B. Multi-function controller (AR-M11)

This unit is a multi-function controller for the laser printer AR-P350/P450.

When installing the AR-EF1 to the above laser printer, the printer controller must be replaced with this multi-function controller.

C. Scanner rack (AR-RK1)

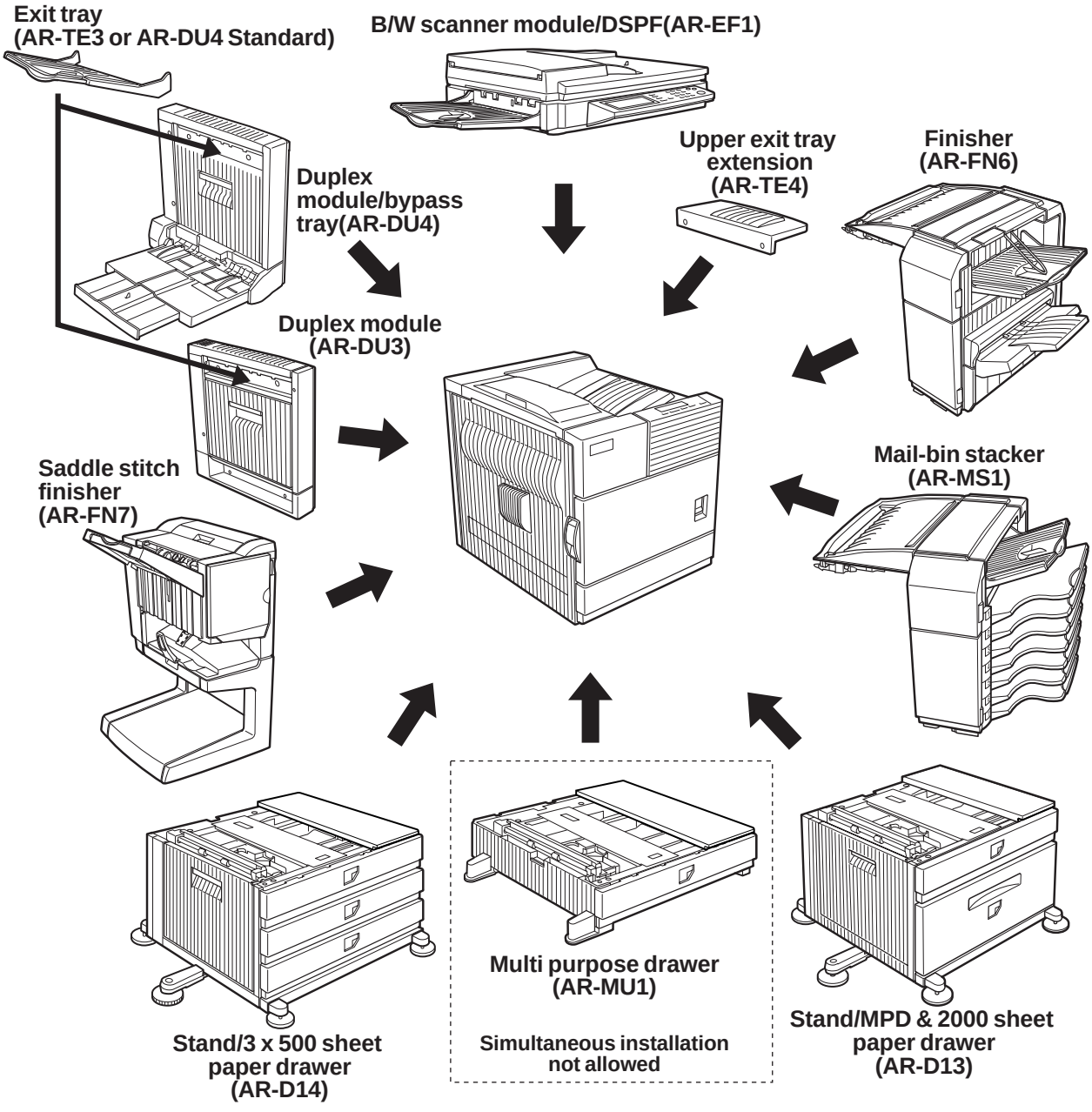
This rack is required when installing the scanner unit (AR-EF1) with duplex DSPF to the laser printer AR-P350/P450/M350/M450.
To install this rack, the machine must be equipped with the large capacity paper feed desk (AR-D13) or the 3 stage paper feed desk (AR-D14).

D. AR-M350/M450

This machine is a version of the AR-P350/P450, and is equipped with the multi-function controller as standard equipments.
To install this model, the large capacity paper feed desk (AR-D13) or the 3 stage paper feed desk (AR-D14) is required.

[2] CONFIGURATION

1.System Configurations



2. Standard

Category	Model Name	Other options required for the installation/mounting. (Options must be ordered separately.)	Remarks
Printer model (35ppm)	AR-P350	•Multi Purpose Drawer (AR-MU1), or Stand/MPD&2000 Sheet Paper Drawer (AR-D13), or Three paper drawer stand (AR-D14) •Power Supply Unit (AR-DC1) is required for Stand/MPD&2000 Sheet Paper Drawer (AR-D13) and Three paper drawer stand (AR-D14)	
Printer model (45ppm)	AR-P450		
MFP model (35ppm)	AR-M350	•B/W Scanner module/DSPF (AR-EF1) (Standard) •Scanner Rack(AR-RK1) (Standard) •Stand/MPD&2000 sheet paper drawer (AR-D13) or Three paper drawer stand (AR-D14) •Power supply unit (AR-DC1)	
MFP model (45ppm)	AR-M450		

3. List of combination of peripheral devices

As shown in the table below, some other peripheral devices (B) may be needed for installation of a peripheral device (A) and some peripheral devices cannot be installed together.

A			B: B/W scanner module/DSPF	Scanner rack	Multi purpose drawer	Stand/3 x 500 sheet paper drawer	Stand/MPD & 2000 sheet	Duplex module/bypass tray	Duplex module	Saddle stitch finisher	Finisher	Mail-bin stacker	Exit tray	Upper exit tray extension	Punch unit	Multi-function controller board	Print server card	PS3 expansion kit	Network scanner expansion kit	Facsimile expansion kit	Fax memory (8 MB)	Power supply unit	Hard disk drive
Related for scanner feature																							
B/W scanner module/DSPF *3	AR-EF1		—	○	×	○*1										○						○	
Scanner rack *3	AR-RK1		○*1	—	×	○*1										○						○	
Related for paper feed unit																							
Multi purpose drawer	AR-MU1		×	×	—	×	×	×		×	×				×	×			×	×	×	×	
Stand/3 x 500 sheet paper drawer	AR-D14				×	—	×	×														○	
Stand/MPD & 2000 sheet paper drawer	AR-D13				×	×	—															○	
Duplex module/bypass tray	AR-DU4				○*1			—		×					×	×						○*2	
Duplex module	AR-DU3				○*1				—													○*2	
Output units																							
Saddle stitch finisher	AR-FN7				×	○*1		×	○	—	×		×	×								○	
Finisher	AR-FN6				○*1					×	—	×		×	×							○	
Mail-bin stacker	AR-MS1				○*1						×	—		×								○	
Exit tray *4	AR-TE3							○*1		×	×	×	—		×								
Upper exit tray extension	AR-TE4										×	×		—									
Punch unit	AR-PN1				×	○*1		×	○	○	×		×		—							○	
Related for extension of functions and others																							
PS3 expansion kit	AR-PK1																—						
Network scanner expansion kit	AR-NS2		○*1	○	×	○*1										○	○		—				
Facsimile expansion kit	AR-FX5		○*1	○	×	○*1										○				—			
Fax memory (8 MB)	AR-MM9		○*1	○	×	○*1										○				○	—	○	
Power supply unit	AR-DC1																					—	
Hard disk drive	AR-HD3																						—
Multi-function controller board *3	AR-M11		○*1	○	×	○*1										—							
Print server card	AR-NC5J																—						

○ = Must be installed together.
○*1 = Any of the units must be installed together.
○*2 = Must be installed for installation of the stand/3 x 500 sheet paper drawer or the stand/MPD & 2000 sheet paper drawer.
× = Cannot be installed together.
*3 = Standard
*4 = AR-DU4 Standard

[3] SPECIFICATIONS

1. Basic Specification

A. Base Engine (AR-M350/M450)

(1) Form

AR-M350/AR-M450	Console type

(2) Engine speed

Paper size	AR-M350	AR-M450
A4, 8.5" x 11"	35ppm	45ppm
A5R/5.5" x 8.5"R	35ppm	45ppm
B5	35ppm	45ppm
B4/8.5" x 14	20ppm	22ppm
A3/11" x 17"	17ppm	20ppm

(3) Engine composition

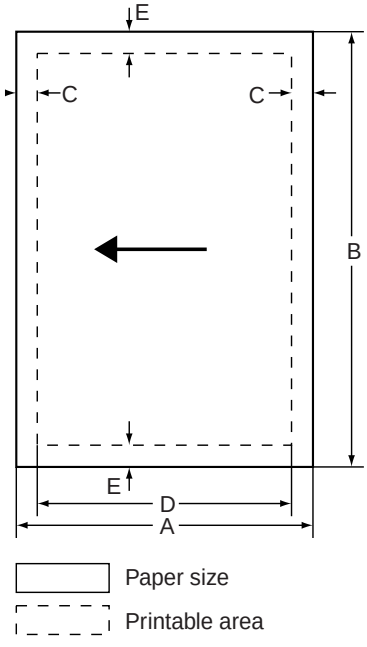
Photoconductor type	OPC (diameter of photoconductor : ø30mm)
Record method	Electrophotograph (laser)
Development method	Dry-type dual-component magnetic brush development
Charge method	Charged saw-tooth method
Transfer method	Transfer roller
Cleaning method	Counter blade
Fusing method	Heat roller
Used toner disposal	Toner recycling system

(4) Engine resolution

Resolution	Write :600dpi
Smoothing	Write :1200dpi equivalent
Gradation	Write :2 levels

(5) Printable area

The print area of this product is shown below.



If a printer driver for Windows or Macintosh is used for printing, the printable area will be smaller. The actual printable area depends on the printer driver to be used.

(in mm)

Paper size	A	B	C	D	E
A3	297	420	4	289	4
B4	257	364	4	242	4
A4	210	297	4	202	4
B5	182	257	4	168	4
A5	148	210	4	140	4
Japanese postcard	100	148	4	92	4
Ledger	279	432	4	271	4
Legal	216	356	4	208	4
Foolscap	216	330	4	208	4
Letter	216	279	4	208	4
Executive	184	267	4	183	4
Invoice	140	216	4	132	4
Com-10(envelope)	105	241	4	97	4
C5(envelope)	162	229	4	154	4
Monarch(envelope)	98	191	4	90	4
DL(envelope)	110	220	4	102	4
ISO B5(envelope)	176	250	4	168	4

(6) Warm-up

Warm-up time	less than 80 seconds
Pre-heat requirement	Required
Jam recovery time	Target: about 30 seconds (Under standard condition of 60 seconds left after side cover opening, polygon motor halt)

(7) Power source

Voltage	100V system	200V system
	100-127V	220-240V
Frequency	50/60Hz	50/60Hz
Power cord		

(8) Power consumption

	AR-M350	AR-M450
Max. Power consump.	1350W	1350W
Average waiting mode	1200W	1200W

(9) Energy Star benchmark

	AR-M350	AR-M450
Low power mode	40W	75W
Transition time to Low power mode	60min	60min

(10) Noise

	AR-M350	AR-M450
At working	less than 6.7B	less than 6.7B
At waiting mode	less than 4.8B	less than 4.8B

* Showing noise benchmark in each model as a whole system.

(11) Dimensions

External dimensions (WxDxH)	428x552x469 (Only main unit) (mm) 16.9"x21.7"x18.5"
Occupied space dimensions (WxD)	963x685 (mm) *1 25.7"x22.3"
Weight	Approx.39kg (Only main unit) Approx.99kg *1

*1: with B/W scanner module/DSPF, Scanner rack, Large capacity paper feed desk, Power supply unit and Upper exit tray extension

B. Document Feeding Equipment

(1) One-drawer tray (included in the base engine)

Paper feed method	One-drawer tray	
Sizes to be fed	A4, B5, 8.5" x 11"	
Paper capacity	500 sheets (at 80g/m²)	
Media available for paper feeding	Plain paper 60 - 105g/m², 16 - 28lbs	
Paper type	Plain, recycled, pre-printed, pre-punched, color, letter head	
Paper size switching	To be switched by user (paper size to be entered from the operation panel).	
Dehumidification heater	Not provided	
Balance detection	Provided (paper empty and 3 steps)	
Default size setting	100V system	200V system
	8.5" x 11"	A4
Mounting/demounting of the tray	Provided	

C. Output Equipment

(1) Face-down Exit Tray (included in the base engine)

Output position/ method	Face-down output at the upper side of main unit
Output paper capacity	400 sheets (80g/m² sheet)
Output paper size	A3, B4, A4, A4R, B5, B5R, A5R 11 " x 17", 8.5" x 14", 8.5" x 13", 8.5" x 11 ", 8.5" x 11 "R, 5.5" x 8.5"R Executive, postal card, Monarch (98 x 191) Com-10 (105 x 241), DL (110 x 220), C5 (162 x 229), ISO B5 (176 x 250)
Spec of media for paper output	Tracing paper : 52 ~ 59g/m² / 14 ~ 15lbs Plain paper : 60 ~ 128g/m² / 16 ~ 34lbs Index paper : 176g/m² / 47lbs Cover paper : 205g/m² / 54 ~ 55lbs Transparency firm
Remaining paper detection	Not provided
Exit tray full detection	Provided

2. Specific Function

A. Printer Function

(1) Platform

IBM PC/AT (Include compatible machine) Macintosh (680x0), Power Macintosh, iMac, G3Macintosh

* For Macintosh OS, the AR-PK1 is required.

(2) Support OS

Custom PS	Windows 95/98/Me
	Windows NT 4.0 Windows 2000
	Mac OS 7.6 to Mac OS 9
Custom PCL5e/6(XL) SPDL	Windows 95/98/Me
	Windows NT 4.0 Windows 2000
PPD	Windows 95/98/Me
	Windows NT 4.0 Windows 2000
	Mac OS 8.5.1 - Mac OS 9

* For Macintosh OS, the AR-PK1 is required.

(3) PDL emulation

PCL6 compatible, PCL5e compatible, PostScript Level 2 compatible, PostScript 3 compatible

(4) Print Function

a. General

		When an optional PS3 expansion kit is installed		
Function	PCL5e/ PCL6	PS	PPD (Windows)	PPD (Macintosh)
Copies	1 - 999	1 - 999	1 - 999	1 - 999
Orientation	Yes	Yes	Yes	Yes
Duplex print	Yes	Yes	Yes	Yes
Saddle stitch	Yes	Yes	No	N/A
Binding edge	Left/top/ right	Left/top/ right	Long/short	Long/short
N-up	2/4/6/8	2/4/6/8	2/4*3*4	2/4/6/9/16
N-up direction	Fixed	Fixed	Fixed	Selectable
N-up border line	Yes	Yes	Yes(always)	Yes

b. Paper input

		When an optional PS3 expansion kit is installed		
Function	PCL5e/ PCL6	PS	PPD (Windows)	PPD (Macintosh)
Paper size	Yes	Yes	Yes	Yes
Custom paper size	1 size	1 size	3 sizes*3*5	N/A
Source selection	Yes	Yes	Yes	Yes
Different first page	Yes	Yes	N/A	Yes
Transparency inserts	Yes	Yes	N/A	Yes

c. Paper output

		When an optional PS3 expansion kit is installed		
Function	PCL5e/ PCL6	PS	PPD (Windows)	PPD (Macintosh)
Output tray selection	Yes	Yes	Yes	Yes
Mail bin	Yes	Yes	Yes	Yes
Staple	Yes	Yes	Yes	Yes
Offset	Yes	Yes	Yes	Yes
Punch	Yes	Yes	Yes	Yes

d. Graphic

		When an optional PS3 expansion kit is installed		
Function	PCL5e/ PCL6	PS	PPD (Windows)	PPD (Macintosh)
Resolution	600/300 dpi	600 dpi	600 dpi	600 dpi
Halftone	N/A	Yes	Yes	N/A
Graphic mode	Yes	N/A	N/A	N/A
Smoothing	Yes	Yes	Yes	Yes
Toner save	Yes	Yes	Yes	Yes
Photo enhancement	Yes*8	Yes	N/A	N/A
Negative image	N/A	Yes	Yes	Yes
Mirror image	N/A	Horizontal/ vertical	Horizontal	Yes
Zoom	N/A	N/A	Yes	Yes
Fit to page	Yes	Yes	N/A	N/A

e. Font

		When an optional PS3 expansion kit is installed		
Function	PCL5e/ PCL6	PS	PPD (Windows)	PPD (Macintosh)
Resident font	45 fonts	136 fonts	136 fonts*6	35 fonts
Download font	Bitmap TrueType, Graphic	Bitmap Type1 TrueType	Bitmap Type1 TrueType	N/A

f. Others

		When an optional PS3 expansion kit is installed		
Function	PCL5e/ PCL6	PS	PPD (Windows)	PPD (Macintosh)
Watermark*7	Yes	Yes	Yes	Yes
Overlay	Yes	Yes	N/A	N/A
Job retention*1	Yes	Yes	N/A	Yes
Account control	Yes	Yes	N/A	Yes
Custom settings	Yes	Yes	N/A	N/A
Automatic configuration*2	Yes	Yes	N/A	Yes
Job end notification	Yes	Yes	N/A	N/A

* 1 In the models without a hard disk drive, an optional hard disk drive must be installed .
* 2 Functions when peripheral devices are installed.
* 3 Not supported in the Windows NT 4.0 environment.
* 4 2/4/6/9/16 is supported in the Windows 2000 environment.
* 5 Only one size is supported in the Windows 2000 environment.
* 6 Only 35 fonts are supported in the Windows NT 4.0 environment.
* 7 This function is limited for PPD.
* 8 PCL6 only

(5) Compatibility

PCL 5e compatibility	Target for PCL5e is to be compatible with HP LaserJet 4000. Small margin difference, rendering difference by different font family, default and transfer function difference are not to be included in the compatibility. All the PJL commands are not necessarily included in the compatibility.
PCL6 compatibility	Target for PCL6 is to be compatible with HP LaserJet 4000. Small margin difference, rendering difference by different font family, default and transfer function difference are not to be included in the compatibility. All the PJL commands are not necessarily included in the compatibility.
PostScript Compatibility	Roman PostScript is targeted to be compatible with Adobe PostScript as performed in HP LaserJet 4000. Small margin difference, rendering difference by different font family, default and transfer function difference are not to be included in the compatibility.

B. Expanded RAM

Installation of an expanded RAM will avoid the following status.

1) Time out error reduction
2) Spool time reduction
3) Avoidance of VM error / memory full

Use a commercially available RAM of the following specifications.
If a RAM which does not meet the specifications is installed, it may cause a trouble such as that it is not recognized or its capacity is not correctly recognized.

<Spesification>

DIMM TYPE	168pin 3.3V Unbuffered SDRAM DIMM Non-ECC
DIMM capacity	64MByte, 128MByte, 256MByte
CAS LATENCY	CL=2
SDRAM CLOCK	For PC100, PC133
SPD	Supporting
Parity	Not support
ECC	Not support

<Operation-assured Memory> (As of March / 2001)

Manufacture	Capacity	Model name	RAM CHIP name	Note
Kingston Technology	128MB	KVR133X64C3/ 128	HYB39S64800BT -7.5	
	128MB	KVR133X64C3 -128	D456821G-A75 -9JF	
	256MB	KVR133X64C3 -256	HY57V28820AT-H	
Viking Compornents	64MB	VIK8641CL2	µPD456841G5 -A80-9JF	
	64MB	VIK8641CL2	D456841G5-A80 -9JF	
	128MB	VIK6642CL2	TC59SM708FT-80	
	128MB	VIK6642CL2	D4564841G5-A80 -9JF	
	256MB	VIK2642CL2	TC59SM708FT-80	
Memory Card Technology	64MB	DM864VS65804X -7G	GM72V66841XT75	
	128MB	DM1665VS65804 X-7G	HY57V64820HG	

C. Scanner function

(1) Scanner function

Scanner mode	Scan to E-mail (Internet FAX) Scan to Server (Client PC)

(2) Support System

Embedded server	SMTP server FTP server
Protocol	TCP/IP

(3) Support Image

Format	TIFF, PDF, TIFF-F
Compression method	Uncompressed, G3(1-dimension) *1, G4 *2 *1 G3 (1-dimension) = MH (Modified Huffman) *2 G4 = MMR (Modified MR)

(4) Transmission Mode

DSPF/OC transmission switching	O (Switching during the reading is not feasible)

(5) Image Process

Half tone reproduction	Equivalent to 256 levels
Exposure adjustment	Light / Auto / Dark
Quality selection	Half-tone ON/OFF
Resolution*	Normal (200x200dpi) Fine (300x300dpi) Super fine (400x400dpi) Ultra fine (600x600dpi) Varies with the file type/transmission method

(6) Original Memory

Standard	Commonly use ERDH area of memory.
Memory expansion	Special : As per ERDH memory

(7) Specified Destination

Specified destination	Specifying by one-touch or group
One-touch*	Max. 500 destinations (in conjunction with the one-touch dial of FAX) Max. 100 destinations can be registered for FTP and Desktop.
Group*	To be registered in one-touch
Program	O

(8) Specified Multiple Destinations

Specified destination	Specifying by one-touch or group
No. of registration	Max. 300 items (in conjunction with those of FAX)
Sequential broadcasting	O (E-mail only. It is not available for FTP/Desktop.)
Simultaneous FAX transmission	O (Specifying multiple destinations of FAX, E-mail or FTP and broadcasting by a single scan)

O : Available

(9) Functions

Transmitting functions	Rotating transmission	O (to be matched with FAX specification)
	Long length original transmission	X
	Verification stamp function	Option
Report/list functions	Transmit/receive record	O
	Transmit/receive result	O
	Address/phone directory list	O
	Group list	O
	ID/sender list	O
	Program list	O

D. Copy function

(1) Copy Speed

	AR-M350			AR-M450		
	Actual	Reduction	Enlargement	Actual	Reduction	Enlargement
A4, 8.5"x11"	35	35	35	45	45	45
A4R, 8.5"x11"R	25	25	25	30	30	30
A5R, 5.5"x8.5"R, Invoice-R	35	35	35	45	45	45
B5	35	35	35	45	45	45
B5R, Exective-R	25	25	25	30	30	30
B4, 8.5"x14"	20	20	20	22	22	22
A3, 11"x17"	17	17	17	20	20	20
Extra, Envelope	17	17	17	20	20	20
Japan P/C	In case of printing on post card, engine speed can vary with system configuration, because next paper is fed after machine completely output previous page.					

* Figures in reduction/enlargement are represented by those at the ratio to show slowest speed

(2) First Copy Time

Conditions: A4 or 8.5"x11"P from front tray of PPC, without HDD and with polygon motor running.

	AR-M350	AR-M450
Document glass *1	Less than 5.3 seconds	Less than 4.6 seconds
DSPF	Less than 6.0 seconds	Less than 5.3 seconds

*1 During OC/high-speed mode

(3) Job Speed

	AR-M350	AR-M450
S → S *1	33 cpm (94%)	42 cpm (93%)
S → D *2	32 cpm (91%)	40 cpm (88%)
D → D *3	32 cpm (91%)	40 cpm (88%)

*1 S → S : A4 / 8.5" x 11"P original 5 sheets copy 5sets
*2 S → D : A4 / 8.5" x 11"P original 10 sheets copy 5sets
*3 D → D : A4 / 8.5" x 11"P original 5 sheets (10 pages) copy 5sets

Note: First copy time has been factored into calculation resulting in reduced CPM.

(4) Continuous Copy

Max. multiple number	999 pages

(5) Copy Ratio

Copy ratio	AB series : 25%, 70%, 81%, 86%, 100%, 115%, 122%, 141%, 400% Inch series : 25%, 64%, 77%, 100%, 121%, 129%, 400%
Zoom	25 - 400% 25 - 200% (Copy from DSPF)
Independent scaling	Not provided

(6) Exposure/Copy Quality Process

Exposure mode	Binary: Text(auto/manual), Text/photo, Photo 256 levels: Not provided
Manual steps	9 steps
Smoothing	Standard
Toner save mode	Standard

(7) Copy Function

Function	APS	O
	AMS	O
	Paper type select	O By type setting
	Auto tray switching	O
	Rotation copy	O
	Electronic sort	O
	Rotation sort	X
	Reserved copy	O
	Prior tray setting	X
	Recall/register of program	O
	Proof copy	X
	Preheat function	O To be set up by key operator
	Auto power shut-off function	O To be set up by the key operator program
	Account control	O 100 accounts
	Communication support (RIC)	O
	Card counter support	Only provided the connector
	Coin vendor support	Only provided the connector
Special function	Margin shift	O
	Edge erase / Center erase	O
	Dual page copying	O
	Covers	X
	Transparency insert	X
	Centering	X
	Multi shot (N in 1)	O (2 in 1 / 4 in 1)
	Pamphlet copy	O
	2-sided copy orientation change	O
	Large capacity original mode	0 (Max. 140 pages)
	B/W reverse	X
	Shading	X
	Mirror image	X
	Repeat	X
	Date stamp	X
	Stamp	X
	Page stamp	X
	Zaurus print	X

O : Standard Function

X : Not provided

3. B/W Scanner Module (DSPF)

(1) Form

Scanner (Document glass) / DSPF standard
Operation panel integral type
(common hardware for all the destinations)

(2) Destination judgment

When connected with a base engine, the type (Japan domestic 100V, overseas 100V or overseas 200V systems) is detected and the settings will accordingly be changed.

(3) Resolution / Gradation

Reading resolution (dpi)	Copy mode				
	Magnification	25~99	100	101~200	201~400
	OC	600x600	600x600	600x600	600x600
	OC (High speed):	600x600	600x300	600x600	600x600
	DSPF/ SPF(standard)	600x300	600x300	600x600	-
	DSPF/SPF (high quality)	600x600	600x600	600x600	-
Input and transmitting resolution (dpi)	FAX transmit mode				
	Selection mode	Standard	Fine	Super fine	Ultra fine
	Input resolution: OC	600x391.2	600x391.2	600x391.2	600x391.2
	Input resolution: DSPF	600x300	600x300	600x300	600x300
	Transmitting resolution	203.2x97.8	203.2x195.6	203.2x391	406.4x391
	Scanner mode				
	Selection mode	Standard	Fine	Super fine	Ultra fine
	Input resolution: OC	600x391.2	600x391.2	600x391.2	600x600
	Input resolution: DSPF	600x300	600x300	600x300	600x300
	Transmitting resolution	200x200	300x300	400x400	600x600
Reading level	256 tones				
Exposure lamp	Electrodeless xenon lamp				
Output level	Binary				

(4) Document Glass

Reading area	297x431.8(mm) 11.7"x17"	
Original alignment	Left edge / Rear corner alignment	
Original size detection	Provided (Standard size only)	
Sizes to be detected	Automatic (one detection unit to be used with software modification by destination)	
	Inch-1 (Default at overseas 100V base engine)	11"x17", 8.5"x14", 8.5"x11", 8.5"x11"R, 5.5"x8.5"
	Inch-2	11"x17", 8.5"x13", 8.5"x11", 8.5"x11"R, 5.5"x8.5"
	AB-1(Default at Japan domestic 100V / overseas 200V base engines)	A3, B4, A4, A4R, B5, B5R, A5A3, B4, A4, A4R, A5
	AB-2	A3, A4R, A5, 216x330 mm

OR guide display	Rear left side (Print display)	Original reference position "⇒"
	Left side OR guide (Print display)	(From the Interior side) [5-1/2]•[A5E]•[B5E]•[A4E/A5]• [8.5"]•[B4/B5]•[11"]•[A3/A4]
	Interior side OR guide (Print display)	(From the left side) [5-1/2]•[A5]•[B5]•[A4/A5E]• [8-1/2]•[B5E]•[11"]•[A4E]•[13"]• [14"]•[B4]•[A3]•[17"]
	Interior side OR guide	Book marks are at A4 and 8-1/2 positions.
	The position available to attach the staple position guide label when the optional finisher (desktop console type) is equipped.	

(5) DSPF/SPF

Type	DSPF	One-scan-dual-side scanning method DSPF with OC integrated
Scan speed	Standard mode	45 opm
	High quality mode	22.5 opm
Original alignment	Center alignment	
Original size	A3, B4, A4, A4R, B5, B5R, A5, A5R11"x17", 8.5"x14", 8.5"x13", 8.5"x11", 8.5"x11"R,5.5"x8.5", 5.5"x8.5"R (in Fax mode : long-length paper up to 800mm is applicable)	
Original paper weight	50~128g/m², 15~34lbs	
Original stack capacity	Max. 50 sheets (max. 30 sheets for A3, B4,11"x17",8.5"x14") (When, however, exceeding 105g/m² and A3, B4,11"x17",8.5"x14", max. 15 sheets) or, Total thickness less than 6.5mm (at 50~80g/m², 15~21lbs) 5.0mm (at 80~128g/m², 21~34lbs)	
Not transportable original type	Transparency film, secondary original paper, tracing paper, carbon paper, thermal paper, original with crumple/crimp/rip, original with attachment/clipping, original with many punch holes (with 2 or 3 holes acceptable), original preprinted with ink-ribbon.	
Original size detection	Provided	
Sizes to be detected	Automatic (one detection unit to be used with software modification by destination)	
	Inch-1 (Default at overseas 100V base engine)	11"x17", 8.5"x14", 8.5"x11", 8.5"x11"R, 5.5"x8.5"
	Inch-2	11"x17", 8.5"x13", 8.5"x11", 8.5"x11"R, 5.5"x8.5"
	AB-1(Default at Japan domestic 100V / overseas 200V base engines)	A3, B4, A4, A4R, B5, B5R, A5, A3, B4, A4, A4R, A5, 8.5"x11", 216x330 mm
	AB-2	A3, B4, A4, A4R, A5, B5, B5R, 216x330 mm, 8.5"x11"
Original tray guide display	Center of the tray (inscribeddisplay)	Original reference position "←" Original face-down placement indication "⎙"
	Original Guide (inscribed display)	(From Center) [B5E]•[A4E/A5]•[8.5"]•[B4/B5]• [11"]•[A3/A4]
	The position available to attach the staple position guide label when the optional finisher (desktop console type) is equipped.	

(6) Power Source

Supplied from the main unit

(7) Dimensions

External dimensions (WxDxH)	808 x 619x180 mm
Occupied space dimensions (WxD)	945 x 619 mm (When the tray is extended)
Weight	Approx. 19.5 kg

(8) Display device at scanner part

Type	Dot map LCD, touch panel
Display dot number	640 x 240 dots (dot pitch 0.24x0.24 mm)
LCD operating dimension	153.5 x 57.5 mm
LCD back-light	Fluorescent tube method
LCD brightness adjustment	Provided

(9) Key

Mode selection area	Job status key Printer mode key (online display LED/data in-memory display LED) Scan/Fax mode key (busy display LED/data in-memory display LED) Copy mode key User definition key
Basic input area	Start key CA key 10-key Clear key * key # key

(10) Touch sense method

Resistive film method

(11) Used character in the LCD

Dot	8 x 16 , 16 x 16 dots
Bold display	O

4. Rack for Scanner

(1) Dimensions

Strength	60 kg
External dimensions (WxDxH)	30 x 415 x 860 mm (Single goods)
Occupied space dimensions (WxD)	575 x 415 mm (State of installation) (2pieces)
Weight	Approx.5 kg (2pieces)

* For the items which are not specified in this Service Manual, refer to the AR-P350/P450 Service Manual.

[4] CONSUMABLE PARTS

1.Supply system table

A.USA

NO	Name	Content		Life	Product name	Remark
1	Toner CA(Black)	Toner(Toner : Net Weight 814g)		27K	AR-450NT (*1 AR-450NT-J)	*Life setup is based on A4 6%
2	Developer	Developer(Developer : Net Weight 450g)		100K	AR-450ND	
3	Drum	Drum	x1	50K	AR-450DR	
4	50K maintenance kit	Cleaner blade	x1	50K	AR-450KC1	
		Drum separation pawl	x4			
		Screen grid	x1			
		Toner reception seal	x1			
		Side malt F	x1			
		Side malt R	x1			
		Charging plate	x1			
5	100K maintenance kit	Transfer roller	x1	100K	AR-450KA1	
		Discharging plate	x1			
		Paper dust removing unit	x1			
		DV blade	x1			
		DV side seal F	x1			
		DV side seal R	x1			
6	Upper heat roller kit	Upper heat roller	x1	200K	AR-450UH	
		Fusing separation pawl (Upper)	x4			
7	Lower heat roller kit	Lower heat roller	x1	200K	AR-450LH	
		Fusing separation pawl (Lower)	x2			
8	Cleaner blade	Cleaner blade	x10	50K(x10)	AR-450CB	AR-450CB=(AR-450BL)x10
9	Cleaning roller	Cleaning roller	x10	200K(x10)	AR-450CR	AR-450CR=(AR-450RC)x10
		Bearing	x20			
10	Staple cartridge	Staple cartridge	x3	3000x3	AR-SC1	Common with cartridge for AR-FN4 & AR-FN6
11	Staple cartridge	Staple cartridge	x3	5000x3	AR-SC2	Common with cartridge for AR-FN7

*1: For USA Government

Note1: Print on Master/individual carton:Toner/Developer in 2 languages (English/French), DR in 4 languages (English/French/German/Spanish).

Note2: Packed with machine: DR 50K/Developer UN/Process UN

Note3: The other maintenance parts which are not listed above are registered as service parts.

B.CANADA/Latin America

NO	Name	Content		Life	Product name	Remark
1	Toner CA(Black)	Toner(Toner : Net Weight 814g)		27K	AR-450NT	*Life setup is based on A4 6%
2	Developer	Developer(Developer : Net Weight 450g)		100K	AR-450ND	
3	Drum	Drum	x1	50K	AR-450DR	
4	50K PM kit	Cleaner blade	x1	50K	AR-450KC	
		Drum separation pawl	x4			
		Screen grid	x1			
		Toner reception seal	x1			
		Side malt F	x1			
		Side malt R	x1			
		Charging plate	x1			
5	100K PM kit	Transfer roller	x1	100K	AR-450KA	
		Discharging plate	x1			
		Paper dust removing unit	x1			
		DV blade	x1			
		DV side seal F	x1			
		DV side seal R	x1			
6	200K PM kit	Upper heat roller	x1	200K	AR-450KB	
		Lower heat roller	x1			
		Fusing separation pawl (Upper)	x4			
		Fusing separation pawl (Lower)	x2			
		Cleaning roller	x1			
		Bearing	x2			
7	Staple cartridge	Staple cartridge	x3	3000x3	AR-SC1	Common with cartridge for AR-FN4 & AR-FN6
8	Staple cartridge	Staple cartridge	x3	5000x3	AR-SC2	Common with cartridge for AR-FN7

Note1: Print on Master/individual carton:Toner/Developer in 2 languages (English/French), DR in 4 languages (English/French/German/Spanish).

Note2: Packed with machine: DR 50K/Developer UN/Process UN

Note3: The other maintenance parts which are not listed above are registered as service parts.

C.Europe/Australia/New Zealand

NO	Name	Content		Life	Product name	Remark
1	Toner CA(Black)	Toner(Toner : Net Weight 814g)		27K	AR-450T	*Life setup is based on A4 6%
2	Developer	Developer(Developer : Net Weight 450g)		100K	AR-450DV	
3	Drum	Drum	x1	50K	AR-450DM	
4	50K PM kit	Cleaner blade	x1	50K	AR-450KC	
		Drum separation pawl	x4			
		Screen grid	x1			
		Toner reception seal	x1			
		Side malt F	x1			
		Side malt R	x1			
		Charging plate	x1			
5	100K PM kit	Transfer roller	x1	100K	AR-450KA	
		Discharging plate	x1			
		Paper dust removing unit	x1			
		DV blade	x1			
		DV side seal F	x1			
		DV side seal R	x1			
6	200K PM kit	Upper heat roller	x1	200K	AR-450KB	
		Lower heat roller	x1			
		Fusing separation pawl (Upper)	x4			
		Fusing separation pawl (Lower)	x2			
		Cleaning roller	x1			
		Bearing	x2			
7	Staple cartridge	Staple cartridge	x3	3000x3	AR-SC1	Common with cartridge for AR-FN4 & AR-FN6
8	Staple cartridge	Staple cartridge	x3	5000x3	AR-SC2	Common with cartridge for AR-FN7

Note1: Print on Master/individual carton:4 languages (English/French/German/Spanish).
Note2: Packed with machine: DR 50K/Developer UN/Process UN
Note3: The other maintenance parts which are not listed above are registered as service parts.

D.Middle East/ Africa

NO	Name	Content		Life	Product name	Remark
1	Toner CA(Black)	Toner(Toner : Net Weight 814g)		27K	AR-450FT	*Life setup is based on A4 6%
2	Developer	Developer(Developer : Net Weight 450g)		100K	AR-450SD	
3	Drum	Drum	x1	50K	AR-450DR	
4	50K PM kit	Cleaner blade	x1	50K	AR-450KC	
		Drum separation pawl	x4			
		Screen grid	x1			
		Toner reception seal	x1			
		Side malt F	x1			
		Side malt R	x1			
		Charging plate	x1			
5	100K PM kit	Transfer roller	x1	100K	AR-450KA	
		Discharging plate	x1			
		Paper dust removing unit	x1			
		DV blade	x1			
		DV side seal F	x1			
		DV side seal R	x1			
6	200K PM kit	Upper heat roller	x1	200K	AR-450KB	
		Lower heat roller	x1			
		Fusing separation pawl (Upper)	x4			
		Fusing separation pawl (Lower)	x2			
		Cleaning roller	x1			
		Bearing	x2			
7	Staple cartridge	Staple cartridge	x3	3000x3	AR-SC1	Common with cartridge for AR-FN4 & AR-FN6
8	Staple cartridge	Staple cartridge	x3	5000x3	AR-SC2	Common with cartridge for AR-FN7

Note1: Print on Master/individual carton:4 languages (English/French/German/Spanish).
Note2: Packed with machine: DR 50K/Developer UN/Process UN
Note3: The other maintenance parts which are not listed above are registered as service parts.

E.Israel/Russia/CIS/Philippines

NO	Name	Content		Life	Product name	Remark
1	Toner CA(Black)	Toner(Toner : Net Weight 814g)		27K	AR-450FT	*Life setup is based on A4 6%
2	Developer	Developer(Developer : Net Weight 450g)		100K	AR-450SD	
3	Drum	Drum	x1	50K	AR-450DR	
4	50K PM kit	Cleaner blade	x1	50K	AR-450KC	
		Drum separation pawl	x4			
		Screen grid	x1			
		Toner reception seal	x1			
		Side malt F	x1			
		Side malt R	x1			
		Charging plate	x1			
5	100K PM kit	Transfer roller	x1	100K	AR-450KA	
		Discharging plate	x1			
		Paper dust removing unit	x1			
		DV blade	x1			
		DV side seal F	x1			
		DV side seal R	x1			
6	200K PM kit	Upper heat roller	x1	200K	AR-450KB	
		Lower heat roller	x1			
		Fusing separation pawl (Upper)	x4			
		Fusing separation pawl (Lower)	x2			
		Cleaning roller	x1			
		Bearing	x2			
7	Staple cartridge	Staple cartridge	x3	3000x3	AR-SC1	Common with cartridge for AR-FN4 & AR-FN6
8	Staple cartridge	Staple cartridge	x3	5000x3	AR-SC2	Common with cartridge for AR-FN7

Note1: Print on Master/individual carton:4 languages (English/French/German/Spanish).
Note2: Packed with machine: DR 50K/Developer UN/Process UN
Note3: The other maintenance parts which are not listed above are registered as service parts.

F.Asia

NO	Name	Content		Life	Product name	Remark
1	Toner CA(Black)	Toner(Toner : Net Weight 814g)		27K	AR-450ST	*Life setup is based on A4 6%
2	Developer	Developer(Developer : Net Weight 450g)		100K	AR-450SD	
3	Drum	Drum	x1	50K	AR-450DR	
4	50K PM kit	Cleaner blade	x1	50K	AR-450KC	
		Drum separation pawl	x4			
		Screen grid	x1			
		Toner reception seal	x1			
		Side malt F	x1			
		Side malt R	x1			
		Charging plate	x1			
5	100K PM kit	Transfer roller	x1	100K	AR-450KA	
		Discharging plate	x1			
		Paper dust removing unit	x1			
		DV blade	x1			
		DV side seal F	x1			
		DV side seal R	x1			
6	200K PM kit	Upper heat roller	x1	200K	AR-450KB	
		Lower heat roller	x1			
		Fusing separation pawl (Upper)	x4			
		Fusing separation pawl (Lower)	x2			
		Cleaning roller	x1			
		Bearing	x2			
7	Staple cartridge	Staple cartridge	x3	3000x3	AR-SC1	Common with cartridge for AR-FN4 & AR-FN6
8	Staple cartridge	Staple cartridge	x3	5000x3	AR-SC2	Common with cartridge for AR-FN7

Note1: Print on Master/individual carton:4 languages (English/French/German/Spanish).
Note2: Packed with machine: DR 50K/Developer UN/Process UN
Note3: The other maintenance parts which are not listed above are registered as service parts.

G.Hong kong

NO	Name	Content		Life	Product name	Remark
1	Toner CA(Black)	Toner(Toner : Net Weight 814g)		27K	AR-450ST-C	*Life setup is based on A4 6%
2	Developer	Developer(Developer : Net Weight 450g)		100K	AR-450SD-C	
3	Drum	Drum	x1	50K	AR-450DR-C	
4	50K PM kit	Cleaner blade	x1	50K	AR-450KC	
		Drum separation pawl	x4			
		Screen grid	x1			
		Toner reception seal	x1			
		Side malt F	x1			
		Side malt R	x1			
		Charging plate	x1			
5	100K PM kit	Transfer roller	x1	100K	AR-450KA	
		Discharging plate	x1			
		Paper dust removing unit	x1			
		DV blade	x1			
		DV side seal F	x1			
		DV side seal R	x1			
6	200K PM kit	Upper heat roller	x1	200K	AR-450KB	
		Lower heat roller	x1			
		Fusing separation pawl (Upper)	x4			
		Fusing separation pawl (Lower)	x2			
		Cleaning roller	x1			
		Bearing	x2			
7	Staple cartridge	Staple cartridge	x3	3000x3	AR-SC1	Common with cartridge for AR-FN4 & AR-FN6
8	Staple cartridge	Staple cartridge	x3	5000x3	AR-SC2	Common with cartridge for AR-FN7

Note1: Print on Master/individual carton:2 languages (English/Chinease).
Note2: Packed with machine: DR 50K/Developer UN/Process UN
Note3: The other maintenance parts which are not listed above are registered as service parts.

H.Taiwan

NO	Name	Content		Life	Product name	Remark
1	Toner CA(Black)	Toner(Toner : Net Weight 814g)		27K	AR-450FT-T	*Life setup is based on A4 6%
2	Developer	Developer(Developer : Net Weight 450g)		100K	AR-450SD-C	
3	Drum	Drum	x1	50K	AR-450DR-C	
4	50K PM kit	Cleaner blade	x1	50K	AR-450KC	
		Drum separation pawl	x4			
		Screen grid	x1			
		Toner reception seal	x1			
		Side malt F	x1			
		Side malt R	x1			
		Charging plate	x1			
5	100K PM kit	Transfer roller	x1	100K	AR-450KA	
		Discharging plate	x1			
		Paper dust removing unit	x1			
		DV blade	x1			
		DV side seal F	x1			
		DV side seal R	x1			
6	200K PM kit	Upper heat roller	x1	200K	AR-450KB	
		Lower heat roller	x1			
		Fusing separation pawl (Upper)	x4			
		Fusing separation pawl (Lower)	x2			
		Cleaning roller	x1			
		Bearing	x2			
7	Staple cartridge	Staple cartridge	x3	3000x3	AR-SC1	Common with cartridge for AR-FN4 & AR-FN6
8	Staple cartridge	Staple cartridge	x3	5000x3	AR-SC2	Common with cartridge for AR-FN7

Note1: Print on Master/individual carton:4 languages (English/French/German/Spanish).
Note2: Packed with machine: DR 50K/Developer UN/Process UN
Note3: The other maintenance parts which are not listed above are registered as service parts.

2.Production number identification

A. Drum cartridge

The lot number, printed on the front side flange, is composed of 10 digits, each digit showing the following content:

1	2	3	4	5	6	7	8	9	10

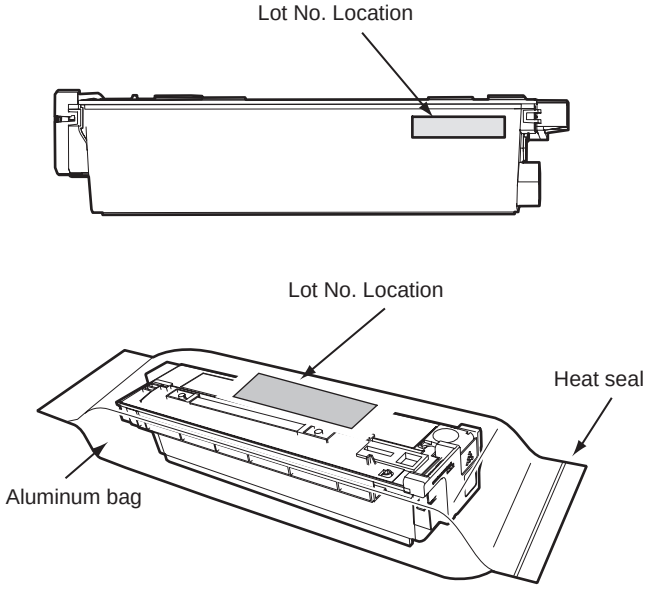
1 Number
For this model, this digit is 2.
2 Letter
Indicates the model conformity code. T for this model.
3 Number
Indicates the end digit of the production year.
4 Number or X, Y, Z
Indicates the production month.
X stands for October, Y November, and Z December.
5/6 Number
Indicates the production day on the month.
7 Number or X, Y, Z
Indicates the month of packing.
X stands for October, Y November, and Z December.
8/9 Number
Indicates the day of the month of packing.
10 Letter
Indicates the production factory. "A" for Nara Plant.

B. Toner cartridge

The lot number is composed of 7 digits each digit indicates the following. The lot number shall be printed in the position shown below.

1	2	3	4	5	6	7

1 Version number (A - sequentially revised)
2 Numeral figure
Indicates the end digit of the production year.
3 Letter
Indicates the production factory. (B for SOCC)
4 Destination code
5,6 Numeral figures
Indicates the production day.
7 Numeral figure or X, Y, Z
Indicates the production month.
X stands for October, Y November, and Z December.



C. Developer cartridge

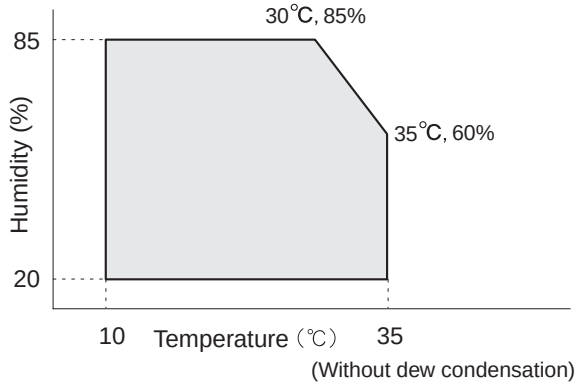
The lot number is composed of 10 digits each digit indicates the following. The lot number is printed on the bag.

1	2	3	4	5	6	7	8	9	10

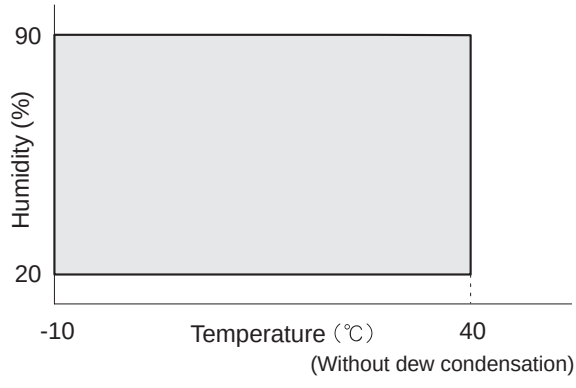
1 Number
For this model, this digit is 2.
2 Letter
Indicates the model conformity code. T for this model.
3 Number
Indicates the end digit of the production year.
4 Number or X, Y, Z
Indicates the production month.
X stands for October, Y November, and Z December.
5/6 Number
Indicates the production day on the month.
7 Number or X, Y, Z
Indicates the month of packing.
X stands for October, Y November, and Z December.
8/9 Number
Indicates the day of the month of packing.
10 Letter
Indicates the production factory. "A" for Nara Plant.

3. Environmental conditions

A. Operating conditions

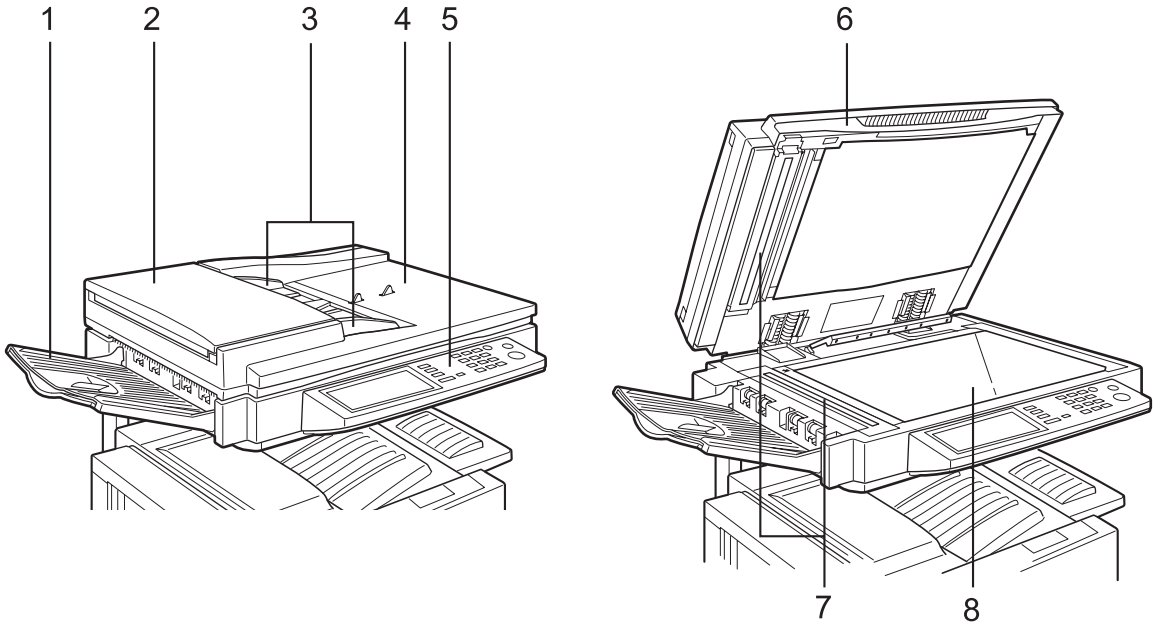


B. Storage conditions



[5] EXTERNAL VIEWS AND INTERNAL STRUCTURES

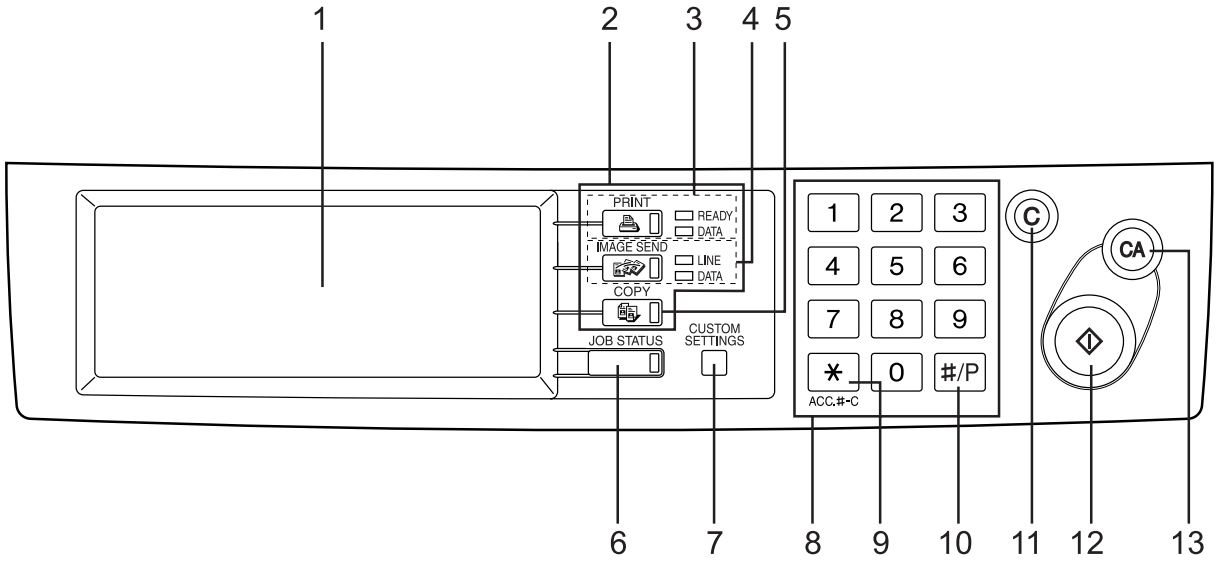
1. Appearance



1	DSPF exit area	Scanned originals are deposited here.
2	Document feeding area cover	Open to remove misfeed originals in this area.
3	Original guides	Adjust to the size of the originals.
4	Document feeder tray	Set the originals here for automatic feeding.
5	Operation panel	Use for operation of copier, network scanner, and facsimile features and for printer configuration operations.
6	Document cover	
7	Document scanning windows	Sheet type originals are scanned here.
8	Document glass	All originals which cannot be copied from the document feeder tray must be copied here.

2. Operation panel

When the printer is equipped with a scanner module, the operation panel on the main unit will become inoperative and the panel on the scanner module must be used.
The operation panel on the printer engine side does not function.

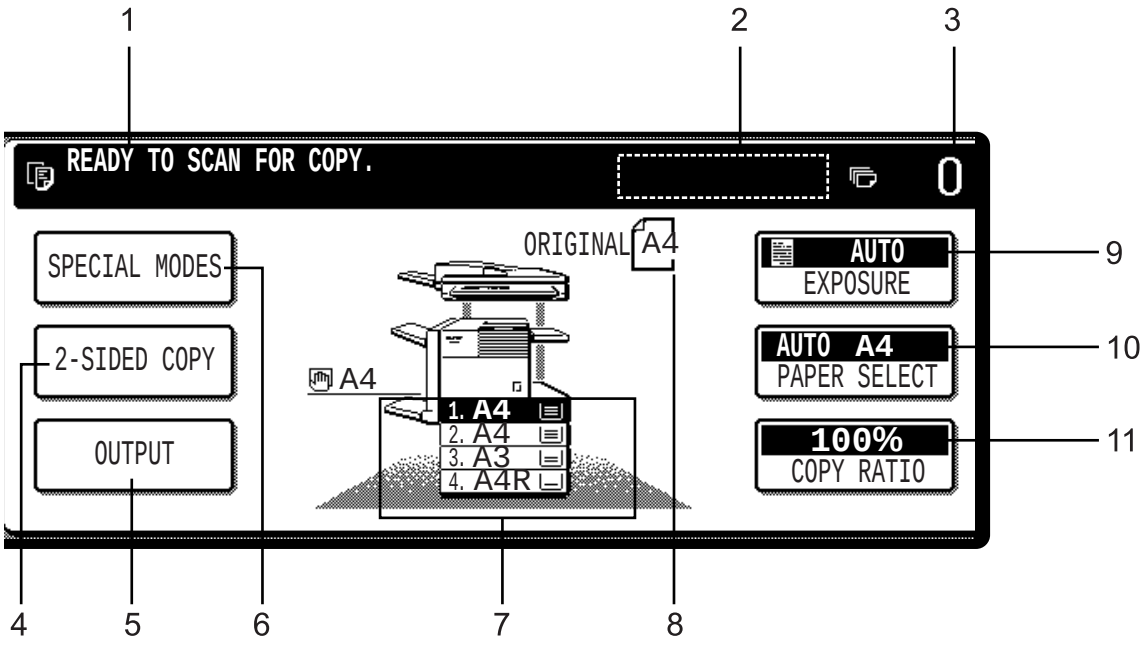


1	Touch panel	The machine status, messages and touch keys are displayed on the panel. The display will change to show the status of print, copy, network scan or fax according to which of those modes is selected.
2	Mode select keys and indicators	Use to switch the display mode of the touch panel.
3	[PRINT] key/ READY indicator/ DATA indicator	Press to enter the print mode. •READY indicator Print data can be received when this indicator is lit. •DATA indicator Lights up or blinks when print data is being received. Also lights up or blinks when printing is being performed.
4	[IMAGE SEND] key/ LINE indicator/ DATA indicator	Press to enter the network scan/fax mode. •LINE indicator During sending or receiving FAX data or scan data, this lamp is lighted. •DATA indicator Lights up or blinks when FAX data is being received. Also lights up or blinks when printing is being performed.
5	[COPY] key	Press to select the copy mode and display the basic screen of the copy mode. Even when the machine is busy in another mode, the basic copy mode screen will appear when the [COPY] key is pressed. If this key is pressed and held while the basic screen of the copy mode is displayed, the total output count and the quantity of toner remaining (percentage) will be displayed.
6	[JOB STATUS] key	Press to display the current job status.
7	[CUSTOM SETTINGS] key	Use to adjust the contrast of the touch panel or to set key operator programs.
8	Numeric keys	Use to enter number values for various settings.
9	[*] key ([ACC.#-C] key)	If the auditing mode has been set, press this key to close an open account after finishing a copy, facsimile scanning or network scanning job.
10	[#/P] key*	Press to select the job memory mode.
11	[C] key*	Press to clear a copy quantity entry. If this key is pressed while the automatic document feeder is being used, any originals in progress will be automatically output.
12	Start key*	When the indicator is lit, copying, facsimile scanning and network scanning jobs can be started. Press to start copying.
13	[CA] key*	Press to clear all selected settings and return the machine to the initial settings for the currently selected mode. Before starting a copy operation, press the [CA] key first.

3. Touch Panel

A. Basic screen of copy mode

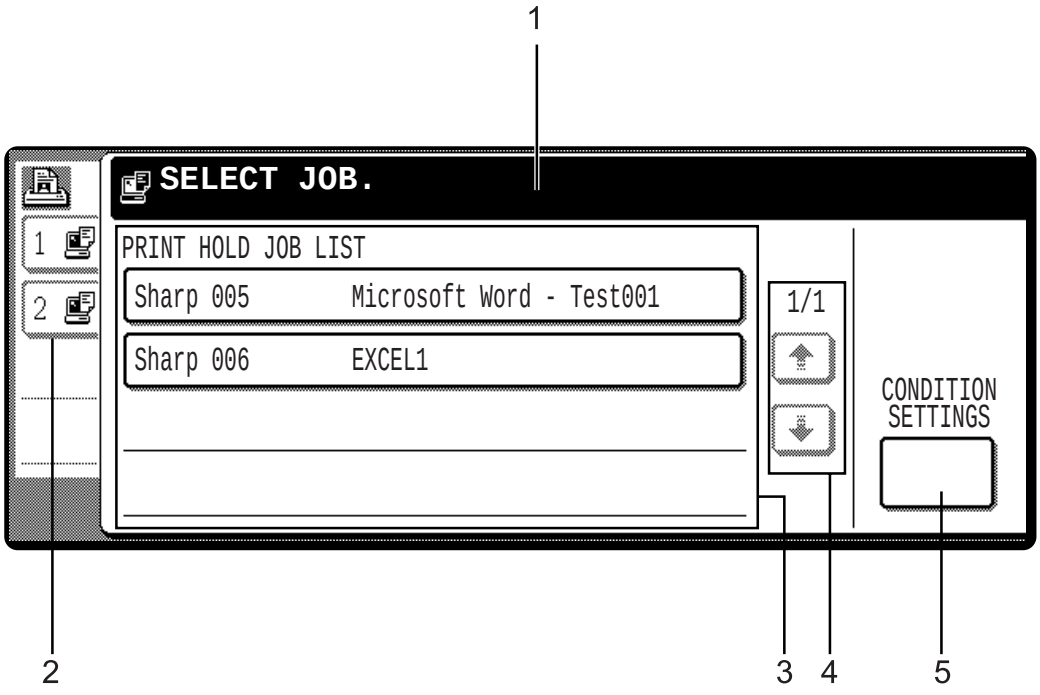
When the copy mode key is pressed, this display screen will appear showing the basic copy mode selections.



1	Message display	Basic status messages are displayed here.
2	[INTERRUPT] key display area	When interrupt copy is available, the [INTERRUPT] key will be displayed here. When an interrupt copy job is being run, a [CANCEL] key will be displayed here to be used for canceling the interrupt copy job.
3	Copy quantity display	Displays the selected number of copies before the [START] key is pressed or the number of completed copies after the [START] key is pressed. A single copy can be made when "0" displayed.
4	[2-SIDED COPY] key	Touch to display the duplex copy mode setting screen. A highlighted selection on the screen will indicate the currently selected mode. The setting screen can be closed by touching the [OK] key on the setting screen whether or not a selection change was made.
5	[OUTPUT] key	Touch to display the output mode setting screen. A highlighted selection on the screen will indicate the currently selected mode. The setting screen can be closed by touching the [OK] key on the setting screen whether or not a selection change was made.
6	[SPECIAL MODES] key	Touch to display the special modes selection screen.
7	Paper size display	The display shows the location of the paper trays, the size of the paper in the trays and the approximate amount of paper loaded in each tray. The approximate amount of paper in a tray is indicated by .
8	Original size display	The original paper size will be displayed when originals are placed on the document glass or in the document feeder.
9	Exposure display and [EXPOSURE] key	A touch of the [EXPOSURE] key will open the exposure selection window. A highlighted key on the exposure window indicates which exposure mode (AUTO, TEXT, TEXT/PHOTO or PHOTO) is currently selected. When an exposure mode other than AUTO is selected, an exposure level scale will also appear in the window.
10	Paper select display and [PAPER SELECT] key	Displays the selected paper size. When the auto paper select mode has been selected, "AUTO" will be displayed.A touch of the [PAPER SELECT] key will open the paper selection window. When a selection is made, the selection window will close. To close the window without making a selection touch the key again
11	Copy ratio display and [COPY RATIO] key	Displays the selected copy ratio. Touch to display the reduction and enlargement copy ratio selection screen.

B. Print mode screen

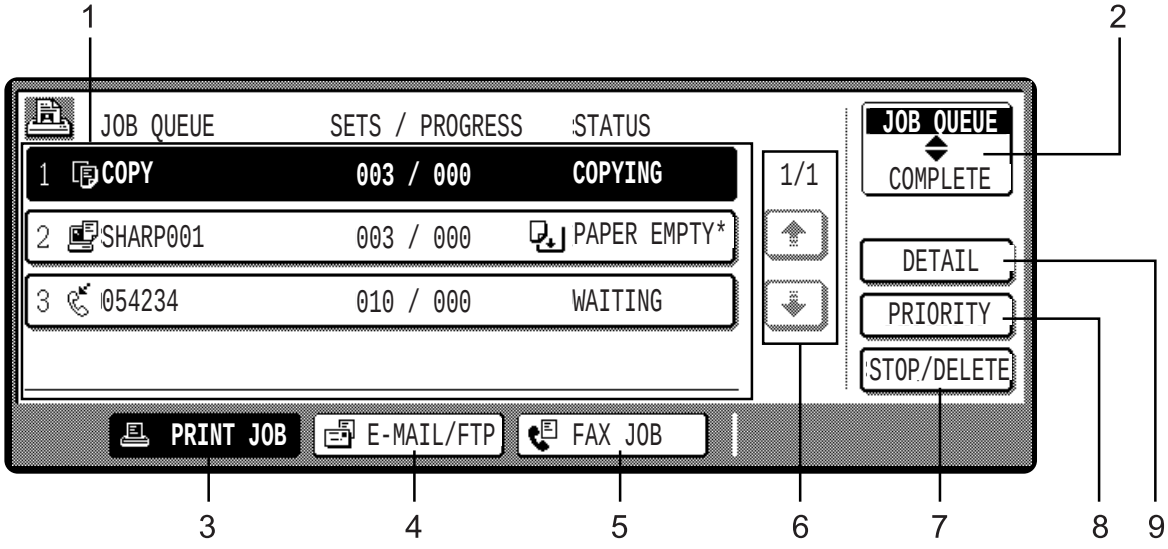
This screen is displayed when the print mode is selected.
(The display varies with the mode. For the display in other modes)



1	Message display	A message is displayed in this column.
2	Job status screen	Refer to the text.
3	Print hold job list	If the job retention function is used, the list of stored print jobs is displayed here (up to 100 jobs). The job retention function can be used only if the printer is equipped with a hard disk drive unit. If the main switch is turned off, stored print data will be cleared.
4	Display scroll keys	Use these keys to view the job hold list when it is contained on more than one screen.
5	[CONDITION SETTINGS] key	Use to switch the display to the printer configuration menu.

C. Job status screen (common to print, copy, network scan, and fax modes)

This screen is displayed when the [JOB STATUS] key on the operation panel is pressed.
A job list showing the current job at the top of the job queue or a list showing completed jobs can be displayed.
The contents of the jobs can be viewed, moved up to the highest priority in the job queue or deleted from the queue.

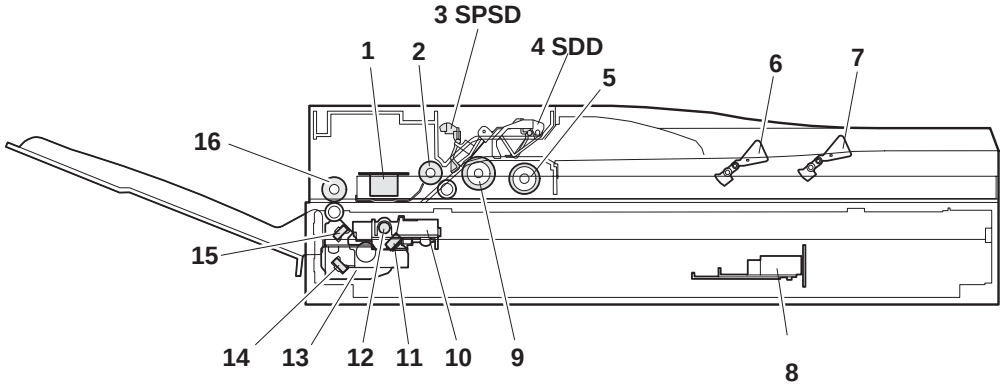


1	Job list	A job list which indicates the current job and reserved jobs or a job list which indicates completed jobs is displayed. The icons to the left of the jobs in queue represent the job mode. Print mode / Copy mode Network scan mode Fax mode (transmission job) / Fax mode (reception job) When a job list which indicates the current job and reserved jobs is displayed, the displayed jobs themselves are operation keys. To cancel printing or to give a job the highest print priority, touch the relevant job key to select the job and execute the desired operation using the keys described in 7,8, and 9
2	Mode switching key	Use to switch the job list between "JOB QUEUE" and "COMPLETE". "JOB QUEUE": Displays the list of the current job and the reserved jobs. "COMPLETE": Displays the list of completed jobs.
3	[PRINT JOB] key	Use to display the print job list for all modes (print, copy, network scan, and fax).
4	[E-MAIL/FTP] key	Use to display the list of jobs that use the network for sending e-mail by SNMP protocol or sending to an ftp site or desktop by ftp protocol.
5	[FAX JOB] key	Use to display the fax communication status and the reserved transmission job status.
6	Display switching keys	Use to switch the page of the displayed job list.
7	[STOP/DELETE] key	Use to cancel or delete the current job or delete the selected reserved job. Received fax print jobs that have been reserved, however, cannot be deleted.
8	[PRIORITY] key	If you select a job among the reserved jobs in the "JOB QUEUE" job list to which you wish to give the highest priority and touch this key, the job will move to the highest priority reserved job.
9	[DETAIL] key	Use to display the detailed information of the selected job. The paper size for printing can be changed from the specified size.This function, however, cannot be used when a fax reception print job is selected.

* "PAPER EMPTY" in the job status display

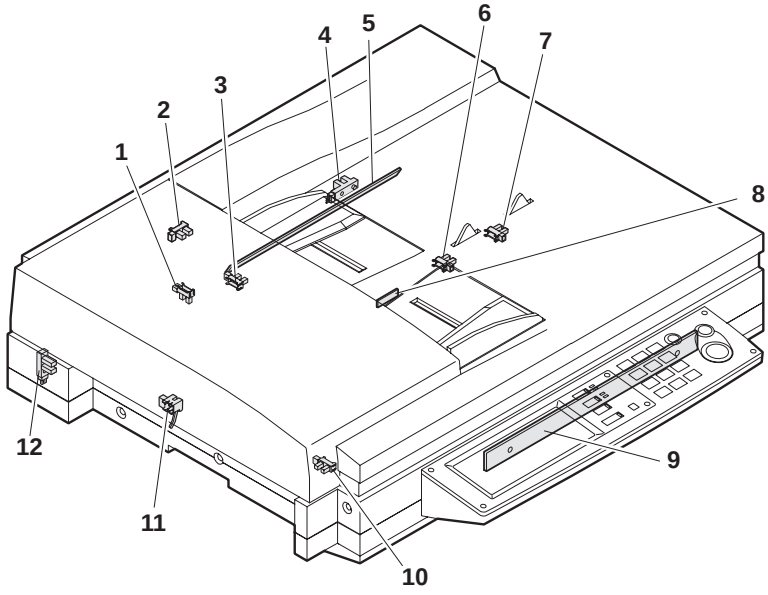
When a job status display indicates "PAPER EMPTY", the specified size paper is not loaded in any tray to run that job.
In this case, printing is suspended for that job until the required paper is loaded. Until the required paper is loaded another reserved job data will be printed if possible.
(If paper runs out during printing, another job will not be printed.) If you wish to change the paper size because you do not have the specified size paper, you can change the size by touching the current job key to select it and touch the [DETAIL] key described in 9

4. Cross sectional view



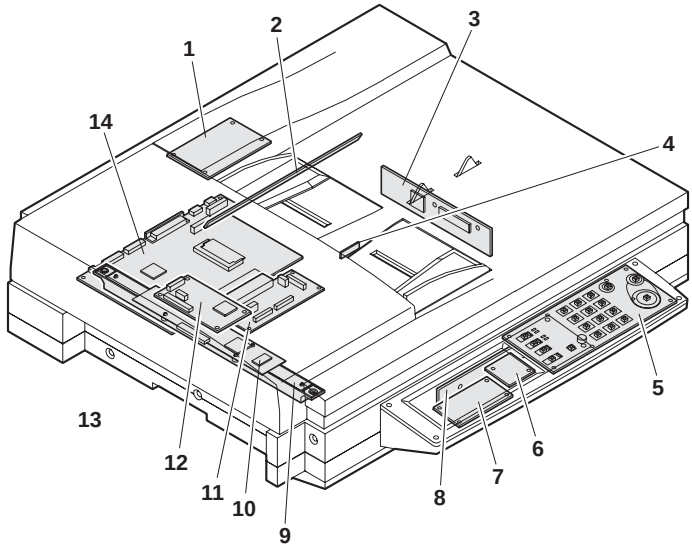
No.	Name	No.	Name
1	CIS unit (AR-EF1 only)	9	Original feed roller
2	Original resist roller	10	Copy lamp base unit
3	Original resist front sensor (SPSD)	11	No. 1 mirror
4	Original set sensor	12	Copy lamp (Xenon)
5	Original take-up roller	13	Mirror base unit
6	Original length sensor 1 (SLD1)	14	No. 3 mirror
7	Original length sensor 2 (SLD2)	15	No. 2 mirror
8	CCD/lens unit	16	Original exit roller

5. Switch, Sensor



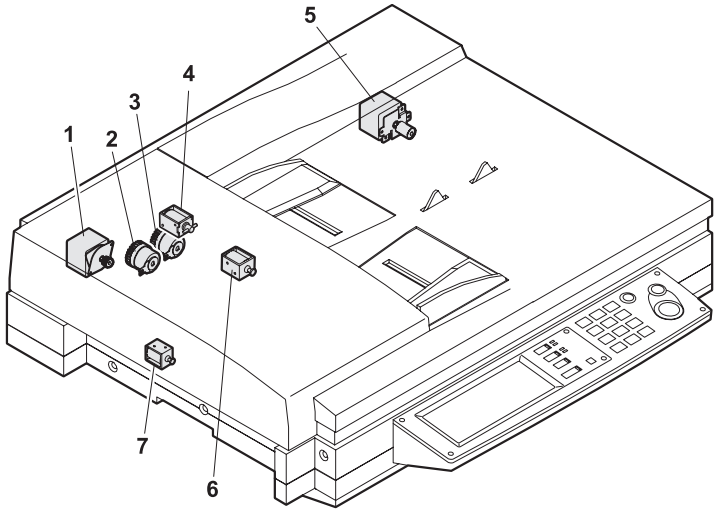
	Code	Name	Active condition
1	SPSD	SPF original resist front sensor	
2	SCOV	SPF paper feed cover sensor	
3	SDD	SPF original set sensor	
4	SOCD	OC open/close sensor	
5		Original size sensor PWB (Light emitting side)	
6	SLD1	SPF original length sensor 1	
7	SLD2	SPF original length sensor	
8		SPF original width detection volume PWB	---
9		Original size sensor PWB (Light receiving side)	
10	SSET	SPF open/close sensor	
11	SPOD	SPF original exit sensor	
12	MHPS	Mirror home position sensor	

6. PWB



No.	Name	Function/Operation
1	SPF control PWB	SPF control
2	Original size detection PWB (Light emitting side)	Original size detection when using the table glass
3	CCD PWB (in lens unit) (The lens unit cannot be disassembled.)	Image scan (Table glass/SPF surface)
4	SPF original width detection volume PWB	SPF original width detection
5	MFP operation PWB	Panel operation control
6	LCD inverter PWB	Inverter for LCD backlight
7	LVDS PWB	LCD signal relay
8	Original size sensor (Light receiving side)	Original size detection when using the table glass
9	CIS unit (in CIS unit) (The CIS unit cannot be disassembled.)	Image scan (SPF back surface)
10	CIS interface PWB (in CIS unit) (The CIS unit cannot be disassembled.)	CIS signal AD conversion process
11	Scanner interface PWB	Scanner unit and connection of scanner control PWB
12	CIS control PWB	CIS unit control and image process
13	CL inverter PWB	Inverter for copy lamp
14	Scanner control PWB	Scanner unit control

7. Motor, Clutch, Solenoid



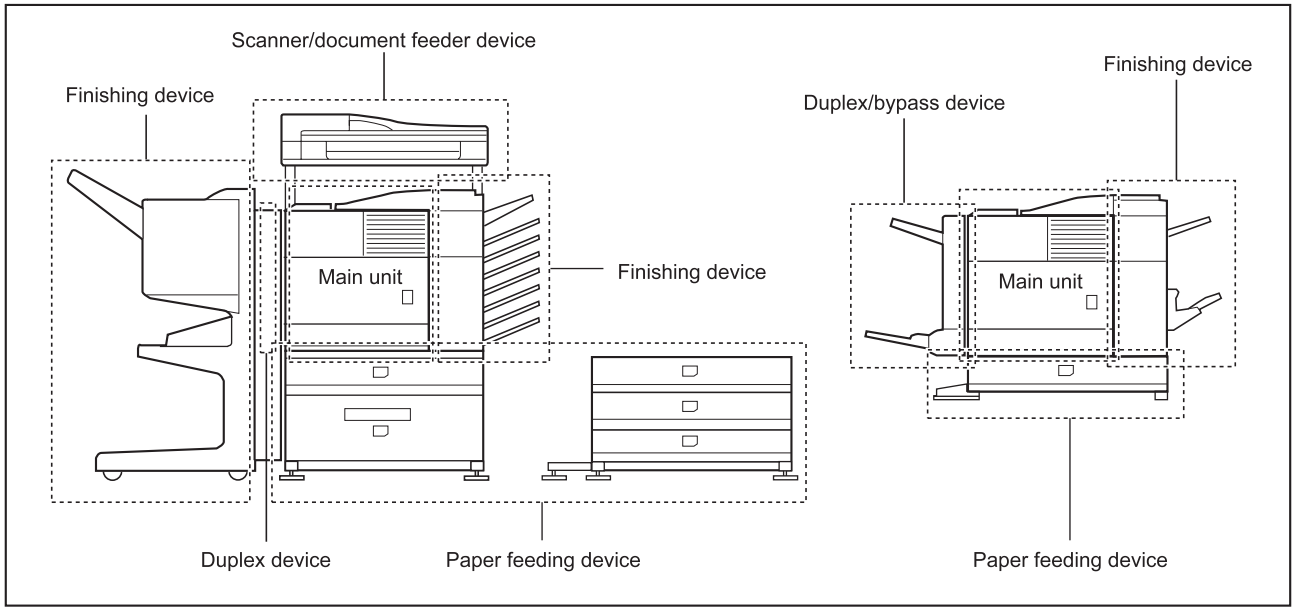
No.	Name		Function/Operation
1	SPFM	SPF motor	Original transport in SPF scan
2	SPSC	SPF original resist clutch	SPF original scan timing adjustment
3	SPFC	SPF original feed clutch	SPF original feed roller drive
4	SDSS	SPF original stopper solenoid	SPF original stopper gate drive
5	MIRM	Mirror motor	Mirror base copy lamp base drive
6	SPFS	SPF original feed solenoid	SPF original feed unit drive
7	STMPS	Stamp solenoid	Finish stamp drive (Option AR-SU1 required)

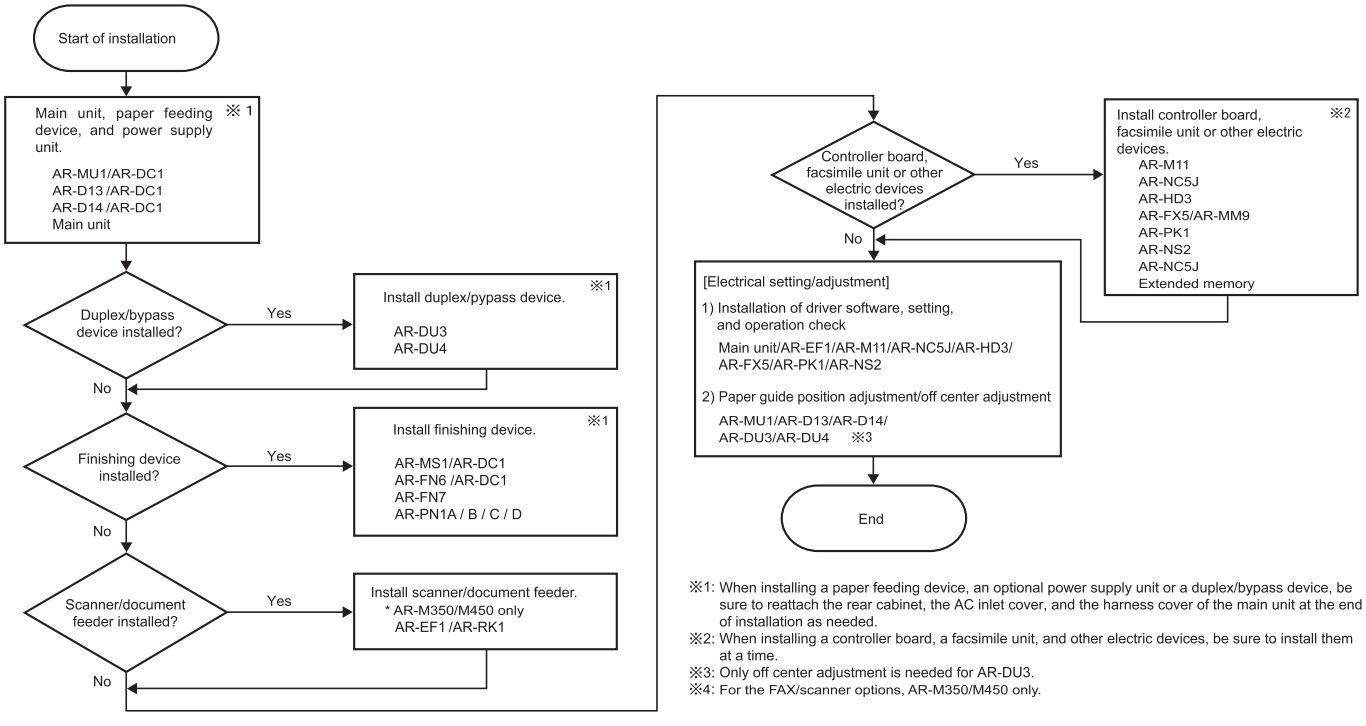
[6] UNPACKING AND INSTALLATION

1. Installing procedure flowchart

There are many combinations between this machine and option units. For installing option units, observe the following procedures for efficiency.

To install the devices effciently, follow the procedure below.
Some peripheral devices may have been installed as standard devices depending on the main unit model.
Part of descriptions and illustrations may be different.





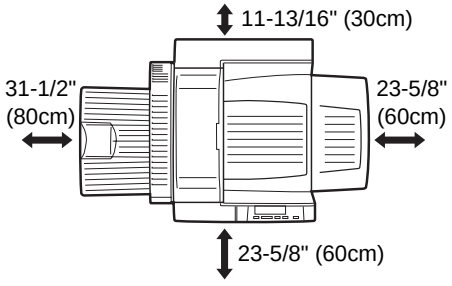
※1: When installing a paper feeding device, an optional power supply unit or a duplex/bypass device, be sure to reattach the rear cabinet, the AC inlet cover, and the harness cover of the main unit at the end of installation as needed.
※2: When installing a controller board, a facsimile unit, and other electric devices, be sure to install them at a time.
※3: Only off center adjustment is needed for AR-DU3.
※4: For the FAX/scanner options, AR-M350/M450 only.

* For installation of an option unit, refer to the Service Manual of the option unit.

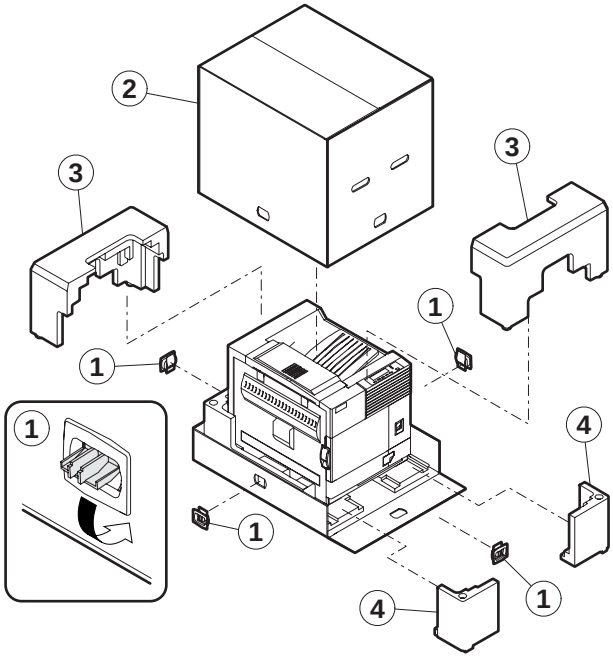
2. Note for installation place

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

1) The machine should be installed near an accessible power outlet for easy connection.
2) 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.
   •For the power supply requirements, see the name plate of the main unit.
3) Do not install your machine in areas that are:
   •damp, humid, or very dusty
   •exposed to direct sunlight
   •poorly ventilated
   •subject to extreme temperature or humidity changes, e.g., near an air conditioner or heater.
4) Be sure to allow the required space around the machine for servicing and proper ventilation.



3. Unpacking procedure



Check the following items are included in the package.

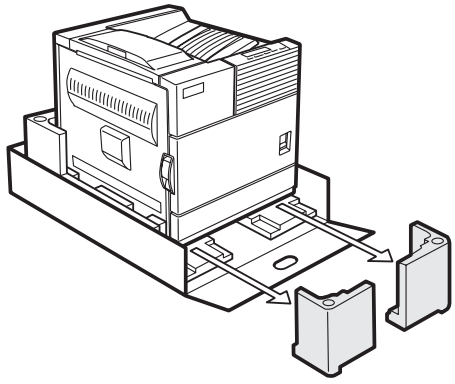
Developer	
Toner cartridge for installation	
CD-ROM for AR-350/450 series printers	
Operating Manual	
Counter kit contract	

4. Machine installing procedure

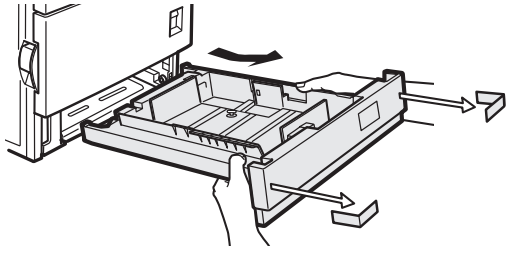
Note: In advance to installation of the machine, the paper feed option units (AR-D13 or AR-D14) should have been installed.

A. Removal of the machine

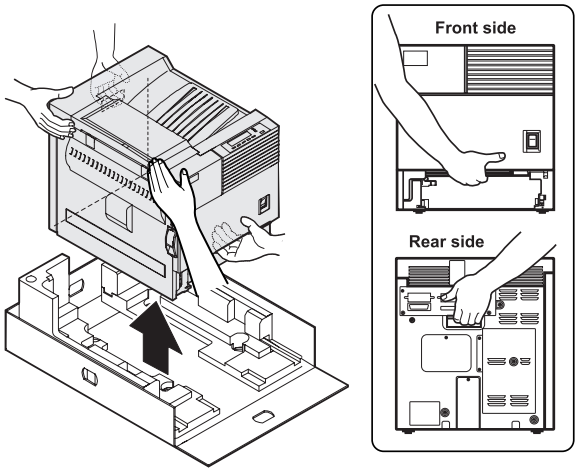
1) Remove the cushioning materials from the right and left of the front side.



2) Remove the locking tape from the right and left sidesof the tray. Then,Remove the top of the carton and lower the plastic bag covering the machine while the machine is still on the carton base.
3) Remove the packing tape from the paper tray, pull out the paper tray until it stops and remove it by tilting it upward.



4) One person must lift by the empty front tray pocket with the right hand and steady the machine with the left hand placed at the upper left of the machine.
   The other person must lift with the right hand by using the lifting recess in the rear of the machine and also steady the machine with the left hand as shown in the illustration.

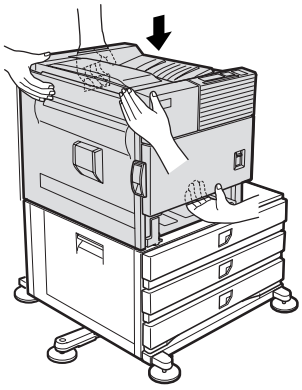


Note: The center of gravity of the machine lies in the left side when viewed from the Back of machine. When lifting the machine, be careful not to drop it.

B. Installation of paper feed options to the machine

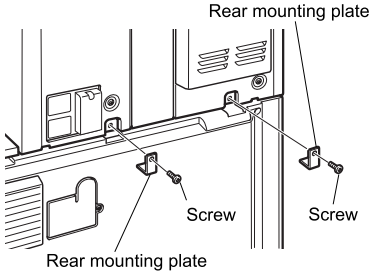
Note: Before use of this machine, one of the paper feed option units (AR-D13/AR-D14) should be installed to the machine for safety reasons.
Refer to the drawing of the AR-MU1 in this manual.

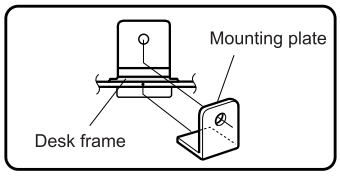
1) Put the machine on the previously installed option unit.
Be sure to check that the boss of the option unit is securely engaged with the machine and that the external lines (front and left sides) of the option unit and those of the machine are aligned completely.



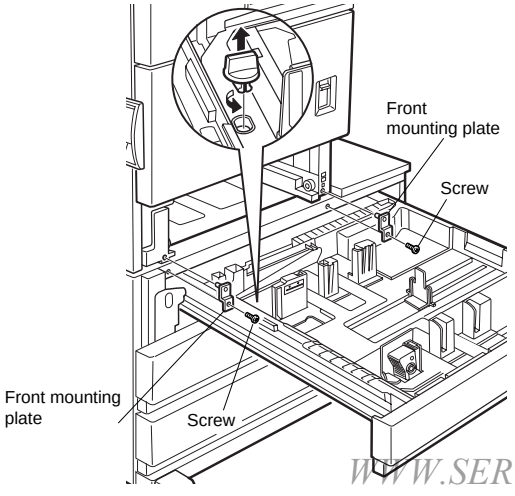
Caution: For installation of the main unit, it must be held by two persons and installed without haste.

2) Connect the main unit to the stand/paper drawer.
<1>Attach the rear mounting plates using a supplied screw for each.

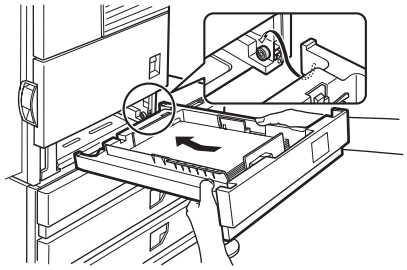




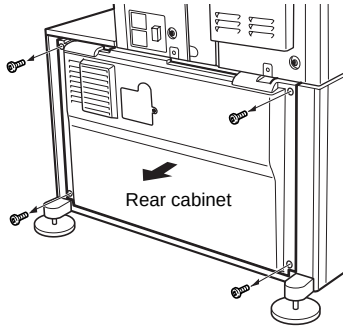
Caution: Insert the rear mounting plates under the desk frame.
<2>Pull out the upper paper tray of the stand/paper drawer until it stops and attach the front mounting plates using a supplied screw for each.
Then, remove the lock of the paper tray and close the tray.
Remove the locks of the middle tray and the lower tray similarly.



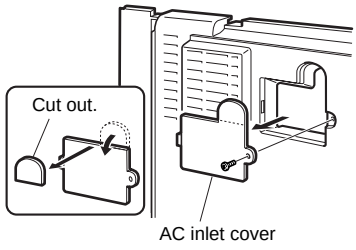
<3>Reattach the paper tray of the main unit.



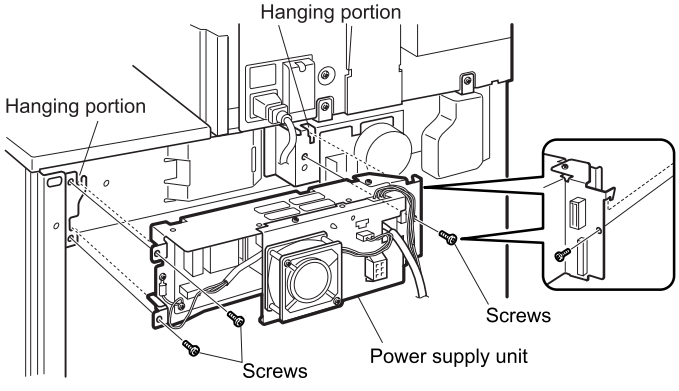
3) Remove the rear cabinet of the stand/paper drawer and remove the AC inlet cover.
<1>Remove the four screws that fix the rear cabinet and then remove the rear cabinet.



<2>Remove the screw that fixes the AC inlet cover and then remove the AC inlet cover.
<3>Process the AC inlet cover as shown in the illustration.

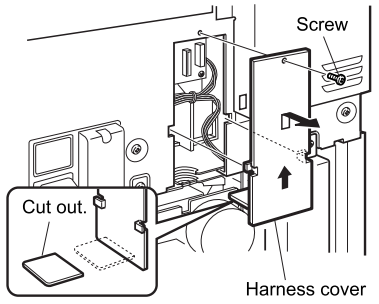


4) Attach the power supply unit (AR-DC1).
Attach the power supply unit to the hanging portions and secure it using the three supplied screws.

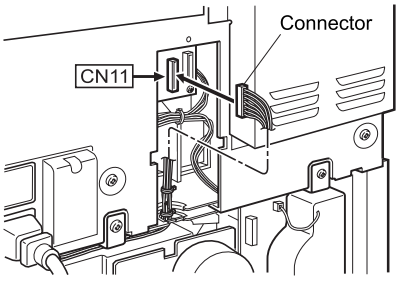


5) Connect the power supply unit harness to the PCU PWB of the main unit of the printer.

<1>Remove the screw that fixes the harness cover of the main unit of the printer and slide the harness cover up to remove it.
Process the harness cover as shown in the illustration.

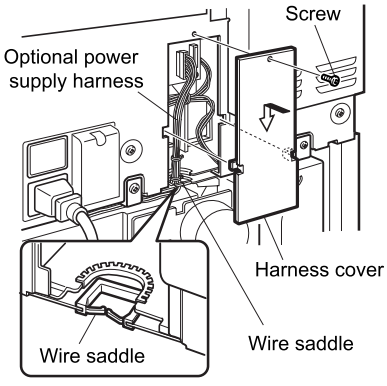


<2>Connect the optional power supply harness connector to CN11 (red connector) of the PCU PWB of the main unit of the printer.

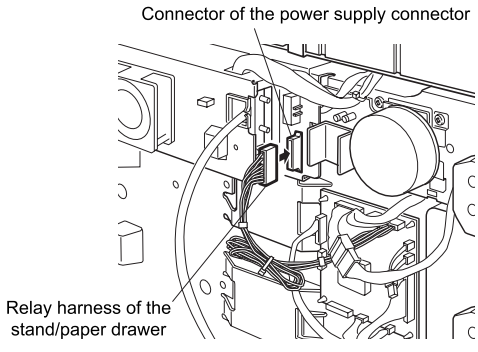


<3>Reattach the harness cover to its original position and fix it with the removed screw.
At this time, ensure that the optional power supply unit harness is arranged as shown in the illustration.

•Fix the harness securely to the wire saddle.

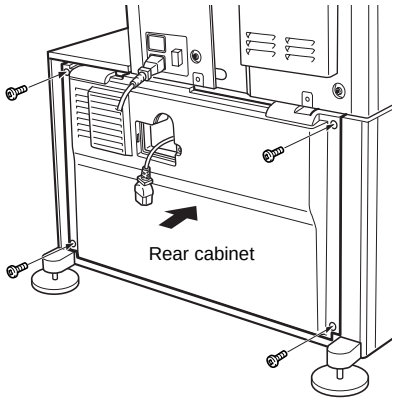


6) Connect the relay harness of the stand/paper drawer to the power supply unit.
Connect the relay harness of the stand/paper drawer to the connector of the power supply unit.

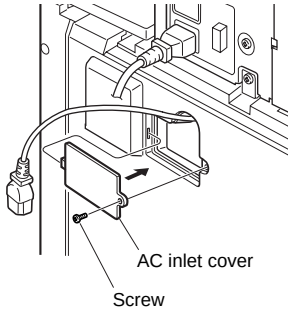


7) Attach the rear cabinet of the stand/paper drawer.

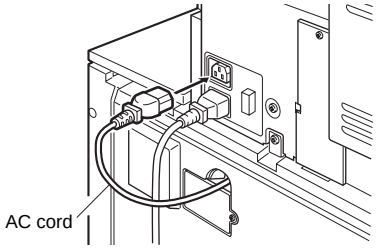
<1>Pass the cord of the power supply unit through the hole of the rear cabinet and attach the rear cabinet to the stand/paper drawer.



<2>Attach the AC inlet cover to the rear cabinet of the stand/paper drawer and fix it with the removed screw.

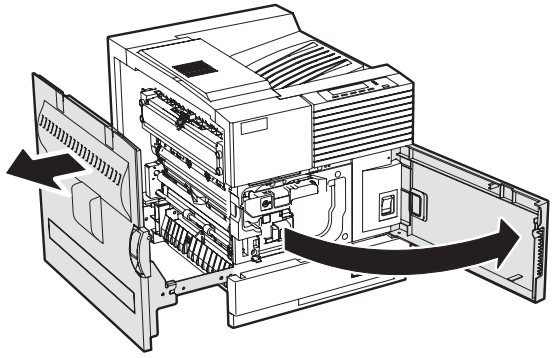


8) Connect the AC cord of the power supply unit to the main unit of the printer.
Connect the AC cord of the power supply unit to the outlet connector of the main unit of the printer at the location shown in the illustration.

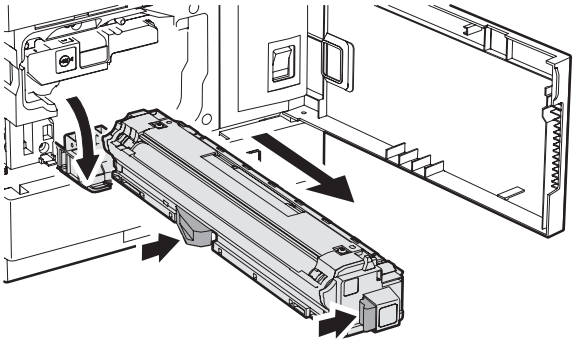


C. Setting related to process

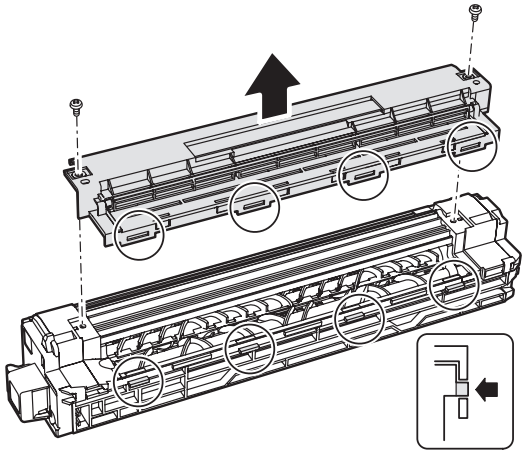
1) Open the left door and the front door.



2) Remove the developer cartridge from the machine.

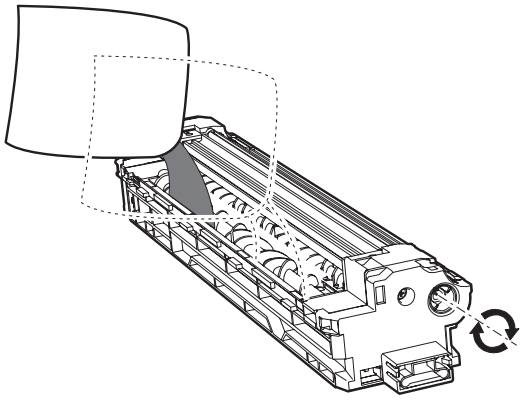


3) Remove the top cover of the developer cartridge.



4) While rotating the MG roller, supply developer into the developer cartridge evenly.B

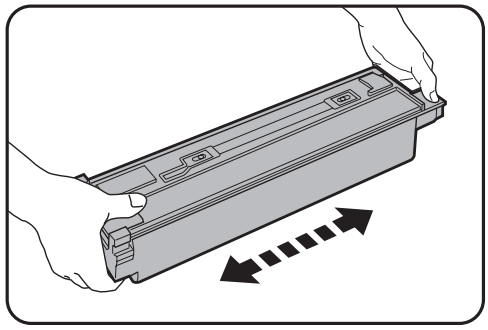
Note: Before opening the developer seal, shake it 4 or 5 times.



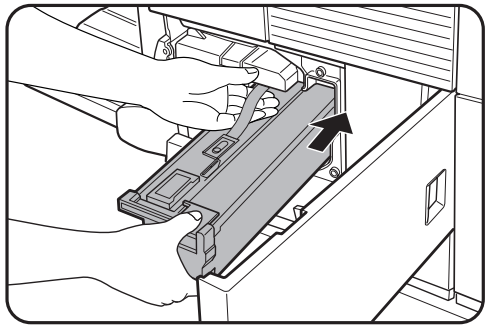
5) Attach the top cover to the developer cartridge and install the cartridge to the machine.

D. Toner cartridge settings

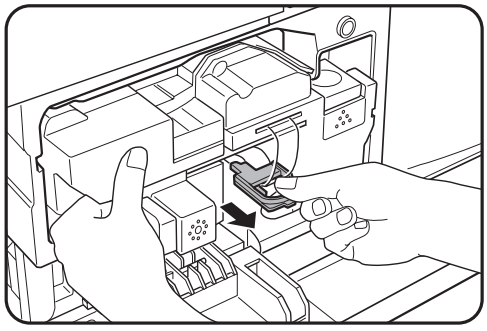
1) Remove a new toner cartridge from the package and shake it horizontally five or six times.



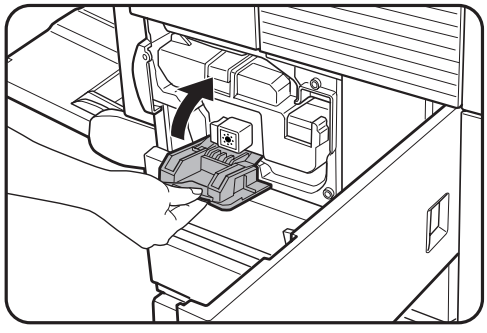
2) Insert a new toner cartridge.
Push the cartridge in until it locks securely into place.



3) Gently remove the sealing tape from the cartridge.

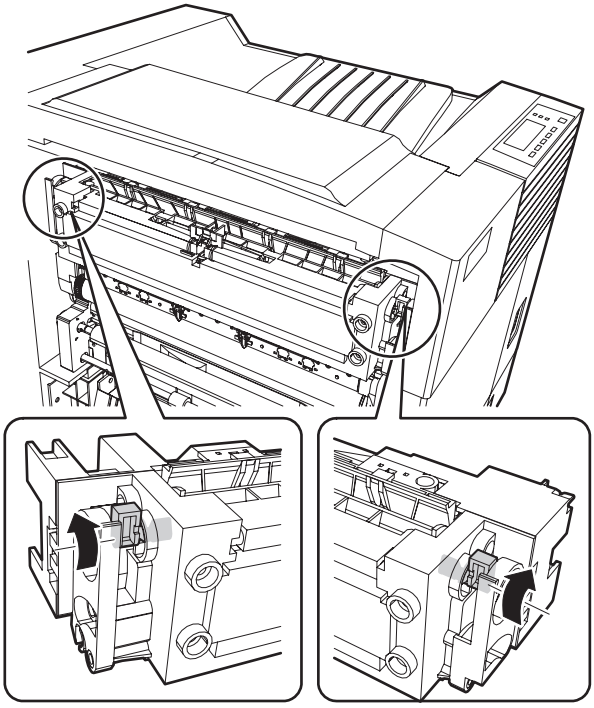


4) Return the cartridge lock lever.



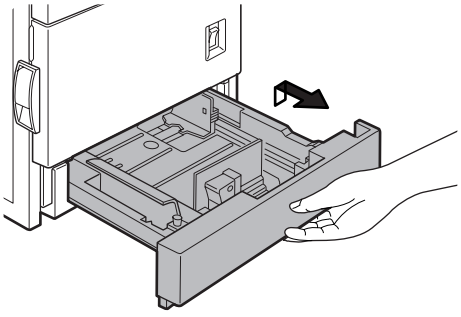
E. Setting related to fusing

1) Put down the right and the left levers of the fusing unit in the arrow direction.

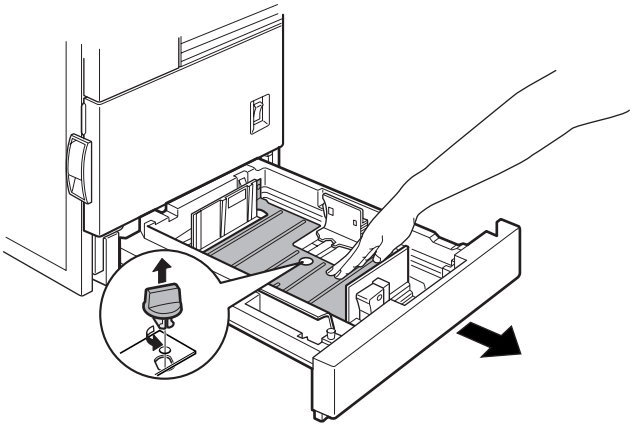


F. Paper setting

1) Pull out the first stage paper feed tray.
Slowly pull out the tray until it stops.



2) While pressing the paper holding plate, remove the fixing pin.

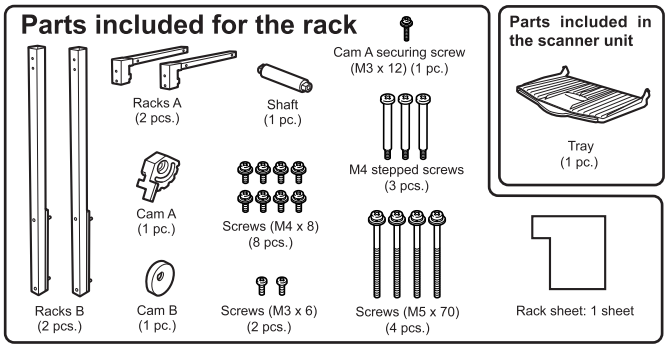


3) Put paper in the tray, and close the paper feed tray.

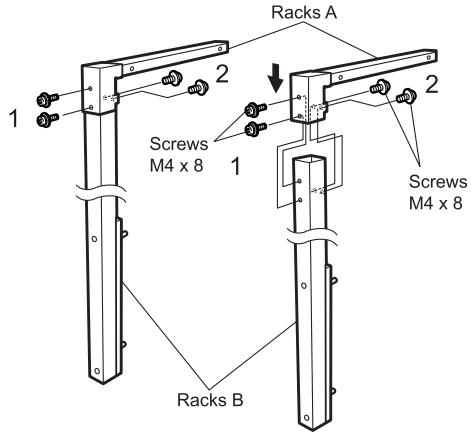
5. AR-EF1 / AR-RK1

<Before installation>

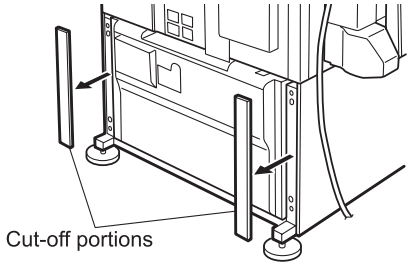
•For installation, an MFP control board (AR-M11) is needed.



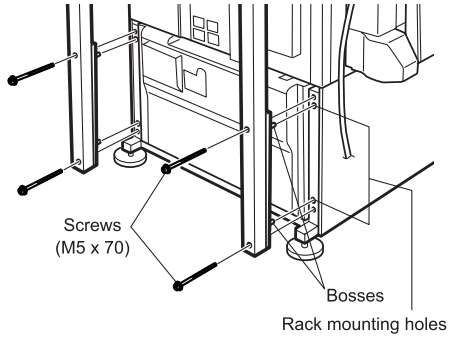
1) Assemble the rack.
Insert two racks A securely all the way into two racks B respectively as shown in the illustration and use four screws (M4 x 8) respectively to secure the racks in the order of <1> to <2> in the illustration.



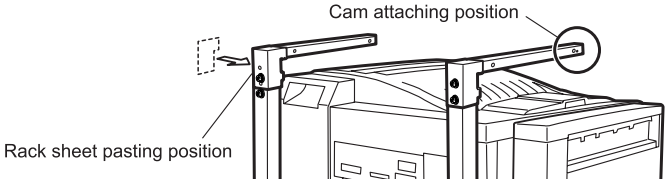
2) Cut the rear cabinet of the desk unit.
Cut the cut-off portions on both ends of the rear cabinet of the desk unit by hand and remove them.



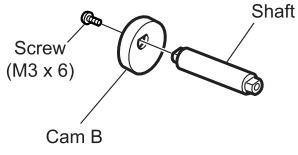
3) Mount the rack to the desk unit.
Insert the bosses of the rack into the two rack mounting holes from which the cut-off portions of the rear cabinet of the desk unit have been removed, and use two screws (M5 x 70) to secure each rack.



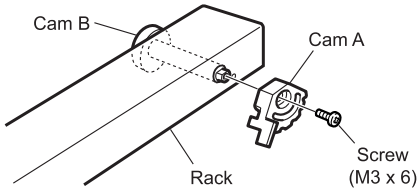
4) Attach the cam and paste the rack sheet.
Attach the cam to the position shown in the right illustration and paste the rack sheet as described in <4>.



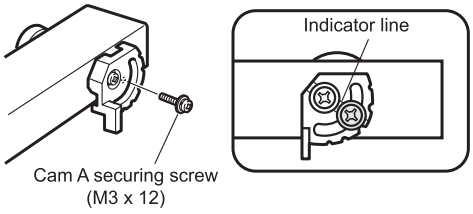
<1>Insert the shaft to cam B as shown in the illustration and secure it with a screw (M3 x 6).



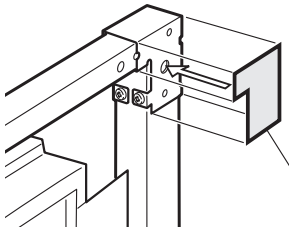
<2>Insert the shaft that has been attached to cam B into the hole of the rack as shown in the illustration, attach cam A to the shaft, and secure it with a screw (M3 x 6).



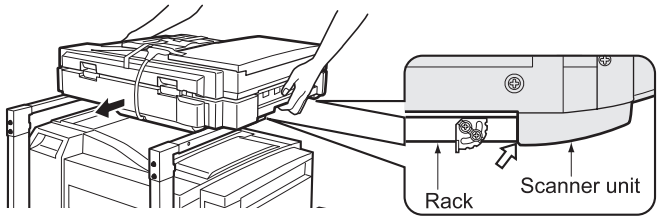
<3>Secure cam A with a cam A securing screw (M3 x 12).
At this time, adjust the position of the head of the cam A securing screw to the center of the indicator line of cam A and secure the cam.



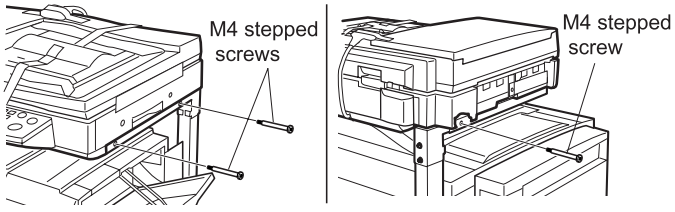
<4>Paste the rack sheet to the position shown in the illustration.



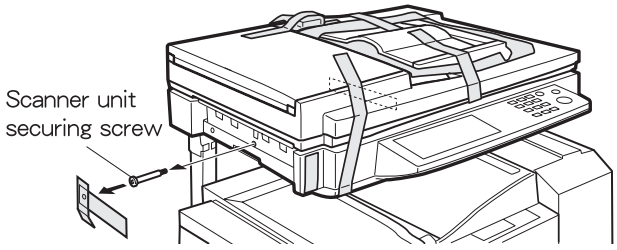
5) Put the scanner unit on the rack.
Hold the grips of the scanner unit, put the scanner unit on the rack from the front of the rack by positioning the unit to the rack as shown in the illustration, and gently slide the unit until it stops at the end of the rack.



6) Secure the scanner unit.
Secure the scanner unit that has been put on the rack to the rack with three M4 stepped screws.

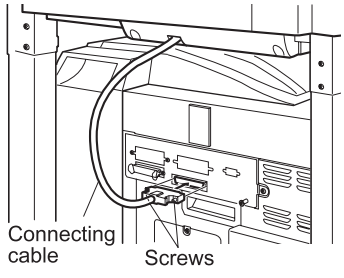


7) Remove the securing tape and securing screw for packing.
Remove all pieces of packing tape and the screw that secure the scanner module and remove the packing, the notice sheet.

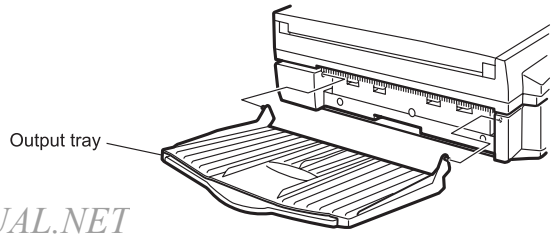


8) Connect the cable.
Connect the connector of the scanner module to the connector of the main unit of the printer and tighten the two screws on the connector to secure the connector.

Caution: To prevent damage to the pins inside the connector, when inserting the connector, align the guides of the connector exactly.



9) Attach the output tray.
Attach the output tray to the scanner unit as shown in the illustration.



If another peripheral device must be installed, carry out the following step at the end of the installation work.

6. Automatic developer adjustment

1) Attach the cabinets which were removed.

2) Close the left door.
   At that time, keep the front door open.

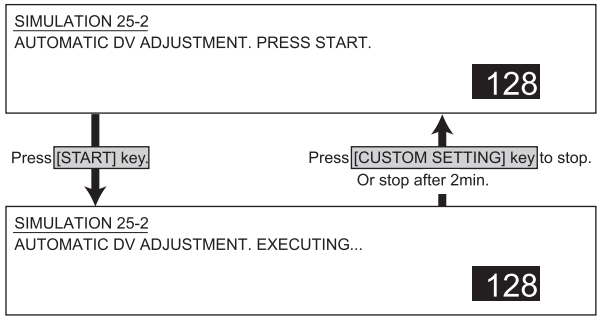
Note: The automatic developer adjustment must be performed by entering the simulation mode with the front door open. If the power is turned off with the front door closed, warm-up is performed to supply toner to the developing unit. As a result, the reference toner density cannot be obtained.

3) Insert the power plug into the power outlet.

4) Switch to the copy mode, and press
   [P] → [*] → [C] → [*] → [2] [5] → [START] → [2] → [START], and
   the machine will enter the simulation mode “AUTOMATIC DV AD”.

5) Close the front door.

(LCD Display)



6) Press the [START] key, and the automatic developer adjustment will be performed.
   During execution of the automatic developer adjustment, the data (LED) blinks and the LCD indicates the toner sensor value.

7) After about 2 min, the adjustment value is stored in the machine. Check that the mode was normally completed.
   Normal end: The data LED goes off.
   Abnormal end: The error LED lights up.
   Remove the cause of the error, and execute the automatic developer adjustment again.

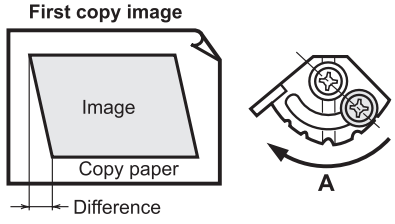
8) Turn off/on the power, and the machine returns to the normal mode and enters the warm-up mode.

7. Adjustment of distortion

Since adjustment was made at the shipment, any additional adjustment is not needed basically. If distortion occurs as shown in the illustration, however, perform the adjustment by following the procedure below.

1) Use a level meter to check that the scanner unit is installed on a horizontal surface.
   Make a copy. If distortion occurs as shown in Fig.1 or Fig. 2, loosen the cam A securing screw (M3 x 12) to perform the adjustment.

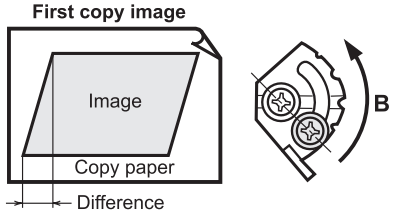
[Fig. 1]



• In case of Fig. 1

Move cam A in the direction of A by the difference of the image.
As a guide for the amount of movement, the image moves 0.5 mm by one division (one groove) of cam movement.
After the movement, tighten the cam A securing screw (M3 x 12) and make a copy again to check that the copy image is not distorted.

[Fig. 2]



• In case of Fig. 2

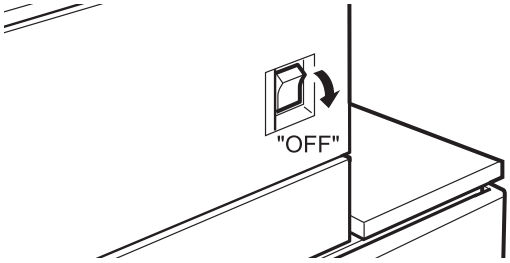
Move cam A in the direction of B by the difference of the image.
As a guide for the amount of movement, the image moves 0.5 mm by one division (one groove) of cam movement.
After the movement, tighten the cam A securing screw (M3 x 12) and make a copy again to check that the copy image is not distorted.

8. AR-M11

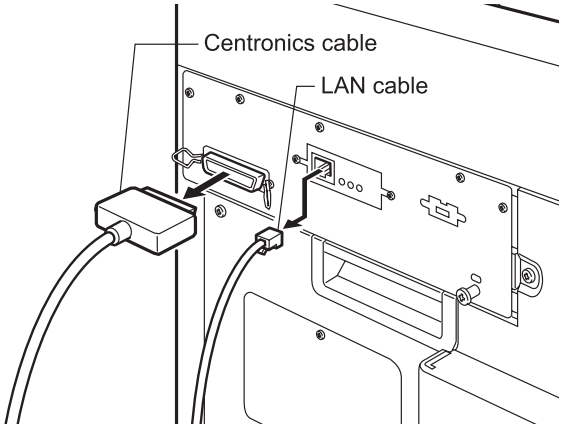
<Before installation>

•For installation of AR-M11, a scanner module is needed.
•Start installation after checking that the DATA and COMMUNICATION indicators on the operation panel are neither lit nor blinking.

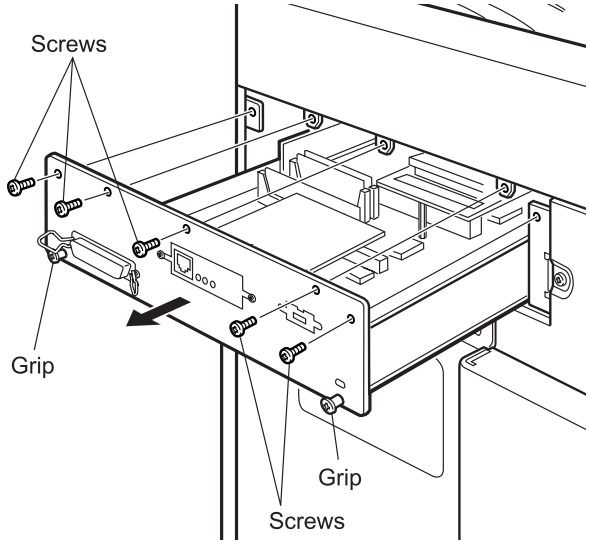
1) Turn off the main switch of the main unit of the printer.
Turn the main switch located on the front side of the main unit to the "OFF" position.
Then remove the power plug from the outlet.



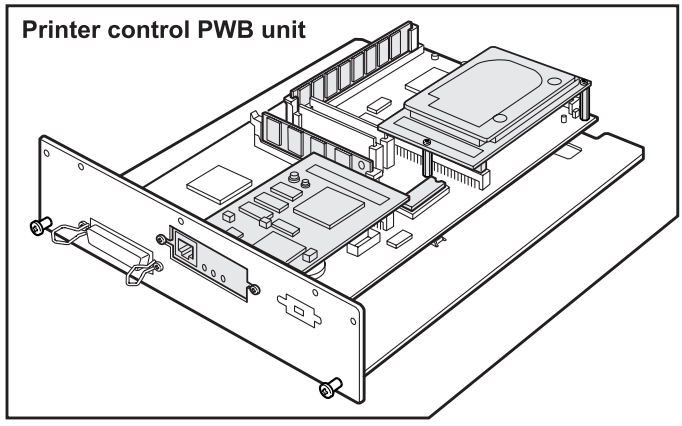
2) Remove the cables connected to the printer control PWB unit.
Remove all the cables connected to the printer control PWB unit from the computer.

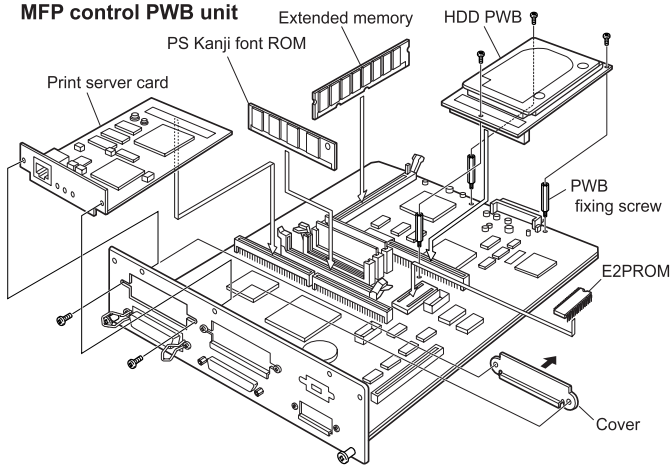


3) Remove the printer control PWB unit.
Remove the five screws that fix the printer control PWB unit to the main unit of the printer.
Then, hold the two grips and pull out the printer control PWB to remove it from the main unit.



4) Move the optional boards to the MFP control PWB.
Remove the print server card, the HDD PWB, the expansion memory, the PS Kanji font ROM, and the E2PROM from the removed printer control PWB unit and mount them to the positions of the MFP control PWB unit shown in the illustration.





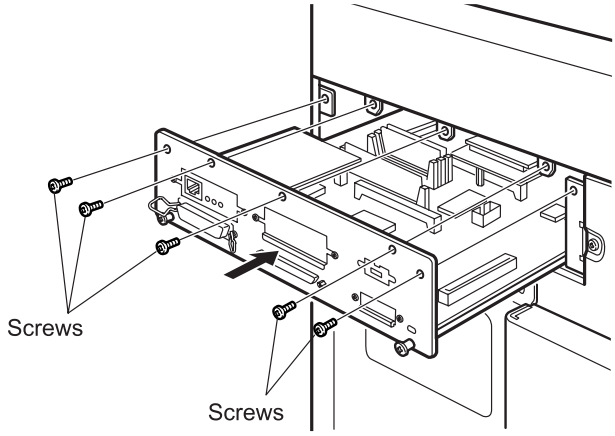
•Installation of print server card

<1>Remove the screws that fix the cover and remove the cover.
<2>Insert the connector of the print server card to the connector of the MFP control PWB unit.
<3>Fix the print server card using the removed screws.

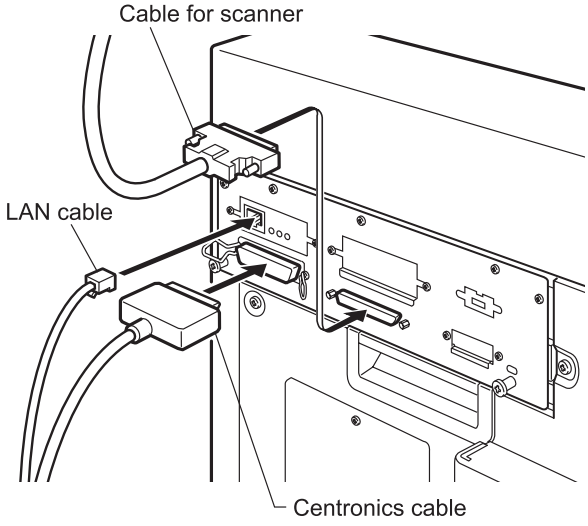
•Installation of HDD expansion PWB

<1>Remove the three screws shown in the illustration among the screws that fix the MFP control PWB unit.
<2>Mount the three PWB fixing screws to the positions from which three screws have been removed.
<3>Insert the HDD expansion PWB to the connector of the MFP control PWB.
<4>Fix the HDD expansion PWB to the PWB fixing screws using the three screws that have been removed.

5) Attach the MFP control PWB.
Attach the MFP control PWB unit to the main unit of the printer and fix it using five screws.

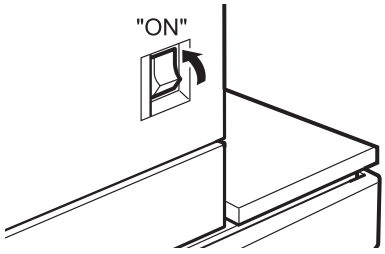


6) Connect the cables to the MFP control PWB.
Connect all the cables that have been removed in step 2 to the connectors of the MFP control PWB unit.



If another peripheral device must be installed, carry out the following step at the end of the installation work.

7) Turn on the main switch of the main unit of the printer.
Insert the power plug of the main unit of the printer to the outlet.
Then, turn the main switch located on the front side of the main unit to the "ON" position.



8) Check the operation.
<1>Check to see if the indicators on the operation panel of the scanner module are lit and key operation is available.
<2>Place an original in the scanner module and check to see if copying can be performed normally.
<3>For setting change of the printer drivers on the computer, see the supplied operation manual.
Then, execute printing from the computer to check for proper printing.

[7] DISASSEMBLY AND ASSEMBLY, MAINTENANCE

1. Self print of set values

Use of SIM 22-6 allows to print the set values and the jam history of the machine.
These values must be printed before execution of maintenance or disassembly procedures.

2. Maintenance System Table

A. Scanner / DSPF

Maintenance cycle : 50K

× Check (Clean, replace, or adjust as necessary.)　○ Clean　▲ Replace　△ Adjust　☆ Lubricate　☐ Move position

Unit name	Part name		When calling	50K	100K	150K	200K	250K	300K	350K	400K	Remark
Optical section	Mirror/Lens/Reflector/Sensors		○	○	○	○	○	○	○	○	○	
	Table glass/OC		○	○	○	○	○	○	○	○	○	
	White reference glass		○	○	○	○	○	○	○	○	○	
	Rails			☆	☆	☆	☆	☆	☆	☆	☆	
	Drive belt/Drive wire/Pulley			×	×	×	×	×	×	×	×	
DSPF	Paper feed section	Take-up roller	○	○	▲	○	▲	○	▲	○	▲	Note 2
		Separation pad	○	○	▲	○	▲	○	▲	○	▲	Note 2
		Paper feed roller	○	○	▲	○	▲	○	▲	○	▲	Note 2
	Transport section	PS roller	○	○	○	○	○	○	○	○	○	
		Exposure section (Dust-proof glass)	○	○	○	○	○	○	○	○	○	
	Paper exit section	Paper feed roller SPF	○	○	○	○	○	○	○	○	○	
	Other	Sensors			○		○		○		○	For cleaning, blow air.
	Finish stamp section [Option] (Japan only)	Stamp solenoid									▲	
		Stamp individual part	×	×	×	×	×	×	×	×	×	User replacement at 10K or 1 year.

Note 2: Replacement reference: Same as above or 2 years.

B. Engine section

* For disassembly procedures, refer to the AR-P350/P450 Service Manual.

Maintenance cycle : 50K

× Check (Clean, replace, or adjust as necessary.) ○ Clean ▲ Replace △ Adjust ☆ Lubricate ☐ Move position

Unit name	Part name	When calling	50K	100K	150K	200K	250K	300K	350K	400K	Remark
Drum peripheral	Drum		▲	▲	▲	▲	▲	▲	▲	▲	Installed when shipping
	Cleaner blade		▲	▲	▲	▲	▲	▲	▲	▲	
	Toner reception seal		▲	▲	▲	▲	▲	▲	▲	▲	
	Side molt		▲	▲	▲	▲	▲	▲	▲	▲	
	Transfer roller	×	×	▲	×	▲	×	▲	×	▲	
	Discharge plate	×	×	▲	×	▲	×	▲	×	▲	
	TR bearing (F/R)			×		×		×		▲	
	Transfer roller collar			×		×		×		▲	
	After-transfer star ring			×		×		×		×	
	TR gear	×	×	×	×	▲	×	×	×	▲	
	Screen grid	(○)×	▲	▲	▲	▲	▲	▲	▲	▲	
	Drum separation pawl UN		▲	▲	▲	▲	▲	▲	▲	▲	
	Charger case (M/C)		○	○	○	○	○	○	○	○	
	Charging plate (saw teeth)	(○)×	▲	▲	▲	▲	▲	▲	▲	▲	
Developing section	Developer		×	▲	×	▲	×	▲	×	▲	Supplied when installing
	DV blade		×	▲	×	▲	×	▲	×	▲	
	DSD collar		○	○	○	○	○	○	○	○	
	DV side seal F		×	▲	×	▲	×	▲	×	▲	
	DV side seal R		×	▲	×	▲	×	▲	×	▲	
	Toner cartridge										Attached when installing./ EX Japan: 814g, user replacement for every 27K.
Fusing section	Upper heat roller		○	○	○	▲	○	○	○	▲	
	Lower heat roller		○	○	○	▲	○	○	○	▲	
	Upper separation pawl		▲	▲	▲	▲	▲	▲	▲	▲	
	Lower separation pawl		▲	▲	▲	▲	▲	▲	▲	▲	
	Thermistor		○	×	○	×	○	×	○	×	Clean and remove paper dust.
	Upper heat roller gear		×	×	×	▲	×	×	×	▲	
	Paper guides	○	○	○	○	○	○	○	○	○	
	Gears		☆	☆	☆	☆	☆	☆	☆	☆	
	Cleaning roller		×	×	×	▲	×	×	×	▲	
	CL roller collar					▲				▲	
Filters	Ozone filter			▲		▲		▲		▲	
Paper feed section	Paper feed roller	○	○	×	○	×	○	×	○	×	Note 1
	Torque limiter	×		×		×		×		×	Note 1
Transport section Paper exit reverse section	PS follower roller	○	○	○	○	○	○	○	○	○	
	Transport rollers	○	○	○	○	○	○	○	○	○	
	Transport paper guides	○	○	○	○	○	○	○	○	○	
	Paper dust remover		×	▲	×	▲	×	▲	×	▲	
Drive section	Specified position	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	Belts							×			
Image quality		×	×	×	×	×	×	×	×	×	
Other	Sensors			×		×		×		×	

Note 1:Replacement reference: Use the counter value of each paper feed port as the replacement reference.
Paper feed roller/Torque limiter section: 80K or 2 years

C. Peripheral devices

Maintenance cycle : 50K

× Check (Clean, replace, or adjust as necessary.) ○ Clean ▲ Replace △ Adjust ☆ Lubricate □ Move position

Option name	Part name		When calling	50K	100K	150K	200K	250K	300K	350K	400K	Remark
ADU + Manual feed	Paper feed separation section	Paper feed rollers	(○) ×	○	×	○	×	○	×	○	×	Note 3
		Separation pad	(○) ×	○	×	○	×	○	×	○	×	Note 3
		Torque limiter	(○) ×		×		×		×		×	Note 3
	Transport section	Transport rollers	○	○	○	○	○	○	○	○	○	
		Transport paper guides	○	○	○	○	○	○	○	○	○	
	Drive section	Gears	☆		☆		☆		☆		☆	(Specified position)
		Belts							×			
	Other	Sensors	×		×		×		×		×	
Desk (Multi stage LCC) Multi purpose	Paper feed separation section	Paper feed rollers	(○) ×	○	×	○	×	○	×	○	×	Note 3
		Torque limiter	(○) ×		×		×		×		×	Note 3
	Transport section	Transport roller	○	○	○	○	○	○	○	○	○	
		Transport paper guides	○	○	○	○	○	○	○	○	○	
	Drive section	Gears	☆		☆		☆		☆		☆	(Specified position)
		Belts							×			
	Other	Sensors	×		×		×		×		×	
Finisher	Transport section	Transport rollers	○		○		○		○		○	
		De-curler roller	(○) ×	×	○	×	○	×	○	×	○	
		Transport paper guides	○		○		○		○		○	
	Drive section	Gears	☆		☆		☆		☆		☆	(Specified position)
		Belts							×			
	Other	Sensors	×		×		×		×		×	
		Discharge brush	×		×		×		×		×	
	Staple un											Replace UN at 100K staple.
	Staple cartridge											User replacement for every 3000pcs.
Mail-bin stacker	Transport section	Transport roller	○		○		○		○		○	
		Transport paper guides	○		○		○		○		○	
	Drive section	Gears	☆		☆		☆		☆		☆	(Specified position)
		Belts							×			
	Other	Sensors	×		×		×		×		×	
		Discharge brush	×		×		×		×		×	
Saddle finisher	Transport section	Transport roller	○		○		○		○		○	
		Transport paper guides	○		○		○		○		○	
	Drive section	Gears	☆		☆		☆		☆		☆	(Specified position)
		Belts							×			
	Other	Sensors	×		×		×		×		×	
		Discharge brush	×		×		×		×		×	
	Staple UN											Replace UN at 100K staple (including the staple UN and the holder section).
	Staple cartridge											User replacement for every 5000 pcs.

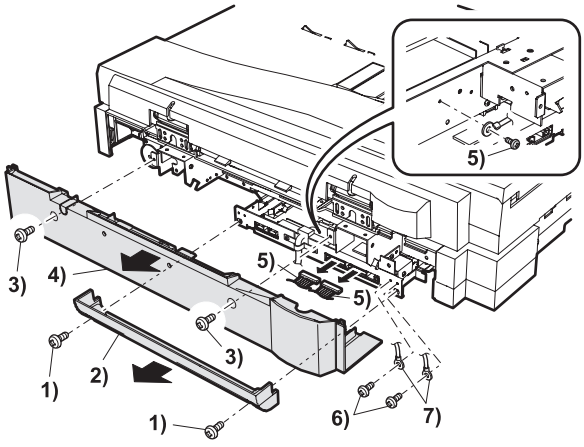
Note 3: Replacement reference: Use the counter value of each paper feed port as the replacement reference.
Paper feed roller/Separation pad/Torque limiter section: 80K or 2 years

3. Disassembly and assembly

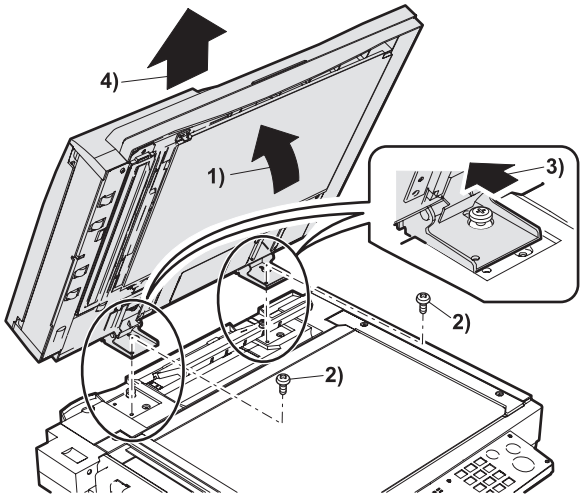
A. Scanner unit

(1) (D) SPF unit removal

1) Remove the rear cabinet of the scanner section.
2) Disconnect the connector.
3) Disconnect the grounding wire.



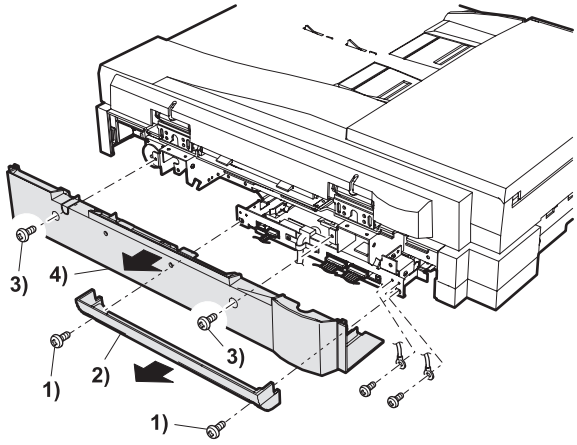
3) (S) Slide the SPF unit to the bottom, then remove it.



(2) Scanner section

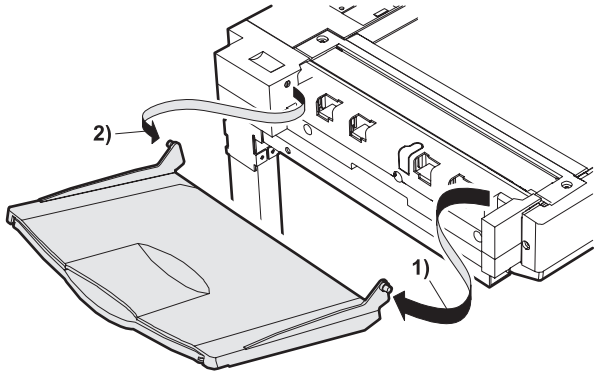
a. Rear cabinet, rear lower cabinet

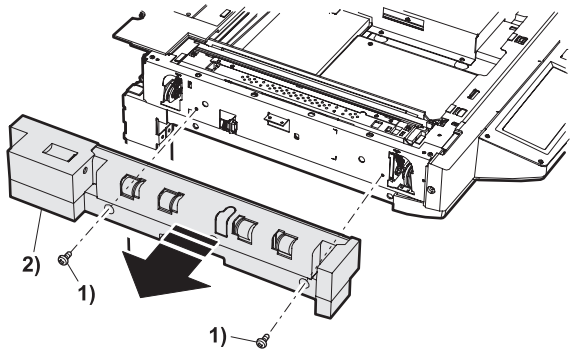
1) Remove the scanner rear cabinet and the rear lower cabinet.



b. Left cabinet

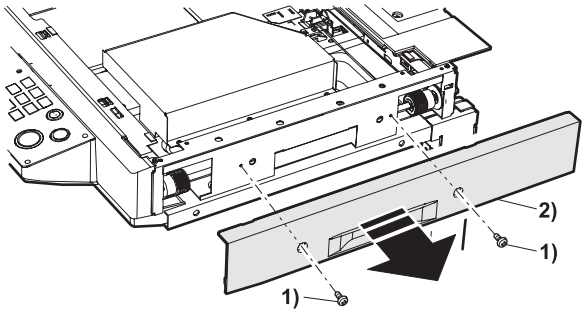
1) Remove the original exit tray, and remove the scanner left cabinet.





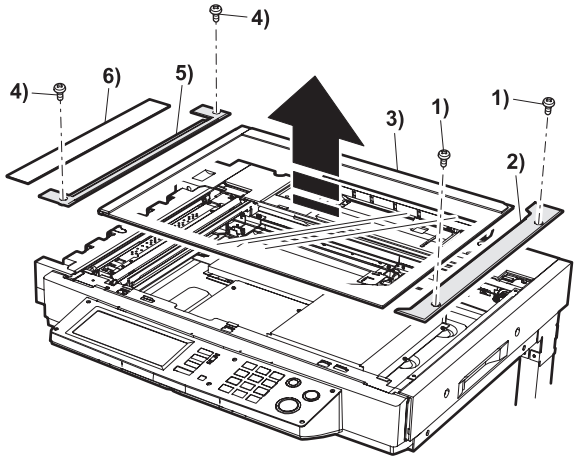
c. Right cabinet

1) Remove the scanner right cabinet.



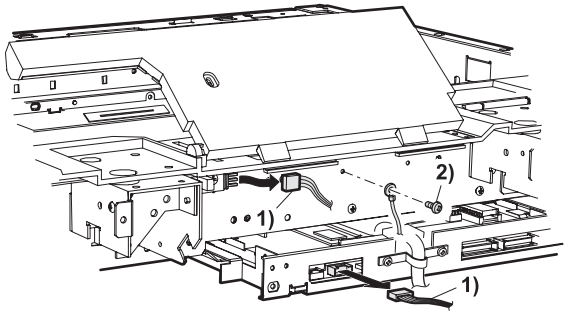
d. Table glass, SPF glass

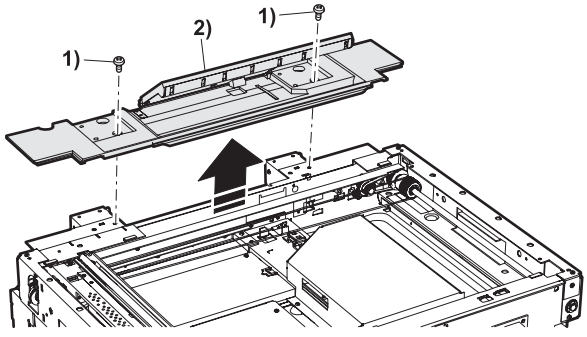
1) Remove the table glass holder and the SPF glass holder, and remove the table glass and the SPF glass.



e. Scanner upper cabinet unit

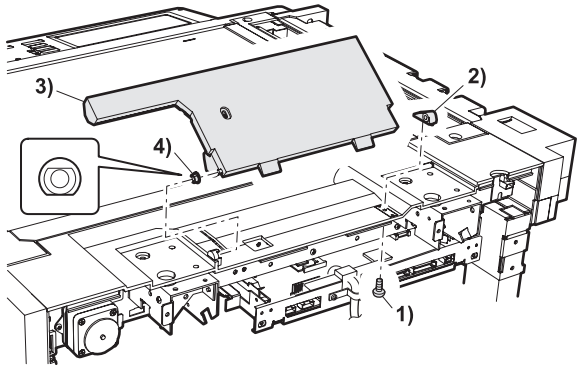
1) Remove the SPF unit
2) Remove the table glass.
3) Remove the rear cabinet.
4) Remove the scanner upper cabinet unit.



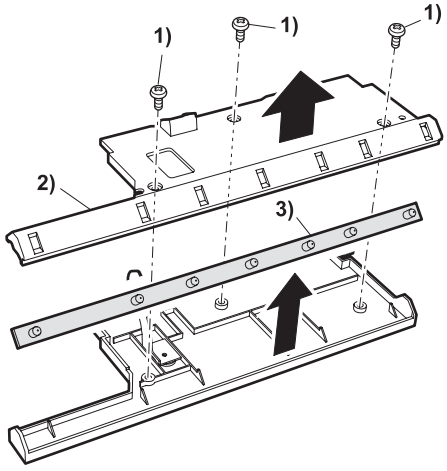


f. Original detection PWB (Light emitting side)

1) Remove the rear cabinet.
2) Remove the original detection unit (Light emitting side).

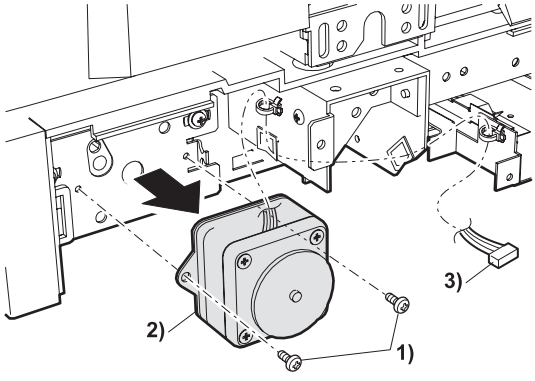


3) Remove the original detection PWB (Light emitting side).



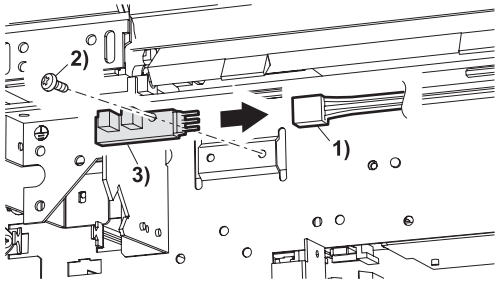
g. Scan motor removal

1) Remove the scanner rear cabinet and the rear lower cabinet.
2) Pull out the harness from the scanner control PWB.
3) Remove the scan motor.



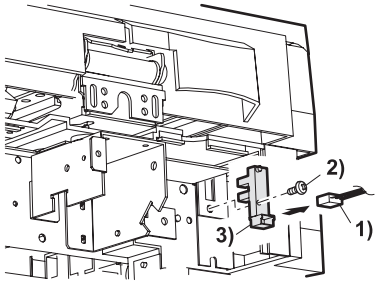
h. OC open sensor

1) Remove the rear cabinet.
2) Remove the OC open sensor.



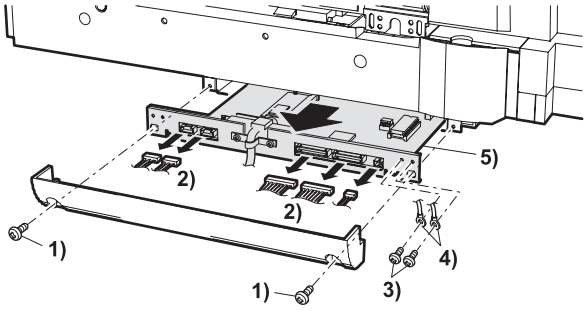
i. Mirror home position sensor

1) Remove the rear cabinet.
2) Remove the mirror home position sensor.



j. Scanner control PWB

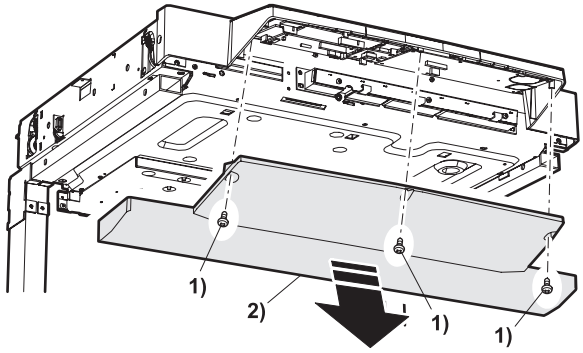
1) Remove the scanner rear lower cabinet.
2) Disconnect the connector and earth band, and pull out the scanner control PWB.



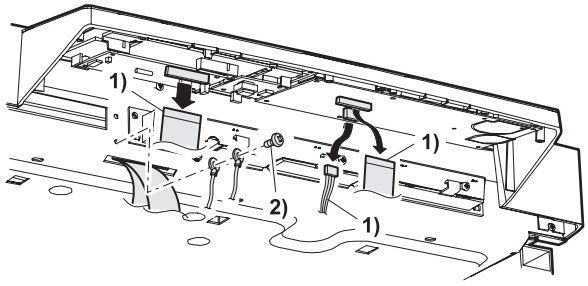
* When the scanner control PWB is replaced, the EEPROM must be replaced.

k. Operation panel unit

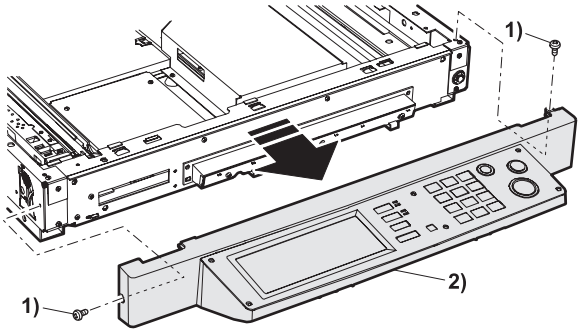
1) Remove the operation panel lower cabinet.



2) Remove the harnesses.

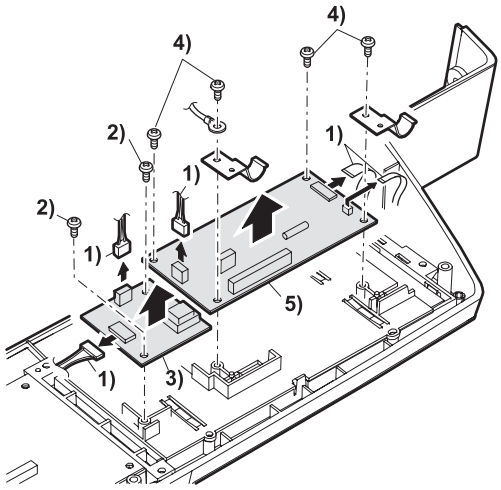


3) Remove the scanner right cabinet.
4) Remove the operation panel unit.

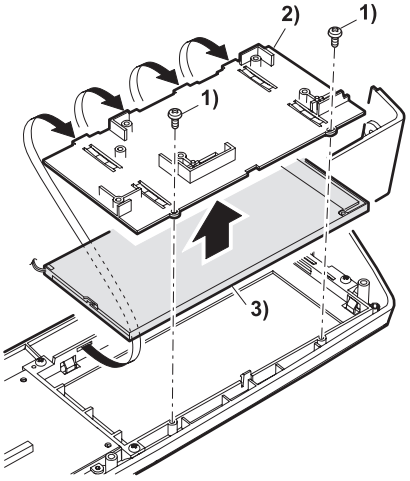


l. Inverter PWB/LVDS PWB/LCD panel

1) Remove the operation panel unit.
2) Remove the harness, and remove the inverter PWB and the LVDS PWB.

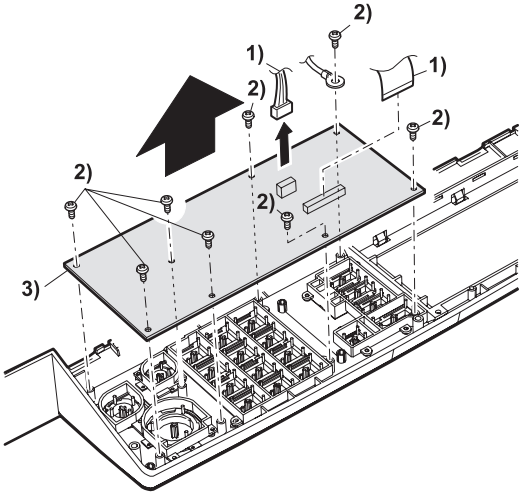


3) Remove the LCD rear cover, and remove the LCD.



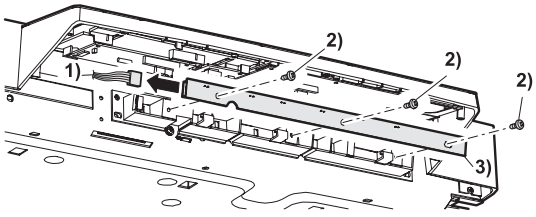
m. Operation control PWB

1) Remove the operation panel unit.
2) Remove the operation control PWB.



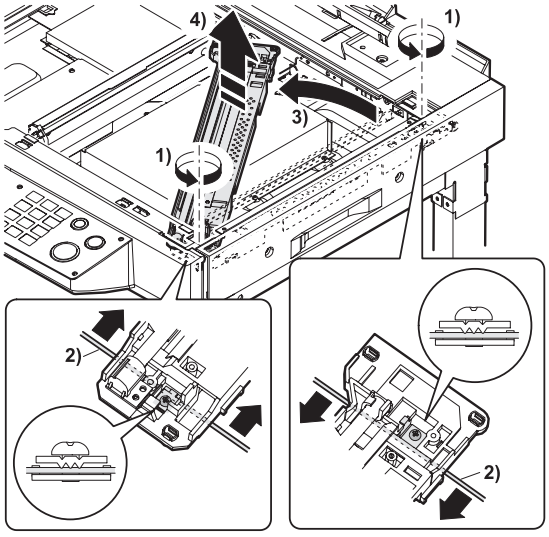
n. Original detection PWB (Light receiving side)

1) Remove the operation panel lower cabinet.
2) Remove the original detection PWB (light receiving side).



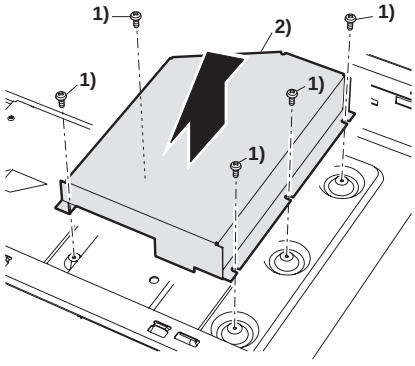
o. Scan lamp

1) Remove the table glass.
2) Remove the scan lamp unit.



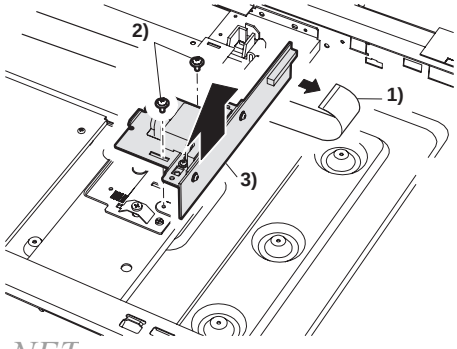
p. CCD/lens unit

1) Remove the table glass.
2) Remove the dark-box cover.



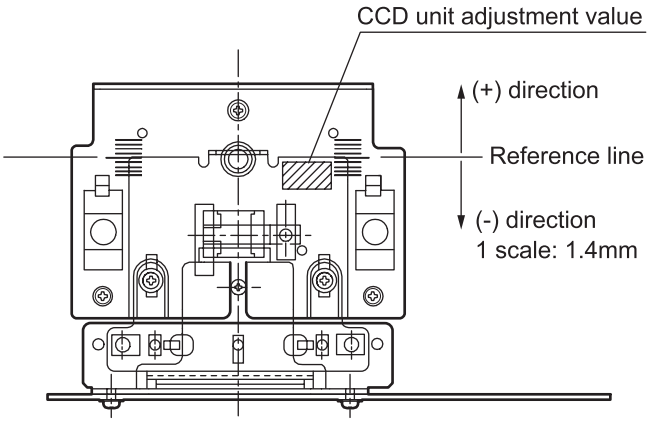
3) Remove the CCD/lens unit.

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.



Note for CCD/lens unit installation

<1>Adjust the CCD unit adjustment value listed in the table below with the scribed line on the lens base.



	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.

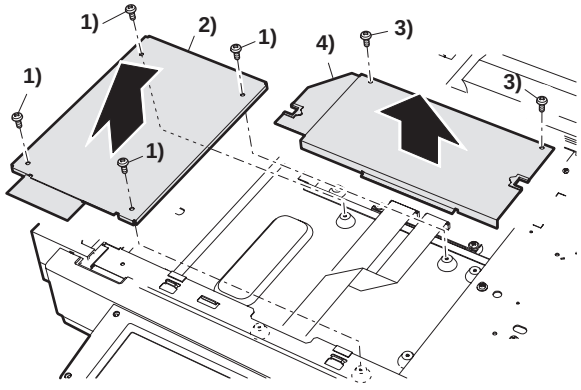
•When the copy image is shorter than the original, shift to the negative (-) direction.

* 1 scale of the scribed line corresponds to 0.3% of magnification ratio.

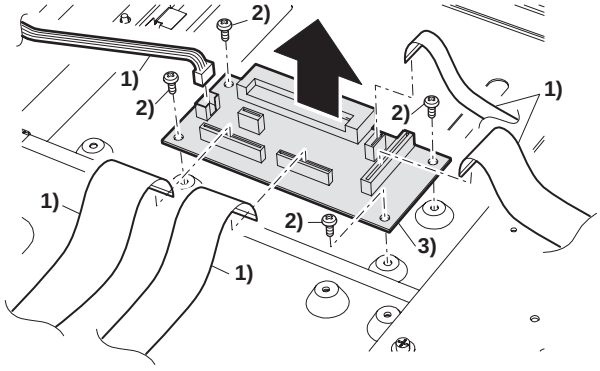
* If this adjustment is not satisfactory, make a fine adjustment with SIM 48-1.
(Refer to the adjustment described below.)

q. Scanner interface PWB

1) Remove the table glass.
2) Remove the PWB cover and the harness cover.



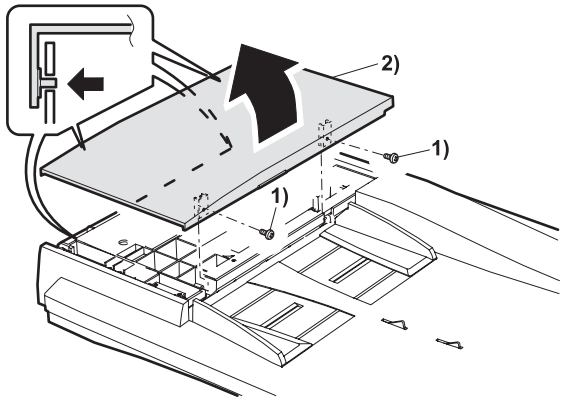
3) Remove the scanner interface PWB.



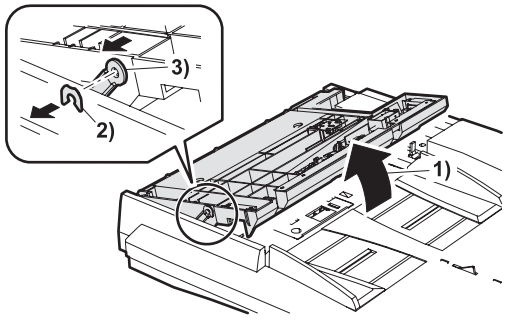
(3) (D) SPF unit

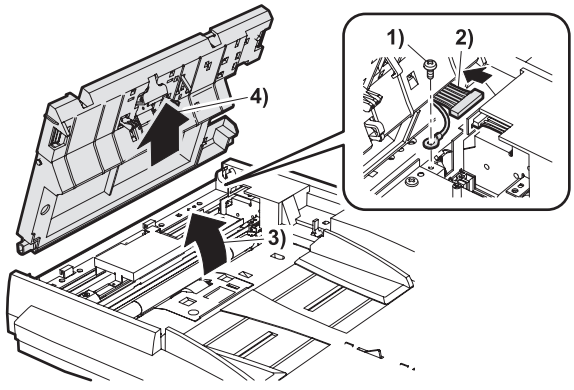
a. Upper transport unit

1) Remove the upper transport unit cover.



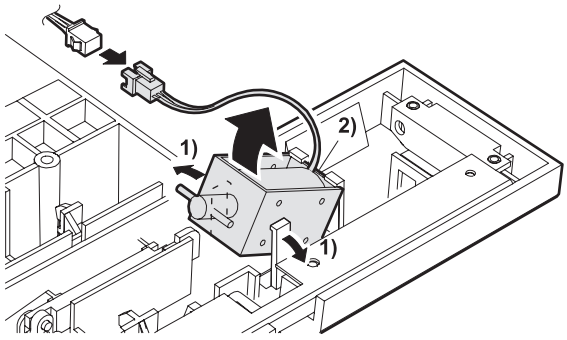
2) Remove the upper transport unit.





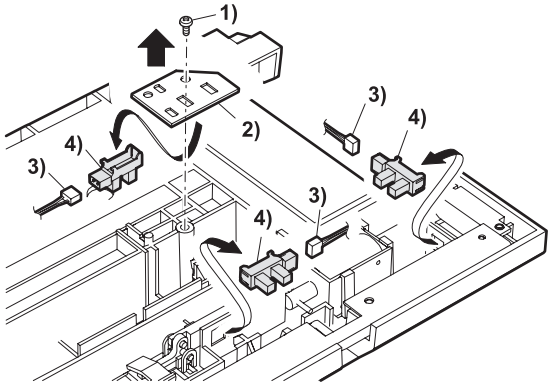
b. Stopper solenoid

1) Remove the upper transport unit cover.
2) Remove the stopper solenoid.



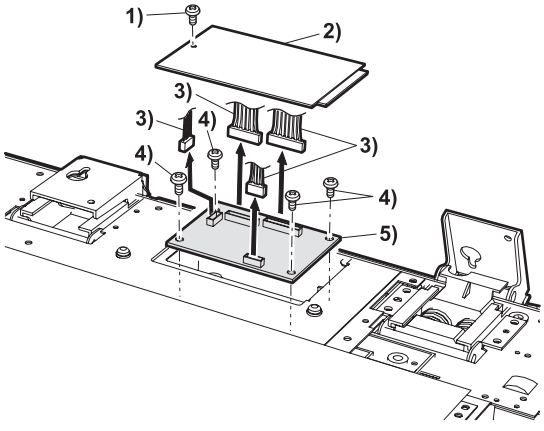
c. Sensors

1) Remove the upper transport unit cover.
2) Remove the sensors.



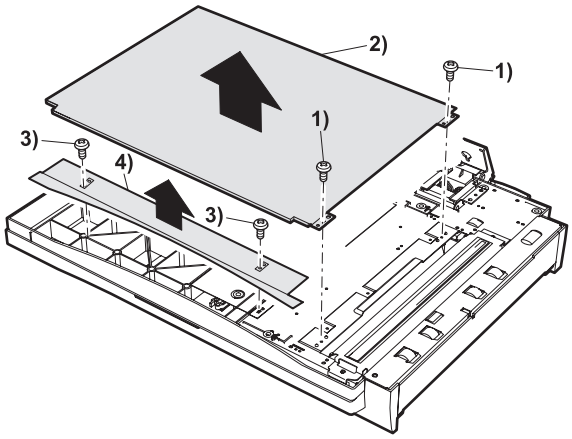
d. (D) SPF control PWB

1) Remove the SPF PWB, and remove the (D) SPF control PWB.

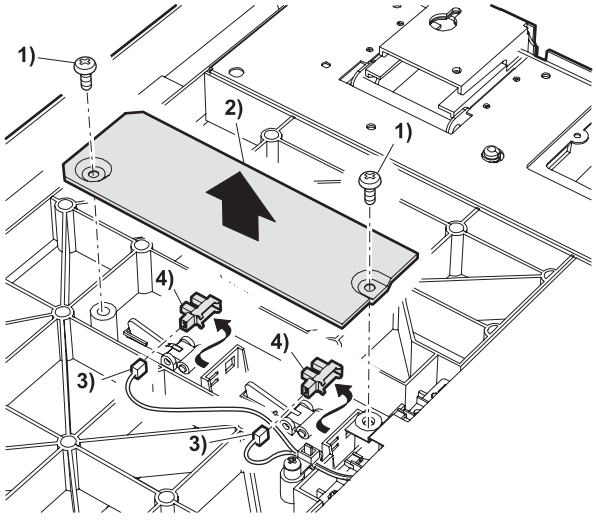


e. Original length sensor

1) Remove the OC cover.

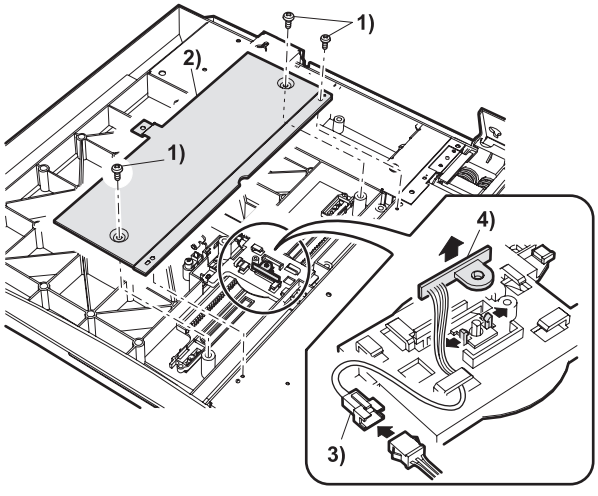


2)Remove the original length sensor cover, and remove the sensor.



f. Original width detection volume

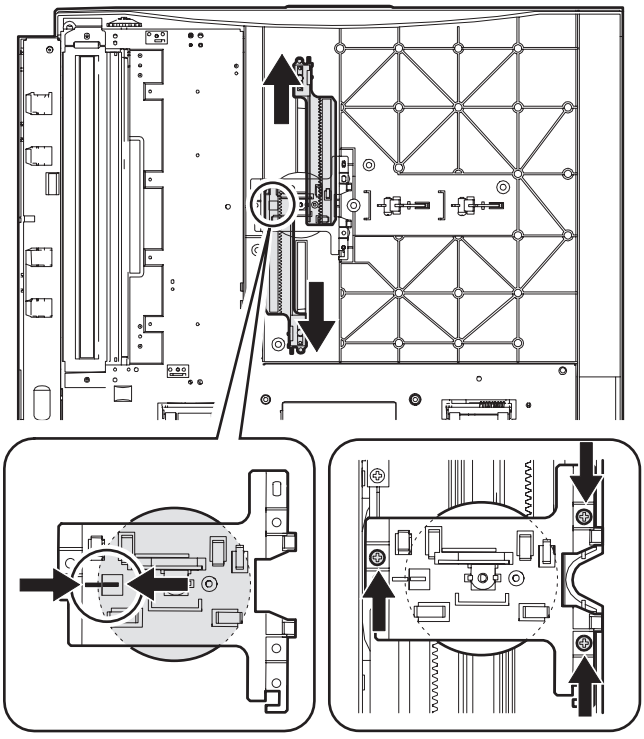
1) Remove the OC cover.
2) Remove the original length sensor cover.
3) Remove the volume cover and remove the volume.



Original width detection volume installation

<1>Extend the original guide to the maximum position.

<2>Adjust so that the mark on the width detection pinion gear is fitted with the mark on the volume mounting plate.

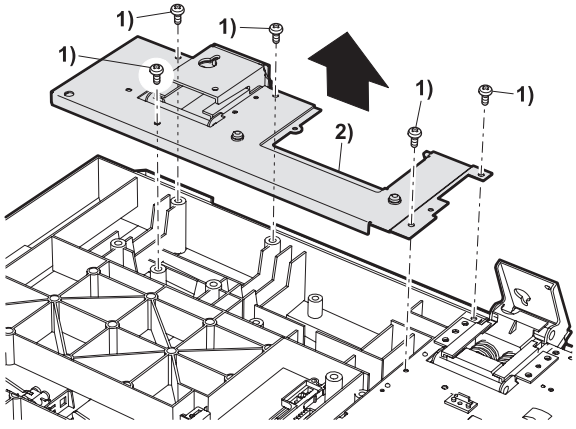


<3>Fix the mounting plate with the screw.

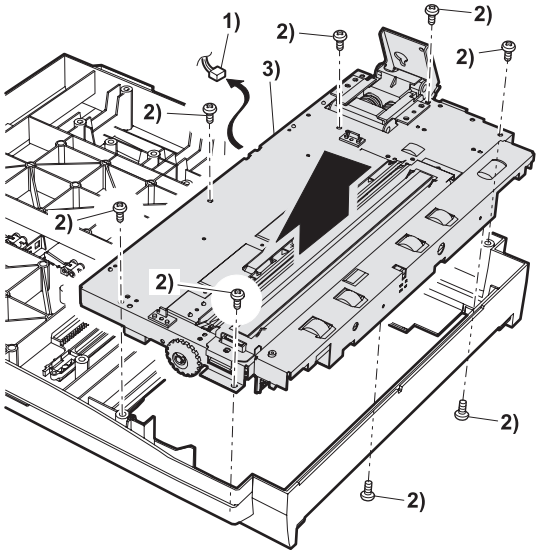
* When the rotational volume sensor is replaced, the sensor value must be adjusted to the paper size (mark on the tray). (Refer to the SIM 53-6 or 53-7.)

g. Original paper feed unit

1) Remove the OC cover.
2) Remove the SPF lower cover.

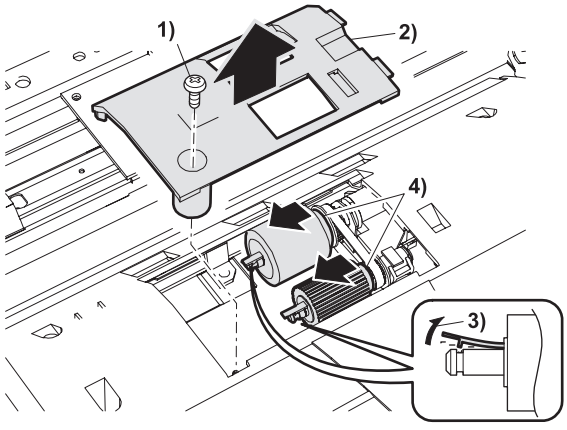


3) Remove the original paper feed unit.



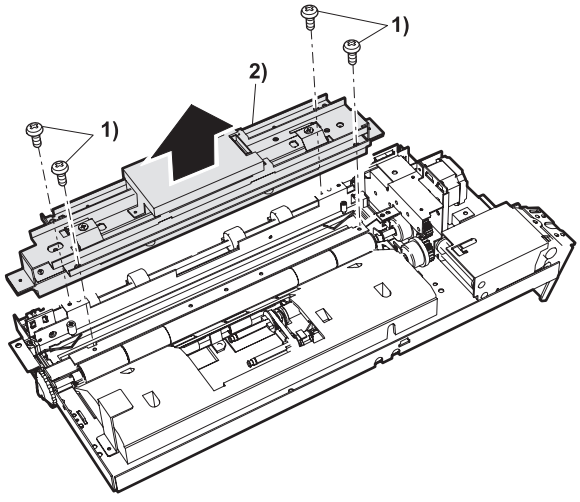
h. Take-up roller, paper feed roller

1) Remove the upper transport unit cover.
2) Remove the paper feed roller cover.
3) Remove the hook of each roller, and remove each roller.



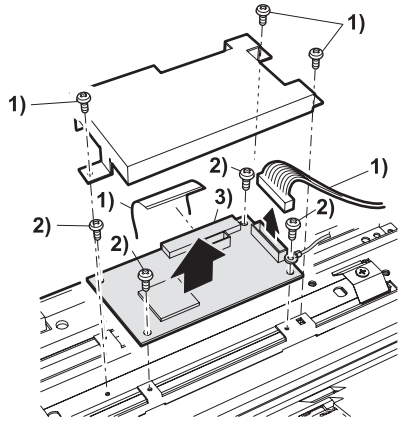
i. CIS unit

1) Remove the upper transport unit cover.
2) Remove the CIS unit.



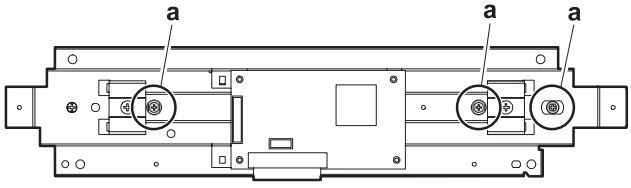
* When the CIS unit is replaced, the CIS shading adjustment must be performed. (Refer to the descriptions of ADJUSTMENTS.)

3) Remove the cover, and remove the CIS control PWB.



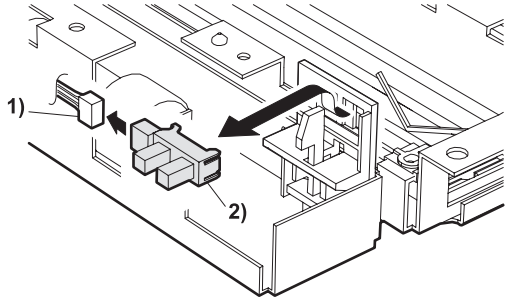
* For easy installation of the cover, slide the earth line to the connector side when attaching.

Note: The CIS unit is factory-adjusted before shipping.
Since these adjustments cannot be performed in the market, never touch the following screws of the CIS unit.



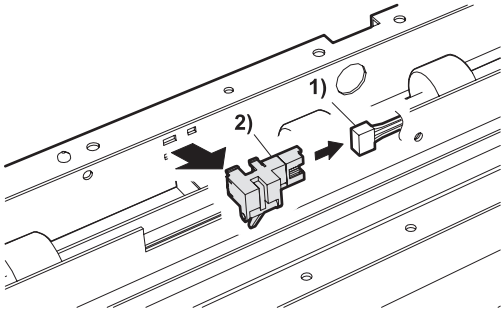
j. Open sensor

1) Remove the open sensor.



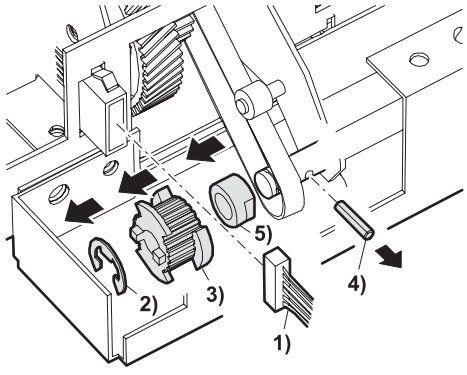
k. Paper exit sensor

1) Remove the paper exit sensor.

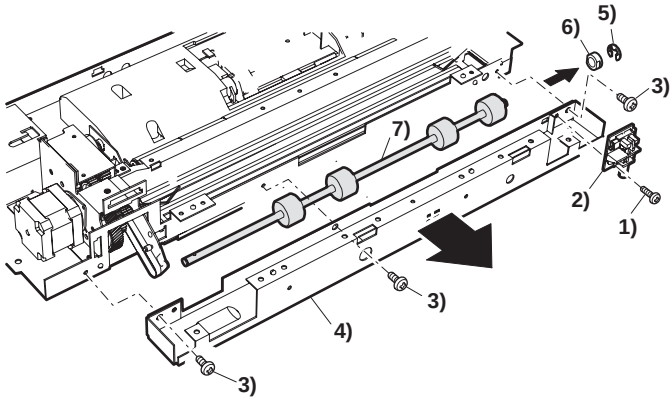


l. Paper exit roller

1) Remove the original paper feed unit.
2) Remove the paper exit roller gear.

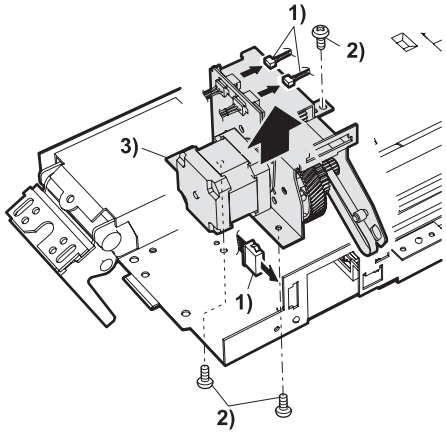


3) Remove the paper exit frame, and remove the paper exit roller.

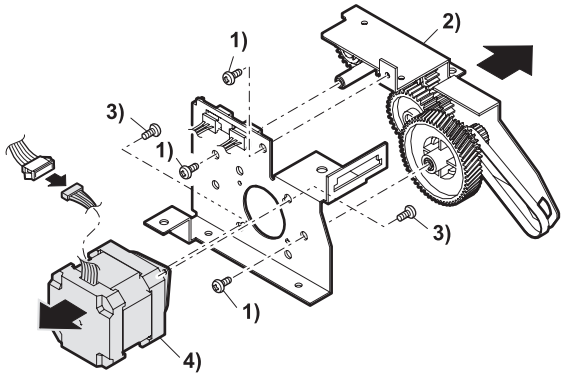


m. SPF motor

1) Remove the original paper feed unit.
2) Remove the SPF drive unit.

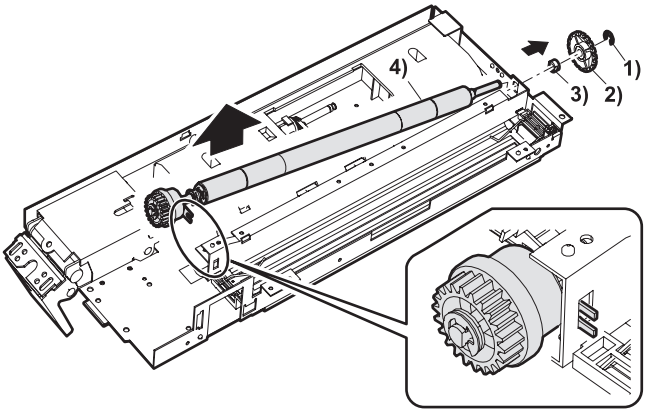


3) Remove the SPF motor.

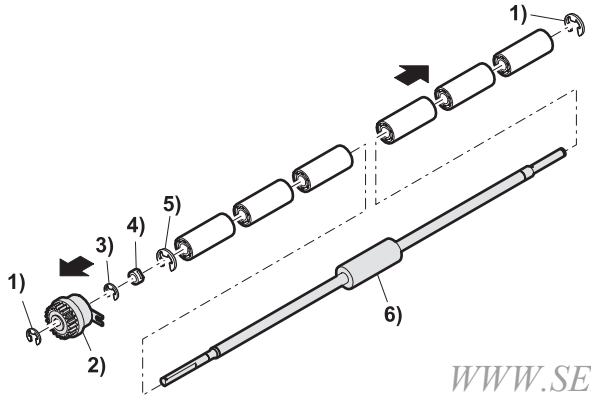


n. SPF resist roller, SPF resist roller clutch

1) Remove the SPF resist roller unit.

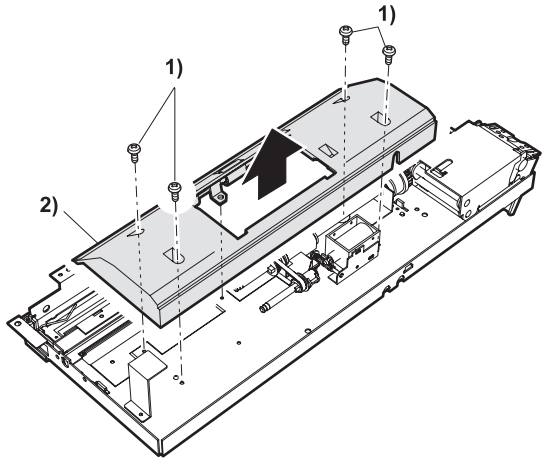


2) Remove the SPF resist roller and the SPF resist roller clutch.

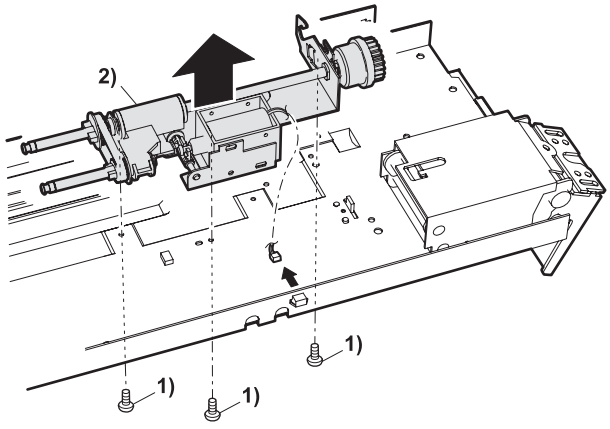


o. SPF paper feed unit, original paper feed solenoid, SPF original paper feed clutch

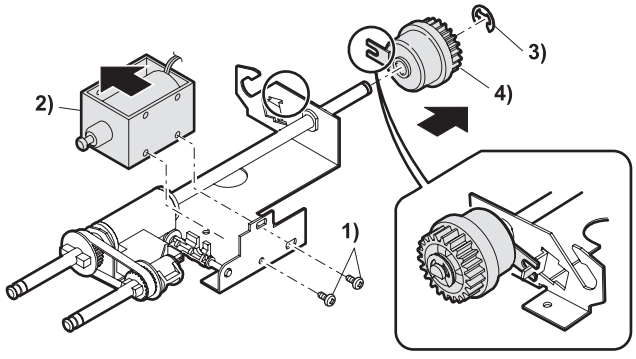
1) Remove the SPF paper feed unit.
2) Remove the SPF paper guide.



3) Remove the SPF pickup unit.



4) Remove the original paper feed solenoid and the SPF original paper feed clutch.

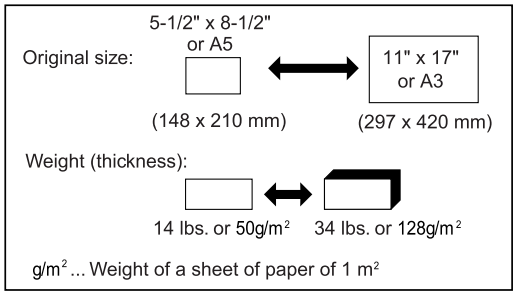


[8] MACHINE OPERATION

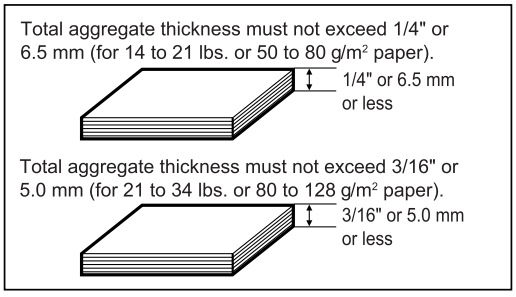
1. Acceptable originals

A stack of up to 50 original sheets of the same size paper can be set in the document feeder tray provided the stack
height is within the limit shown below.
A stack of up to 30 mixed size originals can be set if the width of the originals is the same and the stack height is within
the limit shown below. In this case, however, stapling and duplex will not function and some special functions may not
give the expected result.

A. Size and weight of acceptable originals



B. Total amount of originals that can be set in the document feeder tray

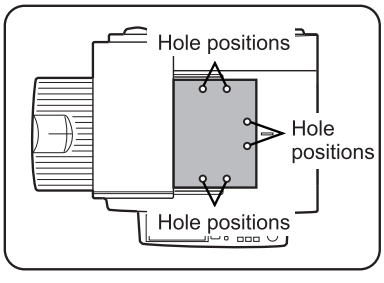


<Notes on use of the automatic document feeder>

- Use originals within the specified size and weight ranges. Use of originals out of the specified range may cause an original misfeed.
- Before loading originals into the document feeder tray, be sure to remove any staples or paper clips.
- If originals have damp spots from correction fluid, ink or glue from pasteups, be sure they are dried before they are fed. If not, the interior of the document feeder or the document glass may be soiled.
- To prevent incorrect original size detection, original misfeeds or smudges on copies, use the following as a guide for feeding originals.

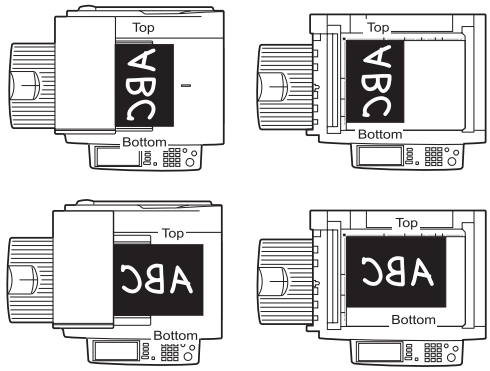
  Transparency film, tracing paper, carbon paper, thermal paper or originals printed with thermal transfer ink ribbon should not be fed through the document feeder. Originals to be fed through the feeder should not be damaged, crumpled or folded or have loosely pasted paper on them or cutouts in them. Originals with multiple punched holes other than two-hole or three-hole punched paper may not feed correctly.

- When using originals with two or three holes, place them so that the punched edge is at a position other than the feed slot.



2. Standard original setting orientation

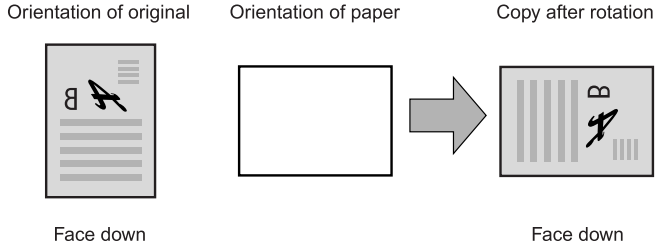
Descriptions of functions that follow in this manual assume that originals are oriented as shown.
Place originals in the document feeder tray or on the document glass so that the top of the original is positioned to the rear side of the machine.
If not, staples will be incorrectly positioned and some special features may not give the expected result.



3. Automatic copy image rotation - rotation copying

If the orientation of the originals and copy paper are different, the original image will be automatically rotated 90" and copied. (When an image is rotated, a message will be displayed.) When enlargement of originals larger than 8-1/2" x 11" or A4 is selected, rotation cannot be done.

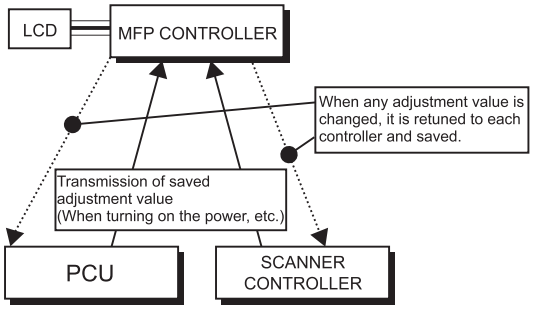
[Example]



4. Adjustment values

A. Processing adjustment values

Each controller has its EEPROM. The adjustment values are collected to the MFP controller.
If any adjustment value is changed, the changed value is returned to the controller and saved.



B. Adjustment values

(1) Adjustment values saved in PCU

Counters	Adjustment values	Others
Drum rotating time counter (accumulated time)	Developing bias voltage value	Serial number
Developing unit rotating time counter	Cleaning mode developing bias voltage value	Trouble history
Toner supply time (Section IC chip)	Main high voltage adjustment	Tray 1 size
Drum rotating time (Section IC chip)	Transfer charger voltage value	LCC tray size
Total counter	Transfer belt cleaning voltage value	Manual feed destination information
Maintenance counter	Toner concentration reference value	Tray 2 destination information
Developing counter	Concentration correction start set time (Developing unit)	Desk 1 destination information
Drum counter	Concentration correction rotating time (Developing unit)	Desk 2 destination information
Toner cartridge counter	Concentration correction quantity (Developing unit)	Machine tray remaining paper quantity data
Effective paper counter	Correction execution direction, upper/lower limits (Developing unit)	Multi-purpose remaining paper quantity data
Tray 1 paper feed counter	Toner concentration temperature correction (low temperature side) correction quantity	Option tray 1 remaining paper quantity data
Multi-purpose paper feed counter	Toner concentration temperature correction (low temperature side) set temperature	Option tray 2 remaining paper quantity data
Desk 1/LCC 1 paper feed counter	Toner concentration temperature correction (low temperature side) cancel temperature	Final toner concentration sensor output value
Desk 2/LCC 2 paper feed counter	Toner concentration temperature correction (high temperature side) correction quantity	Toner cartridge IC chip destination
Manual paper feed counter	Toner concentration temperature correction (high temperature side) judgment temperature	Counter mode setup
ADU paper feed counter	Toner concentration temperature correction (high temperature side) judgment voltage difference	White paper exit count setup
Staple counter	Toner concentration temperature correction (high temperature side) correction value	Trouble memory mode setup
Punch counter	Toner concentration temperature correction (low temperature side) cancel temperature	Fusing operation mode (anti-curling)
Machine right side paper exit counter	Toner concentration temperature correction (high temperature side) toner control delay time	CE mark conforming operation mode
	Multi-purpose width adjustment value	Maintenance cycle
	Manual feed width adjustment value	Print stop setup at developer life over
	Heater lamp temperature (center, normal control)	Saddle alignment operation priority mode
	Lead edge adjustment	
	Lead edge void set value	
	Rear edge void set value	
	Side edge setup	
	Print off-center adjustment value	
	Resist quantity adjustment value	
	Laser power adjustment value	
	PPD1 sensor adjustment	
	Process correction inhibit allow setup value	
	Developing bias rising correction wait time	
	Developing bias rising correction adjustment value	
	Built-in finisher jogger position adjustment	
	Saddle adjustment value	

(2) Adjustment values saved in SCANNER

Counters	Adjustment values	Others
Scan counter	Original lead edge adjustment value	Exposure mode setup value
SPF paper pass counter	Original off-center adjustment value	Serial number
SPF stamp counter	Original image loss quantity adjustment value	
	Magnification ratio adjustment value	
	SPF resist quantity adjustment value	
	Exposure motor speed adjustment value	
	Platen original detection adjustment value	
	SPF width detection adjustment value	
	Touch panel adjustment value	
	Exposure level adjustment value	
	Gamma change value	
	OC/SPF exposure correction value	
	Shading adjustment value (CCD/CIS)	
	CCD shading start position adjustment value	

(3) Adjustment values saved in MFP controller

Counters	Adjustment values	Others
Copy counter	FAX SOFT SW. etc.	Trouble history
Printer counter		Jam history
FAX reception counter		Destination setup
FAX transmission counter		Language setup
Trouble counter		Toner save mode setup
Jam counter		13" setup
		Auditor setup
		Serial number
		Middle binding mode AMS setup
		PC/Modem communication trouble detection YES/NO setup
		Tag number setup
		γ change value
		Exposure mode setup
		OC/SPF exposure correction value
		Printer setup values
		Network setup values

5. Key operator program

KEY OPERATOR PROGRAM			Set value(Default)	Remark
			Engine section LCD	
Copy function settings	Initial status settings	Paper tray,		
		exposure mode		
		copy ratio,		
		duplex mode		
		output mode		
	Exposure adjustment		1~5*~9	
	Rotation copy setting			
	Auto paper selection setting			
	600dpi x 600dpi scanning mode		600x300dpi*/600x600dpi	
	Quick scan from document glass		600x300dpi*/600x600dpi*	
Device control	Original size detector setting		INCH-1/INCH-2/AB-1*/AB-2	
	Disabling of document feeder			
Scan to E-mail initial status settings	Default sender set			
	Initial file format setting			
	Compression mode at broadcasting			

KEY OPERATOR PROGRAM			Set value(Default) Engine section LCD	Remark
Account control	Auditing mode		ON/OFF*	
	Print per account	Print per account display	ON*/OFF	
		Print per account print		
	Reset account			
	Account number control	Enter new account number(5digits)		
		Delete account number		
		Change account number		
		Print account number		
	No print if acc't # invalid		Yes/No*	
Energy save	Auto power shut-off timer		15min/30min*/60min/120min/240min	
	Auto power shut-off		Disable/Enable*	
	Preheat mode		15min*/30min/60min/120min/240min/None	
	Toner save		ON/OFF*	
Operation panel settings	Auto clear setting		15sec/30sec/60sec*/OFF	
	Message display time		3sec/6sec*/9sec/12sec	
	Language setting		American English/English*/French/Spanish	Depend on the distination
Device settings	Disable duplex unit		Yes/No*	
	Disable stapler unit		Yes/No*	
	Disable paper desk drawers		Yes/No*	
	Disable finisher		Yes/No*	
	Disable mail-bin stacker		Yes/No*	
	Saddle stitch adjust	Paper size A4	-3.0mm~0.0mm*~3.0mm (0.1mm unit)	With the saddle finisher installed
		Paper size B4	-3.0mm~0.0mm*~3.0mm (0.1mm unit)	
		Paper size A4R	-3.0mm~0.0mm*~3.0mm (0.1mm unit)	
		Paper size Ledger	-3.0mm~0.0mm*~3.0mm (0.1mm unit)	
		Paper size Letter-R	-3.0mm~0.0mm*~3.0mm (0.1mm unit)	
Print key operator program list				
Key operator code change	Set code		00000*	
System settings	Default settings	Print density level	Normal*/DAKER/DARKEST/LIGHTEST/LIGHTER	
		Disable notice page printing	Yes*/No	
		Disable test page printing	Yes*/No	
		A4/LT auto select	ON/OFF*	
	Interface settings	Hexadecimal dump mode	ON/OFF*	
		PDL for parallel port	Auto*/PostScript/PCL	
		PDL for network port	Auto*/PostScript/PCL	
		I/O timeout	1sec~20sec*~999sec	
		Port switching	Per job*/Timeout/Paralell OFF/Network OFF	
	Network settings	IP address setting	IP address 000.000.000.000*	
			IP subnet mask 000.000.000.000*	
			IP gateway 000.000.000.000*	
		Enable TCP/IP	Yes*/No	
		Enable NetWare	Yes*/No	
		Enable EtherTalk	Yes*/No	
		Enable NetBEUI	Yes*/No	
		Reset the NIC		
	Intialize/Store settings	Restore factory defaults		
		Store current configuration		
		Restore configuration		
Product key	PS3 expansion kit			
	E-mail alert and status			

[9] ADJUSTMENTS

			Adjustment item
1	Process section	A	High voltage output adjustment
2	Engine section	A	LSU right angle adjustment
		B	Print off-center adjustment
		C	Resist quantity adjustment
3	Scanner section	A	Scanner unit distortion adjustment
		B	OC scan distortion adjustment
		C	Vertical image distortion balance adjustment
		D	Vertical image distortion balance adjustment
		E	Vertical (sub scanning direction) distortion adjustment
		F	Original detection light emitting unit height adjustment
		G	Original size detection photo sensor check
		H	Original size detection photo sensor adjustment
		I	(D) SPF hinge height adjustment
		J	(D) SPF hinge diagonal adjustment (Front)
		K	Scan magnification ratio adjustment
		L	OC scan lead edge adjustment
		M	Original off-center adjustment
		N	Image density adjustment
		O	DSPF width detection adjustment

1. Process section

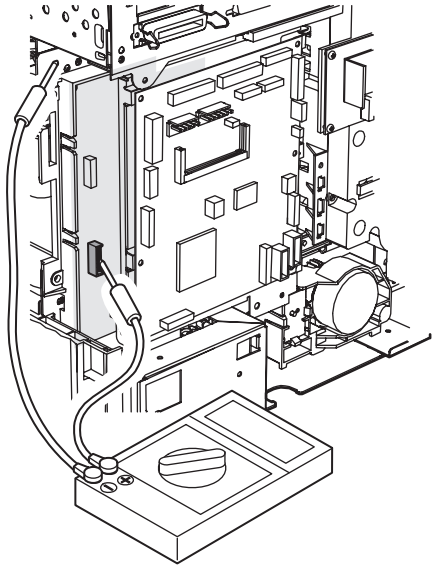
A. High voltage output adjustment

(1) Developing bias output check and setup

1) Remove the rear cabinet to allow checking of the high voltage monitor output pin.
2) Execute the simulation of the target high voltage. (See the table below.)
3) Select the mode to be set with 10-key, and press START key.
4) Enter the set value with 10-key and press START key. The set value is outputted for 30 sec.
5) Apply a high voltage tester between the measurement pin and the frame.

Note: Take care not to short the measuring pin and the frame.

6) The unit stops after 30 sec of output.



			Default		Set range	Measurement pin	High voltage probe impedance
			Monitor output voltage	Set value			
MC grid MAIN GRID (SIM 8-2)	AUTO	AE mode	-650V±5V	645	200~900	CN2-7	100MΩ
	CHARACTER	Text mode	-650V±5V	645	200~900		
	MIX	Text/Photo mode	-650V±5V	645	200~900		
	PHOTO	Photo mode	-650V±5V	645	200~900		
	PRINTER	Printer mode	-650V±5V	645	200~900		
	FAX	Fax mode	-650V±5V	645	200~900		
Transfer current (THV+ (SIM 8-6)	FRONT	Front		45PPM : 267 35PPM : 220	0~620		
	BACK	Back		45PPM : 310 35PPM : 267	0~620		
Developing bias DV BIAS (SIM 8-1)	AUTO	AE mode	-500V±5V	485	0~745	CN2-1	100MΩ
	CHARACTER	Text mode	-500V±5V	485	0~745		
	MIX	Text/Photo mode	-500V±5V	485	0~745		
	PHOTO	Photo mode	-500V±5V	485	0~745		
	PRINTER	Printer mode	-500V±5V	485	0~745		
	FAX	Fax mode	-500V±5V	485	0~745		
	PLUS	Positive bias	+150V±5V	150	0~255		
Separation voltage SHV (SIM 8-17)	FRONT	Front	+1.25V±0.1V	45PPM : 160 35PPM : 120	0~375	CN2-3	10MΩ
	BACK	Rear	+1.25V±0.1V	45PPM : 160 35PPM : 120	0~375		
Transfer voltage THV (SIM 8-17)			-800V±10V	780	0~1250	CN2-5	10GΩ

2. Engine section

A. LSU right angle adjustment

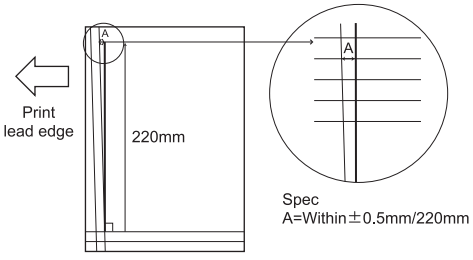
This adjustment is required in the following cases:
•When the LSU is replaced.
•When a distortion is generated in printer output.
(Check with self-print pattern "71.")

After completion of this adjustment, perform the following adjustments:
•Print off-center adjustment
•Void area adjustment

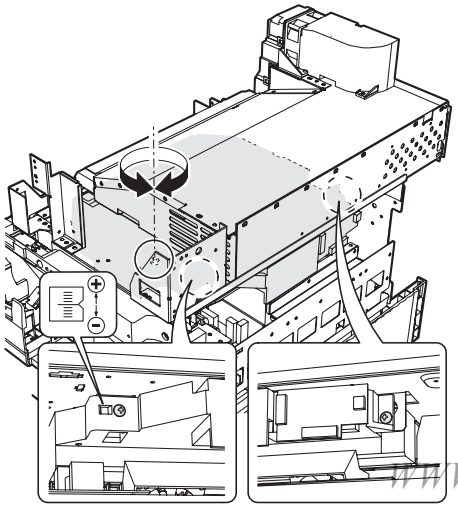
1) Execute SIM 64-1.
2) Make self-print of print pattern 71 and grid pattern from tray 1.
3) Check the self-printout.

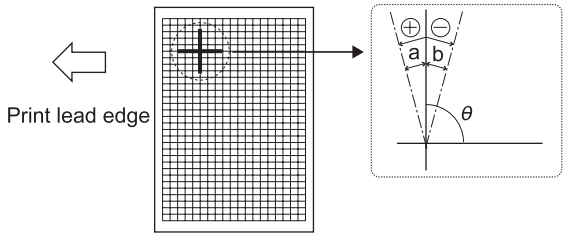
<Right angle check method>

<1> Make a self-print pattern 71.
<2> Draw a line perpendicular to the sub scanning direction (paper transport direction) with a square.
At that time, let the point of intersection of the perpendicular line and the horizontal line be the start point.
<3> Measure distance A at a position 220mm apart from the point of intersection of the vertical line outputted by self print and the line drawn with a square.
<4> Check that distance A satisfies the specification below.



4) If the printout is out of the specifications, perform the following procedures.
5) Loosen two screws (M4) which are fixing the LSU.
6) Turn the adjustment screw on the upper side (rear of the printer operation panel) clockwise and counterclockwise to adjust the height of the LSU front side.
7) After completion of adjustment, tighten the two fixing screws of the LSU unit.
8) Print the grid pattern again and check it.
9) Repeat procedures 7) to 10) until the printout is in the specified range.
10) After completion of the work, apply screw lock to the screws.





<Specifications>

	Measurement position	Specification	Set value
Print distortion adjustment	SIM 64-1 Self-print pattern 71	θ =90°±0.13°	Adjustment scale 1 = about 0.25° shift in θ

B. Print off-center adjustment

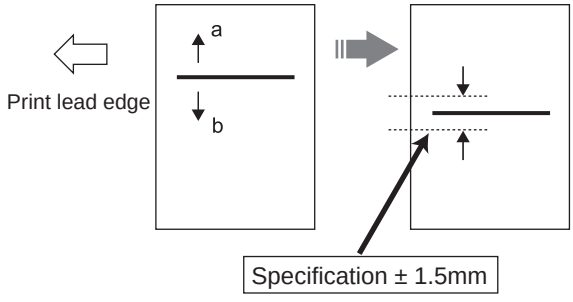
This adjustment is performed in the following cases:
•When the center is misaligned in printing.
•When the LSU is replaced.
•When the option paper feed unit or the automatic duplex unit is installed or replaced.

Before execution of this adjustment, the following adjustments must have been completed.
•LSU right angle adjustment
•Print magnification ratio adjustment

After completion of this adjustment, the following adjustment must be executed.
•Void area setup

1) Execute SIM 50-10.
2) Set the paper fed tray and the magnification ratio for the adjustment.
3) After entering the adjustment values, press START key, and printing is started.
4) Check the off-center (distance from the paper edge) of the printed copy. Repeat procedure 2) until the specification is satisfied.

* When adjusting the off-center of LCC1, load paper only on the left tray of LCC.
When adjusting the off-center of LCC2, load paper only on the right tray of LCC.
This is because no distinction of right and left is made when selecting a tray.



	Adjustment position		Measurement reference	Specification	Set value		
					Default	Range	
Print off-center SIM 50-10	Tray 1	Tray 1	Output pattern center line	0±1.5mm	50	0 - 99	Set value 1: 0.1mm shift
	Tray 2	Tray 2					
	Tray 3	Tray 3/LCC left					
	Tray 4	Tray 4/LCC right					
	MFT	Manual feed					
	ADU	Duplex					

•For the duplex mode (Single ? Duplex), add 10 to the above set value.
•When the print line is shifted toward a from the paper center, decrease the value.
•When the print line is shifted toward b from the paper center, increase the value.

C. Resist quantity setup

•This adjustment required a fine accuracy.
Do not change the default as far as possible.

This adjustment is performed in the following cases:
•When the void quantity is changed by the paper feed tray.
•When paper is skewed.

Before performing this adjustment, the following adjustments must have been completed.
•LSU right angle adjustment
•Print magnification ratio adjustment
•Print off-center setup
•Void area setup

1) Execute SIM 51-2.
2) Adjust the resist quantity so that paper is transferred stably.

<Factory setup value>

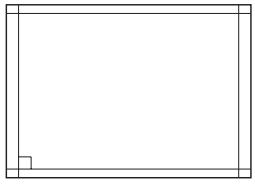
45PPM	BPT	55
	T1	60
	T2	50
	DESK	50
	ADU	50
35PPM	BPT	60
	T1	65
	T2	55
	DESK	55
	ADU	55

3. Scanner section

A. Scanner unit distortion adjustment

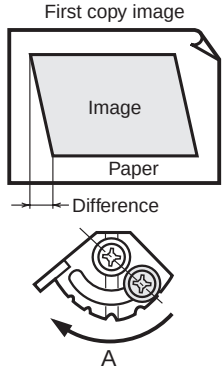
Before executing this adjustment, the following adjustment must have been completed.
•LSU right angle adjustment

1) Make a test chart as shown below. (Make a self-print pattern 71.)

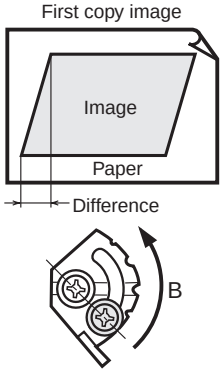


2) Make a copy from the table glass, and check it.
At that time, set the test chart correctly. If it is set in a distorted position, the adjustment cannot be made correctly.
3) If the output value is not in the specified range, perform the following adjustment.
4) Adjust the distortion.

[Fig. 1]



[Fig. 2]



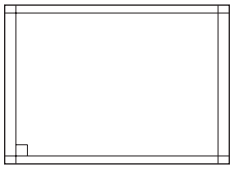
•In the case of Fig. 1
Shift cam A in the direction A by the difference in the copy image.
For one scale (one groove), shift by 0.5mm.
After shifting, tighten the fixing screw (M3 x 12) of cam A and make a copy again, and check the copy again to insure that there is no distortion.
•In the case of Fig. 2
Shift cam A in the direction B by the difference in the copy image.
For one scale (one groove), shift by 0.5mm.
After shifting, tighten the fixing screw (M3 x 12) of cam A and make a copy again, and check the copy again to insure that there is no distortion.

B. OC scan distortion adjustment (MB-B rail height adjustment)

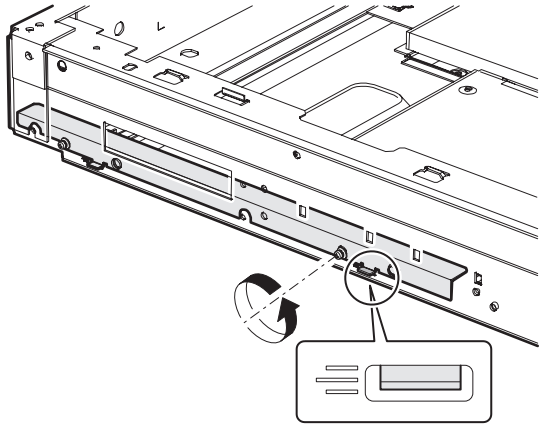
•This adjustment requires a high-level preciseness.
It is easier to perform the scanner unit distortion adjustment previously described.

Before performing this adjustment, the following adjustment must have been completed.
•LSU right angle adjustment

1) Make a test chart as shown below. (Print a self-print pattern 71.)



2) Make a copy from the table glass, and check it.
   At that time, set the test chart correctly. If it is set in a distorted position, the adjustment cannot be made correctly.
3) If the output value is not in the specified range, perform the following adjustment.
4) Remove the front cabinet in front of the scanner, and check that installing position of the MB rail.
5) Loosen the screw at the right of the MB rail to adjust.

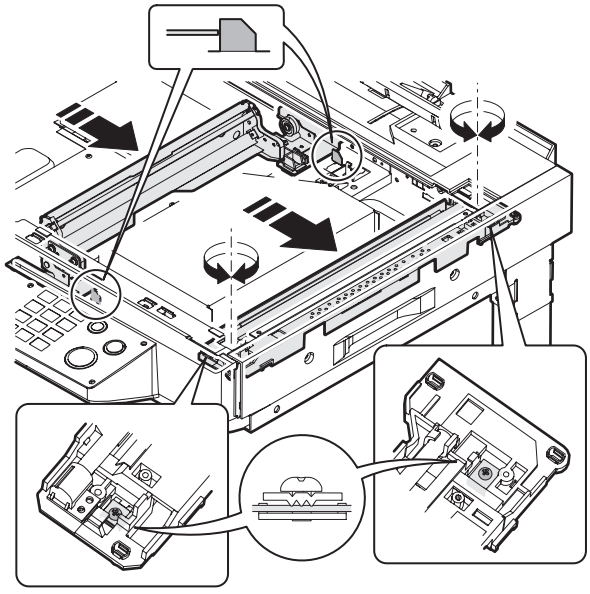


<Specifications>

Measurement point	Specification	Set value	
OC scan distortion adjustment	Angle θ in the above figure	θ = 90°±0.13°	1 scale = about 0.25°shift in θ

C. Vertical image distortion balance adjustment (Copy lamp unit installing position adjustment)

1) Insert the front/rear mirror base drive wire into the frame groove and press and fix it with the wire holder. At that time, do not tighten the wire fixing screw. Change the direction of the lamp positioning plate. (F and R)
2) Push the copy lamp unit onto the positioning plate, and tighten the wire fixing screw.



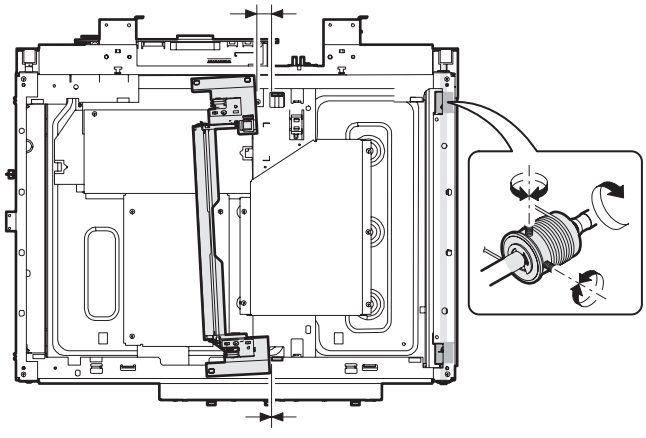
<Note for assembling the copy lamp unit>

After fixing, manually shift the copy lamp unit a few times to check that it moves smoothly.

D. Vertical image distortion balance adjustment (No. 2/3 mirror base unit installing position adjustment)

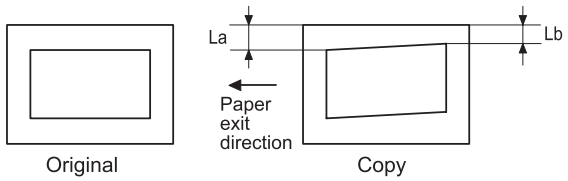
This adjustment is to adjust the parallelism of the mirror base to the OPC drum surface and the original surface.

1) Manually turn the mirror base drive pulley to bring mirror base B into contact with mirror base positioning plate.
   If, at that time, the front frame side and the frame side of mirror base B are brought into contact with the mirror base positioning plate simultaneously, the parallelism is correct and there is no need for adjustment.

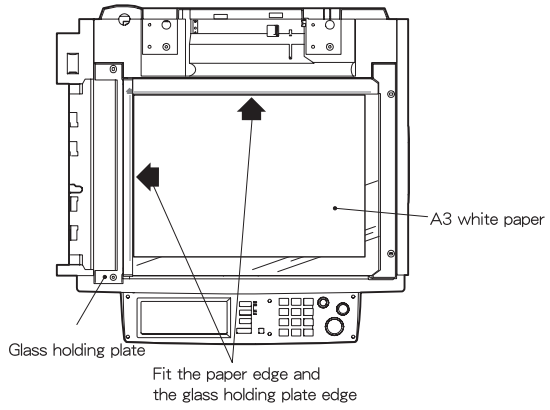


E. Vertical (sub scanning direction) distortion adjustment [Winding pulley position adjustment]

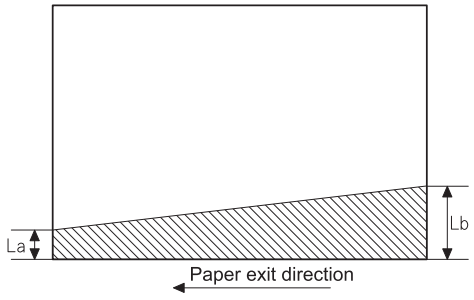
This adjustment is executed in the following cases:
•When the mirror base drive wire is replaced.
•When the lamp unit, or No. 2/3 mirror holder is replaced.
•When a copy shown below is made.



1) Set A3 white paper on the original table as shown below.



2) With the original cover open, make a normal (X 1.0) copy.
3) Measure the black distance at the lead edge and the rear edge of the copy paper.

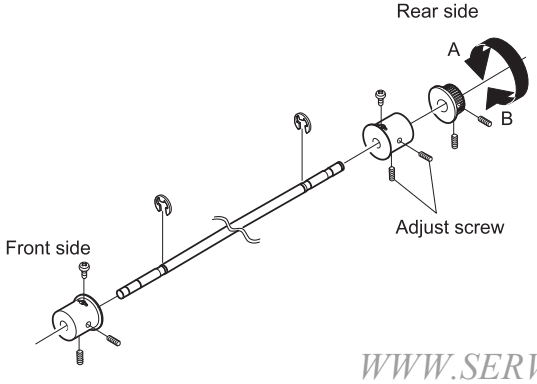


La : Lead edge black background section
Lb : Rear edge black background section

If La = Lb, the procedures 4) through 7) are not required.

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

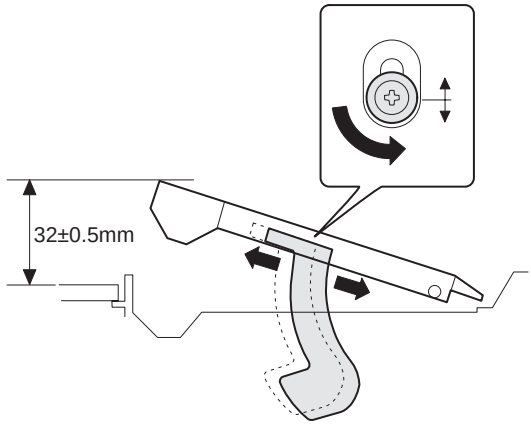
•If La < Lb, turn the rear frame mirror base drive pulley in direction B. (Do not move the mirror base drive pulley shaft.)
•If La > Lb, turn the rear frame mirror base drive pulley in direction A. (Do not move the mirror base drive pulley shaft.)



5) Tighten the fixing screw of the mirror base drive pulley.
6) Perform procedures 1) through 3).
7) If La is not equal to Lb, perform procedures 4) and 5).
If La = Lb, the adjustment is completed.
Repeat procedures 1) through 6) until La = Lb.

F. Original detection light emitting unit height adjustment

1) Execute SIM 41-3.
2) Open the original cover, hold the original detection light emitting unit gently, and select "1" and press START key without placing an original.



3) Check that "COMPLETE" is displayed on the LCD, and press CUSTOM SETTING key, and the screen returns to the original menu.
4) Place an A3 (or WLT) original on the table glass, and select "2" and press START key.
When "COMPLETE" is displayed on the LCD, the adjustment has been completed.

SIMULATION 41-3			
PD SENSOR DATA DISPLAY.			
OCSW			
PD1[128]:	200	PD2[128]:	200
PD3[128]:	50	PD4[128]:	52
PD5[128]:	51	PD6[128]:	50
PD7[128]:	52		

5) After completion of adjustment, press the document detection light emitting unit down with your fingers completely to the bottom, and release it. Check that the document detection light-emitting unit moves up smoothly.

<Specification>

	Specification	Adjustment position
Original size detection photo sensor adjustment	COMPLETE	SIM 41-2

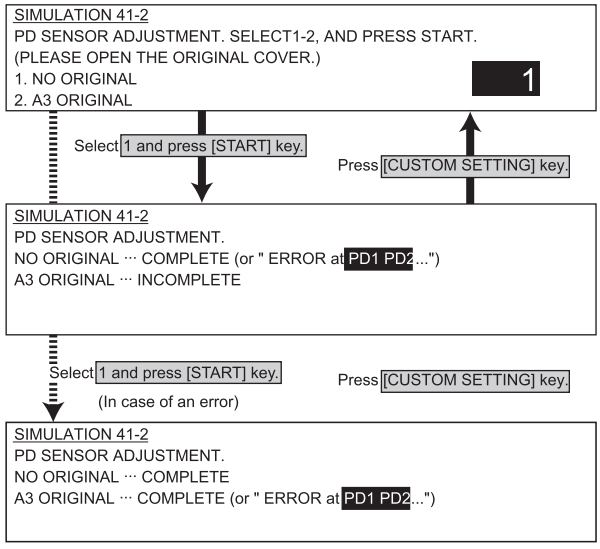
G. Orignal size detection photo sensor check

1) Execute SIM 41-1.
2) Put A3 (or WLT) paper on the table glass, and check that all the sensor displays (except for OCSW) on the LCD are highlighted.
3) Gradually move the unit to the left, and check that the highlighted sensor displays turn off one by one sequentially.

SIMULATION 41-1							
PD SENSOR CHECK..							
OCSW	PD1	PD2	PD3	PD4	PD5	PD6	PD7
(The detected sensors are highlighted.)							

H. Orignal size detection photo sensor adjustment

1) Execute SIM 41-2.
* At that time, check that the scanner mirror base is at the home position.
2) Open the document cover. Select 1 without placing paper on the table glass, and press START.
3) When COMPLETE is displayed on the LCD, press CUSTOM SETTING to return to the initial screen.
4) Place A3 (or WLT) paper on the table glass, select 2 and press START.
   When COMPLETE is displayed, the adjustment is normally completed.
* If ERROR is displayed, the error PD sensor is displayed.

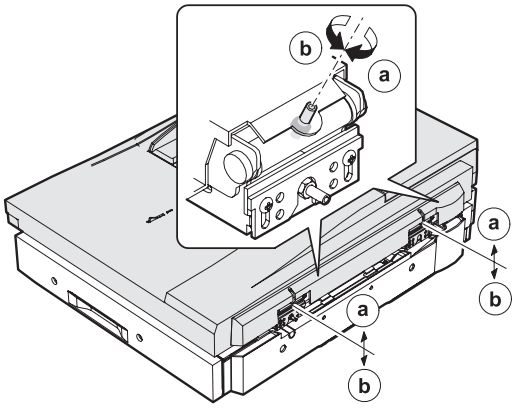


<Specification>

	Specification	Adjustment
Document size detection photo sensor adjustment	COMPLETE	SIM 41-2

I. DSPF hinge height adjustment

1) Close the DSPF.
2) Check that the dove and the reference plate are in contact with the table glass. If not, adjust with the setscrew.



<Specification>

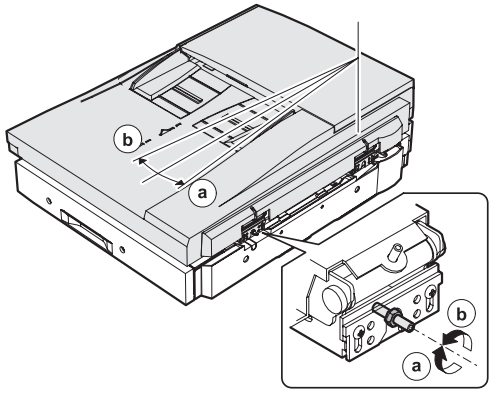
	Specification	Adjustment position
Distance between dove (Reference plate) and table glass	3-point contact (Left front/Left rear/Right front when viewed from the front)	Hinge adjustment set screw

J. DSPF hinge diagonal adjustment (Front)

Before executing this adjustment, the following adjustments must have been completed.
•LSU right angle adjustment
•DSPF height adjustment

1) Make a test chart as shown below. (Print a self-print pattern 71.)
2) Make a copy with DSPF.
3) Measure the rear side and check that the value is in the specified range.

4) If the value is not in the specified range, loosen the nut which is fixing the hinge R adjustment screw, and adjust the adjustment screw.
5) Make a copy again, and check again that the value is in the specified range.
6) Tighten the nut to fix the adjustment screw.



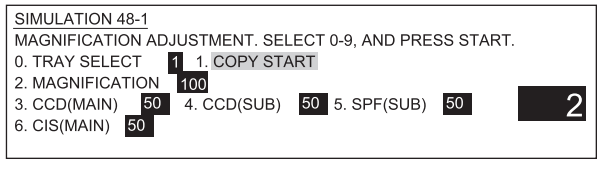
<Specification>

	Specification	Adjustment position
Skew feed	Within ±3mm	Hinge R adjustment screw
Lead edge skew	A4 or less: 1mm or less Greater than A4: 1.5mm or less	Eccentric screw for CIS adjustment

K. Scan magnification ratio adjustment

(1) OC scan magnification ratio adjustment

1) Place a print of self-print pattern (A3 or WLT) 70 or a scale on the table glass.
2) Close the original cover, and make a copy.
3) Check that the value is within the specification.
4) If not, adjust with SIM 48-1.
5) Make a copy again and check again that the value is within the specification.

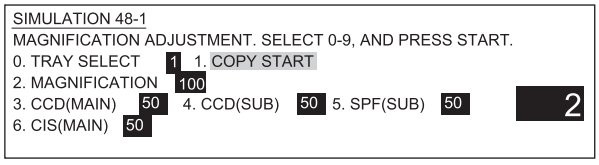


<Specification>

	Specification	Adjustment position	Adjustment value
Main scan direction magnification ratio	±0.5%	SIM48-1	Set value 1: 0.1% change
Sub scan direction magnification ratio			

(2) DSPF scan magnification ratio

1) Set a chart of print pattern 70 on SPF/DSPF.
2) Make a copy. (In the case of DSPF back copy, make a single copy in the duplex mode.)
3) Check that the output paper satisfies the specifications.
4) If not, adjust with SIM 48-1.
5) Make a copy again, and check that the output paper satisfies the specifications.



<Specifications>

	Specifications	Adjustment position	Adjustment value
SPF sub scan direction magnification ratio	±0.5%	SIM 48-1	Set value 1: 0.1% change
DSPF main scan (back) direction magnification ratio			

* The SPF main scan direction magnification ratio is common with OC.

L. OC scan lead edge adjustment

Before executing this adjustment, the following adjustment must have been completed.

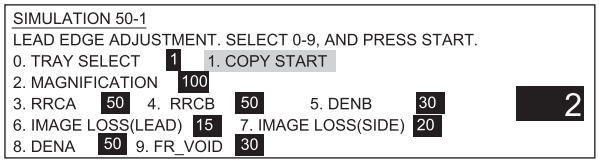
•OC scan magnification ratio adjustment

1) Set an original on the original table.
2) Enter SIM 50-1.
3) Make a copy.
4) Select the number to be set on the right of the LCD, and perform the adjustment of each item.
5) Select "3: RRC-A" and change the value with 10-key to perform the copy adjustment.
6) Select "4: RRC-B" so that the distance between the paper lead edge and the copy image lead edge is within 3.0mm. Change the value with 10-key and perform the copy adjustment.
7) Check that the lead edge shift is within 3.0mm. If not, perform the fine adjustment of procedure 5) and 6).
8) Select "5: DEN-B" so that the white spot in the latter half of copy (rear edge void) is within 3.0mm. Change the value with 10-key and perform the copy adjustment.
   (The rear void adjustment is changed by the step of 0.1mm.)

•When the rear edge void is too small, increase the value.

•When the rear edge void is too great, decrease the value.

9) Press [CA] key to cancel the simulation.



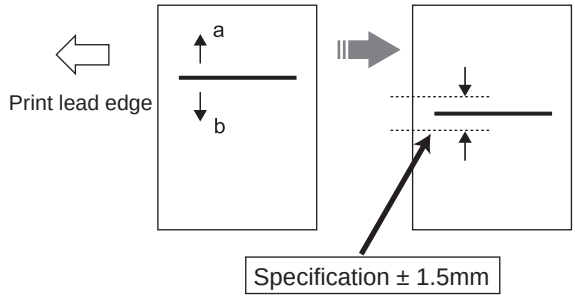
<Specification>

		Specifi-cation	Set value		
			Default	Range	
RRCA	Original scan start position		50	0 ~ 99	Set value 1: 0.2mm shift
RRCB	Image and paper position adjustment on the OPC drum		50	0 ~ 99	Set value 1: 0.1mm shift
DENA	Lead edge void adjustment	Total 8mm or less	35	0 ~ 99	Set value 1: 0.1mm shift
DENB	Rear edge void adjustment		35	0 ~ 99	Set value 1: 0.1mm shift
IMAGE LOSS (LEAD)	Both sides image loss	4.0mm or less	15	0 ~ 99	Set value 1: 0.1mm shift
IMAGE LOSS (SIDE)	F/R void quantity	Total 8mm or less	20	0 ~ 99	Set value 1: 0.1mm shift
FR_VOID		Total 8mm or less	35	0 ~ 99	Set value 1: 0.1mm shift

M. Original off-center adjustment

Before execution of this adjustment, the following adjustment must have been completed.
•LSU right angle adjustment
•Print off-center adjustment
•Print magnification ratio adjustment

1) Set an original on the original table.
2) Execute SIM 50-12.
3) Select the paper feed tray and the magnification ratio.
4) After entering the adjustment value, pres START key, and printing is started.
5) Check the off-center (distance from the paper lead edge) of the printed copy. Repeat procedure 2 until the printed copy satisfies the specifications.



	Adjustment position		Measurement reference	Specification	Set value		
					Default	Range	
Print off-center SIM 50-10	Tray 1	Tray 1	Output pattern center line	As shone in the table below.	50	0 - 99	Set value 1: 0.1mm shift
	Tray 2	Tray 2					
	Tray 3	Tray 3/LCC left					
	Tray 4	Tray 4/LCC right					
	MFT	Manual feed					
	ADU	Duplex					

•For the duplex mode (Single ? Duplex), add 10 to the above set value.
•When the print line is shifted toward a from the paper center, decrease the value.
•When the print line is shifted toward b from the paper center, increase the value.

<Specifications>

Machine (OC mode)	Single	±1.5mm
	Duplex	±1.7mm
Overall (DSPF)	Single S - S	±2.8mm
	Single D - S	±3.5mm
	Duplex S - D	±3.0mm
	Duplex D - D	±3.5mm

N. Image density adjustment

The image density adjustment is required for the following copy quality mode by using the simulation.
There are two methods; the collective adjustment and the individual adjustment of the copy quality mode.

•Copy mode

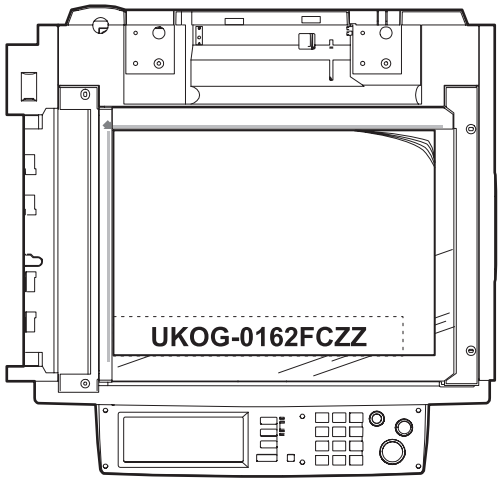
Copy quality mode Collective		adjustment	Individual adjustment
Binary value mode	Auto mode	SIM46-2	
	Character mode		SIM46-9
	Character/Photo mode		SIM46-10
	Photo mode		SIM46-11

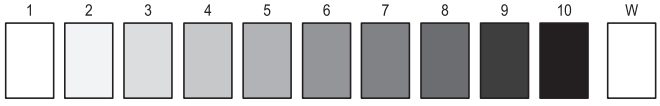
•FAX mode

			adjustment	Individual adjustment
Normal mode	Binary value mode	AUTO	SIM46-12	SIM46-13
		LIGHT		
		DARK		
Small text mode	Binary value mode	AUTO		SIM46-14
		LIGHT		
		DARK		
	Half tone mode	AUTO		
		LIGHT		
		DARK		
Fine mode	Binary value mode	AUTO		SIM46-15
		LIGHT		
		DARK		
	Half tone mode	AUTO		
		LIGHT		
		DARK		
Super fine mode	Binary value mode	AUTO		SIM46-16
		LIGHT		
		DARK		
	Half tone mode	AUTO		
		LIGHT		
		DARK		

(1) Test chart setting

1) Place a test chart (UKOG-0162FCZZ) on the original table as shown below.
2) Place several sheets of A3 (11 x 17) white paper (Sharp's specified paper) on the test chart at the rear reference.





Test chart comparison

UKOG-0162FCZZ DENSITY No.	1	2	3	4	5	6	7	8	9	10	W
UKOG-0089CSZZ DENSITY No.	0.1		0.2		0.3				0.5	1.9	0
KODAK GRAY SCALE		1		2		3		4		19	A
SHARP CORPORATION MADE IN JAPAN											

(2) Density adjustment procedure

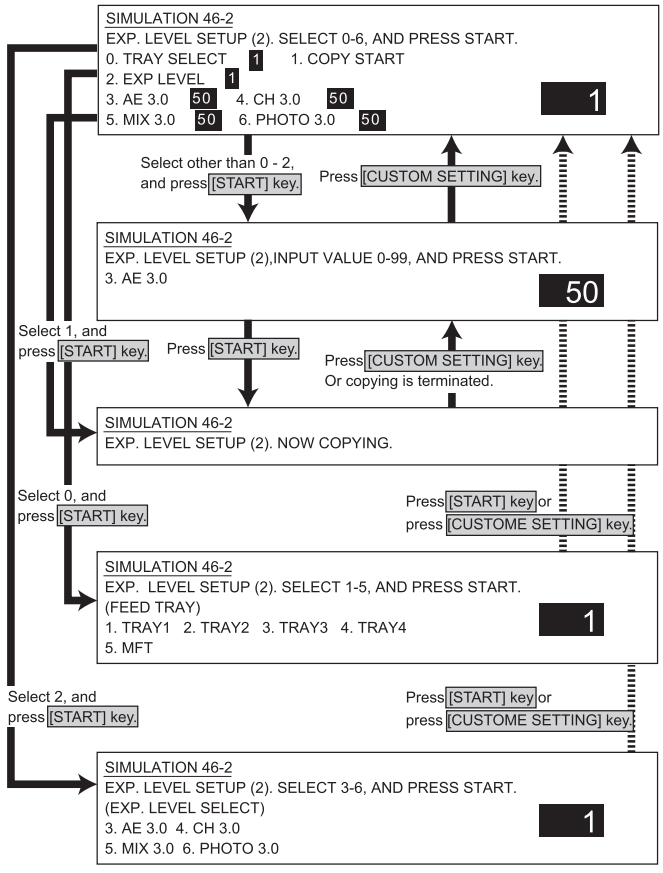
a. Collective adjustment of two or more copy quality modes

Normally this adjustment is performed with SIM 46-2. In this method, two or more copy density adjustments in different modes can be adjusted collectively.

1) Execute SIM 46-2.

(Binary value mode)

Quality mode	Linked simulation data
AE3.0 (AE)	
CH3.0 (Character)	sim46-9
MIX3.0 (Character/Photo)	sim46-10
PH3.0 (Photo)	sim46-11



2) Press the COPY button to make a copy.
Check that the copy density is as shown in the table below.
If not, change the adjustment value.

•Adjustment spec

Mode	EXP.	Chart No.	Adjustment level	Chart No.	Adjustment level
Character	3	3	Copied	2	Not copied
Character/ Photo	3	3	Copied	2	Not copied
Photo	3	3	Copied	2	Not copied
Auto		3	Copied	2	Not copied

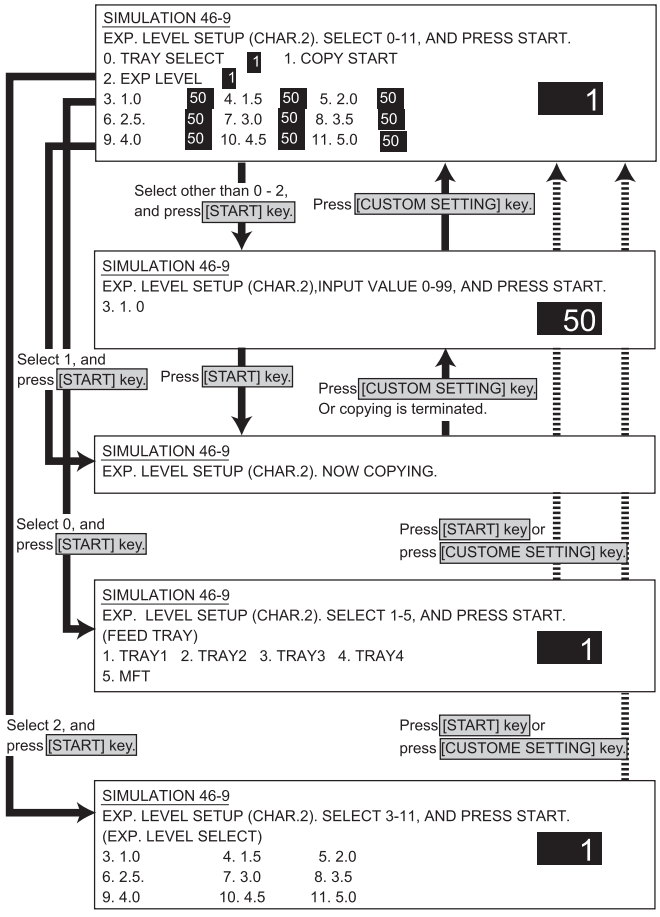
If the copy density is too light, increase the adjustment value.
If the copy density is too dark, decrease the adjustment value.
Adjustment range: 30 - 170

b. Individual adjustment of each copy quality mode

This adjustment is used when a different density level for different copy

quality mode is required. SIM 46-5 to -7 and SIM 46-9 to -11 are used.

1) Execute the simulation corresponding to the copy quality mode to be adjusted.



2) Press the COPY button to make a copy

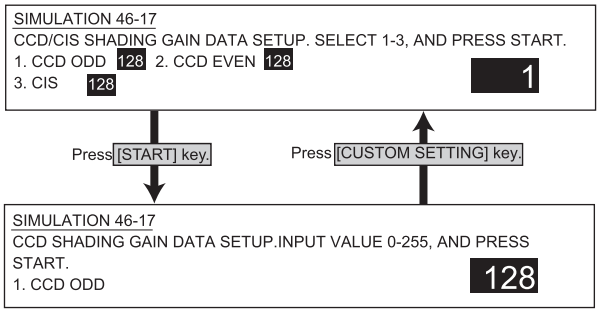
Check that the copy density is as shown in the table below. If not, change the adjustment value.

For the auto mode, there is only one adjustment value. For the other modes, the adjustment value for each density level must be adjusted.

c. Gain adjustment in DSPF back (CIS) scan

When images are too dark or too bright in scanning the back (CIS) of DSPF, perform the following procedures.

1) Make a duplex copy of a sample, and check the density of canning the back.
2) Execute SIM 46-17.

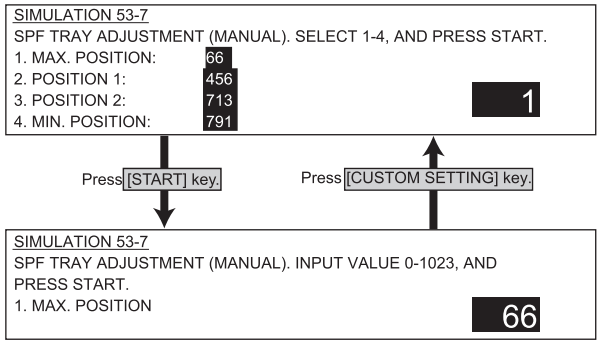


3) Select "3.CIS" and adjust the gain of CIS.
   When the CIS gain setup value is increased, the image becomes brighter.
   When the CIS gain setup value is decreased, the image becomes darker.

O. DSPF width detection adjustment

(1) When replacing DSPF unit

1) Use SIM53-7 to enter the value indicated on the side of the right hinge of the DSPF unit.

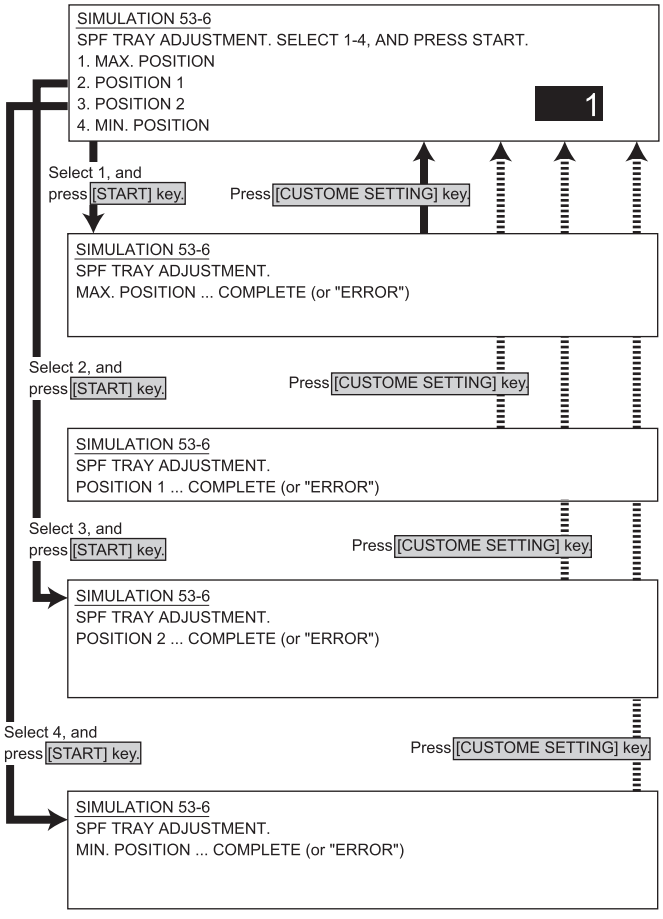


(2)When replacing the original width detection volume.

Execute SIM53-6 to perform the machine DSPF original tray size adjustment.

1) Extend the guide to MAX. position, select 1, and press START. When COMPLETE is displayed, press CUSTOM SETTING to return to the initial screen.
2) Move the guide to A4R position, select 2, and press START. When COMPLETE is displayed, press CUSTOM SETTING to return to the initial screen.
3) Move the guide to A5R position, select 3, and press START. When COMPLETE is displayed, press CUSTOM SETTING to return to the initial screen.
4) Move the guide to MIN. position, select 4, and press START. When COMPLETE is displayed, the adjustment is completed.

If ERROR is displayed in procedures 1) - 4), repeat the adjustment again.



[10] SIMULATIONS

1. Entering the simulation mode

Enter the copy mode and perform the following procedures.
[P] → [*] → [C] → [*] → [Main code] → [START] → [Sub code] → [START]

2. Switching the simulation mode

Press [USER SETTING] to return to the code entry screen.

3. Canceling the simulation mode

Press CA key to cancel the simulation mode.

4. Simulation list

Code		Function (Content)	Purpose	Section	Item	
Main	Sub					
1	1	Used to check the operations of the scanner (reading) unit and its control circuit.	Operation test, check	Scanner (reading)	Operation	
	2	Used to check the operations of the sensors and detectors in the scanner (reading) unit and their control circuits.	Operation test, check	Scanner (reading)	Operation	
2	1	Used to check the operations of the automatic document feeder unit and its control circuit.	Operation test, check	DSPF	Operation	
	2	Used to check the operations of the sensors and detectors in the automatic document feeder unit and their control circuits.	Operation test, check	DSPF	Operation	
	3	Used to check the operation under load in the automatic document feeder unit and their control circuits.	Operation test, check	DSPF	Operation	
3	2	Used to check the operations of the sensors and detectors in the finisher and their control circuits.	Operation test, check	Finisher	Operation	
	3	Used to check the operation under load in the finisher and their control circuits.	Operation test, check	Finisher	Operation	
	6	Used to adjust the stacking capacity of the finisher. (Used to adjust the alignment plate (jogger) stop position in the finisher paper width direction. The adjustment is made by changing the alignment plate home position in the paper width direction by software.)	Adjustment	Finisher	Operation	
	10	Used to adjust the console finisher (AR-FN7).	Adjustment	Finisher	Operation	
	20	Used to check the mail bin stacker (AR-MS1) sensor.	Operation test, check	Mail bin stacker	Operation	
	21	Used to check the operations of the mail bin stacker loads.	Operation test, check	Mail bin stacker	Operation	
4	2	Used to check the operations of the sensors and detectors in the paper feed section (desk paper feed/large capacity trays) and their control circuits.	Operation test, check	Paper feed	Operation	
	3	Used to check the operation under load in the paper feed section (desk paper feed/large capacity trays) and their control circuits.	Operation test, check	Paper feed	Operation	
5	1	Used to check the operations of the lamps and LCD on the operation panel and their control circuits.	Operation test, check	Operation (display, operation)	Operation	
	2	Used to check the operations of the heater lamp and its control circuit.	Operation test, check	Fusing	Operation	
	3	Used to check the operations of the copy lamp and its control circuit.	Operation test, check	Scanner (reading)	Operation	
6	1	Used to check the operation under load (clutches and solenoids) in the paper transport system and their control circuits.	Operation test, check	Paper transport (paper exit, switchback, transport)	Operation	
	2	Used to check the operations of each fan motor and its control circuit.	Operation test, check	Others	Operation	
7	1	Used to set the aging conditions.	Setup		Operation	
	6	Used to set the intermittent aging cycle.	Setup		Operation	
	8	Used to set Enable/Disable of warm-up time display.	Setup		Operation	

Code		Function (Content)	Purpose	Section	Item	
Main	Sub					
8	1	Used to check and adjust the developing bias voltage in each print mode and its control circuit.	Adjustment, operation test, check	Process (OPC drum, developing, transfer, cleaning)		
	2	Used to check and adjust the main charger grid voltage in each print mode and its control circuit.	Adjustment, operation test, check	Process (OPC drum, developing, transfer, cleaning)		
	6	Used to check and adjust the transfer charger current and its control circuit.	Adjustment, operation test, check	Process (OPC drum, developing, transfer, cleaning)		
	17	Used to set and check the transfer roller output.	Operation test, check	Process (OPC drum, developing, transfer, cleaning)	Operation	
9	1	Used to check the operation under load (clutches and solenoids) in the duplex section and their control circuits.	Operation test, check	Duplex	Operation	
	2	Used to check the sensors and detectors in the duplex section and their control circuits.	Operation test, check	Duplex	Operation	
10	0	Used to check the operation of the toner motor and its control circuit. (Note) Do not execute this simulation with toner in the toner hopper. If executed, toner will enter the developing section, causing an overtoner trouble. Be sure to remove toner motor from the toner hopper before execution.	Operation test, check	Process (OPC drum, developing, transfer, cleaning)	Operation	
13	0	Used to cancel the self diag "U1" trouble. (Only when FAX is installed.)	Cancel (incase of a trouble)		Trouble	
14	0	Used to cancel the self diag "U1/LCC/US/PF" troubles.	Cancel (incase of a trouble)		Trouble	Error
15	0	Used to cancel the self diag "U6 (09/20/21/22)" trouble.	Cancel (incase of a trouble)	Paper feed	Trouble	
16	0	Used to cancel the self diag "U2" trouble.	Cancel (incase of a trouble)		Trouble	Error
17	0	Used to cancel the self diag "PF" trouble (when copy is inhibited by the host computer).	Cancel (incase of a trouble)	Communication (RIC/MODEM)	Trouble	Error
21	1	Used to set the maintenance cycle.	Setup		Spec	Counter
22	1	Used to check the print count in each section and in each operation mode. (Used to check the maintenance timing.)	Adjustment, setup, operation data output, check (display, print)		Counter	
	2	Used to check the number of total misfeed and troubles. (If the number of misfeed is considerably great, the machine must be repaired. The misfeed rate is obtained by dividing this count by the total counter value.)	Adjustment, setup, operation data output, check (display)		Trouble	
	3	Used to check the misfeed position and the number of misfeed at that position. (If the number of misfeed is considerably great, the machine must be repaired.) (Sections other than DSPF sections)	Adjustment, setup, operation data output, check (display)		Trouble	Misfeed
	4	Used to check the total trouble (self diag) history.	Adjustment, setup, operation data output, check (display)		Trouble	
	5	Used to check the ROM version of each unit (section).	Other		Software	
	6	Used to print the list of adjustments and setup data (simulations, FAX soft switches, counters).	Adjustment, setup, operation data output, check (print)		Data	Setup, adjustment data
	7	Used to display the key operator code. (Used when the customer has forgotten the key operator code.)	Adjustment, setup, operation data output, check (display)		Data	User data
	8	Used to check the number of use of the staple, DSPF, and scanner (reading) unit.	Adjustment, setup, operation data output, check (display)		Counter	
	9	Used to check the number of use (print quantity) of each paper feed section.	Adjustment, setup, operation data output, check (display)	Paper feed	Counter	
	10	Used to check the system configuration (option, internal hardware).	Adjustment, setup, operation data output, check (display)		Spec	Option

Code		Function (Content)	Purpose	Section	Item	
Main	Sub					
22	11	Used to check the use frequency of FAX. (send/receive) (Only when FAX is installed.)	Adjustment, setup, operation data output, check (display)	FAX	Data	
	12	Used to check the misfeed position and the number of misfeed at that position. (If the number of misfeed is considerably great, the machine must be repaired.)	Adjustment, setup, operation data output, check (display)	DSPF	Trouble	Misfeed
	13	Used to display the process cartridge data.	Adjustment, setup, operation data output, check (display)		Counter	
	19	Used to display the scanner mode counter.	Adjustment, setup, operation data output, check (display)		Counter	
24	1	Used to clear the misfeed counter, misfeed history, trouble counter, and trouble history. (After completion of maintenance, these counters must be cleared.)	Data clear		Counter	
	2	Used to clear the number of use (print quantity) of each paper feed section.	Data clear	Paper feed	Counter	
	3	Used to clear the number of use of the staple, ADF, RADF, SPF, DSPF, and the scanner (reading) unit.	Data clear		Counter	
	4	Used to reset the maintenance counter.	Data clear		Counter	
	5	Used to reset the developer counter. (The developer counter of the DV unit installed is reset.)	Data clear	Process (OPC drum, developing, transfer, cleaning)	Counter	Developer (DV unit)
	6	Used to reset the copy counter.	Data clear		Counter	Copy
	7	Used to clear the OPC drum counter and the toner cartridge counter. (Perform when the OPC drum is replaced.)	Data clear	Process (OPC drum, developing, transfer, cleaning)	Counter	OPC drum
	9	Used to clear the printer print counter. (After completion of maintenance, this counter must be cleared.)	Data clear	Printer	Counter	Printer
	10	Used to clear the FAX counter. (After completion of maintenance, this counter must be cleared.) (Only when FAX is installed.)	Data clear	FAX	Counter	
	11	Used to reset the drum rotation time, toner motor rotation time, and developer rotation time counters. The developer counter of the DV unit installed is reset.	Data clear	Process (OPC drum, developing, transfer, cleaning)	Counter	Developer (DV unit)
	15	Used to clear each counter in the scanner mode.	Data clear		Counter	
25	1	Used to check the operations of the main drive section (excluding the scanner (reading) section) and the toner density sensor. (The toner density sensor output can be monitored.)	Operation test, check	Drive	Operation	
	2	Used to initialize the toner density when replacing developer. (Auto adjustment)	Setup	Process (OPC drum, developing, transfer, cleaning)		
26	3	Used to set the specification mode of the auditor. Setup must be made according to the use condition of the auditor.	Setup	Auditor	Spec	
	5	Used to set the count mode of the total counter and the maintenance counter.	Setup		Spec	Counter
	6	Used to set the specification according to the destination.	Setup		Spec	Destination
	10	Used to set the trial mode of the network scanner.	Setup		Operation	
	18	Used to set Enable/Disable of toner save operation. (This simulation is enabled only in Japan and UK versions. (Depends on SIM 26-6 (Destination) setup). For the other destinations, user program P22 allows to make the similar setup.)	Setup		Spec	Operation mode (Common operation)
	30	Used to set the operation mode conforming to the CE mark (Europe standards). (For flickers when driving the fusing heater lamp.)	Setup		Spec	Operation mode (Common operation)
	35	Used to set whether the trouble history of SIM 22-4 is displayed as one-time trouble or continuous troubles when two or more number of a same trouble occurred.	Setup		Spec	
	38	Used to stop printing when developer life is expired.	Setup	Other	Operation	

Code		Function (Content)	Purpose	Section	Item	
Main	Sub					
26	41	Used to set Enable/Disable of the magnification ratio auto selection function (AMS) in the pamphlet copy mode.	Setup		Spec	Operation mode (Common operation)
	52	Used to set Enable/Disable of count-up when white paper is discharged. (White paper means the index paper (without copying) in the OHP index paper insertion mode, the front/rear covers (without copying) in the cover insertion mode, and white paper in the duplex exit mode (CA, etc.).)	Setup	Paper transport (Paper exit, switchback, transport)		
27	1	Used to set the operation specifications when a communication trouble occurs between the host computer and MODEM (machine side). (When a communication trouble occurs between the host computer and MODEM (machine side), self diag display (U7-00) is displayed and setup is made to inhibit or allow printing.)	Setup	Communication (RIC/MODEM)	Spec	Operation mode (Common operation)
	5	Used to enter the machine tag No. (This function allows to check the machine tag No. from the computer.)	Setup	Communication (RIC/MODEM)	Data	
30	1	Used to check the operations of the sensors and detectors in the paper feed, paper transport, and paper exit sections and their control circuits.	Operation test, check		Operation	
	2	Used to check the operations of the sensors and detectors in the paper feed section and their control circuits. (The operations of the sensors and detectors in the paper feed section can be monitored on the LCD display.)	Operation test, check	Paper feed	Operation	
40	1	Used to check the operations of the manual paper feed tray paper size detectors and their control circuit. (The operations of the manual paper feed tray paper size detectors can be monitored on the LCD display.)	Operation test, check	Paper feed	Operation	
	2	Used to adjust the detection level of the manual paper feed tray paper width detector.	Adjustment	Paper feed	Operation	
	7	Used to enter the adjustment value of the manual paper feed tray width detection level.	Adjustment, setup	Paper feed	Operation	
	11	Used to check the width detection level of the multi purpose tray paper width detector.	Operation test, check	Paper feed	Operation	
	12	Used to adjust the width detection level of the multi purpose tray paper width detector.	Adjustment, setup	Paper feed	Operation	
41	1	Used to check the operations of the document size sensor and the related circuit. (The operation of the document size sensor can be monitored on the LCD display.)	Operation test, check	Other	Operation	
	2	Used to adjust the detection level of the document size sensor.	Adjustment	Other	Operation	
	3	Used to check the operations of the document size sensor and the related circuit. (The output level of the document size sensor can be monitored on the LCD display.)	Operation test, check	Other	Operation	
43	1	Used to set the fusing temperature in each operation mode.	Setup	Fusing, paper exit		
44	1	Used to set Enable/Disable of each correction operation in the image forming (process) section.	Setup	Process (OPC drum, developing, transfer, cleaning)	Operation	
	4	Used to set the target image (reference) density level in the developing bias voltage correction.	Setup	Process (OPC drum, developing, transfer, cleaning)	Data	
	9	Used to check the result (main charger grid voltage developing bias voltage, laser power, etc.) of correction (process correction) in the image forming section. (By this simulation, the correction operation can be checked.)	Adjustment, setup, operation data output, check (display, print)	Process (OPC drum, developing, transfer, cleaning)	Data	Operation data (machine condition)

Code		Function (Content)	Purpose	Section	Item	
Main	Sub					
46	2	Used to adjust the copy density in the copy mode (binary, auto, text, text/photo, photo mode). An adjustment with this simulation affects all the copy density adjustment values.	Adjustment		Picture quality	Density
	9	Used to adjust the print density for each density level (display value) in the copy mode (binary-Text mode). A desired print density can be set for each density level (display value).	Adjustment		Picture quality	Density
	10	Used to adjust the print density for each density level (display value) in the copy mode (binary-Text/Photo mode). A desired print density can be set for each density level (display value).	Adjustment		Picture quality	Density
	11	Used to adjust the print density for each density level (display value) in the copy mode (binary-Photo mode). A desired print density can be set for each density level (display value).	Adjustment		Picture quality	
	12	Used to adjust the print density in the FAX mode (all modes). An adjustment with this simulation affects all the copy density adjustment values. (Only when FAX is installed)	Adjustment		Picture quality	
	13	Used to adjust the print density in the FAX mode (normal mode). (Only when FAX is installed.)	Adjustment		Picture quality	
	14	Used to adjust the print density in the FAX mode (small text mode). (Only when FAX is installed.)	Adjustment		Picture quality	
	15	Used to adjust the print density in the FAX mode (fine mode). (Only when FAX is installed.)	Adjustment		Picture quality	
	16	Used to adjust the print density in the FAX mode (super-fine mode). (Only when FAX is installed.)	Adjustment		Picture quality	
	17	Used to adjust the CCD/CIS shading reference value.	Setup, check		Picture quality	
	18	Used to adjust gamma (density gradient) in each copy mode.	Adjustment		Picture quality	Density
	19	Used to adjust gamma (density gradient) in the auto copy mode and to set the density detection area, and to set the image process mode.	Adjustment		Picture quality	Density
	20	Used to adjust the copy density correction in the SPF/DSPF copy mode for the document table copy mode. This adjustment is made so that the copy density becomes the same as that in the document table copy mode.	Adjustment		Picture quality	Density
	21	Used to adjust the scanner exposure level. (1 mode auto adjustment)	Adjustment, setup, operation data output, check (display)	Scanner (reading)	Picture quality	Density
	22	Used to adjust the scanner exposure level and to make individual setup. (Normal mode)	Adjustment, setup, operation data output, check (display)	Scanner (reading)	Picture quality	Density
	23	Used to adjust the scanner exposure level and to make individual setup. (Small text mode)	Adjustment, setup, operation data output, check (display)	Scanner (reading)	Picture quality	Density
	24	Used to adjust the scanner exposure level and to make individual setup. (Fine mode)	Adjustment, setup, operation data output, check (display)	Scanner (reading)	Picture quality	Density
	25	Used to adjust the scanner exposure level and to make individual setup. (Super fine mode)	Adjustment, setup, operation data output, check (display)	Scanner (reading)	Picture quality	Density
48	1	Used to adjust the copy magnification ratio (main scan direction, sub scan direction).	Adjustment	Scanner (reading)	Picture quality	
	5	Used to adjust the scan motor speed.	Adjustment	Scanner (reading)	Picture quality	

Code		Function (Content)	Purpose	Section	Item	
Main	Sub					
50	1	Used to adjust the document scan position, the image print position, and the void area (image loss).(A similar adjustment can be made with SIM 50-2 (simple method).)	Adjustment		Picture quality	Picture position
	2	Used to adjust the document scan position, the image print position, and the void area (image loss).(This simulation allows simple procedure of the similar adjustment to SIM 50-1.)	Adjustment		Picture quality	Picture position
	6	Document scan position adjustment. (DSPF)	Adjustment		Picture quality	
	7	Document scan position adjustment (Simple method) (DSPF)	Adjustment		Picture quality	
	10	Used to adjust the print image center position. (Adjusted for each paper feed section.)	Adjustment	Image process (ICU)	Picture quality	Picture position
	12	Used to adjust the reading image center position. (Adjusted for each document mode.)	Adjustment	Image process (ICU)	Picture quality	Picture position
51	2	Used to adjust the contact pressure of paper on the resist roller in each section (machine paper feed, duplex paper feed, SPF paper feed). (This adjustment is required when the print image position varies or when paper jam occurs frequently.)	Adjustment	Paper transport (paper exit, switchback, transport)	Operation	
53	6	Used to adjust the DSPF width detection level.	Adjustment		Operation	
	7	Used to enter the adjustment value of SPF width detection.	Adjustment, setup, operation data output, check (display, print)	SPF/ADF/RADF/UDH	Operation	
60	1	Used to check the ICU (DRAM) operation (read/write). (SIMM memory, Onboard memory)	Operation test, check	Image process (ICU)	Operation	
61	1	Used to check the operations of the LSU unit.	Operation test, check		Operation	
	2	Used to adjust laser power (absolute value) in the copy mode.	Adjustment		Operation	
	3	Used to adjust laser power (absolute value) in the FAX reception mode. (Only when FAX is installed.)	Adjustment		Operation	
	4	Used to adjust laser power (absolute value) in the printer mode.	Adjustment		Operation	
62	2	Used to check the hard disk operation (read/write). (Only for the model with the hard disk) (Partial check)	Operation test, check	Memory	Operation	
	3	Used to check the hard disk operation (read/write). (Only for the model with the hard disk) (All area check)	Operation test, check	Memory	Operation	
63	1	Used to check the shading correction result. (The shading correction data are displayed.)	Adjustment, setup, operation data output, check (display, print)	Scanner (exposure)	Operation	
	2	Used to execute shading.	Adjustment, setup, operation data output, check (display, print)	Scanner (exposure)	Operation	
	7	Used to adjust the white plate scan start position in shading white correction.	Adjustment	Scanner (exposure)	Operation	
64	1	Used to check the operations of the printer section (self printing). (The print pattern, paper feed mode, print mode, print quantity, density can be changed optionally.)	Operation test, check	Printer	Operation	
65	1	Used to adjust the touch panel (LCD display section) detecting position.	Adjustment	Operation (display, operation)		
	2	Used to check the result of the touch panel (LCD display section) detecting position adjustment. (The coordinates are displayed.)	Adjustment, setup, operation data output, check (display, print)	Operation (display, operation)		

Code		Function (Content)	Purpose	Section	Item	
Main	Sub					
66	1	Used to set the FAX soft switch function. (Used to utilize the FAX soft switch function.)	Setup	Fax		
	2	Used to set the FAX soft switch setup to the default. (Except for the adjustment values)	Data clear	Fax	Data	
	3	Used to check the operations of FAX PWB memory (read/write). (This adjustment is required when replacing the PWB with a new one.)	Operation test, check	Fax	Data	
	4	Used to check the operations of data signal output in the FAX data output mode. (Used to check the MODEM operation.) Send level 0dB (Max.) (Only when FAX is installed.)	Operation test, check	Fax	Operation	
	5	Used to check the operations of data signal output in the FAX data output mode. (Used to check the MODEM operation.)Signals are sent in the send level set with the soft switch. (Only when FAX is installed.)	Operation test, check	Fax	Operation	
	6	Used to print the confidential password. (Used when the confidential password is forgotten.) (Only when FAX is installed.)	User data output, check (display, print)	Fax	Data	
	7	Used to print the image memory data (memory send, receive). (Only when FAX is installed.)	User data output, check (display, print)	Fax	Data	
	8	Used to check the output operation of the FAX sound signals. (Sound output IC operation check) Send level 0dB (Max.) (Only when FAX is installed.)	Operation test, check	Fax	Operation	
	9	Used to check the output operation of the FAX sound signals. (Sound output IC operation check) (Only when FAX is installed.)	Operation test, check	Fax	Operation	
	10	Used to clear all data of image memory (memory send, receive). Confidential data are also cleared. (Only when FAX is installed.)	User data output, check (display, print)	Fax	Data	
	11	Used to check the output operation of FAX G3 mode 300BPS. (Used to check the MODEM operation.) Send level 0dB (Max.) (Only when FAX is installed.)	Operation test, check	Fax	Operation	
	12	Used to check the output operation of FAX G3 mode 300BPS. (Used to check the MODEM operation.) Signals are sent in the send level set with the soft switch. (Only when FAX is installed.)	Operation test, check	Fax	Operation	
	13	Used to enter (set) the number for the FAX dial signal output test. (The dial number signal set with this simulation is outputted in the dial signal output test with SIM 66-14~16) (Only when FAX is installed.)	Setup	Fax	Data	
	14	Used to set the make time in the FAX pulse dial mode (10PPS) and to test the dial signal output. (The dial number signal set with SIM 66-13 is outputted.) Used to check dialing troubles and the operation. (Only when FAX is installed.)	Setup	Fax	Operation	

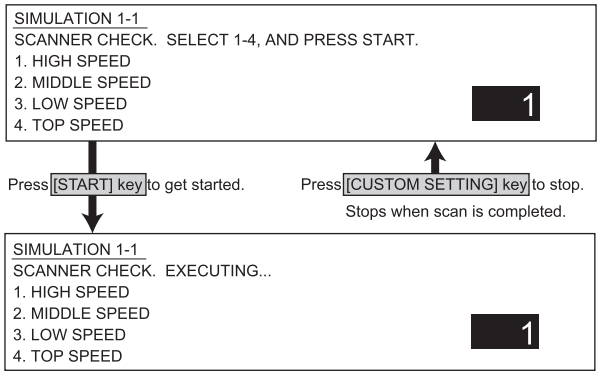
Code		Function (Content)	Purpose	Section	Item	
Main	Sub					
66	15	Used to set the make time in the FAX pulse dial mode (20PPS) and to test the dial signal output. (The dial number signal set with SIM 66-13 is outputted.) Used to check dialing troubles and the operation. (Only when FAX is installed.)	Setup	Fax	Operation	
	16	Used to test the dial signal (DTMF) output in the FAX tone dial mode. (The dial number signal set with SIM 66-13 is outputted.) The send level can be set to an optional level. Dialing troubles and operation.(Only when FAX is installed.)	Setup	Fax	Operation	
	17	Used to test the dial signal (DTMF) output in the Fax tone dial mode. Send level 0db (Max.).Used to check the operation. (Only when FAX is installed.)	Setup	Fax	Operation	
	18	Used to test the dial signal (DTMF) in the FAX tone dial mode. The send level set with the soft switch is outputted. Used to check the operation. (Only when FAX is installed.)	Setup	Fax	Operation	
	19	Used to backup the FAX SRAM data into the flash Memory(Option FAX memory:AR-MM9) (Only when FAX is installed.)	Setup	Fax	Operation	
	20	Used to restore the backup data (SIM 66-19) to SRAM. (Only when FAX is installed.)	Setup	Fax	Operation	
	21	Used to print the FAX information (registrations, communication management, file management, system errors). (Only when FAX is installed.)	Adjustment, setup, operation data output, check (display, print)	Fax	Data	
	22	Used to adjust the handset sound volume. (Only when FAX is installed.)	Setup	Fax	Operation	
	23	Used to download the FAX program. (Only when FAX is installed.)	Inhibited	Fax		
	24	Used clear the FAST memory data. (Only when FAX is installed.)	Inhibited	Fax		
	25	Used to register the FAX number for MODEM dial-in. (Only when FAX is installed.)	Inhibited	Fax		
	26	Used to register the external telephone number for MODEM dial-in. (Only when FAX is installed.)	Inhibited	Fax		
	27	Used to register the voice-warp transfer number. (Only when FAX is installed.)	Inhibited	Fax		
	28	Used to record a sound message. (Only when FAX is installed.)	Inhibited	Fax		
	29	Used to clear the telephone directory. (Only when FAX is installed.)	Setup	Fax	Operation	
	30	Used to check TEL/LIU status change.	Setup	Fax	Operation	
	31	Used to set the TEL/LIU status.	Setup	Fax	Operation	
	32	Used to check received data.	Inhibited	Fax		
	33	Used to check signal detection.	Inhibited	Fax		
	34	Used to measure and display the communication time.	Setup	Fax	Operation	
	35	Modem program rewriting.(Only when FAX is installed.)	Operation test, check	Fax	Operation	
	36	Used to check interface between MFPC and MDMC. Check is made in the data line or the command line.	Operation test, check	Fax	Operation	
67	2	Used to check the parallel I/F operation of the printer. (This simulation is made only in the production site and not in the market. It requires a special tool.)	Inhibited	Printer		Interface, communi-cation
	11	Used to set Enable/Disable of the parallel I/F select signal of the printer.	Adjustment	Printer	Operation	Interface, communi-cation
	16	Used to check the operation of the network card.	Operation test, check	Printer	Operation	Interface, communi-cation

5. Details of simulations

Main code 1

1-1

Purpose	Operation test, check
Function (Content)	Used to check the operations of the scanner (reading) unit and its control circuit.
Section	Scanner (reading)
Item	Operation
Operation/Procedure	Select with 10 digit key pad.

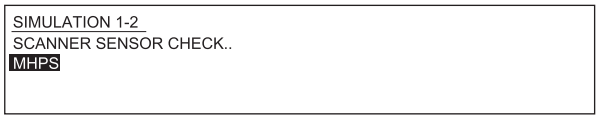


<List of set values>

1	High speed operation	168mm / sec
2	Middle speed operation	110mm / sec
3	Low speed operation	55mm / sec
4	Top speed operation	220mm / sec

1-2

Purpose	Operation test, check
Function (Content)	Used to check the operations of the sensors and detectors in the scanner (reading) unit and their control circuits.
Section	Scanner (reading)
Item	Operation
Operation/Procedure	The sensor display is highlighted when it is detected.



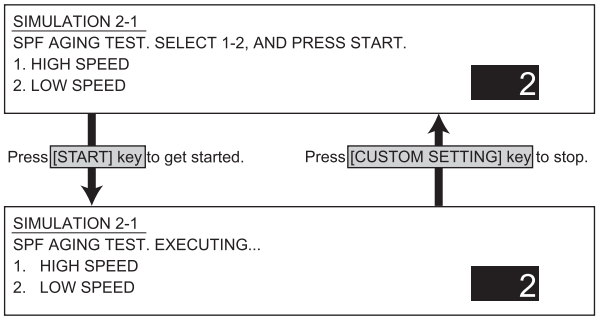
<List of display value>

MHPS	Optical system home position

Main code 2

2-1

Purpose	Operation test, check
Function (Content)	Used to check the operations of the automatic document feeder unit and its control circuit.
Section	DSPF
Item	Operation
Operation/Procedure	Select with 10 digit key pad.

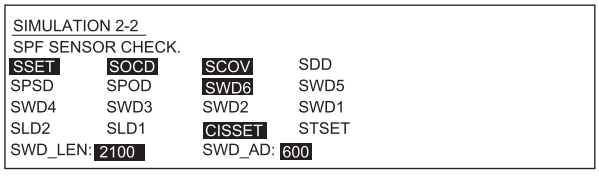


<List of set values>

1	High speed operation
2	Low speed operation

2-2

Purpose	Operation test, check
Function (Content)	Used to check the operations of the sensors and detectors in the automatic document feeder unit and their control circuits.
Section	DSPF
Item	Operation
Operation/Procedure	The sensor display is highlighted when it is detected.

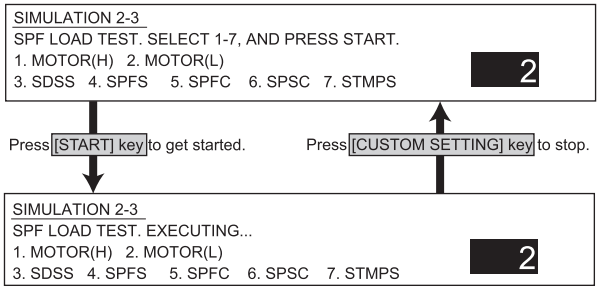


<List of display values>

SSET	SPF sensor
SOCD	Open sensor
SCOV	Paper feed cover sensor
SDD	Document set sensor
SPSD	Document resist front sensor
SPCD	Document exit sensor
SWDn	Document width sensor (n → 1(Inside) ~6(Outside))
SLDn	Document length sensor (n → 1(Inside) ~2(Outside))
OSSET	OS installation sensor
STSET	Stamp unit installation sensor
SWD_LEN	SPF guide plate position (Unit: 0.1mm)
SWD_AD	SPF document width detection volume output AD value

2-3

Purpose	Operation test, check
Function (Content)	Used to check the operation under load in the automatic document feeder unit and their control circuits.
Section	DSPF
Item	Operation
Operation/Procedure	Select with 10 digit key pad.



<List of set values>

1	Motor high speed rotation
2	Motor low speed rotation
3	Document stopper solenoid
4	Document feed solenoid
5	Document feed clutch
6	Document resist clutch
7	Stamp solenoid

Main code 3

3-2

Purpose	Operation test, check
Function (Content)	Used to check the operations of the sensors and detectors in the finisher and their control circuits.
Section	Finisher
Item	Operation
Operation/Procedure	The display is highlighted when detected.

Finisher (AR-FN6)

SIMULATION 3-2
FINISHER SENSOR CHECK.

PID	SCID	SCID2	PPD
SCPD	POD	T1PF	T2UP
T2DN	T2PD	STSP	STLS
STNC	STHP	JFHP	JRHP
PSHP	STUHP	XXXX	STTHP1
STTHP2	DOPD	DSW1	DSW2
24VM	MMLK		

Console finisher (AR-FN7)

SIMULATION 3-2
FINISHER SENSOR CHECK.

FSSS	FJS	FFDSW	FTCS	FFDS			
FSPS	FSUC	FSS	FSTHPS	FSHPS	FLE	FLLLS	
FULS	FFE	FFES	FFRHPS	FFHPS	FFPS	FSLS	
FBES	FOBHPS	FAS	FRJHPS	FFJHPS	FARHPS	FPHPS	
FES							
(FPE)	(FPSHPS)	(FPUC)	(FPDS)	(FPDSS4)	(FPDSS3)	(FPDSS2)	
(FPDSS1)	(FPTS)	Devices in ( ) are added when the punch unit is installed.					

<List of display values>

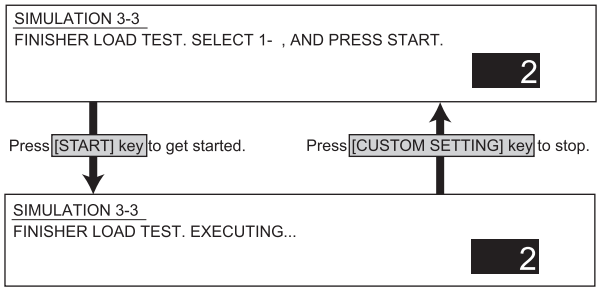
Finisher		Console finisher	
STHP	Stapler HP detection	FSSS	Stapler safety switch
POD	Tray 2 paper exit detection	FJS	Joint switch
SCID	Staple compiler paper entry detection	FFDSW	Front door switch
PID	Paper entry detection	FTCS	Upper cover sensor
T2PD	Tray 2 paper empty detection	FFDS	Front door sensor
T2DN	Tray 2 lower limit detection	FSPS	Self prime sensor
T2UP	Tray 2 upper limit detection	FSUC	Stapler connection detection
JRHP	Jogger R HP	FSS	Staple sensor
JFHP	Jogger (F) HP	FSTHPS	Stapler HP sensor
SCID2	Staple compiler paper entry detection 2	FSHPS	Slide HP sensor
STTHP2	Staple rotation HP detection 2	FLE	Lift lock sensor
STTHP1	Staple rotation HP detection 1	FLLLS	Lift lower limit sensor
STUHP	Staple shift HP detection	FULS	Lift upper limit sensor
PSHP	Pusher HP detection	FFE	Bookbinding clock sensor
PPD	Paper hold return detection	FFES	Bookbinding paper sensor
DSW2	Staple replacement door open detection	FFRHPS	Bookbinding roller HP sensor
DSW1	Compiler jam cancel door open detection	FFHPS	Bookbinding HP sensor
24VM	24V power supply	FFPS	Bookbinding position sensor
T1PF	Tray 1 full detection	FSLS	Paper surface sensor
STSP	Stapling ready detection	FBES	Tray paper sensor
STLS	Cartridge inside spare staple empty detection	FOBHPS	Paper exit belt HP sensor
STNC	Cartridge empty detection	FAS	Alignment tray sensor
DOPD	Interface unit door open detection	FRJHPS	Alignment HP sensor R
MMLK	Main drive motor lock detection	FFJHPS	Alignment HP sensor F
SCPD	Staple compiler paper empty detection	FARHPS	Bundle roller HP sensor
		FPHPS	Paddle HP sensor
		FES	Entry port sensor

•The following units are added when the punch unit is installed to the console finisher:

FPE	Punch motor encoder
FPSHPS	Punch side register HP
FPUC	Punch connection detection
FPDS	Punch dust sensor
FPDSS4	Punch side register sensor 4
FPDSS3	Punch side register sensor 3
FPDSS2	Punch side register sensor 2
FPDSS1	Punch side register sensor 1
FPTS	Punch timing sensor

3-3

Purpose	Operation test, check
Function (Content)	Used to check the operation under load in the finisher and their control circuits.
Section	Finisher
Item	Operation
Operation/Procedure	The display is highlighted when detected.

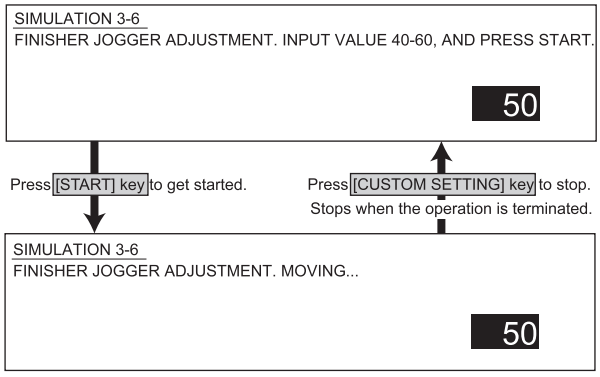


<List of display values>

Finisher			Console finisher		
1	T2S	Tray 2 solenoid	1	FFC	Folding clutch
2	T2OM	Paper exit motor	2	FPSM	Puncher side register motor
3	SPS	Stopper solenoid	3	FPNM	Punch motor
4	SCRS	Roller pressure release solenoid	4	FLM	Shift motor
5	PPS	Rear edge h folding solenoid	5	FFSM	Stapler motor
6	SCGS	Compiler gate solenoid	6	FSM	Slide motor
7	STTM	Staple rotation motor	7	FRJM	Alignment motor R
8	STUM	Stapler shift motor	8	FFJM	Alignment motor F
9	MM	Main drive motor	9	FAM	Bundle exit motor
10	EVM	Elevator motor	10	FPM	Paddle motor
11	STM	Staple motor	11	FFM	Transport motor
12	JRM	Jogger motor rear			
13	JFM	Jogger motor front			
14	PSM	Pusher motor			

3-6

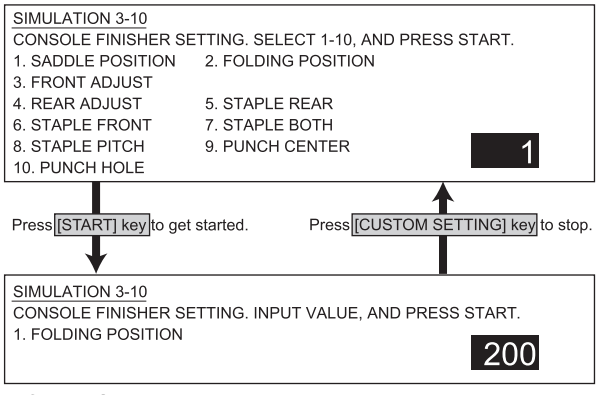
Purpose	Adjustment
Function (Content)	Used to adjust the stacking capacity of the finisher (AR-FN6). (Used to adjust the alignment plate (jogger) stop position in the finisher paper width direction. The adjustment is made by changing the alignment plate home position in the paper width direction by software.)
Section	Finisher
Item	Operation
Operation/Procedure	Enter the adjustment value with 10 digit key pad and press START key. The jogger moves to LT position (Inch series) or A4 position (AB series) according to the entered value, and stops there.



(Stored on PCU PWB)

3-10

Purpose	Adjustment
Function (Content)	Used to adjust the console finisher (AR-FN7).
Section	Finisher
Item	Operation
Operation/Procedure	Setting of the console finisher is performed.



<List of set values>

	Adjustment content	Range	Initial value	1STEP
1	Saddle binding position adjustment	0~400	200	0.0707mm
2	Saddle folding position adjustment	0~400	200	0.0525mm
3	Front alignment position adjustment	0~20	10	0.367mm
4	Rear alignment position adjustment	0~20	10	0.367mm
5	Staple rear one-position binding position adjustment	0~200	100	0.04374mm
6	Staple front one-position binding position adjustment	0~200	100	0.04374mm
7	Staple 2-position binding center adjustment	0~200	100	0.04374mm
8	Staple 2-position binding pitch adjustment	0~99	50	0.04374mm
9	Punch center adjustment (Slide direction)	47~53	50	1mm
10	Punch hole position adjustment (Paper feed direction)	0~99	50	0.105mm

(Values stored in EEPROM)

3-20

Purpose	Operation test, check
Function (Content)	Used to check the mail bin stacker (AR-MS1) sensor.
Section	Mail bin stacker
Item	Operation
Operation/Procedure	The display is highlighted when detected.

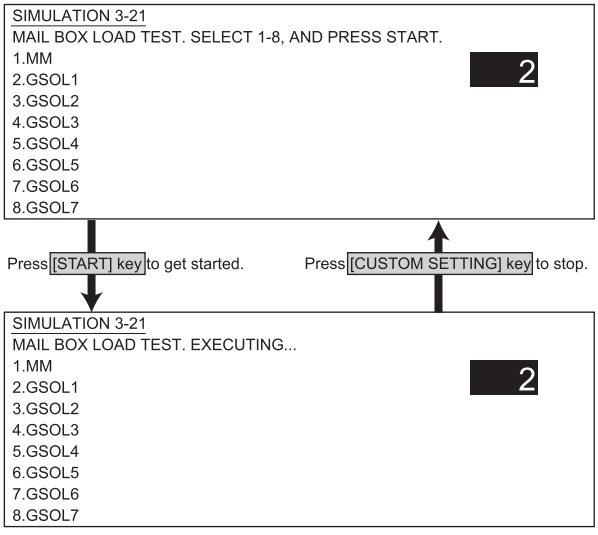
```
SIMULATION 3-20
MAIL BOX SENSOR CHECK.
MPFD1  MPFD2  MPFD3  MPFD4  MPFD5  MPFD6  MPFD7
MPFD8  MPID   MPPD1  MPPD2  MPPD3  MPPD4  MPPD5
M24VM  MDD1   MDOPD
```

<List of display values>

MPFD1	Tray 1 paper full detection	MPPD1	Paper transport sensor 1
MPFD2	Tray 2 paper full detection	MPPD2	Paper transport sensor 2
MPFD3	Tray 3 paper full detection	MPPD3	Paper transport sensor 3
MPFD4	Tray 4 paper full detection	MPPD4	Paper transport sensor 4
MPFD5	Tray 5 paper full detection	MPPD5	Paper transport sensor 5
MPFD6	Tray 6 paper full detection	M24VM	24V power supply
MPFD7	Tray 7 paper full detection	MDD1	Jam cancel door
MPFD8	Tray 8 paper full detection	MDOPD	Interface unit door
MPID	Interface unit paper entry detection		

3-21

Purpose	Operation test, check
Function (Content)	Used to check the operations of the mail bin stacker loads.
Section	Mail bin stacker
Item	Operation
Operation/Procedure	Select with 10 digit key pad.



<List of set values>

1	Main motor
2	Gate solenoid 1
3	Gate solenoid 2
4	Gate solenoid 3
5	Gate solenoid 4
6	Gate solenoid 5
7	Gate solenoid 6
8	Gate solenoid 7

Main code 4

4-2

Purpose	Operation test, check
Function (Content)	Used to check the operations of the sensors and detectors in the paper feed section (desk paper feed/large capacity trays) and their control circuits.
Section	Paper feed
Item	Operation
Operation/Procedure	The display is highlighted when detected.

(3-tray desk)

```
SIMULATION 4-2
DESK SENSOR CHECK.
DDRS    DPFD1   DPFD2   DPFD3
MCLUD   DLUD1   DLUD2   MCSPD
DSPD1   DSPD2   MCPED   DPED1
DPED2   MCSS1   MCSS2   MCSS3
MCSS4   DCSS11  DCSS12  DCSS13
DCSS14  XXXXXX  DCSS21  DCSS22
DCSS23  DCSS24  XXXXXX
```

(LCC)

```
SIMULATION 4-2
LCC SENSOR CHECK.
TDRS    TTSD    TPFD1   TPFD2
TPFD3   MCLUD   TLUD1   TLUD2
MCSPD   TSPD1   TSPD2   MCPED
TPED1   TPED2   MCSS1   MCSS2
MCSS3   MCSS4
```

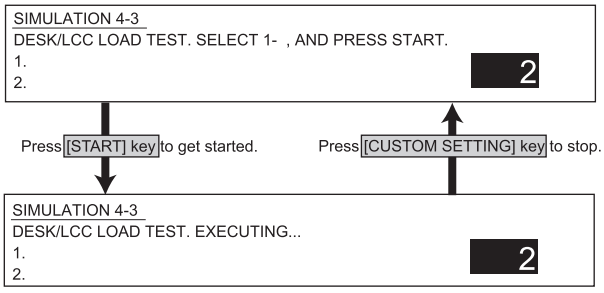
<List of display values>

3-tray desk		LCC	
DDRS	Desk door sensor	TDRS	Tandem side door sensor
DSPD2	Desk cassette 2 remaining paper quantity sensor	TTSD	Tandem tray sensor
DSPD1	Desk cassette 1 remaining paper quantity sensor	TLUD2	Tandem tray 2 upper limit sensor
DCSS24	Desk cassette 2 paper rear edge sensor 4	TLUD1	Tandem tray 1 upper limit sensor
DCSS23	Desk cassette 2 paper rear edge sensor 3	TSPD2	Tandem tray 2 remaining quantity sensor
DCSS22	Desk cassette 2 paper rear edge sensor 2	TSPD1	Tandem tray 1 remaining quantity sensor
DCSS21	Desk cassette 2 paper rear edge sensor 1	TPED2	Tandem tray 2 paper sensor
DLUD2	Desk cassette 2 upper limit sensor	TPED1	Tandem tray 1 paper sensors
DPED2	Desk cassette 2 paper sensor	TPFD3	Tandem paper transport sensor 3
DPFD3	Desk paper transport sensor 3	TPFD2	Tandem paper transport sensor 2
DCSS14	Desk cassette 1 paper rear edge sensor 4	MCSS4	MP tray size detection 4
DCSS13	Desk cassette 1 paper rear edge sensor 3	MCSS3	MP tray size detection 3
DCSS12	Desk cassette 1 paper rear edge sensor 2	MCSS2	MP tray size detection 23
DCSS11	Desk cassette 1 paper rear edge sensor 1	MCSS1	MP tray size detection 1
DLUD1	Desk cassette 1 upper limit sensor	MCSPD	MP tray remaining quantity detection
DPED1	Desk cassette 1 paper sensor	MCLUD	MP tray upper limit detection
DPFD2	Desk paper transport sensor 2	MCPED	MP tray paper empty detection
MCSS4	MP tray size detection 4	TPFD1	MP tray transport detection

3-tray desk		LCC	
MCSS3	MP tray size detection 3		
MCSS2	MP tray size detection 2		
MCSS1	MP tray size detection 1		
MCSPD	MP tray remaining quantity detection		
MCLUD	MP tray upper limit detection		
MCPED	MP tray paper empty detection		
DPFD1	MP tray transport detection		

4-3

Purpose	Operation test, check
Function (Content)	Used to check the operation under load in the paper feed section (desk paper feed/large capacity trays) and their control circuits.
Section	Paper feed
Item	Operation
Operation/Procedure	Select with 10 digit key pad.



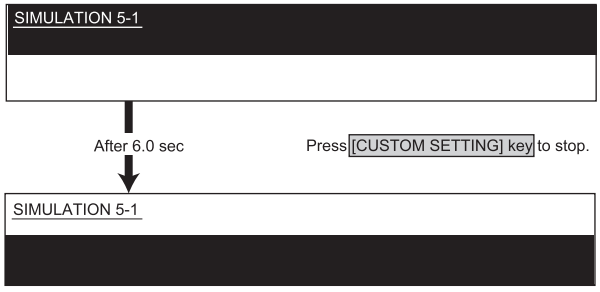
<List of set values>

3-tray desk			LCC		
1	DLUM2	Desk lift-up motor 2	1	TLUM2	LCC lift-up motor 2
2	DLUM1	Desk lift-up motor 1	2	TLUM1	LCC lift-up motor 1
3	MCLUM	Desk multi lift-up motor	3	MCLUM	LCC multi lift-up motor
4	DPFCL	Desk paper transport clutch	4	TPFCL	LCC transport clutch
5	DPCL2	Desk paper feed clutch 2	5	TPCL2	LCC paper feed clutch 2
6	DPCL1	Desk paper feed clutch 1	6	TPCL1	LCC paper feed clutch 1
7	MCPCL	Desk multi paper feed clutch	7	MCPCL	LCC multi paper feed clutch
8	DMM	Desk transport motor	8	TMM	LCC transport motor

Main code 5

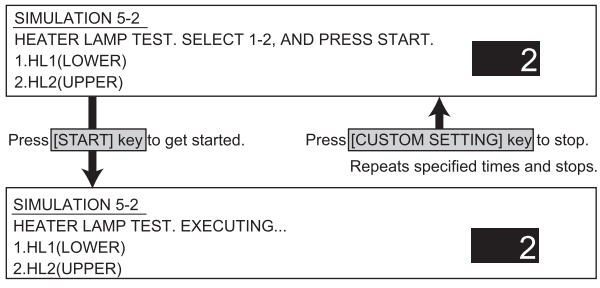
5-1

Purpose	Operation test, check
Function (Content)	Used to check the operations of the lamps and LCD on the operation panel and their control circuits.
Section	Operation (display, operation)
Item	Operation
Operation/Procedure	All LEDs are ON. The LCD contrast changes Max/Min every 2sec.



5-2

Purpose	Operation test, check
Function (Content)	Used to check the operations of the heater lamp and its control circuit.
Section	Fusing
Item	Operation
Operation/Procedure	Select with 10 digit key pad. The lamp repeat ON/OFF every 500ms 5 times.



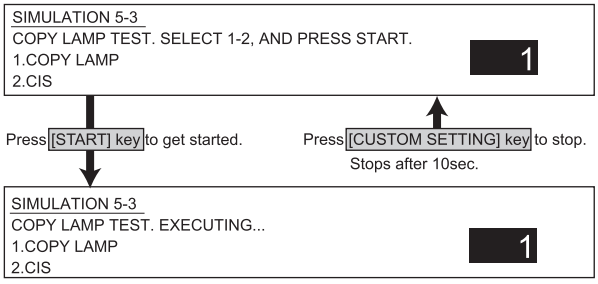
<List of set values>

1	Heater lamp 1 (Lower)
2	Heater lamp 2 (Upper)

5-3

Purpose	Operation test, check
Function (Content)	Used to check the operations of the copy lamp and its control circuit.
Section	Scanner (reading), DSPF (reading)
Item	Operation
Operation/Procedure	The copy lamp or CIS is lighted for 10sec and turned off.

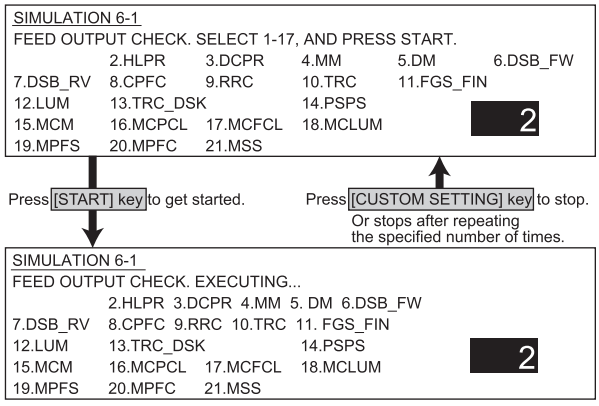
* CIS is displayed only when DSPF is installed.



Main code 6

6-1

Purpose	Operation test, check
Function (Content)	Used to check the operation under load (clutches and solenoids) in the paper transport system and their control circuits.
Section	Paper transport (paper exit, switchback, transport)
Item	Operation
Operation/Procedure	Select with 10 digit key pad.



<List of set values>

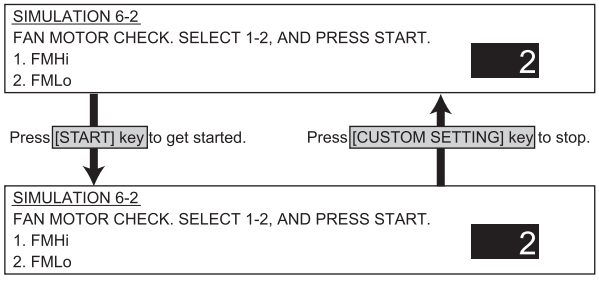
2	HLPR (Heater power relay)
3	DCPR (DC power relay)
4	MM (Main motor)
5	DM (Drum motor)
6	DSB_FW (Stepping motor forward rotation)
7	DSB_RV (Stepping motor reverse rotation)
8	CPFC (Paper feed clutch)
9	RRC (Resist roller clutch)
10	TRC (Transport roller clutch)
11	FGS_FIN (Finisher gate solenoid)
12	LUM (Tray 1 lift-up motor)
13	TRC_DSK (Desk clutch sync signal)
14	PSPS (Separation pawl solenoid)
15*1	MCM(MP drive motor control signal)
16*1	MCPCL(MP tray paper feed clutch signal)
17*1	MCFCL(MP tray transport clutch signal)
18*1	MCLUM(MP tray lift-up motor signal)
19*2	MPFS (Manual paper feed solenoid signal)
20*2	MPFC (Manual paper feed clutch signal)
21*2	MSS (Manual paper feed gate solenoid)

*1 Displayed when OPTION of multi-purpose only.

*2 Displayed when manual feed OPTION is added.

6-2

Purpose	Operation test, check
Function (Content)	Used to check the operations of each fan motor and its control circuit.
Section	Others
Item	Operation
Operation/Procedure	Select with 10 digit key pad.



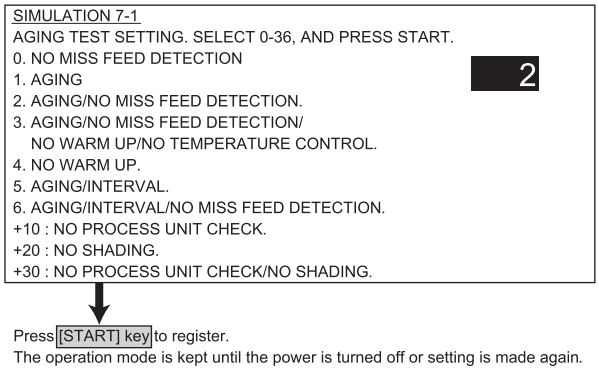
<List of set values>

1	Fan motor high speed
2	Fan motor low speed

Main code 7

7-1

Purpose	Setup
Function (Content)	Used to set the aging conditions.
Section	
Item	Operation
Operation/Procedure	Select with 10 digit key pad.

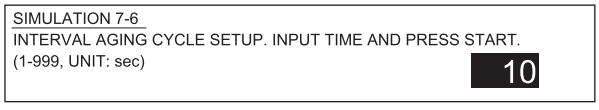


<List of set values>

0	No jam detection
1	Aging mode
2	Aging mode without jam detection
3	Aging mode without jam/without warm-up/without fusing temperature control
4	Without warm-up
5	Intermittent aging mode
6	Intermittent aging mode without jam detection
Above +10	No process unit (including developing unit) detection
Above +20	No shading
Above +30	No process unit detection/No shading

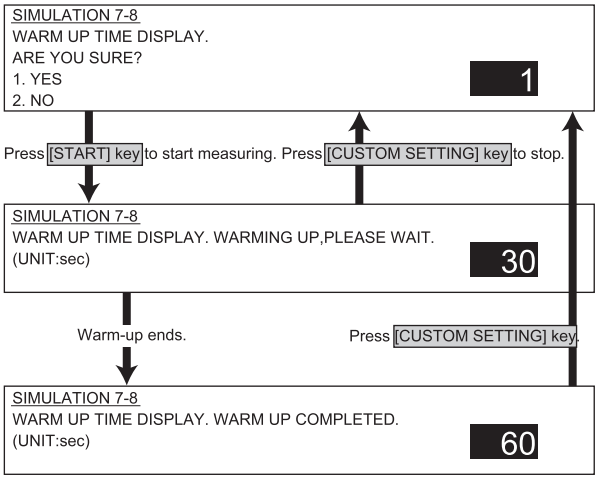
7-6

Purpose	Setup
Function (Content)	Used to set the intermittent aging cycle.
Section	
Item	Operation
Operation/Procedure	Select with 10 digit key pad. Used to set the intermittent aging cycle of Sim 7-1.



7-8

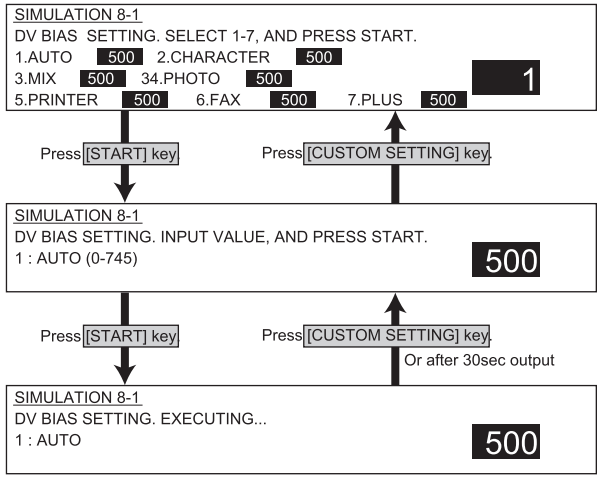
Purpose	Setup
Function (Content)	Used to set Enable/Disable of warm-up time display.
Section	
Item	Operation
Operation/Procedure	The warm-up time is displayed in the unit of second.



Main code 8

8-1

Purpose	Adjustment
Function (Content)	Used to check and adjust the developing bias voltage in each print mode and its control circuit.
Section	Process (OPC drum, developing, transfer, cleaning)
Item	
Operation/Procedure	Enter the output value to be adjusted with the 10 digit key pad. The current set value is highlighted at the right of each item. After entering the value with the 10-digit key pad press the START key. The output is made for 30 sec at the set value. Then the output is stopped.

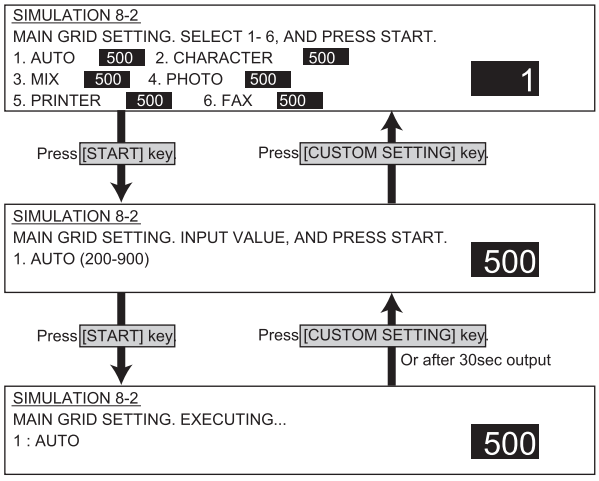


<List of set values>

		Default	Set range
1	Auto mode	485	0 ~745
2	Text mode		
3	Text/Photo mode		
4	Photo mode		
5	Printer mode		
6	Fax mode		
7	Reverse developing bias voltage	150	0 ~255

8-2

Purpose	Adjustment
Function (Content)	Used to check and adjust the main charger grid voltage in each print mode and its control circuit.
Section	Process (OPC drum, developing, transfer, cleaning)
Item	
Operation/Procedure	Enter the output value to be adjusted with 10 digit key pad. The current set value is highlighted at the right of each item. After entering the value with 10 digit key pad, press START key. The output is made for 30sec at the set value. Then the output is stopped.

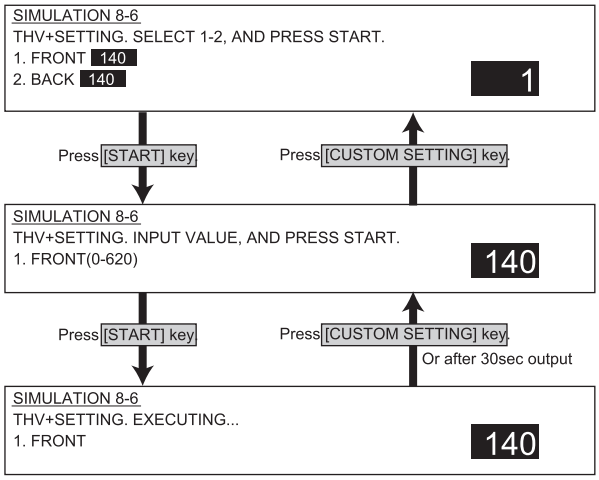


<List of set values>

		Default	Set range
1	Auto mode	645	200 ~ 900
2	Text mode		
3	Text/Photo mode		
4	Photo mode		
5	Printer mode		
6	Fax mode		

8-6

Purpose	Adjustment
Function (Content)	Used to check and adjust the transfer charger current and its control circuit.
Section	Process (OPC drum, developing, transfer, cleaning)
Item	
Operation/Procedure	Enter the output value to be adjusted with 10 digit key pad. The current set value is highlighted at the right of each item. After entering the value with 10 digit key pad, press START key. The output is made for 30sec at the set value. Then the output is stopped.

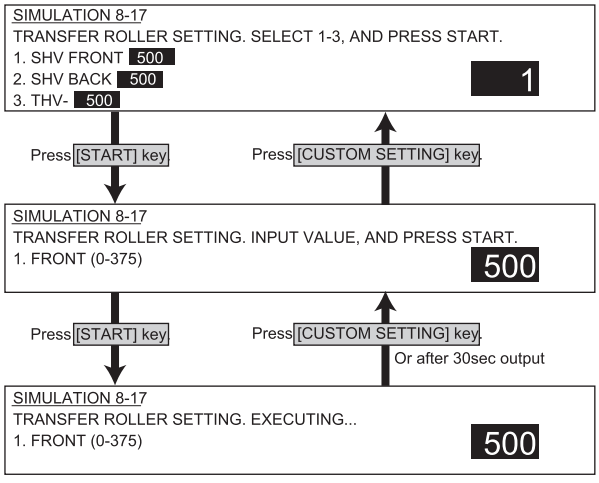


<List of set values>

			Default	Set range
1	Cassette/manual paper feed	45PPM	267	0 ~ 620
		35PPM	220	
2	Paper feed from ADU	45PPM	310	
		35PPM	267	

8-17

Purpose	Operation test, check
Function (Content)	Used to set and check the transfer roller output.
Section	Process (OPC drum, developing, transfer, cleaning)
Item	Operation
Operation/Procedure	Enter the output value to be adjusted with 10 digit key pad. The current set value is highlighted at the right of each item. After entering the value with 10 digit key pad, press START key. The output is made for 30sec at the set value. Then the output is stopped.



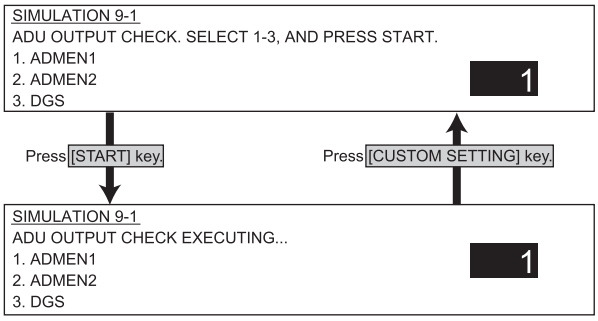
<List of set values>

		Default	Set range
1	SHV front surface	160(45PPM) 120(35PPM)	0 ~ 375
2	SHV back surface		
3	THV-output	780	0 ~1250

Main code 9

9-1

Purpose	Operation test, check
Function (Content)	Used to check the operation under load (clutches and solenoids) in the duplex section and their control circuits.
Section	Duplex
Item	Operation
Operation/Procedure	Select with 10 digit key pad.



<List of set values>

1	ADMEN1(ADU motor 1 control signal)
2	ADMEN2(ADU motor 2 control signal)
3	DGS(ADU gate solenoid)

9-2

Purpose	Operation test, check
Function (Content)	Used to check the sensors and detectors in the duplex section and their control circuits.
Section	Duplex
Item	Operation
Operation/Procedure	The display is highlighted when detected.

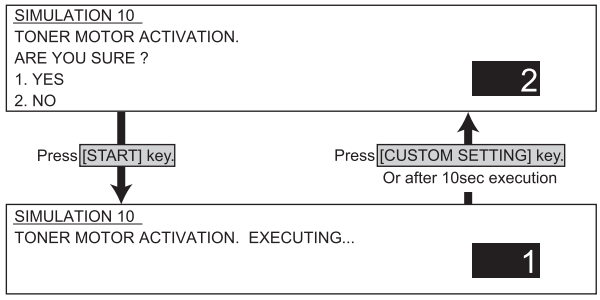
<List of display values>

ADUSET	ADU installation detection
DSW_D	ADU cabinet open detection
AINPD	ADU paper entry detection
APOD	ADU paper exit detection
APPD1	ADU paper detection 1
APPD2	ADU paper detection 2

Main code 10

Purpose	Operation test, check
Function (Content)	Used to check the operation of the toner motor and its control circuit.
Section	Process (OPC drum/developing/transfer/cleaning)/ Developing toner
Item	Operation
Operation/Procedure	Select with 10 digit key pad. The toner motor rotates for 10sec.

Note: Never execute this simulation with toner in the toner hopper.
If executed, excessive toner will enter the developing section, causing an overtoner trouble. Be sure to remove the toner motor from the toner hopper before execution.

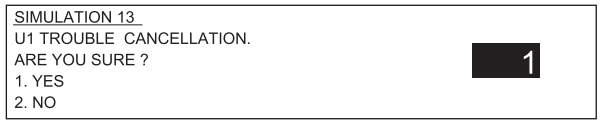


<List of set values>

1	Toner motor rotation start
2	Cancel (The display returns to the main code entry menu.)

Main code 13

Purpose	Cancel (incase of a trouble)
Function (Content)	Used to cancel the self diag “U1” trouble. (Only when FAX is installed.)
Section	
Item	Trouble
Operation/Procedure	Select with 10 digit key pad.

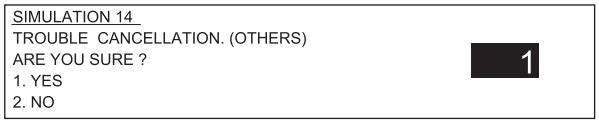


<List of set values>

1	After canceling U1 trouble, the display returns to the main code entry menu.
2	Without canceling a trouble, the display returns to the main code entry menu.

Main code 14

Purpose	Cancel (in case of a trouble)
Function (Content)	Used to cancel the self diag U1/LCC/US/PF troubles.
Section	
Item	Trouble
Operation/Procedure	Select with 10 digit key pad

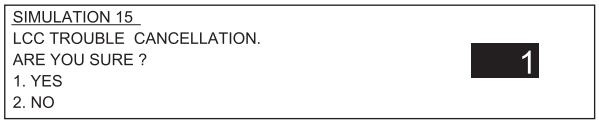


<List of set values>

1	After canceling a trouble other than U1, U2, PF, and LCC, the display returns to the main code entry menu.
2	Without canceling a trouble, the display returns to the main code entry menu.

Main code 15

Purpose	Cancel (incase of a trouble)
Function (Content)	Used to cancel the self diag “U6 (09/20/21/22)” trouble.
Section	Paper feed
Item	Trouble
Operation/Procedure	Select with 10 digit key pad.

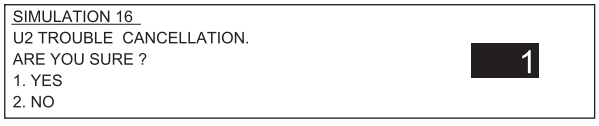


<List of set values>

1	After canceling LCC trouble, the display returns to the main code entry menu.
2	Without canceling a trouble, the display returns to the main code entry menu.

Main code 16

Purpose	Cancel (incase of a trouble)
Function (Content)	Used to cancel the self diag “U2” trouble.
Section	
Item	Trouble
Operation/Procedure	Select with 10 digit key pad.

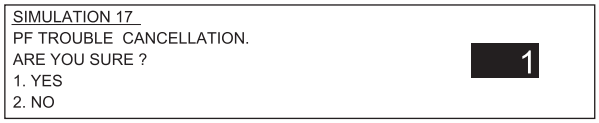


<List of set values>

1	After canceling U2 trouble, the display returns to the main code entry menu.
2	Without canceling a trouble, the display returns to the main code entry menu.

Main code 17

Purpose	Cancel (incase of a trouble)
Function (Content)	Used to cancel the self diag “PF” trouble (when copy is inhibited by the host computer).
Section	Communication (RIC/MODEM)
Item	Trouble
Operation/Procedure	Select with 10 digit key pad.



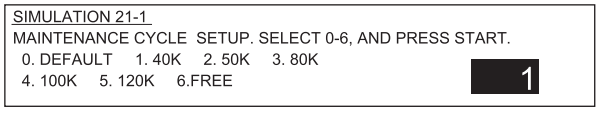
<List of set values>

1	After canceling PF trouble, the display returns to the main code entry menu.
2	Without canceling a trouble, the display returns to the main code entry menu.

Main code 21

21-1

Purpose	Setup
Function (Content)	Used to set the maintenance cycle.
Section	
Item	Spec
Operation/Procedure	Used to set the maintenance cycle in an SRU machine.



<List of set values>

0	Maintenance display at the cycle of each control spec.
1	Maintenance display at 40K
2	Maintenance display at 50K
3	Maintenance display at 80K
4	Maintenance display at 100K
5	Maintenance display at 120K
6	No maintenance display

Main code 22

22-1

Purpose	Adjustment, setup, operation data output, check (display)
Function (Content)	Used to check the print count in each section and in each operation mode. (Used to check the maintenance timing.)
Section	
Item	Counter
Operation/Procedure	Data of each counter are displayed.

```
SIMULATION 22-1
COUNTER DATA DISPLAY.
TOTAL : ********    DRUM : ********    TONER : ********
DEVE : ********     MAINTENANCE : ********
TOTAL OUTPUT : ********    COPIES : ********
PRINTER : ********    FAX OUTPUT : ********
RIGHT SIDE : ********    OTHERS : ********
```

<List of display values>

TOTAL	Total counter
DRUM	Drum cartridge counter
TONER	Toner cartridge counter
DEVE	Developer cartridge counter
MAINTENANCE	Maintenance counter
TOTAL OUTPUT	Total output quantity
COPIES	Copy effective paper counter
PRINTER	Printer counter
FAX	Fax print counter
RIIGHT SIDE OUTPUT	Right side paper exit counter
OTHERS	Other print counter (List print, etc.)

22-2

Purpose	Adjustment, setup, operation data output, check (display)
Function (Content)	Used to check the number of total misfeed and troubles. (If the number of misfeed is considerably great, the machine must be repaired. The misfeed rate is obtained by dividing this count by the total counter value.)
Section	
Item	Trouble
Operation/Procedure	The numbers of times of paper jam, SPF jam, and troubles are displayed.

```
SIMULATION 22-2
JAM/TROUBLE COUNTER DATA DISPLAY.
PAPER JAM :  ********    SPF JAM : ********
TROUBLE :  ********
```

<List of display values>

PAPER JAM	Number of times of paper jam
SPF JAM	Number of times of SPF jam
TROUBLE	Number of times of troubles

22-3

Purpose	Adjustment, setup, operation data output, check (display)
Function (Content)	Used to check the misfeed position and the number of misfeed at that position. (If the number of misfeed is considerably great, the machine must be repaired.) (Sections other than DSPF sections)
Section	
Item	Trouble
Operation/Procedure	The history of the latest 50 paper jams is displayed. (Refer to the jam codes below.)

```
SIMULATION 22-3
PAPER JAM HISTORY.
******** ******** ******** ******** ******** ******** ******** ******** ******** ********
******** ******** ******** ******** ******** ******** ******** ******** ******** ********
******** ******** ******** ******** ******** ******** ******** ******** ******** ********
******** ******** ******** ******** ******** ******** ******** ******** ******** ********
******** ******** ******** ******** ******** ******** ******** ******** ******** ********
.....
```

(10 lines x 80 digits = 800 characters)

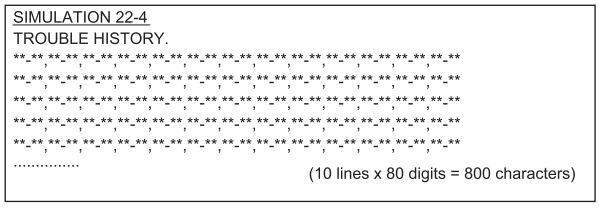
<Jam codes>

Code	Description
TRAY2	Tray 2 paper feed jam (MPFD not-reaching)
MPFDND1	MPFD not-reaching jam (Desk tray 1 feed paper)
MPFDND2	MPFD not-reaching jam (Desk tray 2 feed paper)
MPFDNTD	MPFD not-reaching jam (Tandem desk feed paper)
MPFDST2	MPFD remaining jam (Machine tray 3 feed paper)
MPFDSD1	MPFD remaining jam (Desk tray 1 feed paper)
MPFDSD2	MPFD remaining jam (Desk tray 2 feed paper)
MPFDSTD	MPFD remaining jam (Tandem desk feed paper)
PPD1NMF	PPD1 not-reaching jam (Manual feed tray paper)
TRAY1	Tray 1 feed paper jam (PPD1 not-reaching)
PPD1NT2	PPD1 not-reaching jam (Machine tray 2 feed paper)
PPD1ND1	PPD1 not-reaching jam (Desk tray 1 feed paper)
PPD1ND2	PPD1 not-reaching jam (Desk tray 2 feed paper)
PPD1NTD	PPD1 not-reaching jam (Tandem desk feed paper)
PPD1NAD	PPD1 not-reaching jam (ADU refeed paper)
PPD1SMF	PPD1 remaining jam (Manual feed tray feed paper)
PPD1ST1	PPD1 remaining jam (Machine tray 1 feed paper)
PPD1ST2	PPD1 remaining jam (Machine tray 2 feed paper)
PPD1SD1	PPD1 remaining jam (Desk tray 1 feed paper)
PPD1SD2	PPD1 remaining jam (Desk tray 2 feed paper)
PPD1STD	PPD1 remaining jam (Tandem desk feed paper)
PPD1SAD	PPD1 remaining jam (ADU refeed paper)
PPD1PRI	PPD1 jam (Image ready is not supplied from ICU.)
POD1N	POD1 not-reaching jam
POD1S	POD1 remaining jam
POD2N	POD2 not-reaching jam
POD2SR	POD2 remaining jam (When discharging to the right side of machine.)
POD2SL	POD2 remaining jam (When discharging to the left side of machine.)
AINPDN	ADU paper entry sensor not-reaching jam
AINPDS	ADU paper entry sensor remaining jam
APODN	ADU paper exit sensor not-reaching jam
APODS	ADU paper exit sensor remaining jam
APPD1N	ADU transport sensor 1 not-reaching jam
APPD1S	ADU transport sensor 1 remaining jam
APPD2N	ADU transport sensor 2 not-reaching jam (When ADU transport)
APPD2S	ADU transport sensor 2 remaining jam (When ADU transport)

Code	Description
BPT	Manual feed tray paper feed jam (APPD2 not-reaching)
APPD2SM	ADU transport sensor 2 remaining jam (Manual feed tray feed paper)
DESK2	Desk tray 2 paper feed jam (DPFD3 not-reaching)
DPFD3SD2	DPFD3 remaining jam (Desk tray 2 feed paper)
DESK1	Desk tray 1 paper feed jam (DPFD2 not-reaching)
DPFD2ND2	DPFD2 not-reaching jam (Desk tray 2 feed paper)
DPFD2SD1	DPFD2 remaining jam (Desk tray 1 feed paper)
DPFD2SD2	DPFD2 remaining jam (Desk tray 2 feed paper)
TTRAY2	Tandem tray 2 paper feed jam (TPFD3 not-reaching)
TPFD3STD2	TPFD3 remaining jam (Tandem tray 2 feed paper)
TTRAY1	Tandem tray 1 paper feed jam (TPFD2 not-reaching)
TPFD2NTD2	TPFD2 not-reaching jam (Tandem tray 2 feed paper)
TPFD2STD1	TPFD2 remaining jam (Tandem tray 1 feed paper)
TPFD2STD2	TPFD2 remaining jam (Tandem tray 2 feed paper)
FPID_N	Built-in finisher PID not-reaching jam
FPID_S	Built-in finisher PID remaining jam
FSCID_N	Built-in finisher SCID not-reaching jam
FSCID_S	Built-in finisher SCID remaining jam
FSCID2_N	Built-in finisher SCID2 not-reaching jam
FSCID2_S	Built-in finisher SCID2 remaining jam
FPPD_S	Built-in finisher PPD remaining jam
FSCPD_N	Built-in finisher SCPD not-reaching jam
FSCPD_S	Built-in finisher SCPD remaining jam
FPOD_N	Built-in finisher POD not-reaching jam
FPOD_S	Built-in finisher POD remaining jam
FES_N	Console finisher entry port sensor (FES) not-reaching jam
FES_S	Console finisher entry port sensor (FES) remaining jam
FFPS_N	Console finisher saddle not-reaching jam (Not reaching the folding sensor (FFPS).)
FFPS_S	Console finisher saddle remaining jam (The folding sensor (FFPS) does not turn off.)
FSTPL	Console finisher staple jam (The stapler does not complete clinching.)
FPNCH	Console finisher punch jam (The puncher does not complete punching.)
FDOP	Console finisher door open jam (During/after paper passing, the front door, joint, or upper cover is opened.)
PID_N	mail bin PID not-reaching jam
PID_S	mail bin PID remaining jam
MPPD1_N	mail bin MPPD1 not-reaching jam
MPPD1_S	mail bin MPPD1 remaining jam
MPPD2_N	mail bin MPPD2 not-reaching jam
MPPD2_S	mail bin MPPD2 remaining jam
MPPD3_N	mail bin MPPD3 not-reaching jam
MPPD3_S	mail bin MPPD3 remaining jam
MPPD4_N	mail bin MPPD4 not-reaching jam
MPPD4_S	mail bin MPPD4 remaining jam
MPPD5_N	mail bin MPPD5 not-reaching jam
MPPD5_S	mail bin MPPD5 remaining jam

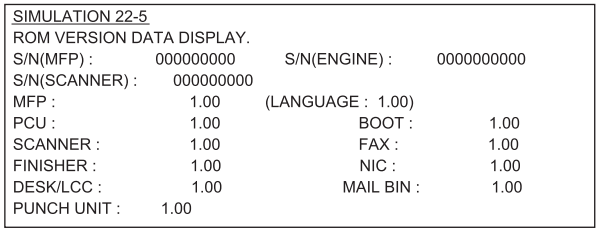
22-4

Purpose	Adjustment, setup, operation data output, check (display)
Function (Content)	Used to check the total trouble (self diag) history.
Section	
Item	Trouble
Operation/Procedure	The history of the latest 30 troubles is displayed.



22-5

Purpose	Other
Function (Content)	Used to check the ROM version of each unit (section).
Section	
Item	Software
Operation/Procedure	The version of each ROM is displayed.



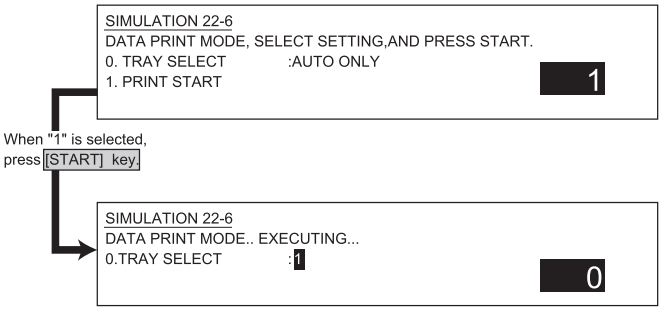
<List of display values>

S/N(MFP)	Controller serial number
S/N(ENGINE)	Engine section serial number
S/N(SCANNER)	Scanner section serial number
MFP	MFP controller
(LANGUAGE)	(Language version)
BOOT	MFP controller boot ROM
FAX	FAX controller
NIC	Network card
PCU	PCU controller
SCANNER	Scanner controller
FINISHER	Finisher controller
DESK/LCC	Desk/LCC controller
MAIL BIN	mail bin controller
PUNCH UNIT	Punch unit

(Product key controlled by PCU PWB serial number.)

22-6

Purpose	Adjustment, setup, operation data output, check (print)
Function (Content)	Used to print the list of adjustments and setup data (simulations, FAX soft switches, counters).
Section	
Item	Data
Operation/Procedure	the selected data is displayed on the menu box.



<List of display values>

0	TRAY SELECT auto only (no selection)
1	PRINT START

22-7

Purpose	User data output, check (display)
Function (Content)	Used to display the key operator code. (Used when the customer has forgotten the key operator code.)
Section	
Item	Data
Operation/Procedure	The key operator code is displayed.

22-8

Purpose	Adjustment, setup, operation data output, check (display)
Function (Content)	Used to check the number of times the staple, and scanner (reading) unit were used.
Section	
Item	Counter
Operation/Procedure	The counter data below are displayed.

<List of display value>

SPF	Number of times of document feed
SCAN	Number of times of scan
STAPLER	Number of times of stapling
PUNCH	Number of times of punching
STAMP	Number of times of SPF finish stamp

22-9

Purpose	Adjustment, setup, operation data output, check (display)
Function (Content)	Used to check the number of times (print quantity) of each paper feed section.
Section	Paper feed
Item	Counter
Operation/Procedure	The counter data below are displayed.

<List of display values>

TRAY1	Use quantity of tray 1
TRAY2	Use quantity of tray 2 (Multi purpose tray)
TRAY3	Use quantity of tray 3/LCC left tray (Common to Desk/LCC)
TRAY4	Use quantity of tray 4/LCC right tray (Desk/LCC)
BPT	Use quantity of manual feed tray
ADU	Use quantity of duplex paper feed

22-10

Purpose	Adjustment, setup, operation data output, check (display)
Function (Content)	Used to check the system configuration (option, internal hardware).
Section	
Item	Spec
Operation/Procedure	The machine composition below is displayed.

```
SIMULATION 22-10
SYSTEM INFORMATION.
MACHINE: *******
SPF: *******  XXXXXXXXXXX
FINISHER : *******          MAIL BIN : *******          PUNCH : ******
DESK/LCC : *******          ADU: *******  XXXXXXXXXXXX
PROCESS TYPE : *
SYSTEM MEMORY: **MB                  HDD: ***MB  ICU F ******
NIC : *******  NSCN : ******          PS3 : ******
FAX: *******  FAX  MEMORY : **MB      HAND SET: *******
STAMP : *******
```

<List of display value>

MACHINE	AR-P350/350LP , AR-P450/450LP, AR-M350/350M, AR-M450/450M
SPF	NONE/ (Model code)
DSPF	NONE/ (Model code)
FINISHER	NONE/ (Model code)
MAIL BIN	NONE/ (Model code)
PUNCH	NONE/ (Model code)
DESK/LCC	NONE/ (Model code)
ADU	NONE/ (Model code)
SPEED	Machine speed 35/45 (CPM)
PROCESS TYPE	Process control spec (1, 2: AR machine 3: DM machine)
SYSTEM MEMORY	Memory capacity (MB)
HDD	Hard disk capacity (MB)
ICU	PRINTER/MFP
NIC	NONE/ (Model code)
NSCN	NONE/ (Network scanner)
PS3	NONE/ (PS3 expansion kit)
FAX	NONE/ (Model code)
FAX MEMORY	FAX expansion memory capacity (MB)
HAND SET	NONE/ (Model code)
STAMP	Finisher stamp NONE/ (Model code)

<List of machine model codes>

Item	Display	Content
MACHINE	AR-P350/350LP	
	AR-P450/450LP	
	AR-M350/350M	
	AR-M450/450M	
SPF	-	Document feed unit not installed
	AR-EF2	Document feed unit (SPF) installed
	AR-EF1	Duplex document feed unit installed
FINISHER	-	After-work unit not installed
	AR-FN6	Built-in finisher installed
	AR-FN7	Console finisher installed
MAIL BIN	-	Mail bin not installed
	AR-MS1	Mail bin installed
Punch unit	-	Punch unit not installed
	AR-PN1A	Punch unit 2 holes
	AR-PN1B	Punch unit 3 holes
	AR-PN1C	Punch unit 4 holes
	AR-PN1D	Punch unit 4 holes wide hole
ADU	-	Duplex module not installed
	AR-DU3	Duplex module installed
	AR-DU4	Duplex module + manual feed unit installed
DESK	-	Paper feed desk not installed
	AR-MU1	Multi-purpose tray installed
	AR-D14	Paper feed desk installed
	AR-D13	Tandem desk installed
ICU	PRINTER	Printer board
	AR-M11	MFP board
MEMORY	0MB	No expansion memory
	***MB	Expansion memory ***MB
HD	0MB	Hard disk not installed
	****MB	Hard disk installed (AR-HD3)
NIC	-	NIC not installed
	AR-NC5J	NIC installed
PS3 expansion kit	-	PS3 expansion kit not installed
	AR-PK1	PS3 expansion kit installed
FAX	-	FAX expansion kit installed
	AR-FX5	FAX expansion kit not installed
Network scanner	-	Network expansion kit not installed
	AR-NS2F	Network expansion kit installed
Expansion memory	-	Expansion memory for FAX not installed
	AR-MM9	Expansion memory for FAX 8MB (AR-MM9) installed
Handset	-	handset not installed
	AR-HN5	Handset installed
Finish stamp	-	Finish stamp unit not installed
	AR-SU1	Finish stamp unit installed

22-11

Purpose	Adjustment, setup, operation data output, check (display)
Function (Content)	Used to check the use frequency of FAX. (send/receive) (Only when FAX is installed.)
Section	FAX
Item	Data
Operation/Procedure	The counter data below are displayed.

```
SIMULATION 22-11
FAX COUNTER DATA DISPLAY.
FAX SEND : ********      FAX RECEIVE : ********
FAX OUTPUT : ********
SEND IMAGES : ********      SEND TIME : ********:**:**
RECEIVE TIME : ********:**:**
```

<List of display values>

FAX SEND	Number of times of FAX sending
FAX RECEIVE	Number of times of FAX receiving
FAX OUTPUT	FAX print quantity
SEND IMAGES	Quantity of sending
SEND TIME	Time for sending
RECEIVE TIME	Time for receiving

22-12

Purpose	Adjustment, setup, operation data output, check (display)
Function (Content)	Used to check the misfeed position and the number of misfeed at that position. (If the number of misfeed is considerably great, the machine must be repaired.)
Section	DSPF
Item	Trouble
Operation/Procedure	The history of the latest 50 paper jams is displayed. (Refer to the jam code table below.)

```
SIMULATION 22-12
SPF JAM HISTORY.
******* ******* ******* ******* ******* ******* ******* ******* ******* *******
******* ******* ******* ******* ******* ******* ******* ******* ******* *******
******* ******* ******* ******* ******* ******* ******* ******* ******* *******
******* ******* ******* ******* ******* ******* ******* ******* ******* *******
******* ******* ******* ******* ******* ******* ******* ******* ******* *******
.....                                   (10 lines x 80 digits = 800 characters)
```

<Jam code table>

Code	Description
SPSD_N	SPSD not-reaching jam
SPSD_S	SPSD remaining jam
SPOD_N	SPOD not-reaching jam
SPOD_S	SPOD remaining jam
SPSDSCN	Exposure start timer end

22-13

Purpose	Adjustment, setup, operation data output, check (display)
Function (Content)	Used to display the process cartridge data.
Section	
Item	Counter
Operation/Procedure	The counter data below are displayed.

```
SIMULATION 22-13
PROCESS CARTRIDGE DATA DISPLAY.
DRUM :  ********(counts)    **********(sec.)
TONER :  ********(counts)   **********(sec.)
DEVE :  *********(counts)    **********(sec.)
```

<List of display values>

DRUM	Drum cartridge counter	Count value (counts)
		Rotating time (sec)
TONER	Toner cartridge counter	Count value (counts)
		Rotating time (sec)
DEVE	Developer cartridge counter	Count value (counts)
		Rotating time (sec)

22-19

Purpose	Adjustment, setup, operation data output, check (display, print)
Function (Content)	Used to display the scanner mode counter.
Section	
Item	Counter
Operation/Procedure	The counter values related to the network scanner are displayed.

```
SIMULATION 22-19
NETWORK SCANNER COUNTER DISPLAY.

 NETWORK SCANNER ORIGINAL COUNTER :  *********
 MAIL COUNTER :  ********
 FTP COUNTER :  ********
```

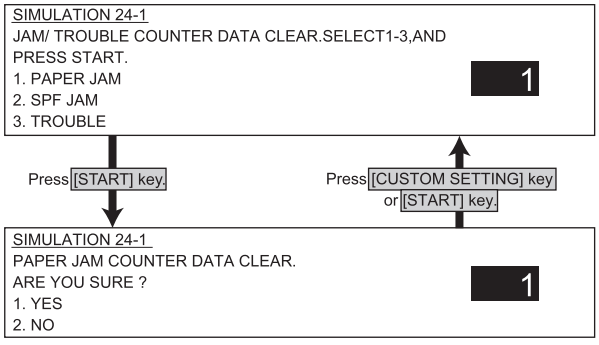
<List of display values>

NETWORK SCANNER ORIGINAL COUNTER	Number of scanned documents (total of OC and SPF)
MAIL COUNTER	Number of times of mail sending
FTP COUNTER	Number of times of FTP sending

Main code 24

24-1

Purpose	Data clear
Function (Content)	Used to clear the misfeed counter, misfeed history, trouble counter, and trouble history. (After completion of maintenance, these counters must be cleared.)
Section	
Item	Counter
Operation/Procedure	Select with 10 digit key pad and press START key. The procedure below is executed and the display returns to the original state. 1: Counter is cleared 2: Not cleared

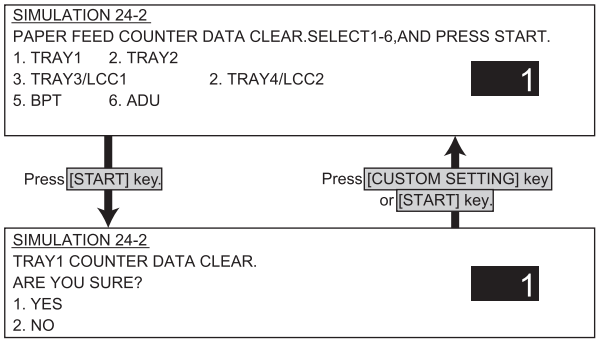


<List of set values>

PAPER JAM	Number of times of paper jam
SPF JAM	Number of times of SPF jam
TROUBLE	Number of times of troubles

24-2

Purpose	Data clear
Function (Content)	Used to clear the number of use (print quantity) of each paper feed section.
Section	Paper feed
Item	Counter
Operation/Procedure	Select with 10 digit key pad and press START key. The procedure below is executed and the display returns to the original state. 1: Counter is cleared 2: Not cleared

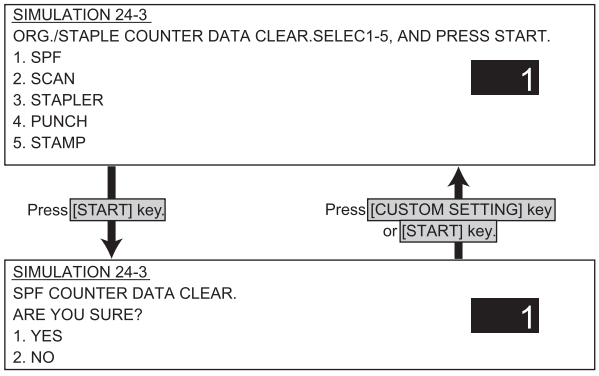


<List of set values>

1	Tray 1 use quantity
2	Tray 2 use quantity
3	Tray 3/LCC left tray use quantity
4	Tray 4/LCC right tray use quantity
5	Manual feed tray use quantity
6	Duplex paper feed use quantity

24-3

Purpose	Data clear
Function (Content)	Used to clear the number of use of the staple, DSPF and the scanner (reading) unit.
Section	
Item	Counter
Operation/Procedure	Select with 10 digit key pad and press START key. The procedure below is executed and the display returns to the original state. 1: Counter is cleared 2: Not cleared

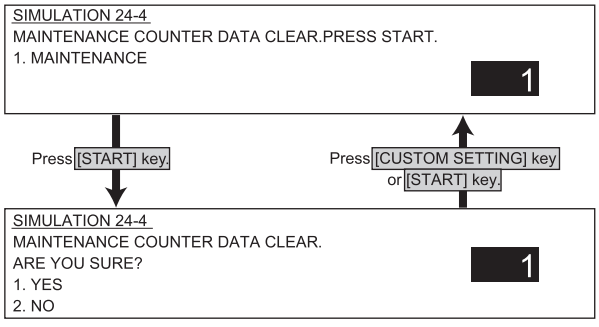


<List of set values>

1	SPF paper passing quantity
2	Number of times of document scan
3	Number of times of stapling
4	Number of times of punching
5	Number of times of finish stamp

24-4

Purpose	Data clear
Function (Content)	Used to reset the maintenance counter.
Section	
Item	Counter
Operation/Procedure	Select with 10 digit key pad and press START key. The procedure below is executed and the display returns to the original state. 1: Counter is cleared 2: Not cleared

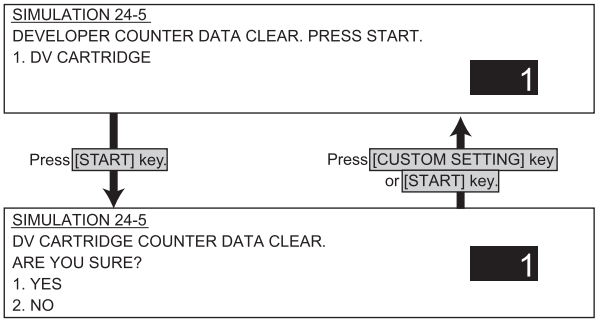


<List of set values>

1	maintenance counter

24-5

Purpose	Data clear
Function (Content)	Used to reset the developer counter. (The developer counter of the DV unit installed is reset.)
Section	Process (OPC drum, developing, transfer, cleaning)
Item	Counter
Operation/Procedure	Select with 10 digit key pad and press START key. The procedure below is executed and the display returns to the original state. 1: Counter is cleared 2: Not cleared

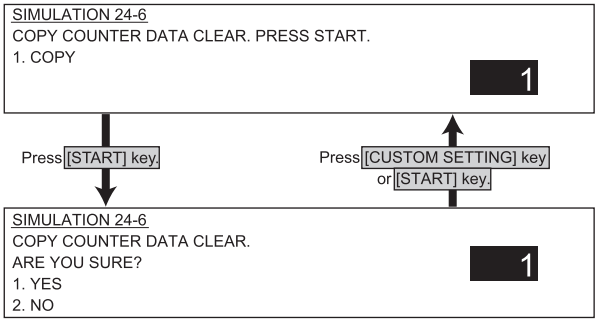


<List of set values>

1	Developer cartridge counter

24-6

Purpose	Data clear
Function (Content)	Used to reset the copy counter.
Section	
Item	Counter
Operation/Procedure	Select with 10 digit key pad and press START key. The procedure below is executed and the display returns to the original state. 1: Counter is cleared 2: Not cleared

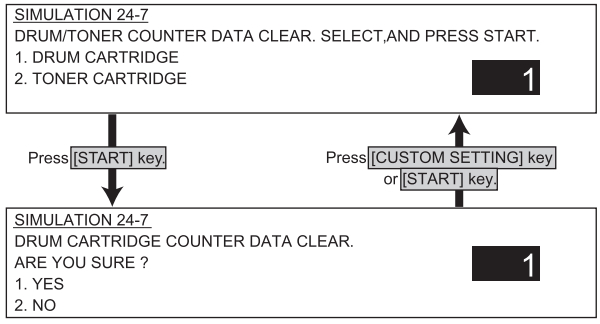


<List of set values>

1	Copy effective paper counter

24-7

Purpose	Data clear
Function (Content)	Used to clear the OPC drum counter and the toner cartridge counter. (Perform when the OPC drum is replaced.)
Section	Process (OPC drum, developing, transfer, cleaning)
Item	Counter
Operation/Procedure	Select with 10 digit key pad and press START key. The procedure below is executed and the display returns to the original state. 1: Counter is cleared 2: Not cleared

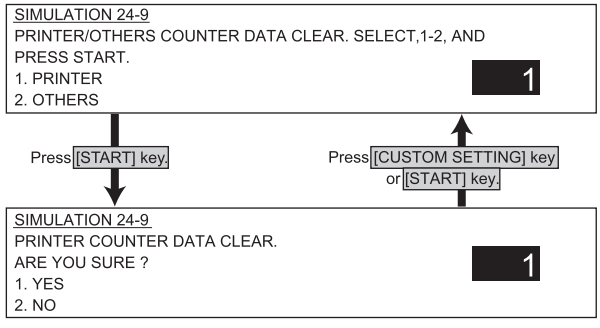


<List of set values>

1	Drum cartridge counter
2	Toner cartridge counter

24-9

Purpose	Data clear
Function (Content)	Used to clear the printer print counter. (After completion of maintenance, this counter must be cleared.)
Section	Printer
Item	Counter
Operation/Procedure	Select with 10 digit key pad and press START key. The procedure below is executed and the display returns to the original state. 1: Counter is cleared 2: Not cleared

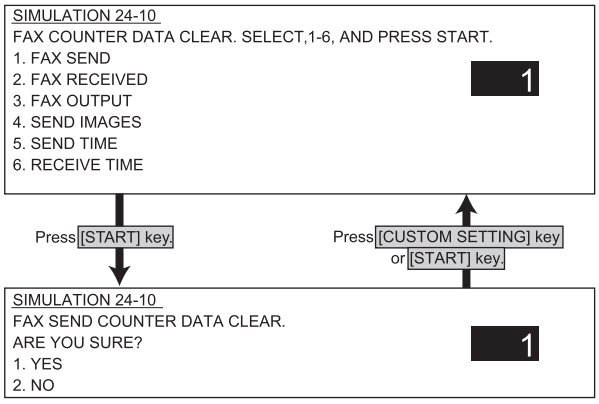


<List of set values>

1	Printer counter
2	Other effective paper counter

24-10

Purpose	Data clear
Function (Content)	Used to clear the FAX counter.
Section	FAX
Item	Counter
Operation/Procedure	Select with 10 digit key pad and press START key. The procedure below is executed and the display returns to the original state. 1: Counter is cleared 2: Not cleared

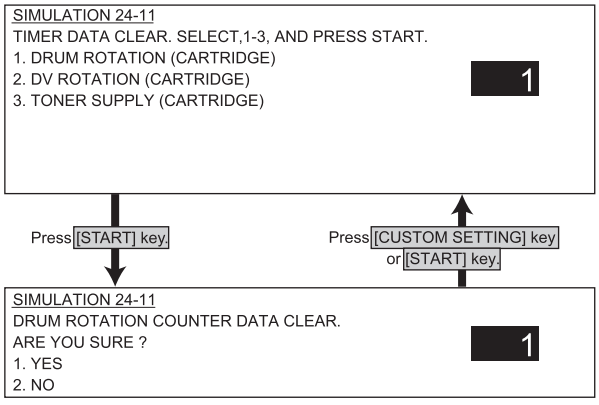


<List of set values>

1	FAX SEND: Number of times of FAX sending
2	FAX RECEIVE: Number of times of FAX reception
3	FAX OUTPUT: FAX print quantity
4	SEND IMAGES: Sending quantity
5	SEND TIME: Time for sending
6	RECEIVE TIME: Time for reception

24-11

Purpose	Data clear
Function (Content)	Used to reset the drum rotation time, toner motor rotation time, and developer rotation time counters. The developer counter of the DV unit installed is reset.
Section	Process (OPC drum, developing, transfer, cleaning)
Item	Counter
Operation/Procedure	Select with 10 digit key pad and press START key. The procedure below is executed and the display returns to the original state. 1: Counter is cleared 2: Not cleared

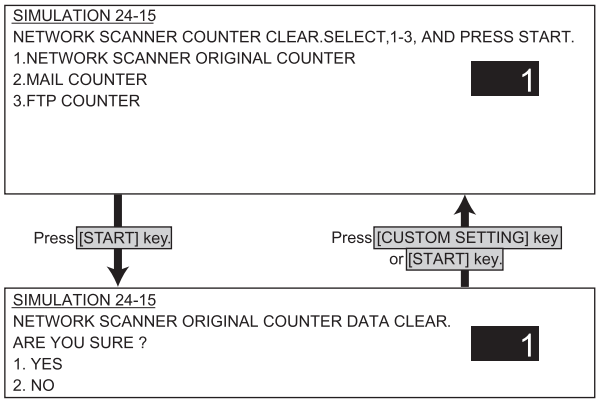


<List of set values>

1	Drum rotating time (cartridge)
2	Developing unit rotating time (cartridge)
3	Toner supply time (cartridge)

24-15

Purpose	Data clear
Function (Content)	Used to clear each counter in the scanner mode.
Section	
Item	Counter
Operation/Procedure	Select with 10 digit key pad and press START key. The procedure below is executed and the display returns to the original state. 1: Counter is cleared 2: Not cleared



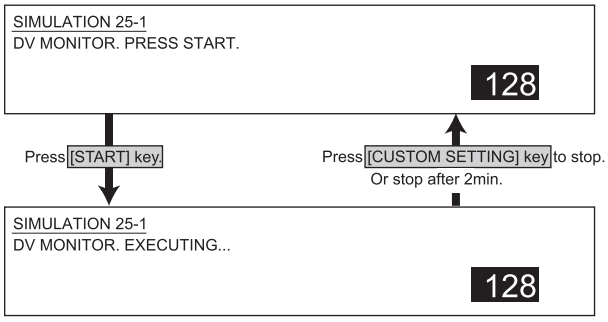
<List of set values>

1	Document scan counter in the network scanner mode
2	Number of times of mail sending
3	Number of times of FTP sending

Main code 25

25-1

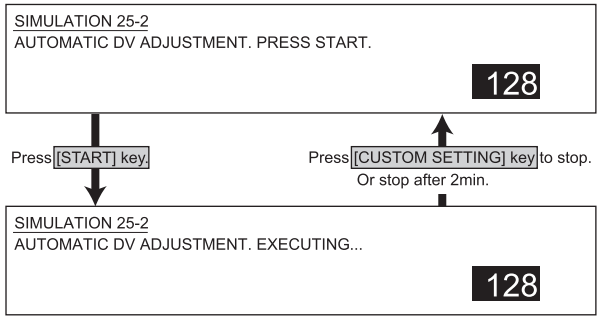
Purpose	Operation test, check
Function (Content)	Used to check the operations of the main drive section (excluding the scanner (reading) section) and the toner density sensor. (The toner density sensor output can be monitored.)
Section	Drive
Item	Operation
Operation/Procedure	the toner density control sensor value is displayed. Press START key, and the main motor will rotate to start monitoring the toner density control sensor.



25-2

Purpose	Setup
Function (Content)	Used to initialize the toner density when replacing developer. (Auto adjustment)
Section	Process (OPC drum, developing, transfer, cleaning)
Item	
Operation/Procedure	The toner density control sensor value is displayed. Press START key, and the main motor will rotate. After stirring for 2 min, the toner density control sensor value is sampled 10 times and the average value is stored.

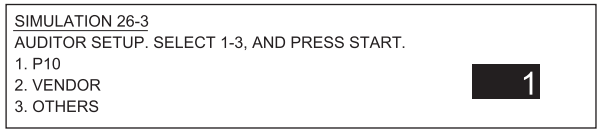
Note: Open front cover before entering SIM for Auto adjust.



Main code 26

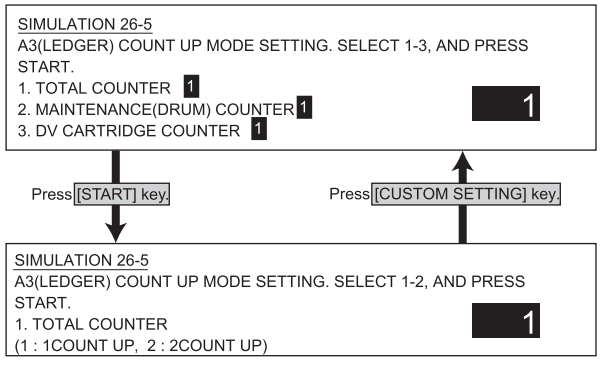
26-3

Purpose	Setup
Function (Content)	Used to set the specification mode of the auditor. Setup must be made according to the use conditions under auditor.
Section	Auditor
Item	Spec
Operation/Procedure	The auditor setting is performed. (Default: 1)



26-5

Purpose	Setup
Function (Content)	Used to set the count mode of the total counter and the maintenance counter.
Section	
Item	Spec
Operation/Procedure	1) Setting of the count-up number of A3/WLT paper passing (1 or 2) is made. The current set value is highlighted on the right side of the item. 2) Setting of the count-up number of the selected counter is made. 1: 1 count up 2: 2 counts up (Default : 2)



<List of target counters>

1	Total counter
2	Maintenance counter/drum cartridge counter
3	Developer cartridge counter

26-6

Purpose	Setup
Function (Content)	Used to set the specification according to the destination.
Section	
Item	Spec
Operation/Procedure	After setting the destination, the power is turned off/on.

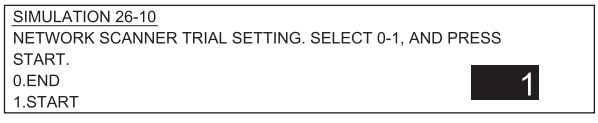
* When NIC is installed, reset cannot be performed. Therefore, the power must be turned off/on.
* This simulation cannot change the FAX destination. Use SIM 66-2 to change the FAX destination.

<List of destinations>

1	United States of America
2	Canada
3	Inch series EX
4	Japan
5	AB series B5
6	Europe
7	UK
8	Australia
9	AB series A5
10	China

26-10

Purpose	Setup
Function (Content)	Used to set the trial mode of the network scanner.
Section	
Item	Operation
Operation/Procedure	The network scanner trial mode is set. (Testing scanner without product key is limited to 500 sheets.) (Default: 0)

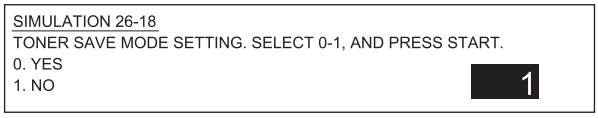


<List of set values>

0	Trial mode cancel
1	Trial mode start

26-18

Purpose	Setup
Function (Content)	Used to set Enable/Disable of toner save operation. (This simulation is enabled only in Japan and UK versions. (Depends on SIM 26-6 (Destination) setup). For the other destinations, user program P22 allows to make the similar setup.)
Section	
Item	Spec
Operation/Procedure	The toner mode setup is made. (Default: 1)

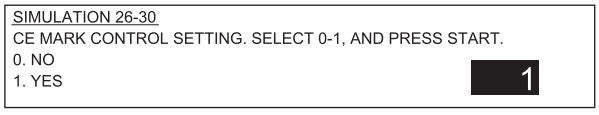


<List of set values>

0	Toner save mode is enabled.
1	Toner save mode is disabled.

26-30

Purpose	Setup
Function (Content)	Used to set the operation mode conforming to the CE mark (Europe standards). (For flickers when driving the fusing heater lamp.)
Section	
Item	Spec
Operation/Procedure	

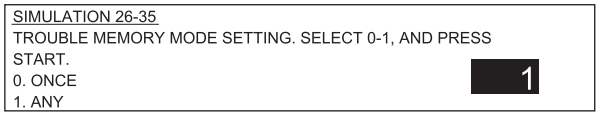


<List of set values>

0	No control of CE mark
1	Control of CE mark

26-35

Purpose	Setup
Function (Content)	Used to set whether the trouble history of SIM 22-4 is displayed as one-time trouble or continuous troubles when two or more number of a same trouble occurred.
Section	
Item	Spec
Operation/Procedure	The trouble memory storing method is set. (Default: 0)



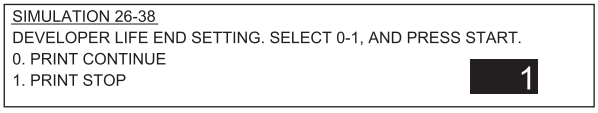
<List of set values>

0	Only once (If same as the previous one, it is not stored.)
1	Any times (Though same as the previous one, it is stored.)

26-38

Purpose	Setup
Function (Content)	Used to stop printing when developer life is expired.
Section	Other
Item	Operation
Operation/Procedure	Print enable/disable is set when the developer cartridge is expired in a DM machine. (Default: 1)

* This simulation is ignored in the AR model, that is, the operation is continued.

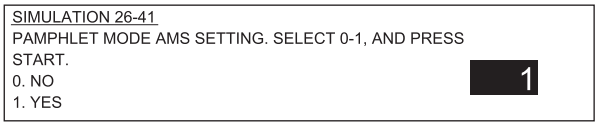


<List of set values>

0	Print continue
1	Print stop

26-41

Purpose	Setup
Function (Content)	Used to set Enable/Disable of the magnification ratio auto selection function (AMS) in the pamphlet copy mode.
Section	
Item	Spec
Operation/Procedure	Pamphlet mode AMS setting is enabled or disabled. Press START key to save. (Europe : 1, Others : 0)



<List of set values>

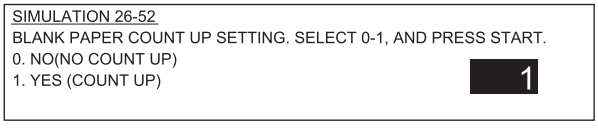
0	AMS setting disabled
1	AMS setting enabled

26-52

Purpose	Setup
Function (Content)	Used to set Enable/Disable of count-up when white paper is discharged. (White paper means the index paper (without copying) in the OHP index paper insertion mode, the front/rear covers (without copying) in the cover insertion mode, and white paper in the duplex exit mode (CA, etc.).)
Section	Paper transport (Paper exit, switchback, transport)
Item	
Operation/Procedure	Count-up setting of white paper exit mode is made. Press START key to save. (Default: 0 for Japan and Australia, 1 for the others)

* The following counters are not counted up.

- •Copies counter
- •Printer counter
- •Department control counter
- •Total counter
- •Effective paper counter



<List of set values>

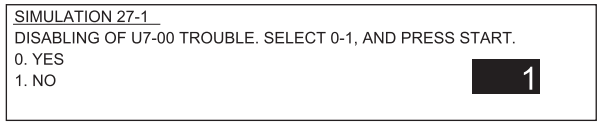
0	Count-up is not made.
1	Count-up is made

Main code 27

27-1

Purpose	Setup
Function (Content)	Used to set the operation specifications when a communication trouble occurs between the host computer and MODEM (machine side). (When a communication trouble occurs between the host computer and MODEM (machine side), self diag display (U7-00) is displayed and setup is made to inhibit or allow printing.)
Section	Communication (RIC/MODEM)
Item	Spec
Operation/Procedure	Yes/No of communication trouble between PC/MODEM is set. (Default: 0)

(Japan only)

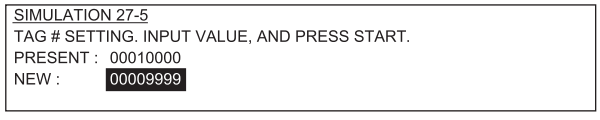


<List of set values>

0	U7-00 is not displayed in a communication trouble.
1	U7-00 is displayed in a communication trouble.

27-5

Purpose	Setup
Function (Content)	Used to enter the machine tag No. (This function allows to check the machine tag No. from the computer.)
Section	Communication (RIC/MODEM)
Item	Data
Operation/Procedure	The tag number is set. The current value is displayed on PRESENT column. Enter a new tag number with 10 digit key pad and press START to store.



Main code 30

30-1

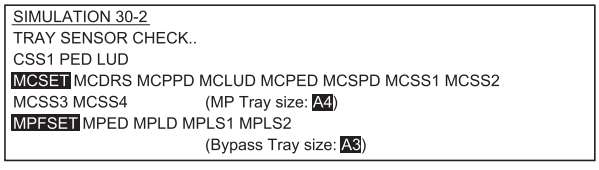
Purpose	Operation test, check
Function (Content)	Used to check the operations of the sensors and detectors in the paper feed, paper transport, and paper exit sections and their control circuits.
Section	
Item	Operation
Operation/Procedure	Then sensors of the machine are checked. The sensor name is highlighted when it is detected.

<List of display values>

PPD1	Resist roller front paper detection
POD1	Fusing rear transport detection 1
POD2	Fusing rear transport detection 2
POD3	Paper full detection
DVCRUin	DV unit version detection
PRCRUin	Process unit version detection
DSWL	Cabinet open detection
DSWF	Machine front door

30-2

Purpose	Operation test, check
Function (Content)	Used to check the operations of the sensors and detectors in the paper feed section and their control circuits. (The operations of the sensors and detectors in the paper feed section can be monitored on the LCD display.)
Section	Paper feed
Item	Operation
Operation/Procedure	Then sensors of the machine paper feed tray are checked. The sensor name is highlighted when it is detected.



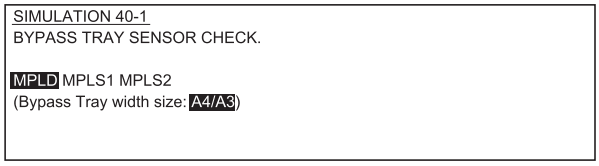
<List of display values>

CSS1	Tray 1 insertion detection	MCSS1	MP tray size detection 1
PED	Tray 1 paper empty detection	MCSS2	MP tray size detection 2
LUD	Tray 1 upper limit detection	MCSS3	MP tray size detection 3
MCSET	MP unit detection	MCSS4	MP tray size detection 4
MCDRS	MP unit side door open detection	MP Tray size	(The detection size of MP tray is displayed.)
MCPPD	MP tray transport detection	MPFSET	Manual feed tray detection
MCLUD	MP tray upper limit detection	MPED	Manual feed tray paper empty detection
MCPED	MP tray paper empty detection	MPLD	Manual feed length detection
MCSPD	MP tray remaining quantity detection	MPLS1	Manual feed pull-out sensor 1
		MPLS2	Manual feed pull-out sensor 2
		Bypass Tray size	(The detection size of manual feed tray is displayed.)

Main code 40

40-1

Purpose	Operation test, check
Function (Content)	Used to check the operations of the manual paper feed tray paper size detectors and their control circuit. (The operations of the manual paper feed tray paper size detectors can be monitored on the LCD display.)
Section	Paper feed
Item	Operation
Operation/Procedure	The sensors of the manual feed tray are checked. The sensor name is highlighted when it is detected.



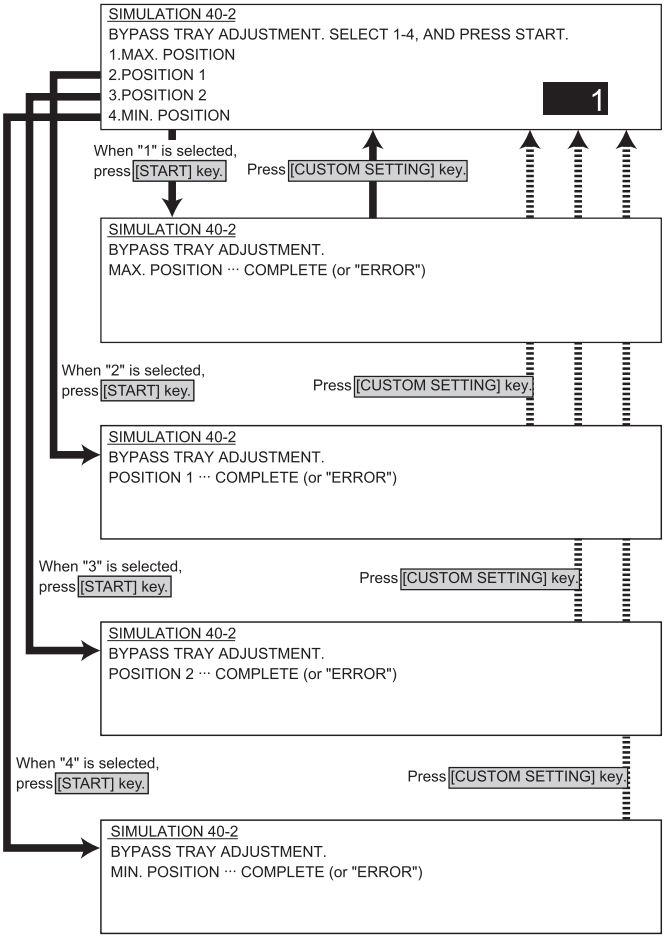
<List of display values>

MPLD	Manual feed tray length detection
MPLS1	Manual feed pull-out sensor 1
MPLS2	Manual feed pull-out sensor 2
Bypass Tray width size	(The detected width of manual feed tray is displayed.) A4/A3, 11x, B5/B4, 8.5x, A4R, B5R, A5R, 5.5x, 7.25x, EXTRA

40-2

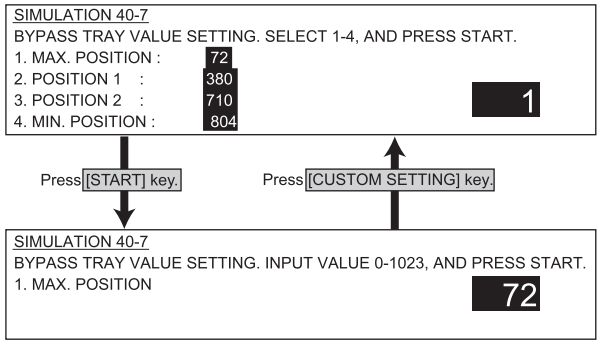
Purpose	Adjustment, setup
Function (Content)	Used to adjust the detection level of the manual paper feed tray paper width volume.
Section	Paper feed
Item	Operation
Operation/Procedure	The manual feed tray size is adjusted. 1) Extend the guide to the MAX. position. Select 1 and press START. When COMPLETE is displayed, press CUSTOM SETTING to return to the initial screen. 2) Move the guide to A4R position. Select 2 and press START. When COMPLETE is displayed, press CUSTOME SETTING to return to the initial screen. 3) Move the guide to A5R position. Select 3 and press START. When COMPLETE is displayed, press CUSTOME SETTING to return to the initial screen. 4) Move the guide to MIN. position in the initial screen. Select 4 and press START. When COMPLETE is displayed, the adjustment is completed. If ERROR is displayed in procedures 1) - 4), repeat the adjustment again."

* This adjustment is performed only when the width detection volume is replaced.
Normally use SIM 40-7 for input.



40-7

Purpose	Adjustment, setup
Function (Content)	Used to enter the adjustment value of the manual paper feed tray width detection level.
Section	Paper feed
Item	Operation
Operation/Procedure	The adjustment value(Specified on the back of the tray pull-out section) of the manual feed tray size is entered.

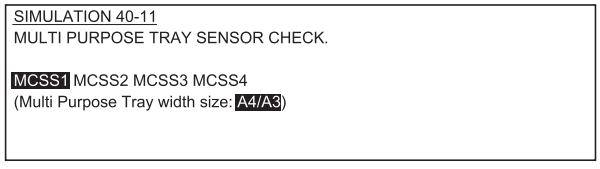


<List of set values>

1	Max. width(Max.)
2	Adjustment point 1(P1)
3	Adjustment point 2(P2)
4	Min. width(Min.)

40-11

Purpose	Operation test, check
Function (Content)	Used to check the width detection level of the multi-purpose tray paper width detector.
Section	Paper feed
Item	Operation
Operation/Procedure	The multi-purpose tray (MPT) sensors are checked. The sensor name is highlighted when it is highlighted.

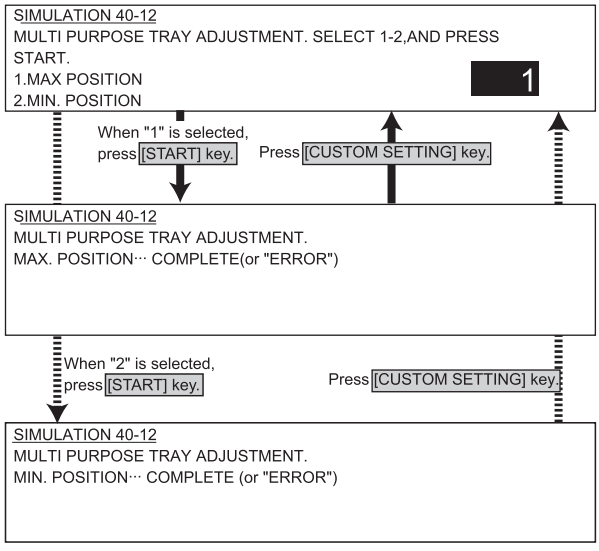


<List of display values>

MCSS1	Multi-purpose tray size detection 1
MCSS2	Multi-purpose tray size detection 2
MCSS3	Multi-purpose tray size detection 3
MCSS4	Multi-purpose tray size detection 4
Multi Purpose Tray width size	(The detected size of MPT width is displayed.) A4/A3, 11x, B5/B4, 8.5x, A4R, B5R, A5R, 5.5x, 7.25x, EXTRA

40-12

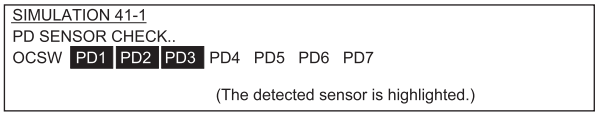
Purpose	Operation test, check
Function (Content)	Used to adjust the width detection level of the multi-purpose tray paper width detector.
Section	Paper feed
Item	Operation
Operation/Procedure	The multi-purpose tray size is adjusted. 1) Extend the guide to the MAX. position. Select 1 and press START. When COMPLETE is displayed, press CUSTOM SETTING to return to the initial screen. 2) Move the guide to MIN. position. Select 2 and press START. When COMPLETE is displayed, the adjustment is completed. If ERROR is displayed in procedures 1) - 2), repeat the adjustment again.



Main code 41

41-1

Purpose	Operation test, check
Function (Content)	Used to check the operations of the document size sensor and the related circuit. (The operation of the document size sensor can be monitored on the LCD display.)
Section	Other
Item	Operation
Operation/Procedure	The OC document sensor is checked.

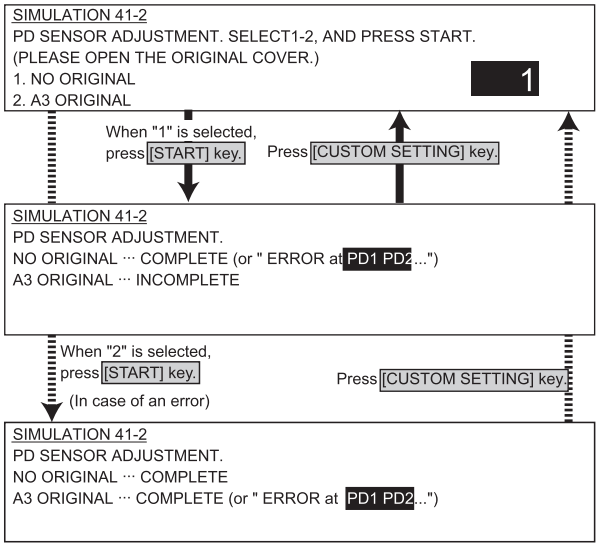


<List of display values>

OCSW	Original cover state
	Open : Normal display
	Close : Highlighted
PD1 ~ 7	Document sensor state
	No document : Normal display
	Document loaded : Highlighted

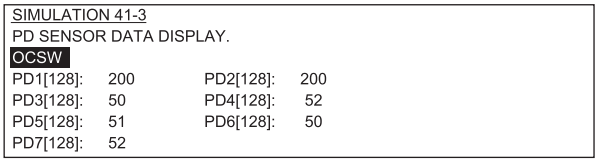
41-2

Purpose	Adjustment
Function (Content)	Used to adjust the detection level of the document size sensor.
Section	Other
Item	Operation
Operation/Procedure	The OC document sensor is adjusted. 1) Open the original cover. Press 1 without an original. Press START, and COMPLETE is displayed. Press CUSTOM SETTING to return to the initial screen. 2) Place an A3 (or WLT) paper in the initial screen. Select 2 and press START. When COMPLETE is displayed, the adjustment is completed. If ERROR is displayed in procedures 1) - 2), repeat the adjustment again.



41-3

Purpose	Operation test, check
Function (Content)	Used to check the operation of the document size sensor and the related circuit. (The output level of the document size sensor can be monitored on the LCD display.)
Section	Other
Item	Operation
Operation/Procedure	The OC document sensor detection level is displayed. (Real time display)



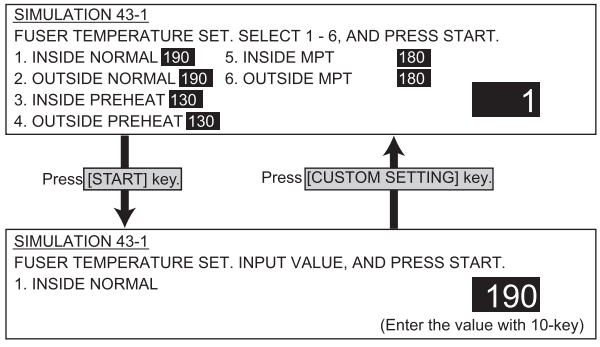
<List of display values>

OCSW	Original cover state
	Open : Normal display
	Close : Highlighted
PD1 ~ 7	PD sensor detection level
	Figures in [ ] indicate the adjustment threshold values (41-2 adjustment value).

Main code 43

43-1

Purpose	Setup
Function (Content)	Used to set the fusing temperature in each operation mode.
Section	Fusing, paper exit
Item	Operation
Operation/Procedure	The fusing control temperature is set. The current set value is highlighted on the right of each item. Select an item (1 - 6), and enter a set value with 10 digit key pad. Press START key to store the value.



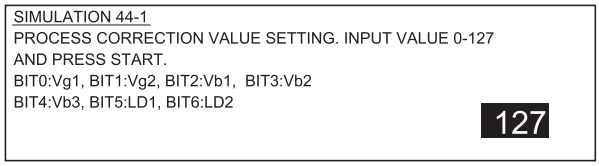
<List of display values>

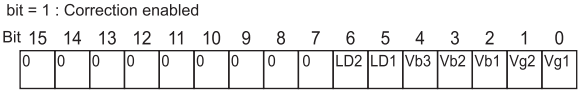
		Default	Set range
1	Heater inside/Normal	190	165~210
2	Heater outside/Normal	190	165~210
3	Heater inside/Pre-heat	150	100~160
4	Heater outside/Pre-heat	150	100~160
5	Heater inside/Manual paper feed used	190	165~210
6	Heater outside/Manual paper feed used	190	165~210

Main code 44

44-1

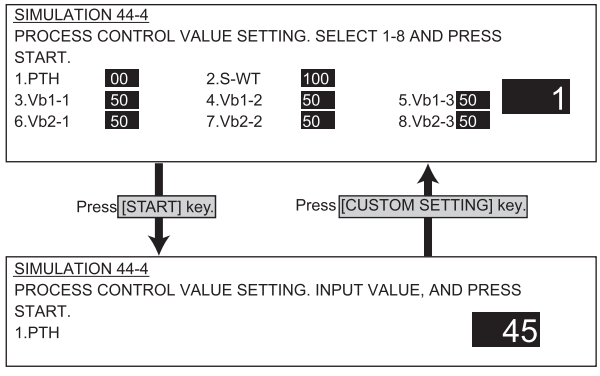
Purpose	Setup
Function (Content)	Used to set Enable/Disable of each correction operation in the image forming (process) section.
Section	Process (OPC drum, developing, transfer, cleaning)
Item	Operation
Operation/Procedure	





44-4

Purpose	Setup
Function (Content)	Used to set the target image (reference) density level in the developing bias voltage correction.
Section	Process (OPC drum, developing, transfer, cleaning)
Item	Data
Operation/Procedure	The process correction value is set. Select an item (1 - 9), and enter a value with 10 digit key pad. Press SYTART to store the value.



<List of display values>

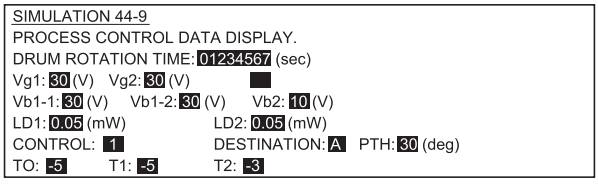
1	PTH *1	Process Thermistor temperature forcible set value (0-99°C : Normal 0)
2	S_WT *2	Vb (Devepoping bias correction value) rising correction wait time (0-180sec : Default 90)
3	Vb1-1 *3	Vb (Devepoping bias correction value) correction quantity (First rotation) 1 (0 - 150V : Default 50)
4	Vb1-2 *3	Vb (Devepoping bias correction value) correction quantity (First rotation) 2 (0 - 150V : Default 50)
5	Vb1-3 *3	Vb (Devepoping bias correction value) correction quantity (First rotation) 3 (0 - 150V : Default 50)
6	Vb2-1 *4	Vb (Devepoping bias correction value) correction quantity (Second rotation) 1 (0 - 50V : Default 15)
7	Vb2-2 *4	Vb (Devepoping bias correction value) correction quantity (Second rotation) 2 (0 - 50V : Default 15)
8	Vb2-3 *4	Vb (Devepoping bias correction value) correction quantity (Second rotation) 3 (0 - 50V : Default 15)

*1: Only when this value is 0, control is performed with the actual measurement value of process Thermistor.
If it is not 0, control is forcibly performed.
*2: When the drum motor standby time is greater than this value, the correction of SIM 44-1 Vb1 is performed.
*3: This value is SIM 44-9 Vb1-1 correction value. The value corresponding to the drum rotating time is used.
*4: This value is SIM 44-9 Vb1-2 correction value. The value corresponding to the drum rotating time is used.

DRUM ROTATION TOME		Vb1 correction value (X' th rotation)
45PPM	35PPM	
0 ~ 40K (sec)	0 ~ 50K (sec)	(X' th rotation) -1
40 ~ 80K (sec)	50 ~ 95K (sec)	(X' th rotation) -2
80K ~ (sec)	95K ~ (sec)	(X' th rotation) -3

44-9

Purpose	Adjustment, setup, operation data output, check (display)
Function (Content)	Used to check the result (main charger grid voltage developing bias voltage, laser power, etc.) of correction (process correction) in the image forming section. (By this simulation, the correction operation can be checked.)
Section	Process (OPC drum, developing, transfer, cleaning)
Item	Data
Operation/Procedure	The process correction value is checked.



<List of display values>

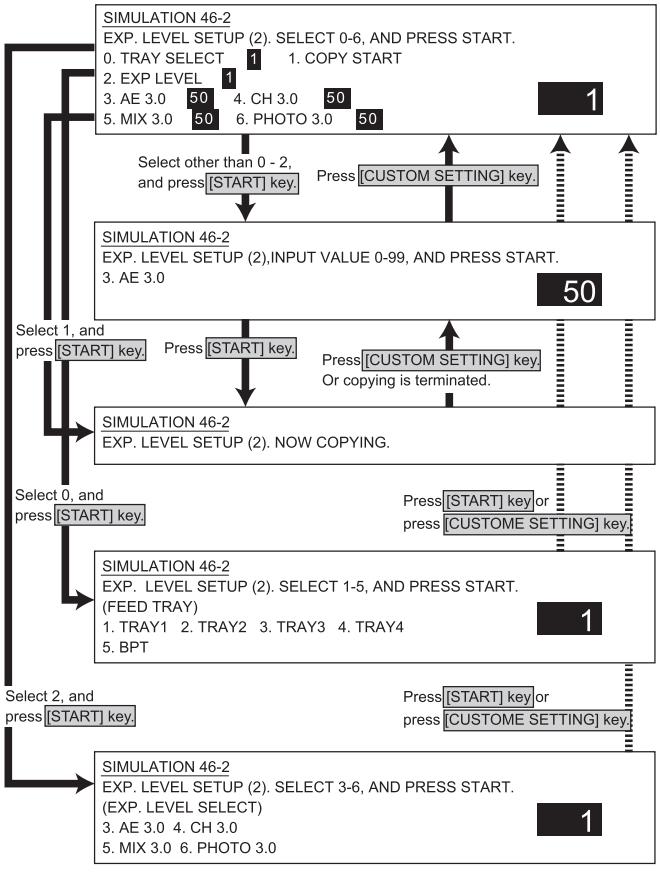
DRUM ROTATION TIME	Drum rotation time
Vg1~Vg2	Grid voltage correction value
Vb1-1 *1	Vb (Developing bias correction value) correction value (first rotation)
Vb1-2 *1	Vb (Developing bias correction value) correction value (second rotation)
Vb2	Developing bias correction value
Vb3	Developing bias correction value
LD1	Laser power correction value
LD2	Laser power correction value
CONTROL	CRUM control spec (1 - 3)
DESTINATION	CRUM destination (A - J)
PTH *2	Process Thermistor temperature value
T0	Toner control correction value (Rotation time correction) (±100)
T1	Toner control correction value T1 (Temperature correction) (±100)
T2	Toner control correction value T2 (Temperature correction) (±100)

*1: Vb1-1 and Vb1-2 are enabled or disabled by SIM 44-1 Vb1 setup.
*2: When PTH is set to 0 with SIM 44-4, the detected value in this adjustment is displayed. If PTH is set to other than 0, the value set with SIM 44-4 is displayed.

Main code 46

46-2

Purpose	Adjustment
Function (Content)	Used to adjust the copy density in the copy mode (binary, auto, text, text/photo, photo mode). An adjustment with this simulation affects all the reading density adjustment values.
Section	
Item	Picture quality
Operation/Procedure	The exposure mode to be set is selected. (Auto adjustment) 1) The current set value is highlighted on the right side of each item. In this screen, be sure to select "1: COPY START." (Set value: 1) 2) Set the exposure level with 10 digit key pad. Press P to store the set value. (Default: 50, set range: 0 - 99) 3) Press START, and copying is started and the set value is stored. (Display value 1) 4) Select a paper feed tray. (Set value 2) 5) Select an exposure level. (Set value 3)



<List of set values 1>

0	Paper feed tray selection
1	Copy start (Default)
2	Exposure level selection
3	AE mode
4	Text mode 30
5	Text/Photo mode 30
6	Photo mode 30

<List of display values 1>

Normal display		NOW COPYING
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	paper empty	PAPER EMPTY.

<List of set values 2>

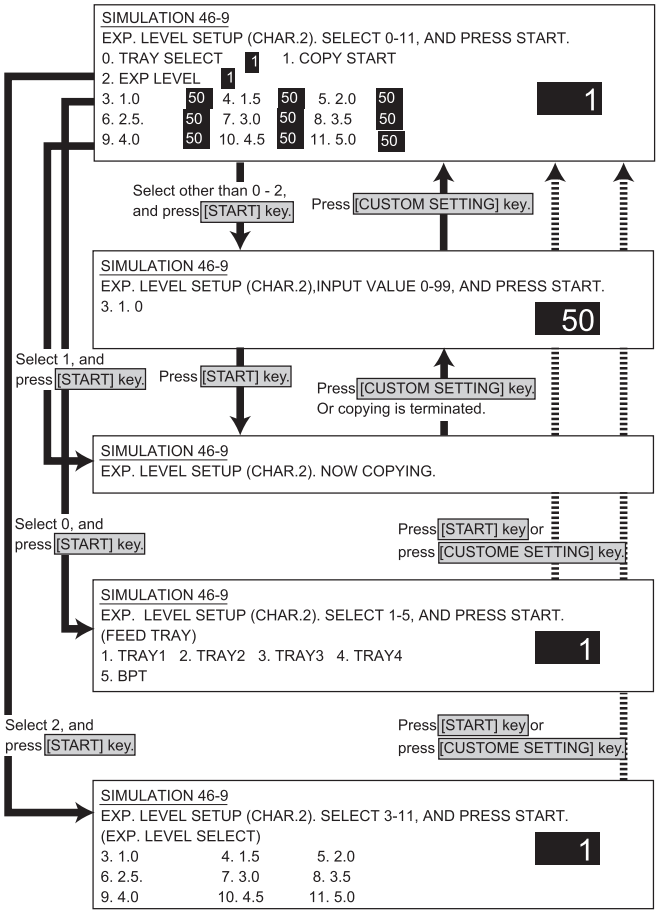
1	TRAY1
2	TRAY2
3	TRAY3
4	TRAY4
5	Manual feed

<List of set values 3>

3	AE mode
4	Text mode 30
5	Text/Photo mode 30
6	Photo mode 30

46-9

Purpose	Adjustment
Function (Content)	Used to adjust the print density for each density level (display value) in the copy mode (binary-Text mode). A desired reading density can be set for each density level (display value).
Section	
Item	Picture quality
Operation/Procedure	The exposure mode to be set is selected. (Text mode) 1) The current set value is highlighted on the right side of each item. In this screen, be sure to select "1: COPY START." (Set value: 1) 2) Set the exposure level with 10 digit key pad. Press P to store the set value. (Default: 50, set range: 0 - 99) 3) Press START, and copying is started and the set value is stored. (Display value 1) 4) Select a paper feed tray. (Set value 2) 5) Select an exposure level. (Set value 3)



<List of set values 1>

0	Paper feed tray selection
1	Copy start (Default)
2	Exposure level selection
3	Exposure level 1.0
4	Exposure level 1.5
5	Exposure level 2.0
6	Exposure level 2.5
7	Exposure level 3.0
8	Exposure level 3.5
9	Exposure level 4.0
10	Exposure level 4.5
11	Exposure level 5.0

<List of display values 1>

Normal display		NOW COPYING
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	paper empty	PAPER EMPTY.

<List of set values 2>

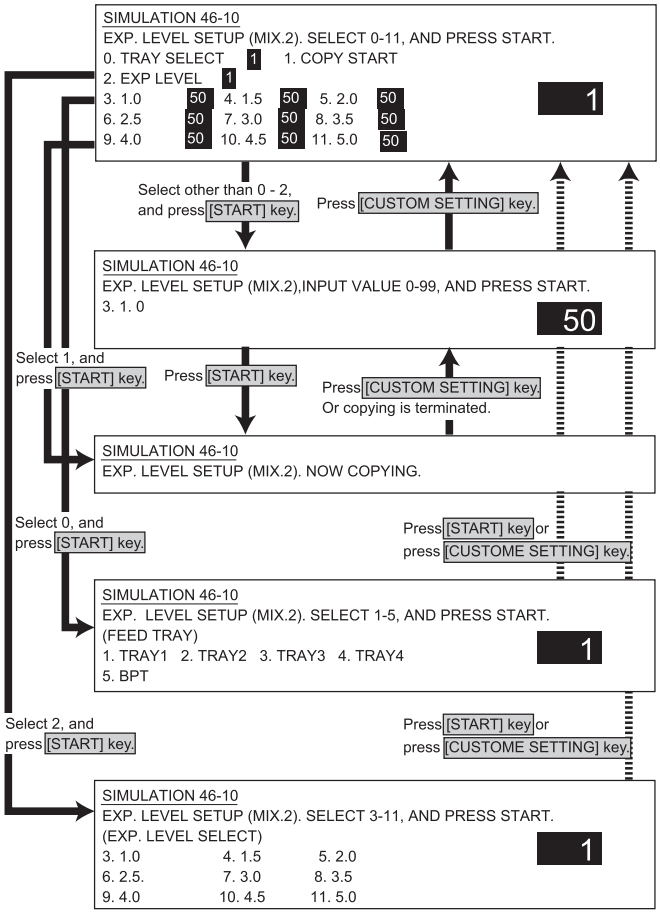
1	TRAY1
2	TRAY2
3	TRAY3
4	TRAY4
5	Manual feed

<List of set values 3>

3	Exposure level 1.0
4	Exposure level 1.5
5	Exposure level 2.0
6	Exposure level 2.5
7	Exposure level 3.0
8	Exposure level 3.5
9	Exposure level 4.0
10	Exposure level 4.5
11	Exposure level 5.0

46-10

Purpose	Adjustment
Function (Content)	Used to adjust the print density for each density level (display value) in the copy mode (binary-Text/Photo mode). A desired reading density can be set for each density level (display value).
Section	
Item	Picture quality
Operation/Procedure	The exposure mode to be set is selected. (Text/Photo mode) 1) The current set value is highlighted on the right side of each item. In this screen, be sure to select "1: COPY START." (Set value: 1) 2) Set the exposure level with 10 digit key pad. Press P to store the set value. (Default: 50, set range: 0 - 99) 3) Press START, and copying is started and the set value is stored. (Display value 1) 4) Select a paper feed tray. (Set value 2) 5) Select an exposure level. (Set value 3)



<List of set values 1>

0	Paper feed tray selection
1	Copy start (Default)
2	Exposure level selection
3	Exposure level 1.0
4	Exposure level 1.5
5	Exposure level 2.0
6	Exposure level 2.5
7	Exposure level 3.0
8	Exposure level 3.5
9	Exposure level 4.0
10	Exposure level 4.5
11	Exposure level 5.0

<List of display values 1>

Normal display		NOW COPYING
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	paper empty	PAPER EMPTY.

<List of set values 2>

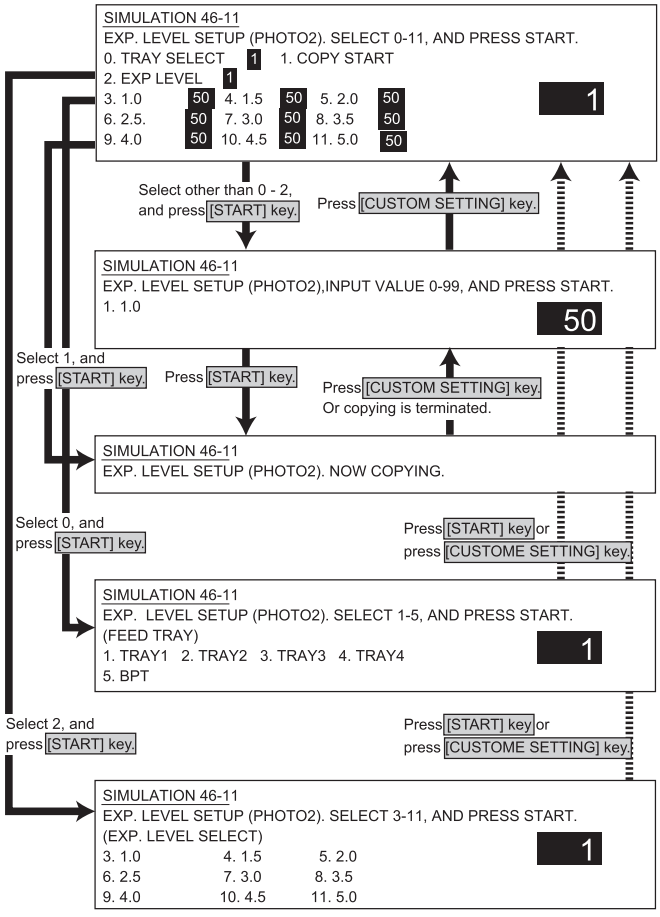
1	TRAY1
2	TRAY2
3	TRAY3
4	TRAY4
5	Manual feed

<List of set values 3>

3	Exposure level 1.0
4	Exposure level 1.5
5	Exposure level 2.0
6	Exposure level 2.5
7	Exposure level 3.0
8	Exposure level 3.5
9	Exposure level 4.0
10	Exposure level 4.5
11	Exposure level 5.0

46-11

Purpose	Adjustment
Function (Content)	Used to adjust the print density for each density level (display value) in the copy mode (binary-Photo mode). A desired reading density can be set for each density level (display value).
Section	
Item	Picture quality
Operation/Procedure	The exposure mode to be set is selected. (Photo mode) 1) The current set value is highlighted on the right side of each item. In this screen, be sure to select "1: COPY START." (Set value: 1) 2) Set the exposure level with 10 digit key pad. Press P to store the set value. (Default: 50, set range: 0 - 99) 3) Press START, and copying is started and the set value is stored. (Display value 1) 4) Select a paper feed tray. (Set value 2) 5) Select an exposure level. (Set value 3)



<List of set values 1>

0	Paper feed tray selection
1	Copy start (Default)
2	Exposure level selection
3	Exposure level 1.0
4	Exposure level 1.5
5	Exposure level 2.0
6	Exposure level 2.5
7	Exposure level 3.0
8	Exposure level 3.5
9	Exposure level 4.0
10	Exposure level 4.5
11	Exposure level 5.0

<List of display values 1>

Normal display		NOW COPYING
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	paper empty	PAPER EMPTY.

<List of set values 2>

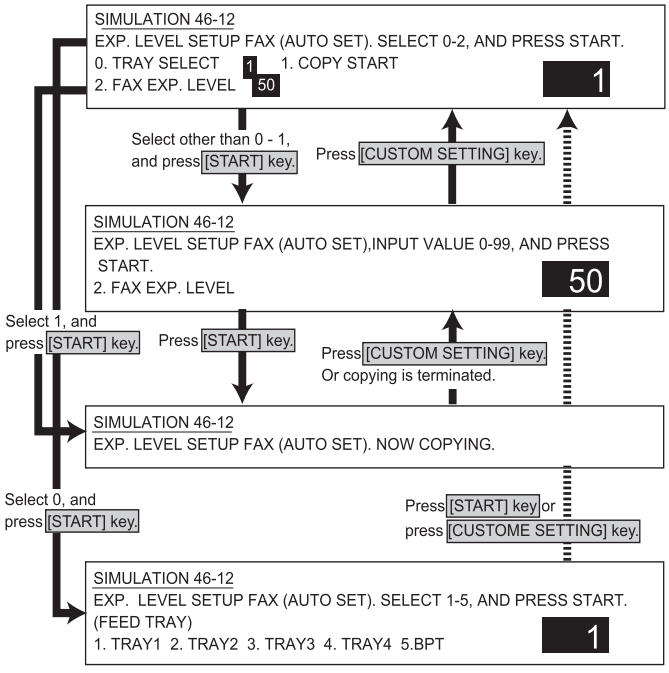
1	TRAY1
2	TRAY2
3	TRAY3
4	TRAY4
5	Manual feed

<List of set values 3>

3	Exposure level 1.0
4	Exposure level 1.5
5	Exposure level 2.0
6	Exposure level 2.5
7	Exposure level 3.0
8	Exposure level 3.5
9	Exposure level 4.0
10	Exposure level 4.5
11	Exposure level 5.0

46-12

Purpose	Adjustment
Function (Content)	Used to adjust the print density in the FAX mode (all modes). An adjustment with this simulation affects all the reading density adjustment values. (Only when FAX is installed)
Section	
Item	Picture quality
Operation/Procedure	The exposure mode to be set is selected. (FAX auto adjustment) 1) The current set value is highlighted on the right side of each item. In this screen, be sure to select "1: COPY START." (Set value: 1) 2) Set the exposure level with 10 digit key pad. Press P to store the set value. (Default: 50, set range: 0 - 99) 3) Press START, and copying is started and the set value is stored. (Display value 1) 4) Select a paper feed tray. (Set value 2)



<List of set values 1>

0	Paper feed tray selection
1	Copy start (Default)
2	FAX mode exposure setup

<List of display values 1>

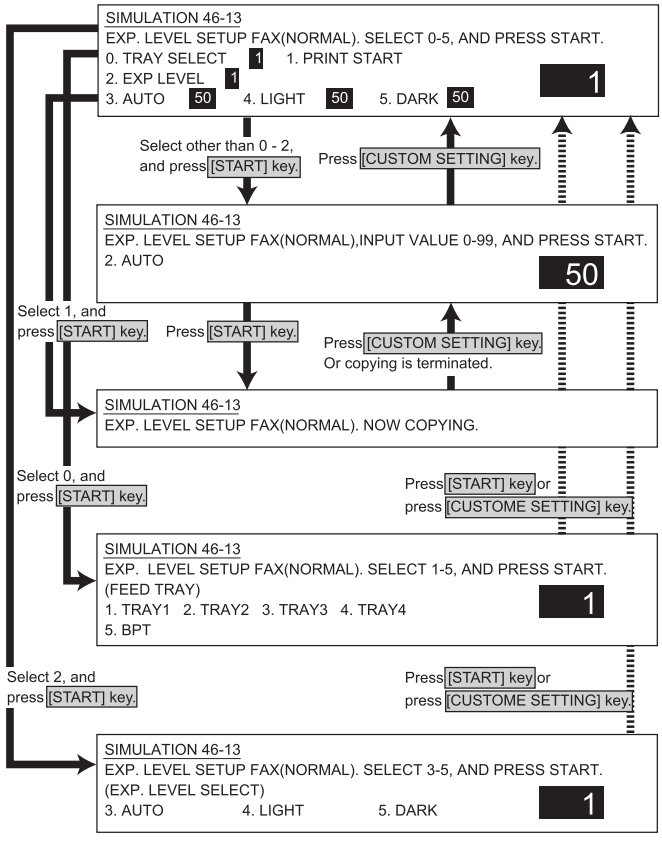
Normal display		NOW COPYING
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	paper empty	PAPER EMPTY.

<List of set values 2>

1	TRAY1
2	TRAY2
3	TRAY3
4	TRAY4
5	Manual feed

46-13

Purpose	Adjustment
Function (Content)	Used to adjust the reading density in the FAX mode (normal mode). (Only when FAX is installed.)"
Section	
Item	Picture quality
Operation/Procedure	The exposure mode to be set is selected. (FAX normal text mode individual adjustment) 1) The current set value is highlighted on the right side of each item. In this screen, be sure to select "1: COPY START." (Set value: 1) 2) Set the exposure level with 10 digit key pad. Press P to store the set value. (Default: 50, set range: 0 - 99) 3) Press START, and copying is started and the set value is stored. (Display value 1) 4) Select a paper feed tray. (Set value 2) 5) Select an exposure level. (Set value 3)



<List of set values 1>

0	Paper feed tray selection
1	Print start (Default)
2	Exposure level selection
3	Auto
4	Bright
5	Dark

<List of display values 1>

Normal display		NOW COPYING
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	paper empty	PAPER EMPTY.

<List of set values 2>

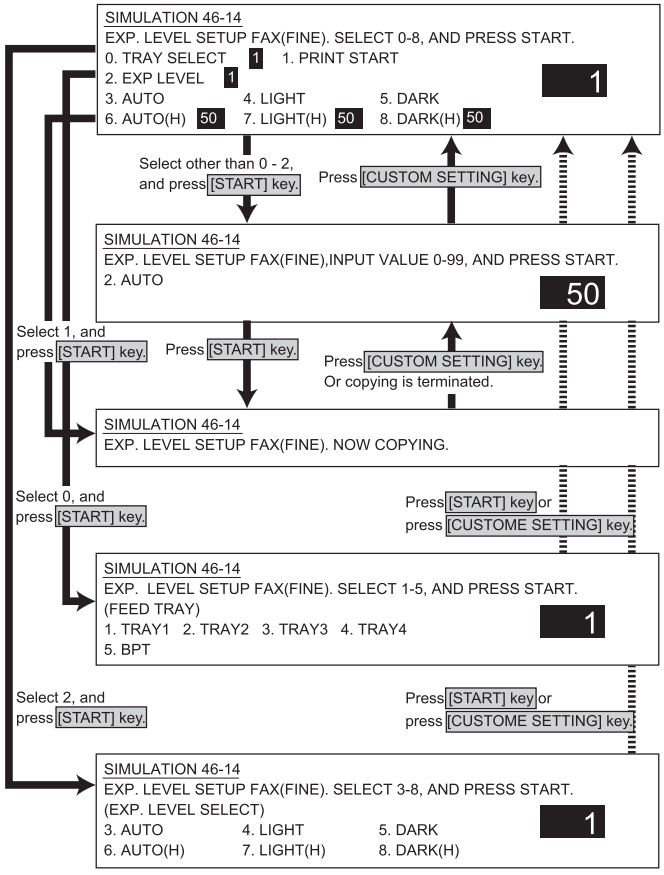
1	TRAY1
2	TRAY2
3	TRAY3
4	TRAY4
5	Manual feed

<List of set values 3>

3	Auto
4	Bright
5	Dark

46-14

Purpose	Adjustment
Function (Content)	Used to adjust the reading density in the FAX mode (small text mode). (Only when FAX is installed.)
Section	
Item	Picture quality
Operation/Procedure	The exposure mode to be set is selected. (FAX small text mode individual adjustment) 1) The current set value is highlighted on the right side of each item. In this screen, be sure to select "1: COPY START." (Set value: 1) 2) Set the exposure level with 10 digit key pad. Press P to store the set value. (Default: 50, set range: 0 - 99) 3) Press START, and copying is started and the set value is stored. (Display value 1) 4) Select a paper feed tray. (Set value 2) 5) Select an exposure level. (Set value 3)



<List of set values 1>

0	Paper feed tray selection
1	Print start (Default)
2	Exposure level selection
3	Auto
4	Bright
5	Dark
6	Auto (Half tone)
7	Bright (half tone)
8	Dark (Half tone)

<List of display values 1>

Normal display		NOW COPYING
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	Paper empty	PAPER EMPTY.

<List of set values 2>

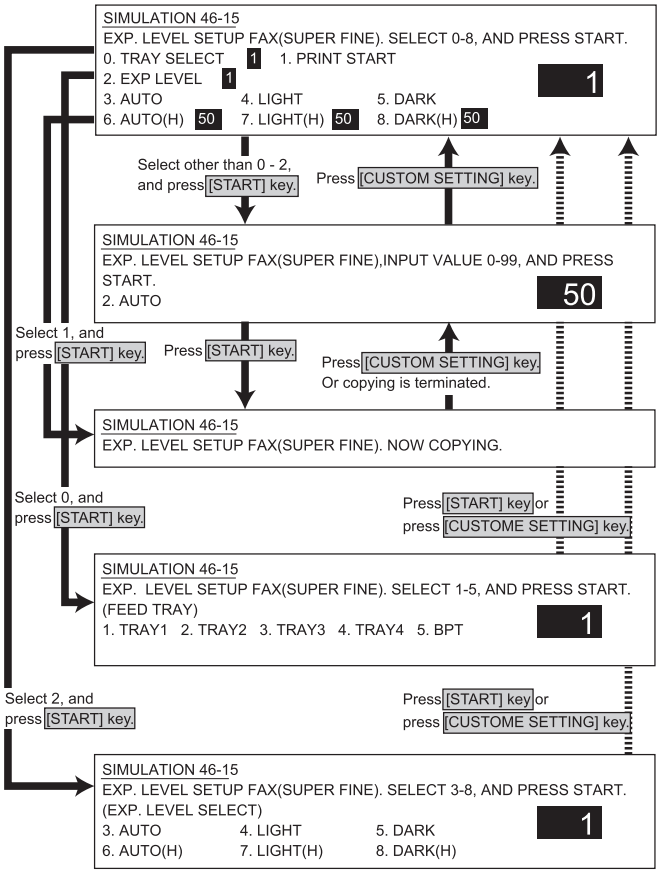
1	TRAY1
2	TRAY2
3	TRAY3
4	TRAY4
5	Manual feed

<List of set values 3>

3	Auto
4	Bright
5	Dark
6	Auto (Half tone)
7	Bright (half tone)
8	Dark (Half tone)

46-15

Purpose	Adjustment
Function (Content)	Used to adjust the reading density in the FAX mode (fine mode). (Only when FAX is installed.)
Section	
Item	Picture quality
Operation/Procedure	The exposure mode to be set is selected. (FAX fine mode individual adjustment) 1) The current set value is highlighted on the right side of each item. In this screen, be sure to select "1: COPY START." (Set value: 1) 2) Set the exposure level with 10 digit key pad. Press P to store the set value. (Default: 50, set range: 0 - 99) 3) Press START, and copying is started and the set value is stored. (Display value 1) 4) Select a paper feed tray. (Set value 2) 5) Select an exposure level. (Set value 3)



<List of set values 1>

0	Paper feed tray selection
1	Print start (Default)
2	Exposure level selection
3	Auto
4	Bright
5	Dark
6	Auto (Half tone)
7	Bright (half tone)
8	Dark (Half tone)

<List of display values 1>

Normal display		NOW COPYING
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	Paper empty	PAPER EMPTY.

<List of set values 2>

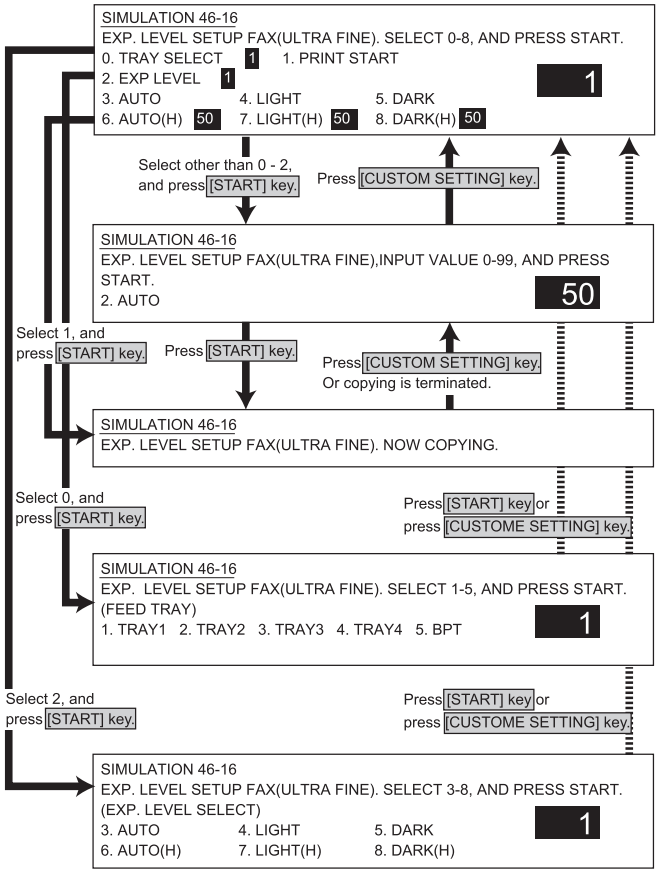
1	TRAY1
2	TRAY2
3	TRAY3
4	TRAY4
5	Manual feed

<List of set values 3>

3	Auto
4	Bright
5	Dark
6	Auto (Half tone)
7	Bright (half tone)
8	Dark (Half tone)

46-16

Purpose	Adjustment
Function (Content)	Used to adjust the reading density in the FAX mode (super fine mode). (Only when FAX is installed.)
Section	
Item	Picture quality
Operation/Procedure	The exposure mode to be set is selected. (FAX super fine mode individual adjustment) 1) The current set value is highlighted on the right side of each item. In this screen, be sure to select "1: COPY START." (Set value: 1) 2) Set the exposure level with 10 digit key pad. Press P to store the set value. (Default: 50, set range: 0 - 99) 3) Press START, and copying is started and the set value is stored. (Display value 1) 4) Select a paper feed tray. (Set value 2) 5) Select an exposure level. (Set value 3)



<List of set values 1>

0	Paper feed tray selection
1	Print start (Default)
2	Exposure level selection
3	Auto
4	Bright
5	Dark
6	Auto (Half tone)
7	Bright (half tone)
8	Dark (Half tone)

<List of display values 1>

Normal display		NOW COPYING
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	Paper empty	PAPER EMPTY.

<List of set values 2>

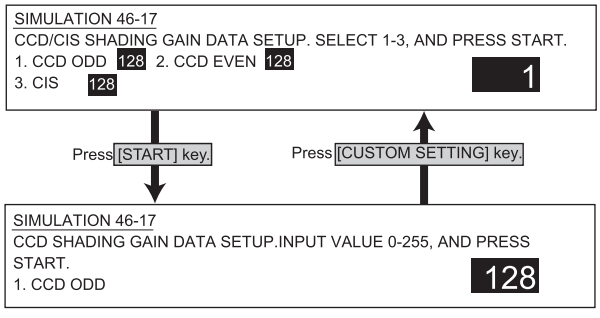
1	TRAY1
2	TRAY2
3	TRAY3
4	TRAY4
5	Manual feed

<List of set values 3>

3	Auto
4	Bright
5	Dark
6	Auto (Half tone)
7	Bright (half tone)
8	Dark (Half tone)

46-17

Purpose	Adjustment, setup, operation data output, check (display)
Function (Content)	Used to adjust the CCD/CIS shading reference value.
Section	Scanner (reading) / DSPF (reading)
Item	Operation
Operation/Procedure	1) Change the shading reference value of CCD/CIS. The current set value is displayed don the right of each item. (Set value) 2) Set the exposure level with 10 digit key pad. Press START to store the set value. (Default: 128, set range: 0 - 255)

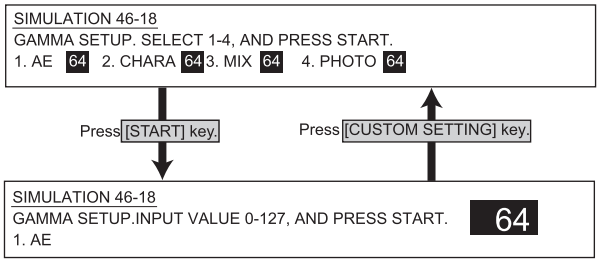


<Set values>

1	CCD CDD
2	CCD EVEN
3	CS

46-18

Purpose	Adjustment
Function (Content)	Used to adjust gamma (density gradient) in each copy mode.
Section	
Item	Picture quality
Operation/Procedure	1) Change the gamma value. The current set value is displayed on the right of each item. (Set value) 2) Set the gamma with 10 digit key pad. Press START to store the set value. (Default 64, set range 0 - 127) 3) The greater the value is, the greater the gradient is.

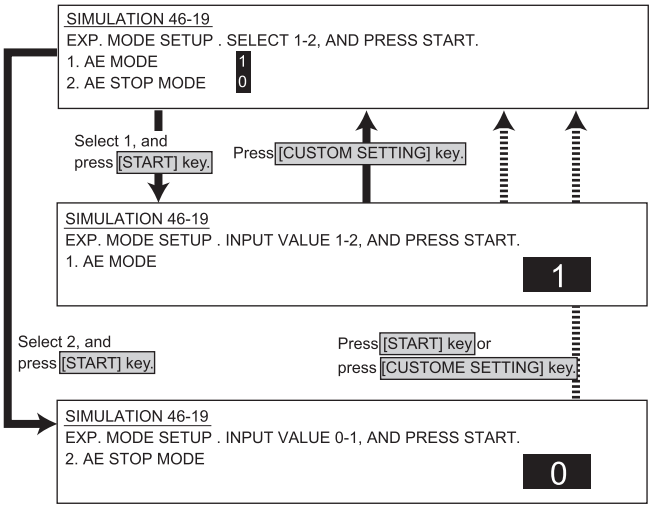


<Set values>

1	AE mode
2	Text mode
3	Text/Photo mode
4	Photo mode

46-19

Purpose	Adjustment
Function (Content)	Used to adjust gamma (density gradient) in the auto copy mode and to set the density detection area, and to set the image process mode.
Section	
Item	Picture quality
Operation/Procedure	1) Change the control method of exposure mode. The current set value is displayed on the right of each item. (Set value 1) 2) Set with 10 digit key pad. (AE mode) 3) Set with 10 digit key pad. (AE fixed mode)



<Set value 1>

1	AE mode
2	AE fixed mode

<AE mode>

1	Picture priority mode
2	Toner consumption priority mode

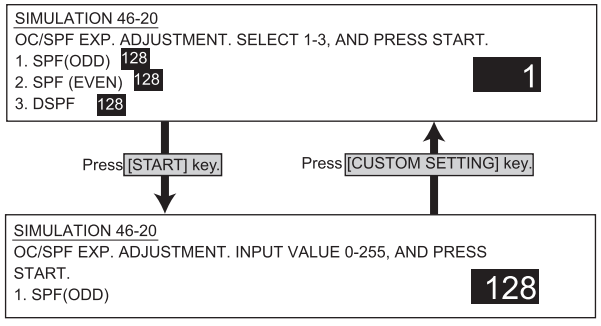
<AE fixed mode>

0	AE fixed function : OFF
1	AE fixed function : ON

Default : 0

46-20

Purpose	Adjustment
Function (Content)	Used to adjust the copy density correction in the SPF/DSPF copy mode for the document table copy mode. This adjustment is made so that the copy density becomes the same as that in the document table copy mode.
Section	
Item	Picture quality
Operation/Procedure	1) The exposure correction of OC and SPF is performed. The current set value is displayed on the right of each item. (Set value) 2) Set with 10 digit key pad. (Default 128, set range 0 -255) 3) Add "Set value - 128" to the shading adjustment value (SIM 46-17).



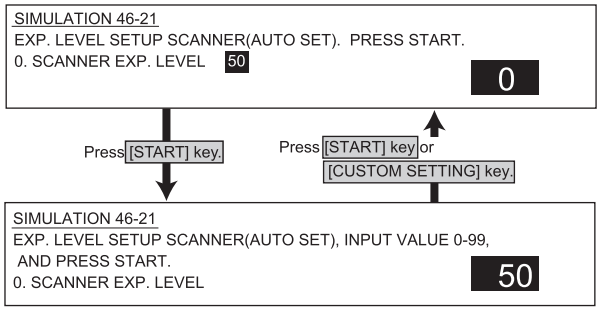
<Set value>

1	SPF (surface CCD odd pixel)
2	SPF (surface CCD even pixel)
3	DSPF (back surface)

46-21

Purpose	Adjustment, setup, operation data output, check (display, print)
Function (Content)	Used to adjust the scanner exposure level. (1 mode auto adjustment)
Section	Scanner (reading)
Item	Picture quality
Operation/Procedure	1) Select the exposure mode to be set. (Scanner auto adjustment) The current set value is highlighted on the right of each item. (Set value) 2) Set the exposure level with 10 digit key pad. Press P to store the set value. (Default 50, set range 0 - 99)

* The set value is changed only, and printing is not performed.



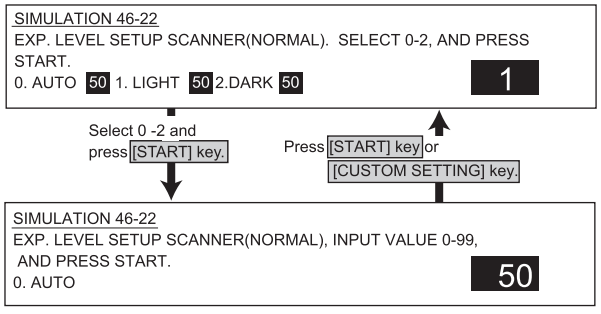
<Set value>

0	Scanner mode exposure setup

46-22

Purpose	Adjustment, setup, operation data output, check (display, print)
Function (Content)	Used to adjust the scanner exposure level and to make individual setup. (Normal mode)
Section	Scanner (reading)
Item	Picture quality
Operation/Procedure	1) Select the exposure mode to be set. (Scanner normal text mode individual adjustment) The current set value is highlighted on the right of each item. (Set value) 2) Set the exposure level with 10 digit key pad. Press P to store the set value. (Default 50, set range 0 - 99)

* The set value is changed only, and printing is not performed.



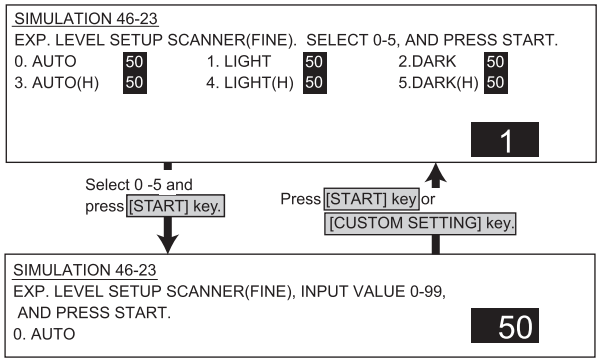
<Set value>

0	Auto
1	Bright
2	Dark

46-23

Purpose	Adjustment, setup, operation data output, check (display, print)
Function (Content)	Used to adjust the scanner exposure level and to make individual setup. (Small text mode)
Section	Scanner (reading)
Item	Picture quality
Operation/Procedure	1) Select the exposure mode to be set. (Scanner small text mode individual adjustment) The current set value is highlighted on the right of each item. (Set value) 2) Set the exposure level with 10 digit key pad. Press P to store the set value. (Default 50, set range 0 - 99)

* The set value is changed only, and printing is not performed.



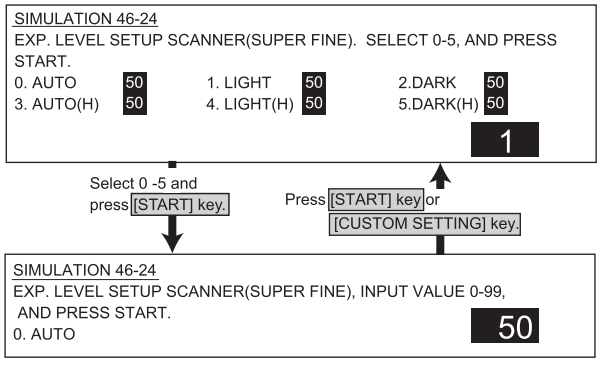
<Set value>

0	Auto	3	Auto (half tone)
1	Bright	4	Bright (Half tone)
2	Dark	5	Dark (Half tone)

46-24

Purpose	Adjustment, setup, operation data output, check (display, print)
Function (Content)	Used to adjust the scanner exposure level and to make individual setup. (Fine mode)
Section	Scanner (reading)
Item	Picture quality
Operation/Procedure	1) Select the exposure mode to be set. (Scanner fine mode individual adjustment) The current set value is highlighted on the right of each item. (Set value) 2) Set the exposure level with 10 digit key pad. Press P to store the set value. (Default 50, set range 0 - 99)

* The set value is changed only, and printing is not performed.



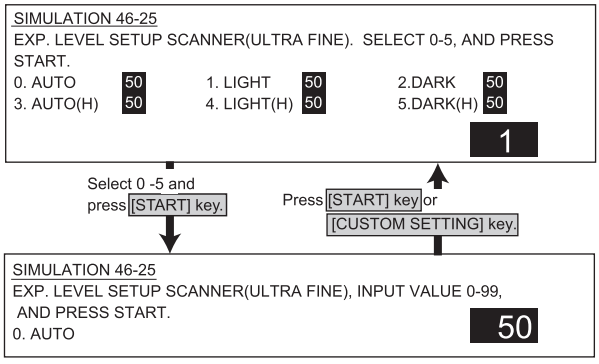
<Set value>

0	Auto	3	Auto (half tone)
1	Bright	4	Bright (Half tone)
2	Dark	5	Dark (Half tone)

46-25

Purpose	Adjustment, setup, operation data output, check (display, print)
Function (Content)	Used to adjust the scanner exposure level and to make individual setup. (Super fine mode)
Section	Scanner (reading)
Item	Picture quality
Operation/Procedure	1) Select the exposure mode to be set. (Scanner super fine mode individual adjustment) The current set value is highlighted on the right of each item. (Set value) 2) Set the exposure level with 10 digit key pad. Press P to store the set value. (Default 50, set range 0 - 99)

* The set value is changed only, and printing is not performed.



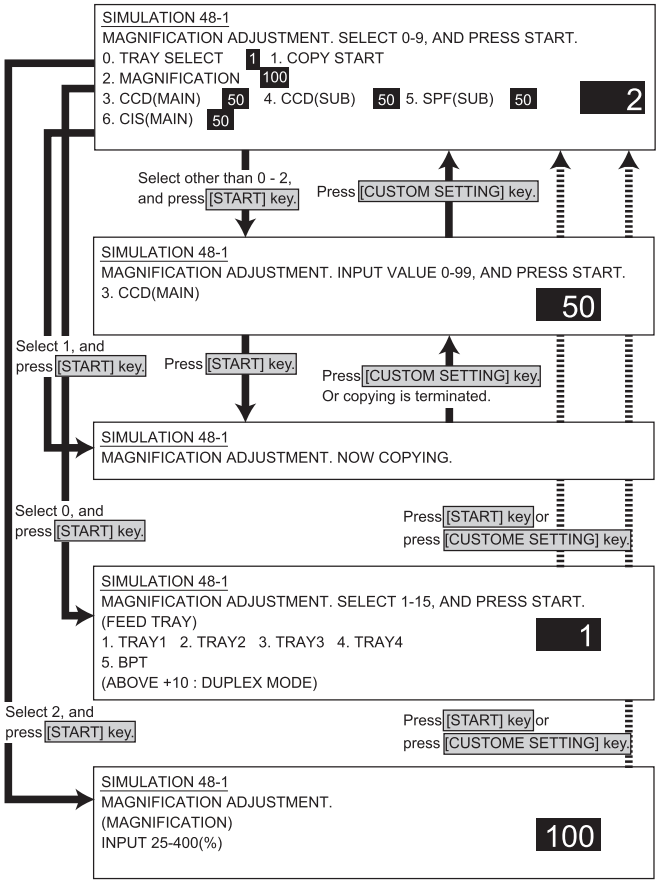
<Set value>

0	Auto
1	Bright
2	Dark
3	Auto (half tone)
4	Bright (Half tone)
5	Dark (Half tone)

Main code 48

48-1

Purpose	Adjustment
Function (Content)	Used to adjust the copy magnification ratio (main scan direction, sub scan direction).
Section	Scanner (reading)
Item	Picture quality
Operation/Procedure	Perform the magnification ratio correction. 1) The current set value is highlighted on the right of each item. In this screen, be sure to select "1: COPY START." (Set value: 1) 2) Enter the correction value with 10 digit key pad. Press P to store the set value. (Default 50, set range 0 - 99) 3) The greater the set value is, the greater the correction is. 1 step : 0.1% adjustment 4) Press START to start copying and store the set value. (Display value: 1) 5) Select the paper feed tray. (Set value : 2) 6) Set the scan magnification ratio. (Set value: 3)



<List of set values 1>

0	Paper feed tray selection
1	Copy start (Default)
2	Print magnification ratio
3	Main scan magnification ratio (CCD)
4	Sub scan magnification ratio (CCD)
5	SPF surface magnification ratio (sub scan)
6	SPF back magnification ratio (CIS main scan)

<List of display values 1>

Normal display		NOW COPYING
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	Paper empty	PAPER EMPTY.

<List of set values 2>

1	TRAY1
2	TRAY2
3	TRAY3
4	TRAY4
5	Manual feed

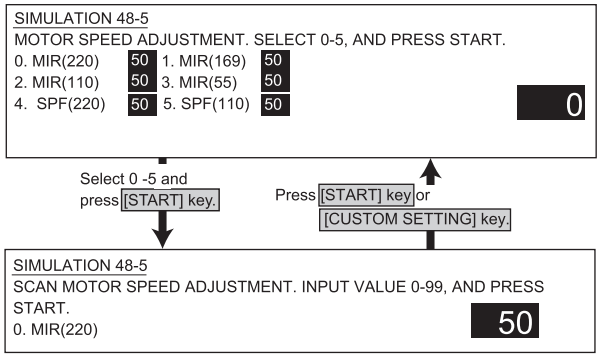
* Above + 10 becomes the duplex mode (DD), making duplex copy.

<List of set values 3>

Set range	25 - 400%

48-5

Purpose	Adjustment
Function (Content)	Used to adjust the exposure motor speed.
Section	Scanner (reading)
Item	Picture quality
Operation/Procedure	1) The current set value is displayed on the right of each item. 2) Set the exposure level with 10 digit key pad. 3) Press START to store the set value. (Default 50, set range 0 - 99)



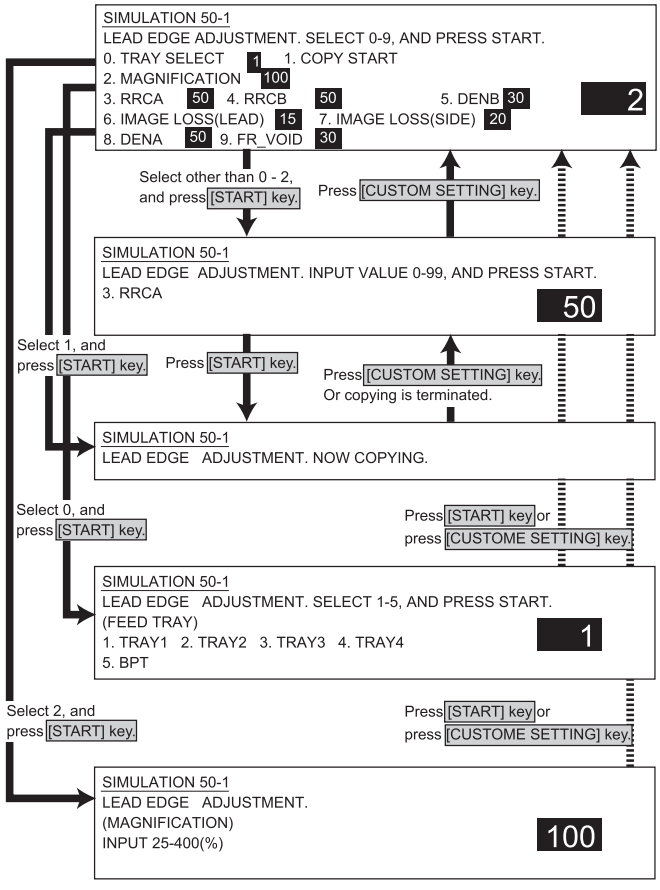
<List of display values>

0	Mirror motor (220mm/sec)
1	Mirror motor (168.7mm)
2	Mirror motor (110mm/sec)
3	Mirror motor (55mm/sec)
4	SPF motor (220mm/sec)
5	SPF motor (110mm/sec)

Main code 50

50-1

Purpose	Adjustment
Function (Content)	Used to adjust the copy image position and the void area (image loss) on print paper in the copy mode. (A similar adjustment can be made with SIM 50-2 (simple method).)
Section	
Item	Picture quality
Operation/Procedure	Perform the copy lead edge adjustment. 1) The current set value is highlighted on the right of each item. In this screen, be sure to select "1: COPY START." (Set value: 1) 2) Enter the correction value with 10 digit key pad. Press P to store the set value. 3) Press START to start copying and store the set value. (Display value: 1) 4) Set the scan magnification ratio. (Set value: 3)



<List of set values 1>

			Default	Set range
0	TRAY SELECT	Paper feed tray selection	-	1 ~ 5
1	COPY START	Copy start (Initial value)	-	-
2	MAGNIFICATION	Print magnification ratio setup	-	25 ~ 400
3	RRCA	Document scan start position adjustment	50	0 ~ 99
4	RRCB	Resist roller clutch ON timing adjustment value	50	0 ~ 99
5	DENB	Rear edge void quantity adjustment value	35	0 ~ 99
6	IMAGE LOSS(LEAD)	Lead edge image loss quantity set value	15	0 ~ 99
7	IMAGE LOSS(SIDE)	Side image loss quantity set value	20	0 ~ 99
8	DENA	Lead edge void quantity set value	35	0 ~ 99
9	FR_VOIDFR	Void quantity adjustment value	35	0 ~ 99

<List of display values 1>

Normal display		NOW COPYING
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	Paper empty	PAPER EMPTY.

<List of set values 2>

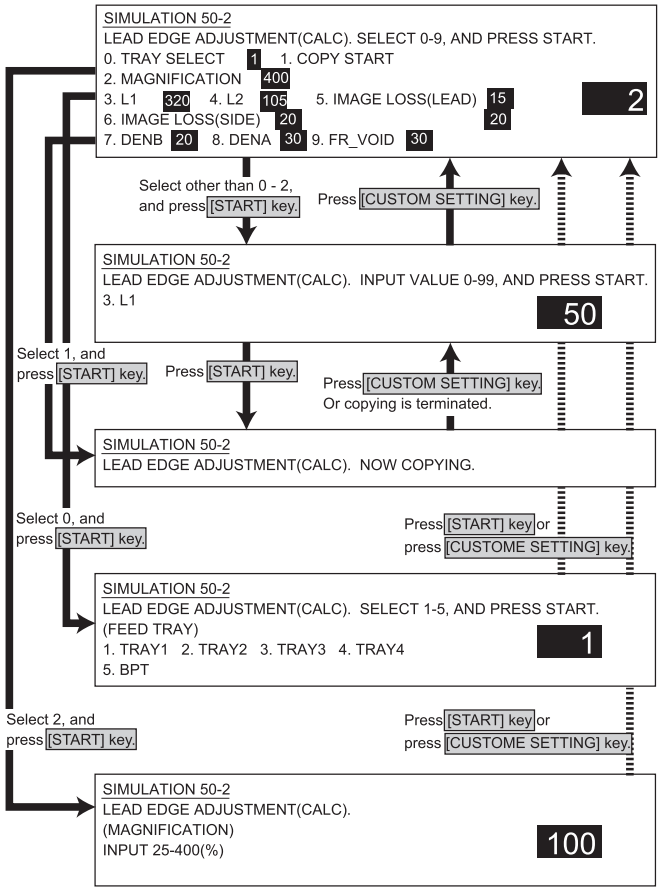
1	TRAY1
2	TRAY2
3	TRAY3
4	TRAY4
5	Manual feed

<List of set values 3>

Set range	25 - 400%

50-2

Purpose	Adjustment
Function (Content)	Used to adjust the copy image position and the void area (image loss) on print paper in the copy mode. (This simulation is a simpler procedure compared to the similar adjustment using SIM 50-1.)
Section	
Item	Picture quality
Operation/Procedure	Perform the copy lead edge adjustment. 1) The current set value is highlighted on the right of each item. In this screen, be sure to select "1: COPY START." (Set value: 1) 2) Enter the correction value with 10 digit key pad. Press P to store the set value. 3) Press START to start copying and store the set value. (Display value: 1) 4) Set the scan magnification ratio. (Set value: 3)



<List of set values 1>

			Default	Set range
0	TRAY SELECT	Paper feed tray selection	-	1 ~ 5
1	COPY START	Copy start (Initial value)	-	
2	MAGNIFICATION	Print magnification ratio setup	-	25 ~ 400
3	L1	Document scan start position adjustment	-	0 ~ 999
4	L2	Resist roller clutch ON timing adjustment value	-	0 ~ 999
5	IMAGE LOSS (LEAD)	Rear edge void quantity adjustment value	15	0 ~ 99
6	IMAGE LOSS (SIDE)	Lead edge image loss quantity set value	20	0 ~ 99
7	DENB	Side image loss quantity set value	35	0 ~ 99
8	DENA	Lead edge void quantity set value	35	0 ~ 99
9	FR_VOIDFR	Void quantity adjustment value	35	0 ~ 99

<List of display values 1>

Normal display		NOW COPYING
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	Paper empty	PAPER EMPTY.

<List of set values 2>

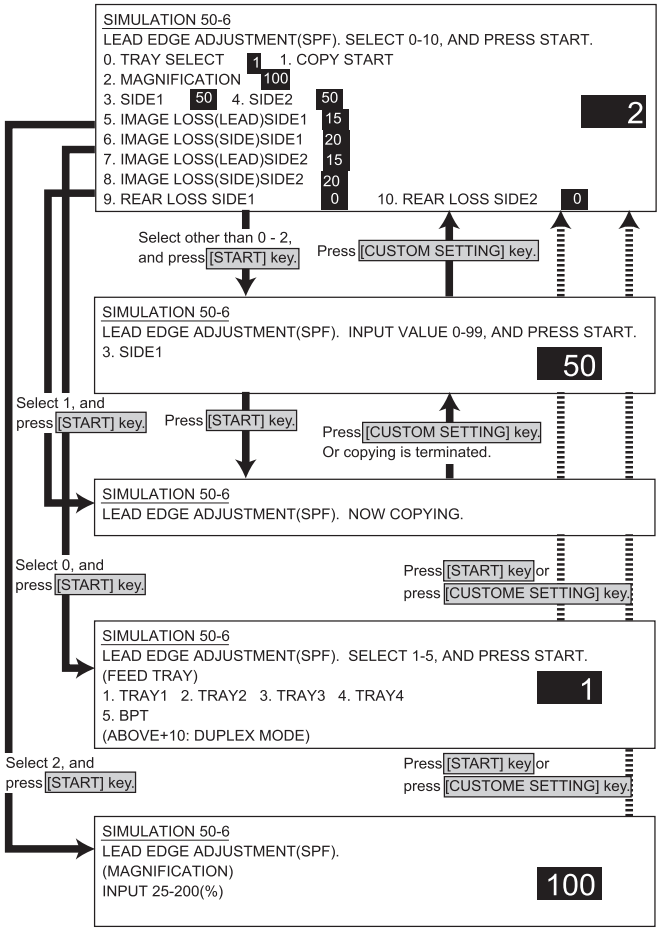
1	TRAY1
2	TRAY2
3	TRAY3
4	TRAY4
5	Manual feed

<List of set values 3>

Set range	25 - 400%

50-6

Purpose	Adjustment
Function (Content)	Copy lead edge adjustment (DSPF)
Section	
Item	Picture quality
Operation/Procedure	Perform the SPF copy lead edge adjustment. 1) The current set value is highlighted on the right of each item. In this screen, be sure to select "1: COPY START." (Set value: 1) 2) Enter the correction value with 10 digit key pad. Press P to store the set value. 3) Press START to start copying and store the set value. (Display value: 1) 4) Select a paper feed tray. (Set value 2) 5) Set the scan magnification ratio. (Set value: 3)



<List of set values 1>

			Defauult	Set range
0	TRAY SELECT	Paper feed tray selection	-	1 ~ 5
1	COPY START	Copy start (Initial value)	-	-
2	MAGNIFICATION	Print magnification ratio setup (25 - 400%)	-	25 ~ 200
3	SIDE 1	Document front scan start position adjustment	50	0 ~ 99
4	SIDE 2	Document back scan start position adjustment	50	0 ~ 99
5	IMAGE LOSS (LEAD) SIDE 1	Front lead edge image loss set value	15	0 ~ 99
6	IMAGE LOSS (SIDE) SIDE 1	Front side image loss set value	20	0 ~ 99
7	IMAGE LOSS (LEAD) SIDE 2	Back lead edge image loss set value	15	0 ~ 99
8	IMAGE LOSS (SIDE) SIDE 2	Back side image loss set value	20	0 ~ 99
9	REAR LOSS SIDE1	Front rear edge image loss set value	0	0 ~ 20
10	REAR LOSS SIDE2	Back rear edge image loss set value	0	0 ~ 20

<List of display values 1>

Normal display		NOW COPYING
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	Paper empty	PAPER EMPTY.

<List of set values 2>

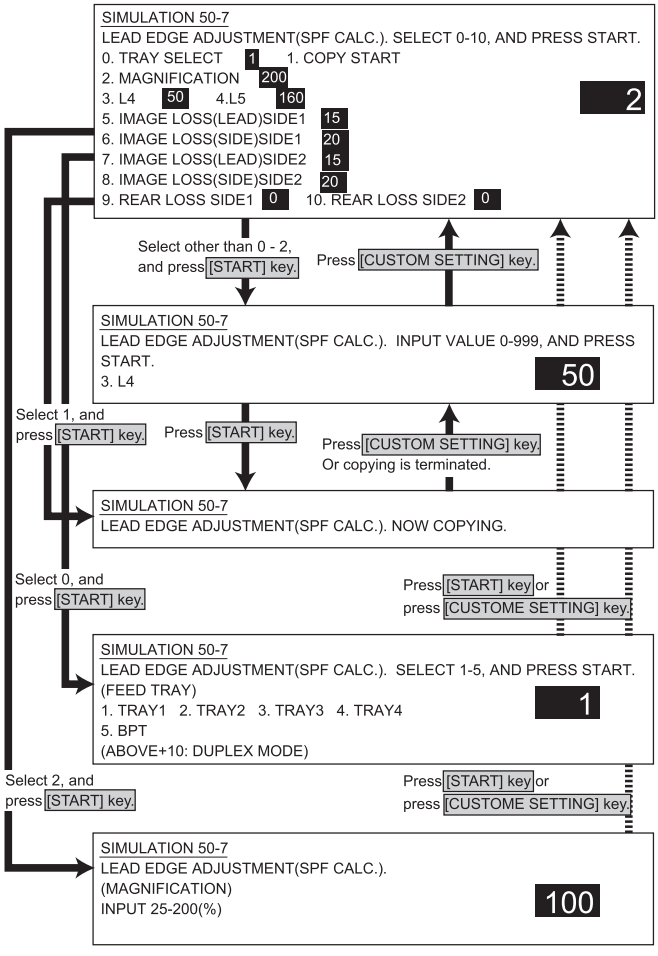
1	TRAY1	11	TRAY1 with Duplex
2	TRAY2	12	TRAY2 with Duplex
3	TRAY3	13	TRAY3 with Duplex
4	TRAY4	14	TRAY4 with Duplex
5	Manual feed	15	Manual feed with Duplex

<List of set values 3>

Set range	25 - 200%

50-7

Purpose	Adjustment
Function (Content)	Copy lead edge adjustment (Simple method) (DSPF)
Section	
Item	Picture quality
Operation/Procedure	Perform the SPF copy lead edge adjustment. (Simple method) 1) The current set value is highlighted on the right of each item. In this screen, be sure to select "1: COPY START." (Set value: 1) 2) Enter the correction value with 10 digit key pad. Press P to store the set value. 3) Press START to start copying and store the set value. (Display value: 1) 4) Select a paper feed tray. (Set value 2) 5) Set the scan magnification ratio. (Set value: 3)



<List of set values 1>

			Defauult	Set range
0	TRAY SELECT	Paper feed tray selection	-	1 ~ 5
1	COPY START	Copy start (Initial value)	-	-
2	MAGNIFICATION	Print magnification ratio setup (25 - 400%)	200	25 ~ 200
3	L4	Distance from the front lead edge of copy image to the scale of 10mm. (SPF: 200%)	-	0 ~ 999
4	L5	Distance from the back lead edge of copy image to the scale of 10mm. (SPF: 200%)	-	0 ~ 999
5	IMAGE LOSS (LEAD) SIDE 1	Front lead edge image loss set value	15	0 ~ 99
6	IMAGE LOSS (SIDE) SIDE 1	Front side image loss set value	20	0 ~ 99
7	IMAGE LOSS (LEAD) SIDE 2	Back lead edge image loss set value	15	0 ~ 99
8	IMAGE LOSS (SIDE) SIDE 2	Back side image loss set value	20	0 ~ 99
9	REAR LOSS SIDE1	Front rear edge image loss set value	0	0 ~ 20
10	REAR LOSS SIDE2	Back rear edge image loss set value	0	0 ~ 20

<List of display values 1>

Normal display		NOW COPYING
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	Paper empty	PAPER EMPTY.

<List of set values 2>

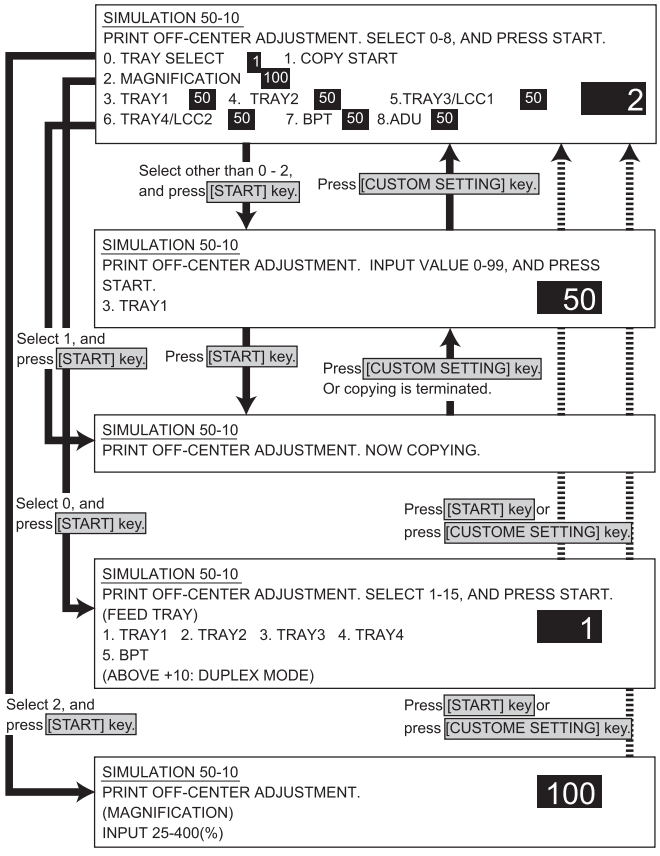
1	TRAY1	11	TRAY1 with Duplex
2	TRAY2	12	TRAY2 with Duplex
3	TRAY3	13	TRAY3 with Duplex
4	TRAY4	14	TRAY4 with Duplex
5	Manual feed	15	Manual feed with Duplex

<List of set values 3>

Set range	25 - 200%

50-10

Purpose	Adjustment
Function (Content)	Used to adjust the copy image center position. (Adjusted for each paper feed section.)
Section	Image process (ICU)
Item	Picture quality
Operation/Procedure	Perform the print off-center adjustment. 1) The current set value is highlighted on the right of each item. In this screen, be sure to select "1: COPY START." (Set value: 1) 2) Enter the correction value with 10 digit key pad. Press P to store the set value. 3) When the value of UNIT:0.1mm/STEP is increased, the image is shifted toward the rear side. 4) Press START to start copying and store the set value. (Display value: 1) 5) Select a paper feed tray. (Set value 2) 6) Set the scan magnification ratio. (Set value: 3)



<List of set values 1>

			Default	Set range
0	TRAY SELECT	Paper feed tray selection	-	1 ~ 5
1	COPY START	Copy start (Initial value)	-	
2	MAGNIFICATION	Print magnification ratio setup (25 - 400%)	100	25 ~ 400
3	TRAY 1	Tray 1 adjustment	50	0 ~ 99
4	TRAY2	Tray 2 adjustment	50	0 ~ 99
5	TRAY3	Tray 3 adjustment	50	0 ~ 99
6	TRAY4	Tray 4 adjustment	50	0 ~ 99
7	BPT	Manual feed tray adjustment	50	0 ~ 99
8	ADU	Adjustment in refeed from ADU	50	0 ~ 99

<List of display values 1>

Normal display		NOW COPYING
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	Paper empty	PAPER EMPTY.

<List of set values 2>

1	TRAY1
2	TRAY2
3	TRAY3/LCC1
4	TRAY4/LCC2
5	Manual feed

* The selected tray is registered as an initial set value in the initial screen.
At the above value + 10, the SPF enters the duplex mode (DD), making duplex copies.

<List of set values 3>

Set range	25 - 400%

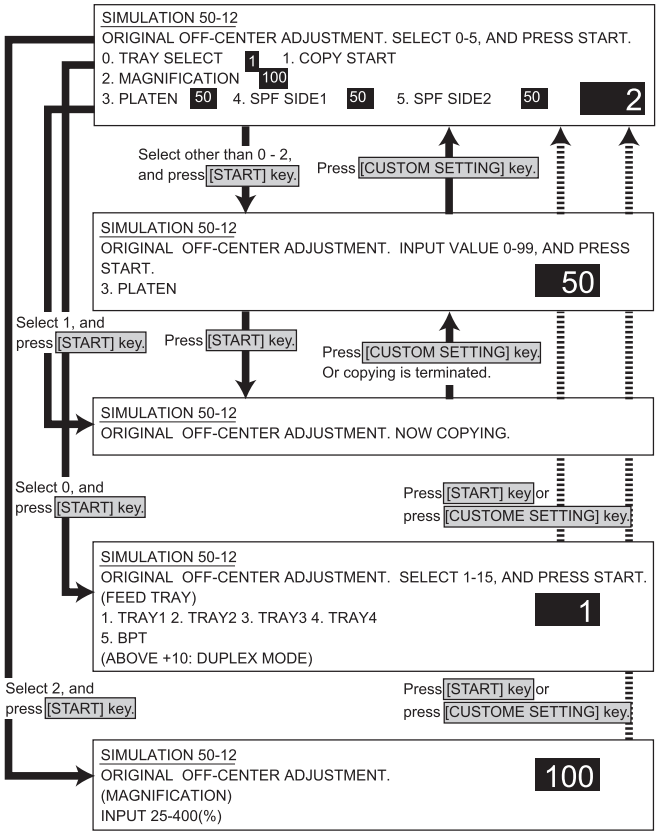
(Adjustment procedure)

1) Select a paper feed tray to be used in the adjustment, set the magnification ratio, and enter the adjustment item.
2) After entering the adjustment value, press START, and printing is started.
3) Check the off-center (distance from the paper edge) of the copy. Repeat procedure 2) until a satisfactory result is obtained.

Note: When adjusting the off-center of LCC1, set only the left tray of LCC. When adjusting the off-center of LCC2, set only the right tray of LCC. This is because there is no distinction between right and left in selection of a tray.

50-12

Purpose	Adjustment
Function (Content)	Used to adjust the reading image center position. (Adjusted for each document mode.)
Section	Image process (ICU)
Item	Picture quality
Operation/Procedure	Perform the document print off-center adjustment. 1) The current set value is highlighted on the right of each item. In this screen, be sure to select "1: COPY START." (Set value: 1) 2) Enter the correction value with 10 digit key pad. Press P to store the set value. 3) When the value of UNIT:0.1mm/STEP is increased, the image is shifted toward the front side. 4) Press START to start copying and store the set value. (Display value: 1) 5) Select a paper feed tray. (Set value 2) 6) Set the scan magnification ratio. (Set value: 3)



<List of set values 1>

			Default	Set range
0	TRAY SELECT	Paper feed tray selection	-	1 ~ 5
1	COPY START	Copy start (Initial value)	-	
2	MAGNIFICATION	Print magnification ratio setup (25 - 400%)	100	25 ~ 400
3	PLATEN	OC mode adjustment	50	0 ~ 99
4	SPF SIDE1 SPF	Front surface adjustment	50	0 ~ 99
5	SPF SIDE2 SPF	Back surface adjustment	50	0 ~ 99

<List of display values 1>

Normal display		NOW COPYING
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	Paper empty	PAPER EMPTY.

<List of set values 2>

1	TRAY1
2	TRAY2
3	TRAY3
4	TRAY4
5	Manual feed

* The selected tray is registered as an initial set value in the initial screen.
At the above value + 10, the SPF enters the duplex mode (DD), making duplex copies.

<List of set values 3>

Set range	25 - 400%

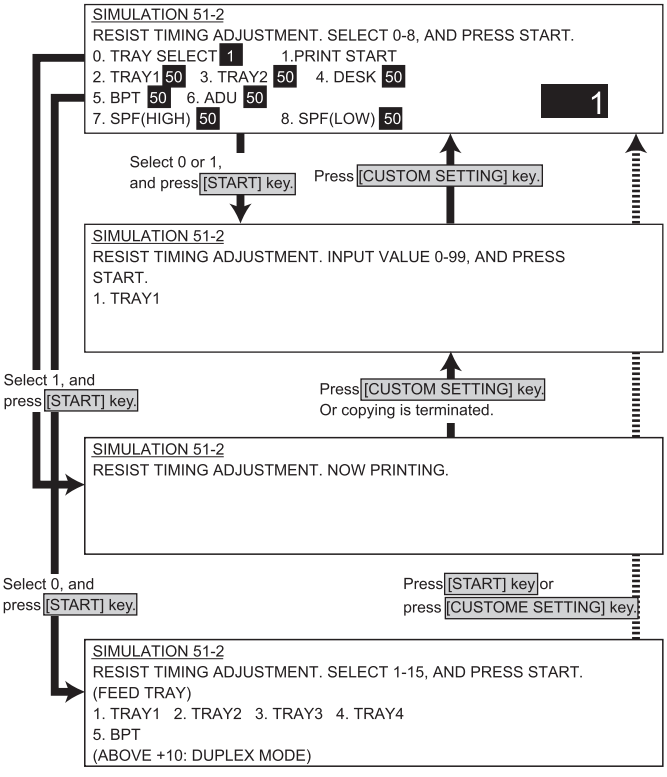
(Adjustment procedure)

1) Select a paper feed tray to be used in the adjustment, set the magnification ratio, and enter the adjustment item.
2) After entering the adjustment value, press START, and printing is started.
3) Check the off-center (distance from the paper edge) of the copy. Repeat procedure 2) until a satisfactory result is obtained.

Main code 51

51-2

Purpose	Adjustment
Function (Content)	Used to adjust the contact pressure of paper on the resist roller in each section (machine paper feed, duplex paper feed, SPF paper feed). (This adjustment is required when the print image position varies or when paper jam occurs frequently.)
Section	Paper transport (paper exit, switchback, transport)
Item	Operation
Operation/Procedure	Perform the resist quantity adjustment. 1) The current set value is highlighted on the right of each item. In this screen, be sure to select "1: COPY START." (Set value: 1) 2) Enter the correction value with 10 digit key pad. Press P to store the set value. 3) When the value is increased by 1, the resist quantity is changed by 1ms. 4) Press START to start copying and store the set value. (Display value: 1) 5) Select a paper feed tray. (Set value 2)



<List of set values 1>

			45PPM	35PPM
0	TRAY SELECT	Paper feed tray selection (1 - 5)		
1	PRINT START	Copy start (Initial value)		
2	TRAY1	Tray 1 resist adjustment value	60	65
3	TRAY2	Tray 2 resist adjustment value	50	55
4	DESK	Desk resist adjustment value	50	55
5	BPT	Manual tray resist adjustment value	55	60
6	ADU	ADU resist adjustment value	50	55
7	SPF(HIGH)	SPF resist adjustment value (High speed)	50	50
8	SPF(LOW)	SPF resist adjustment value (Low speed)	50	50

<List of display values 1>

Normal display		NOW COPYING
ERROR display	Door open	DOOR OPEN.
	Jam	JAM
	Paper empty	PAPER EMPTY.

<List of set values 2>

1	TRAY1	11	TRAY1 with Duplex
2	TRAY2	12	TRAY2 with Duplex
3	TRAY3	13	TRAY3 with Duplex
4	TRAY4	14	TRAY4 with Duplex
5	Manual feed	15	Manual feed with Duplex

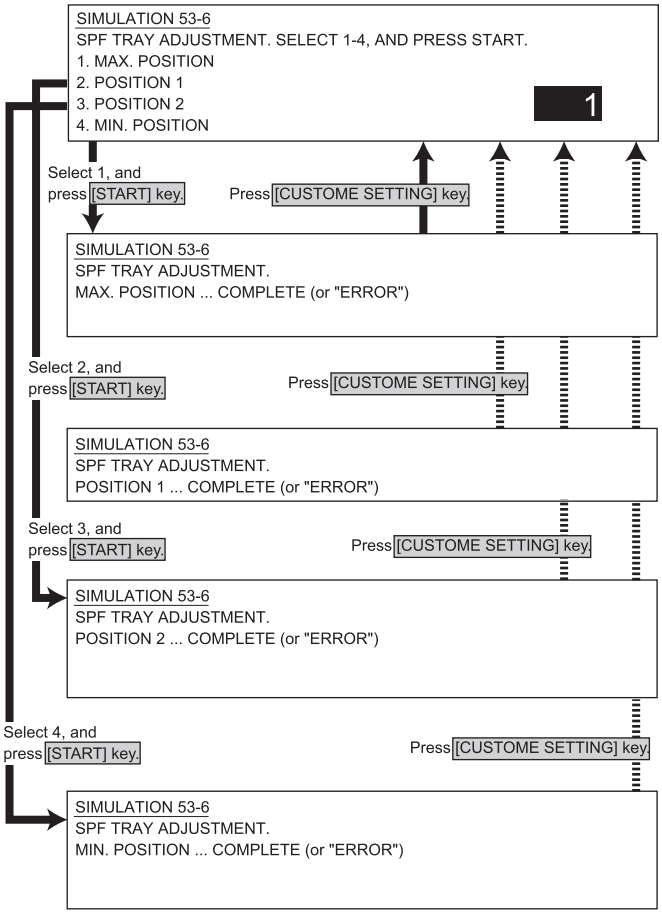
* The selected tray is registered as an initial set value in the initial screen.

Main code 53

53-6

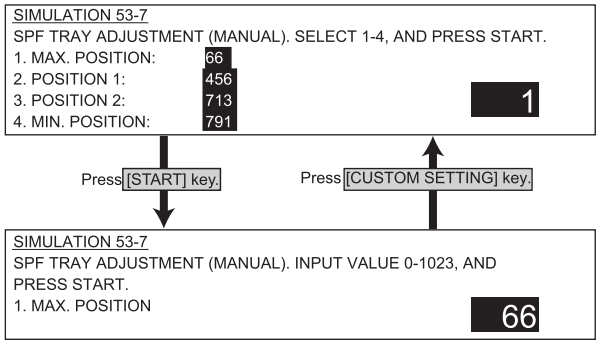
Purpose	Adjustment
Function (Content)	Used to adjust the DSPF width detection level.
Section	SPF/DSPF
Item	Operation
Operation/Procedure	Adjust the machine SPF document tray size adjustment. 1) Extend the guide to MAX. position, select 1, and press START. When COMPLETE is displayed, press CUSTOM SETTING to return to the initial screen. 2) Move the guide to A4R position, select 2, and press START. When COMPLETE is displayed, press CUSTOM SETTING to return to the initial screen. 3) Move the guide to A5R position, select 3, and press START. When COMPLETE is displayed, press CUSTOM SETTING to return to the initial screen. 4) Move the guide to MIN. position, select 4, and press START. When COMPLETE is displayed, the adjustment is completed. If ERROR is displayed in procedures 1) - 4), repeat the adjustment again.

* This adjustment is performed only when the width detection volume is replaced.
Normally use SIM 53-7 for input.



53-7

Purpose	Adjustment, setup, operation data output, check (display, print)
Function (Content)	Used to enter the adjustment value of SPF width detection.
Section	DSPF
Item	Operation
Operation/Procedure	Enter the adjustment value (indicated on the back of SPF) of SPF document tray size.



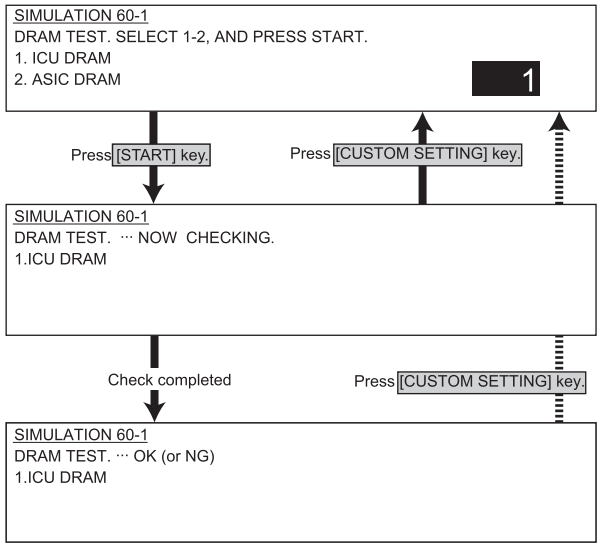
<List of set values>

		Initial value	Range
1	Max. width	66	0 - 1023
2	Adjustment point 1	456	
3	Adjustment point 2	713	
4	Min. width	791	

Main code 60

60-1

Purpose	Operation test, check
Function (Content)	Used to check the ICU (DRAM) operation (read/write). (SIMM MEMORY/ON BOARD MEMORY)
Section	Image process (ICU)
Item	Operation
Operation/Procedure	Perform read/write check of the ICU image DRUM. After starting, NOW CHECKING is displayed during checking. When the read/write check is normally completed, OK is displayed. If an error occurs, NG is displayed.



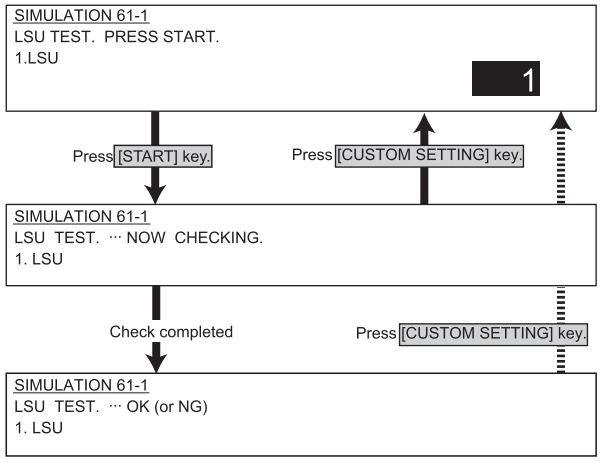
<List of set values>

1	ICU DRAM	Image memory for ERDH
2	ASIC DRAM	Image memory for ASIC

Main code 61

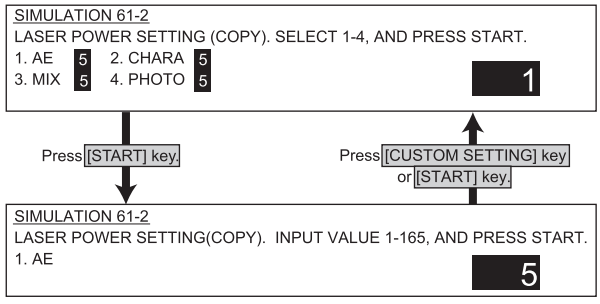
61-1

Purpose	Operation test, check
Function (Content)	Used to check the operations of the laser scan unit.
Section	PCU
Item	Operation
Operation/Procedure	Check the LSU. Turn on the LSU and check that the sync signal (HSYNC) is delivered or not. After starting, NOW CHECKING is displayed during checking. When the test is normally completed, OK is displayed. When an error occurs, NG is displayed.



61-2

Purpose	Adjustment
Function (Content)	Used to adjust the laser power (absolute value) in the copy mode.
Section	PCU
Item	Operation
Operation/Procedure	Enter the laser power set value in copying, and press START to store it.

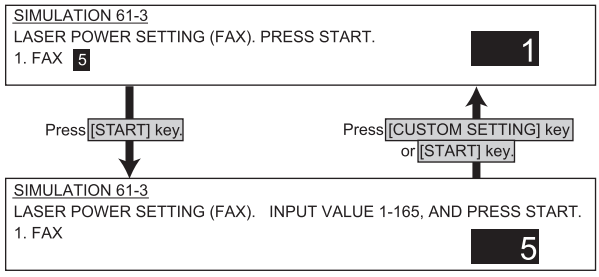


<List of set values>

			Initial value	Set range
1	Auto exposure mode	45PPM	104	104 - 150 (45PPM) 80 - 150 (35PPM)
		35PPM	80	
2	Text mode	45PPM	104	
		35PPM	80	
3	Text/Photo mode	45PPM	104	
		35PPM	80	
4	Photo mode	45PPM	104	
		35PPM	80	

61-3

Purpose	Adjustment
Function (Content)	Used to adjust the scanner (exposure) laser power (absolute value) in the FAX reception mode. (Only when FAX is installed.)
Section	PCU
Item	Operation
Operation/Procedure	Set the laser power in FAX reception. Enter the set value and press Start to store it.

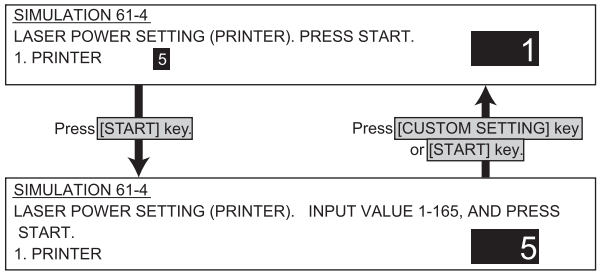


<List of set values>

			Initial value	Set range
1	FAX reception	45PPM	104	104 - 150 (45PPM) 80 - 150 (35PPM)
		35PPM	80	

61-4

Purpose	Adjustment
Function (Content)	Used to adjust the laser power (absolute value) in the printer mode.
Section	PCU
Item	
Operation/Procedure	Set the laser power value in the printer mode. Enter the value and press START to store it.



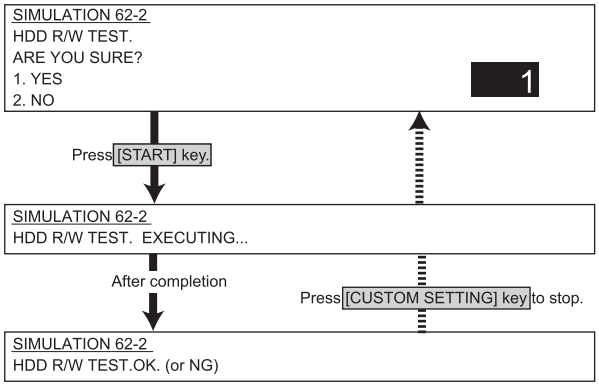
<List of set values>

			Initial value	Set range
1	PRINTER	45PPM	104	104 - 150 (45PPM) 80 - 150 (35PPM)
		35PPM	80	

Main code 62

62-2

Purpose	Operation test, check
Function (Content)	Used to check the hard disk operation (read/write). (Only for the model with the hard disk) (Partial check)
Section	Memory
Item	Operation
Operation/Procedure	Perform the partial check of read/write of the hard disk. EXECUTING is displayed during check. When check is normally completed, OK is displayed. When an error occurs, NG is displayed.

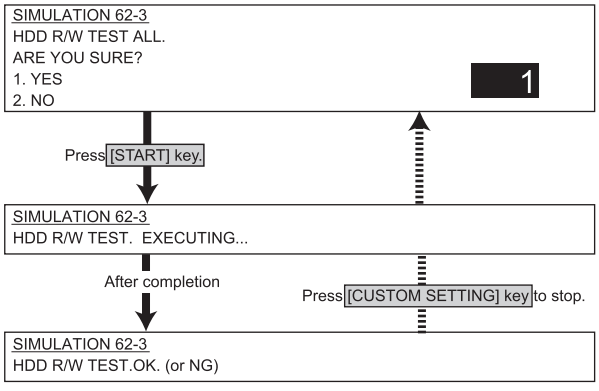


<List of set values>

1	Execution
2	Cancel

62-3

Purpose	Operation test, check
Function (Content)	Used to check the hard disk operation (read/write). (Only for the model with the hard disk) (All area check)
Section	Memory
Item	Operation
Operation/Procedure	Perform the all area check of read/write of the hard disk. EXECUTING is displayed during check. When check is normally completed, OK is displayed. When an error occurs, NG is displayed.



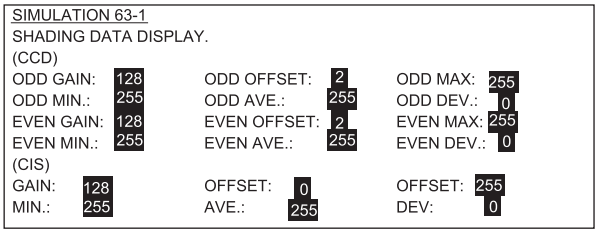
<List of set values>

1	Execution
2	Cancel

Main code 63

63-1

Purpose	Adjustment, setup, operation data output, check (display, print)
Function (Content)	Used to check the shading correction result. (The shading correction result is displayed.)
Section	Scanner (exposure)
Item	Operation
Operation/Procedure	The latest shading data are displayed.

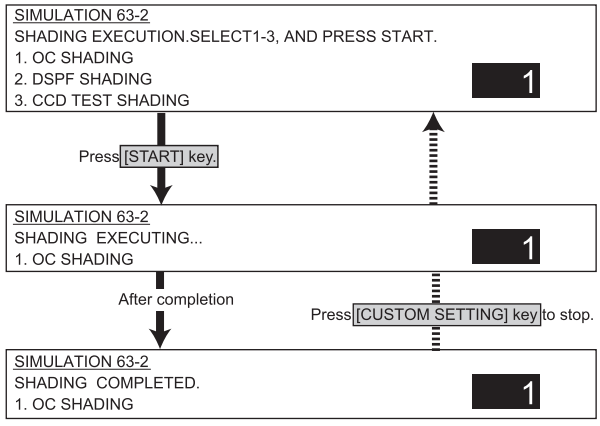


<Set values>

CCD data	
Values	Description
ODD GAIN	Pixel gain adjustment value
EVEN GAIN	Pixel gain adjustment value
ODD MAX	Pixel MAX
ODD MIN	Pixel MIN
ODD AVE	Od pixel average
EVEN MAX	Even pixel MAX
EVEN MIN	Even pixel MIN
EVEN AVE	Even pixel average
ODD OFFSET	Black offset
EVEN OFFSET	Even offset
ODD DEV	Odd standard deviation
EVEN DEV	Even standard deviation
CIS data : Only when DSPF installed	
Values	Description
GAIN	Gain adjustment value
MAX	Pixel MAX
MIN	Pixel MIN
AVE	Pixel average
OFFSET	Black offset
DEV	Standard deviation

63-2

Purpose	Adjustment, setup, operation data output, check (display, print)
Function (Content)	Used to execute shading.
Section	Scanner (exposure)
Item	Operation
Operation/Procedure	Execute shading. During shading, EXECUTING is displayed. When shading is completed, COMPLETED is displayed.

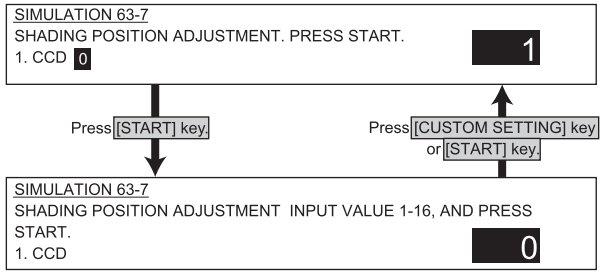


<List of set values>

1	OC analog data correction and shading correction data making
2	DSPF analog level correction and shading correction data making
3	Execution of CCD data taking test

63-7

Purpose	Adjustment
Function (Content)	Used to adjust the white plate scan start position in shading white correction.
Section	Scanner (exposure)
Item	Operation
Operation/Procedure	Adjust the white plate scan start position in shading white correction. Enter the adjustment value and press START to store it.



<Set value>

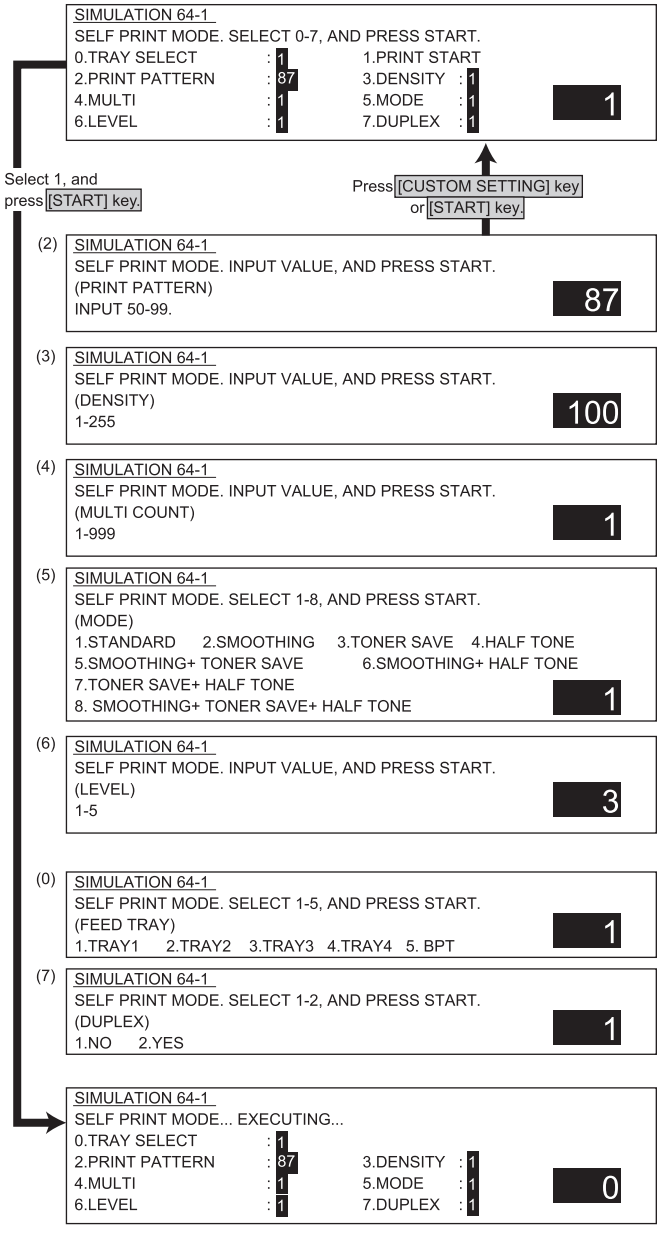
		Initial value	Range
1	CCD scan	6	1-16

(1 count : 0.5 mm)

Main code 64

64-1

Purpose	Operation test, check
Function (Content)	Used to check the operations of the printer section (self printing). (The print pattern, paper feed mode, print mode, print quantity, density can be changed optionally.)
Section	Printer
Item	Operation
Operation/Procedure	Perform self printing. The current set data is displayed on the right side of the menu.



<List of set values>

0	Paper feed tray	1: TRAY1 2: TRAY2 3: TRAY3 4: TRAY4: 5: MANUAL
1	Print execution	Print is started with the set data.
2	Print pattern	Refer to the print pattern.
3	Picture density	Enable only when No. 79, 80, or 84 is selected.
4	Print quantity	-
5	Print mode	1: Standard 2: Smoothing ON 3: Toner save ON 4: Half tone ON 5: Smoothing + Toner save 6: Smoothing + Half tone 7: Toner save + half tone 8: Smoothing + Toner save + Half tone
6	Print level	1 ~ 5
7	Duplex	1: Single print 2: Duplex print

<Print pattern>

50	Total surface 1BY1 (Vertical)	70	Scaled print adjustment pattern (Vertical)
51	Total surface 1BY1 (Horizontal)	71	Grid pattern
52	Total surface 1BY2 (Vertical)	72	Slant line 45 degrees
53	Total surface 1BY2 (Horizontal)	73	Slant line 26.6 degrees
54	Total surface 1BY3 (Vertical)	74	Slant line 63.4 degrees
55	Total surface 1BY3 (Horizontal)	75	ID-BG pattern
56	Total surface 1BY4 (Vertical)	76	Dot pattern 12.5%
57	Total surface 1BY4 (Horizontal)	77	Dot pattern 28%
58	Total surface 1BY5 (Vertical)	78	Dot pattern 50%
59	Total surface 1BY5 (Horizontal)	79	Whole surface error diffusion background
60	Total surface 2BY2 (Vertical)	70	Whole surface dither process background
61	Total surface 2BY2 (Horizontal)	81	1 block 128 pixels/ every 32 gradations
62	Total surface 2BY3 (Vertical)	82	1 block 128 pixels/ every 16 gradations
63	Total surface 2BY3 (Horizontal)	83	1 block 128 pixels/ every 8 gradations
64	Whole surface background copy	84	Memory check pattern
65	Special pattern (Vertical)	85	Cleaning check pattern
66	1 block 128 pixels/ every 32 gradations	86	Offset check pattern
67	1 block 128 pixels/ every 16 gradations	87	Test B image (for aging)
68	1 block 128 pixels/ every 8 gradations	88	Printer 6%
69	11-do t pattern	89	Printer 5%
		98	List of setup values

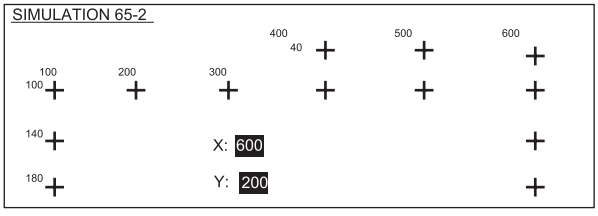
Main code 65

65-1

Purpose	Adjustment
Function (Content)	Used to adjust the touch panel (LCD display section) detecting position.
Section	Operation (display, operation)
Item	
Operation/Procedure	Adjust the coordinates of the touch panel. Press the four cross marks on the LCD, and the pressed mark will turn gray. When all four marks are pressed, the adjustment is completed.

65-2

Purpose	Adjustment, setup, operation data output, check (display, print)
Function (Content)	Used to check the result of the touch panel (LCD display section) detecting position adjustment. (The coordinates are displayed.)
Section	Operation (display, operation)
Item	
Operation/Procedure	Check the touch panel. When the touch panel is pressed, the coordinates (dot conversion values) in X/Y directions are displayed.

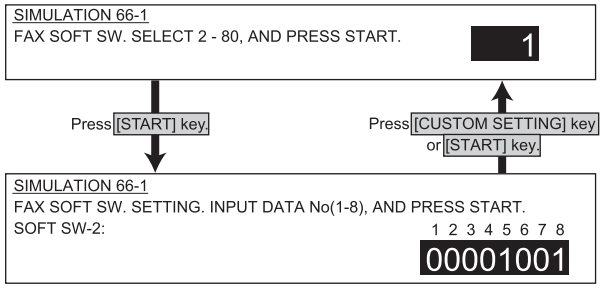


Main code 66

66-1

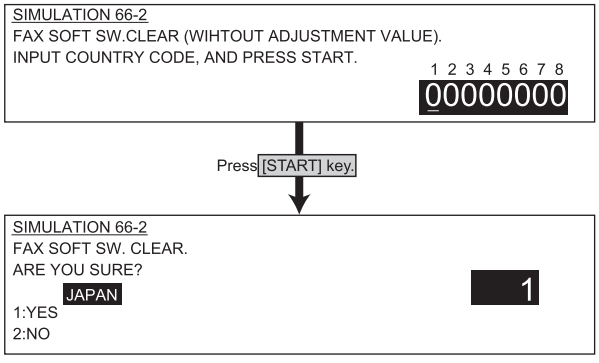
Purpose	Setup
Function (Content)	Used to set the FAX soft switch function. (Used to utilize the FAX soft switch function.)
Section	Fax
Item	
Operation/Procedure	Set the Fax soft switch. (For details of the soft SW, refer to the AR-FX5 Service Manual.) Entry of 1 - 8 only is effective. 1) Specify the bit to be changed (highlighted) with a number. 2) Press START to rewrite the setting.

* SIM 1 cannot be changed with this simulation.



66-2

Purpose	Data clear
Function (Content)	Used to set the FAX soft switch setup to the default. (Except for the adjustment values)
Section	Fax
Item	Data
Operation/Procedure	The current set value of SW1 is displayed. Entry of 1 - 8 only is effective. 1) Specify the bit to be changed (highlighted) with a number. 2) Select the country code, and press START to rewrite the setting. 3) Select a number (1 - 2) with 10 digit key pad and press START to execute. 1: FAX soft SW clear 2: Not clear 4) The soft switch (excluding the FAX adjustment value) corresponding to the selected country code is cleared. 5) The selected country is highlighted.



<Country codes>

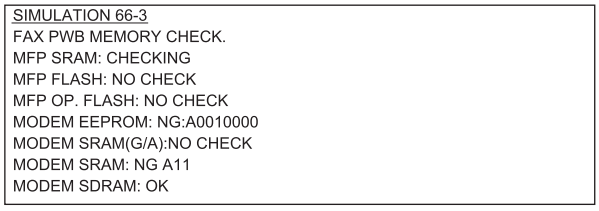
Japan	0
U.S.A.	10110101
Australia	1001
U.K	10110100
France	111101
Germany	100
Canada	100000
Netherlands	1111011

* The codes other than the above are recognized as Japan.

* Conforms to Advisory Document T.35.

66-3

Purpose	Operation test, check
Function (Content)	Used to check the operations of FAX PWB memory (read/write). (This adjustment is required when replacing the PWB with a new one.)
Section	Fax
Item	Data
Operation/Procedure	Check the FAX PWB memory. When this simulation is executed, the error occurring address or the data line is displayed.



<List of display values>

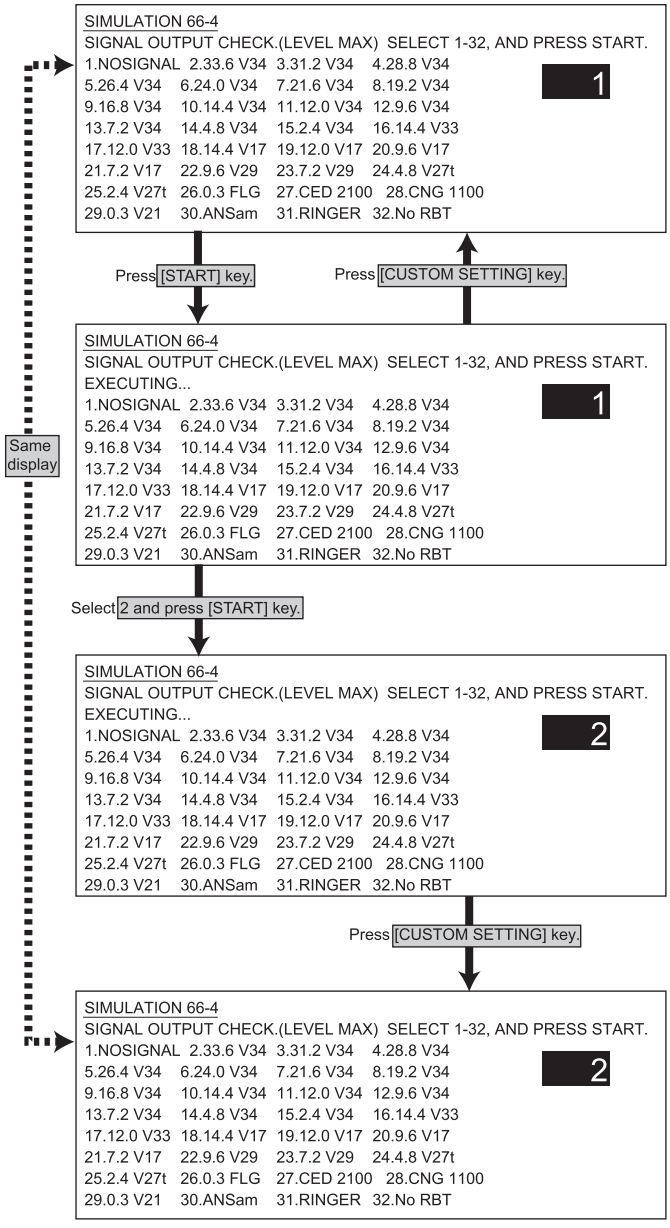
NO CHECK	Not checked
CHECKING	Checking
OK	Check complete OK
NG	Check error

<Items>

MFP SRAM (MFP control PWB)	SRAM
MFP FLASH (FAX I/F PWB)	FLASH Memory (AR-MM9)
MFP OP.FLASH (FAX I/F PWB)	
MODEM EEPROM (FAX PWB)	
MODEM SRAM(G/A) (FAX PWB)	
MODEM SRAM (FAX PWB)	
MODEM SDRAM (FAX PWB)	

66-4

Purpose	Operation test, check
Function (Content)	Used to check the operation of data signal output in the FAX data output mode. (Used to check the MODEM operation.) Send level 0db (Max.) (Only when FAX is installed.)
Section	FAX
Item	Operation
Operation/Procedure	Signal output check (level Max.) When CUSTOM SETTING is pressed during execution of this simulation, execution is stopped. Enter a number and press START to change the signal.

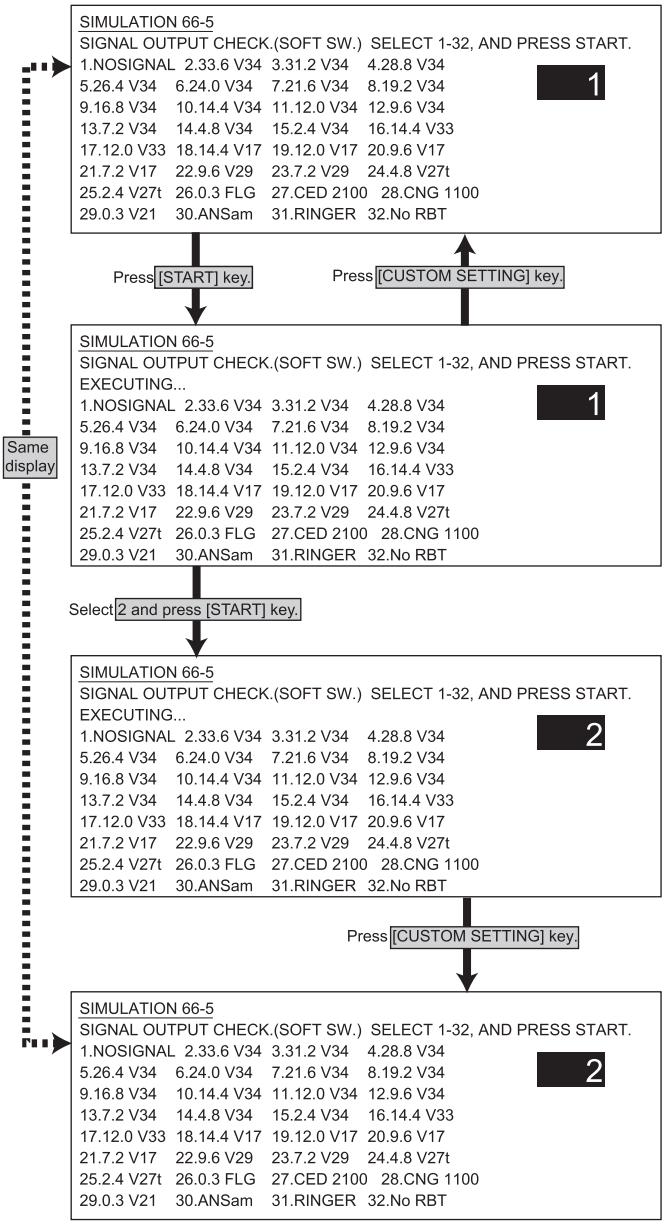


<List of set values>

1	No signal	17	12.0 V33
2	33.6 V34	18	14.4 V17
3	31.2 V34	19	12.0 V17
4	28.8 V34	20	9.6 V17
5	26.4 V34	21	7.2 V17
6	24.0 V34	22	9.6 V29
7	21.6 V34	23	7.2 V29
8	19.2 V34	24	4.8 V27t
9	16.8 V34	25	2.4 V27t
10	14.4 V34	26	0.3 FLG
11	12.0 V34	27	CED2100
12	9.6 V34	28	CNG1100
13	7.2 V34	29	0.3 V21
14	4.8 V34	30	ANSam
15	2.4 V34	31	RINGER
16	14.4 V33	32	No RBT

66-5

Purpose	Operation test, check
Function (Content)	Used to check the operations of data signal output in the FAX data output mode. (Used to check the MODEM operation.) Signals are sent in the send level set with the soft switch. (Only when FAX is installed.)
Section	FAX
Item	Operation
Operation/Procedure	Signal output check (Send level is set with the soft SW.) When CUSTOM SETTING is pressed during execution of this simulation, execution is stopped. Enter a number and press START to change the kind of signal.

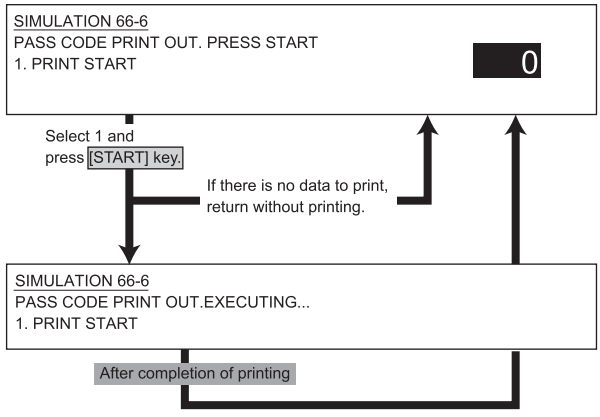


<List of set values>

1	No signal	17	12.0 V33
2	33.6 V34	18	14.4 V17
3	31.2 V34	19	12.0 V17
4	28.8 V34	20	9.6 V17
5	26.4 V34	21	7.2 V17
6	24.0 V34	22	9.6 V29
7	21.6 V34	23	7.2 V29
8	19.2 V34	24	4.8 V27t
9	16.8 V34	25	2.4 V27t
10	14.4 V34	26	0.3 FLG
11	12.0 V34	27	CED2100
12	9.6 V34	28	CNG1100
13	7.2 V34	29	0.3 V21
14	4.8 V34	30	ANSam
15	2.4 V34	31	RINGER
16	14.4 V33	32	No RBT

66-6

Purpose	User data output, check (display, print)
Function (Content)	Used to print the confidential password. (Used when the confidential password is forgotten.) (Only when FAX is installed.)
Section	Fax
Item	Data
Operation/Procedure	The confidential pass code is printed. 1) The currently selected data is displayed on the side of menu. 2) The paper size is automatically selected by the size stored in the image memory.

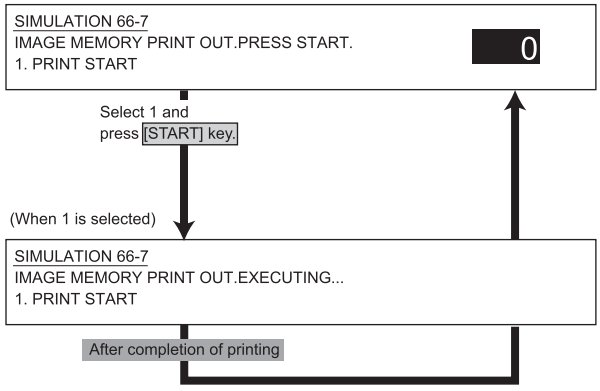


<Set value>

1	Print start

66-7

Purpose	User data output, check (display, print)
Function (Content)	Used to print the image memory data (memory send, receive). (Only when FAX is installed.
Section	Fax
Item	Data
Operation/Procedure	The content of image memory is printed. The paper size is automatically selected with the paper size stored in the image memory.

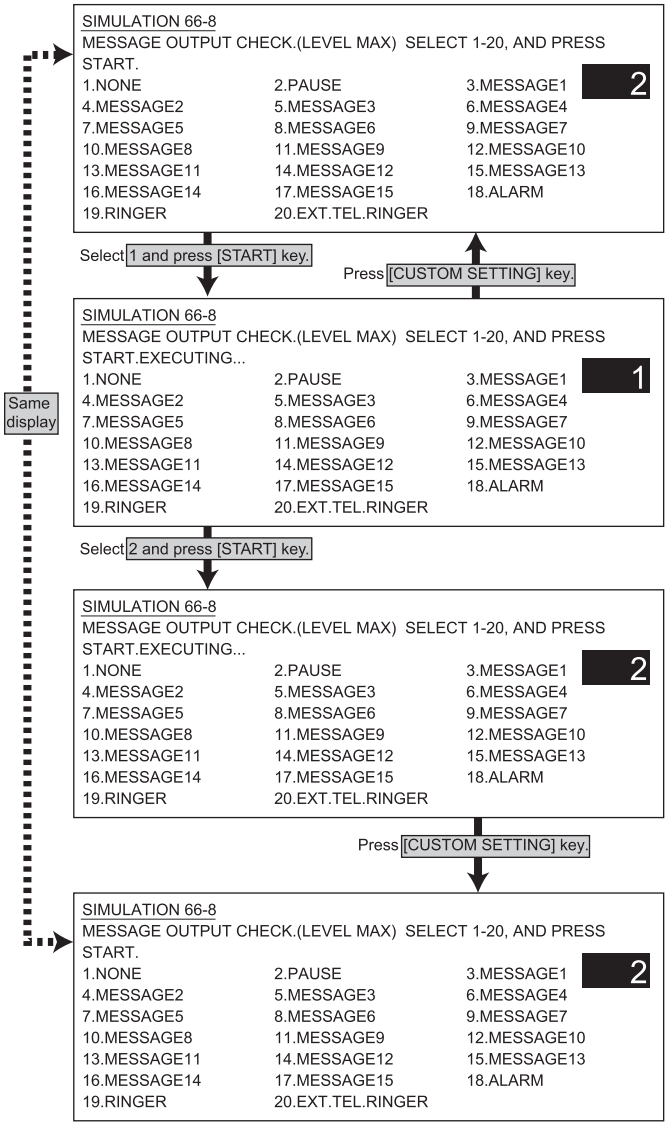


<Set value>

1	Print start

66-8

Purpose	Operation test, check
Function (Content)	Used to check the output operation of the FAX sound signals. (Sound output IC operation check) Send level 0dB (Max.) (Only when FAX is installed.)
Section	FAX
Item	Operation
Operation/Procedure	A voice message is outputted. (Level 0) Enter a number during execution to change the signal. Press START to start sending a voice message. Press CUSTOMSETTING to terminate.

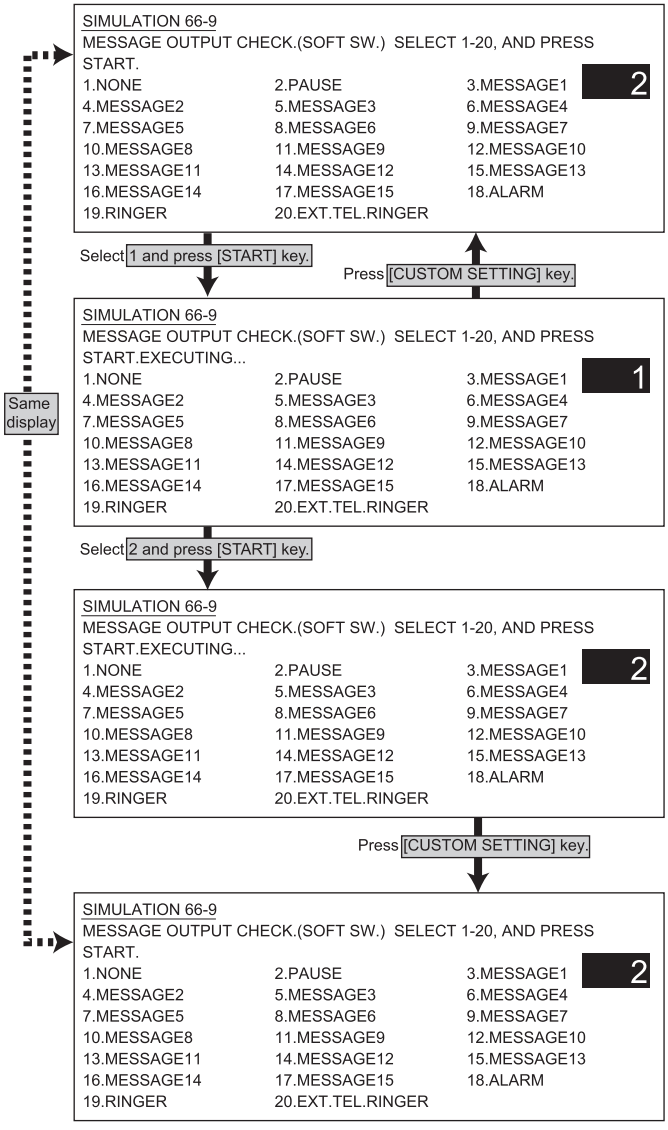


<List of set values>

1	NONE	NONE
2	PAUSE	PAUSE
3	MESSAGE1	MESSAGE1
4	MESSAGE2	MESSAGE2
5	MESSAGE3	MESSAGE3
6	MESSAGE4	MESSAGE4
7	MESSAGE5	MESSAGE5
8	MESSAGE6	MESSAGE6
9	MESSAGE7	MESSAGE7
10	MESSAGE8	MESSAGE8
11	MESSAGE9	MESSAGE9
12	MESSAGE10	MESSAGE10
13	MESSAGE11	MESSAGE11
14	MESSAGE12	MESSAGE12
15	MESSAGE13	MESSAGE13
16	MESSAGE14	MESSAGE14
17	MESSAGE15	MESSAGE15
18	ALARM	ALARM
19	RINGER	RINGER
20	EXT.TEL.RINGER	EXT.TEL.RINGER

66-9

Purpose	Operation test, check
Function (Content)	Used to check the output operation of the FAX sound signals. (Sound output IC operation check) (Only when FAX is installed.)
Section	Fax
Item	Operation
Operation/Procedure	A voice message is outputted. (Send level is set with SW.) Enter a number during execution to change the signal. Press START to start sending a voice message. Press CUSTOMSETTING to terminate.



<List of set values>

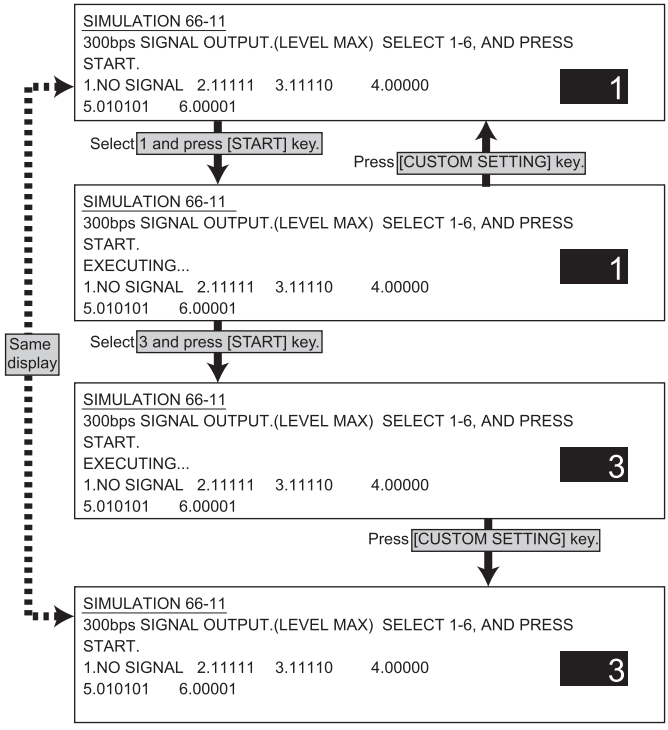
1	NONE	NONE
2	PAUSE	PAUSE
3	MESSAGE1	MESSAGE1
4	MESSAGE2	MESSAGE2
5	MESSAGE3	MESSAGE3
6	MESSAGE4	MESSAGE4
7	MESSAGE5	MESSAGE5
8	MESSAGE6	MESSAGE6
9	MESSAGE7	MESSAGE7
10	MESSAGE8	MESSAGE8
11	MESSAGE9	MESSAGE9
12	MESSAGE10	MESSAGE10
13	MESSAGE11	MESSAGE11
14	MESSAGE12	MESSAGE12
15	MESSAGE13	MESSAGE13
16	MESSAGE14	MESSAGE14
17	MESSAGE15	MESSAGE15
18	ALARM	ALARM
19	RINGER	RINGER
20	EXT.TEL.RINGER	EXT.TEL.RINGER

66-10

Purpose	User data output, check (display, print)
Function (Content)	Used to clear all data of image memory (memory send, receive). Confidential data is also cleared. (Only when FAX is installed.)
Section	Fax
Item	Data
Operation/Procedure	The FAX image memory is cleared. 1) Select an item with 10 digit key pad and press START. The following is executed and the display returns to the initial state. 1: Image memory clear 2: Not clear 2) After completion of memory clear, reset.

66-11

Purpose	Operation test, check
Function (Content)	Used to check the output operation of FAX G3 mode 300BPS. (Used to check the MODEM operation.) Send level 0dB (Max.) (Only when FAX is installed.)
Section	FAX
Item	Operation
Operation/Procedure	A signal of 300bps is outputted. (Level Max.) Enter a number during execution to change the signal. Press START to start sending a voice message. Press CUSTOMSETTING to terminate.

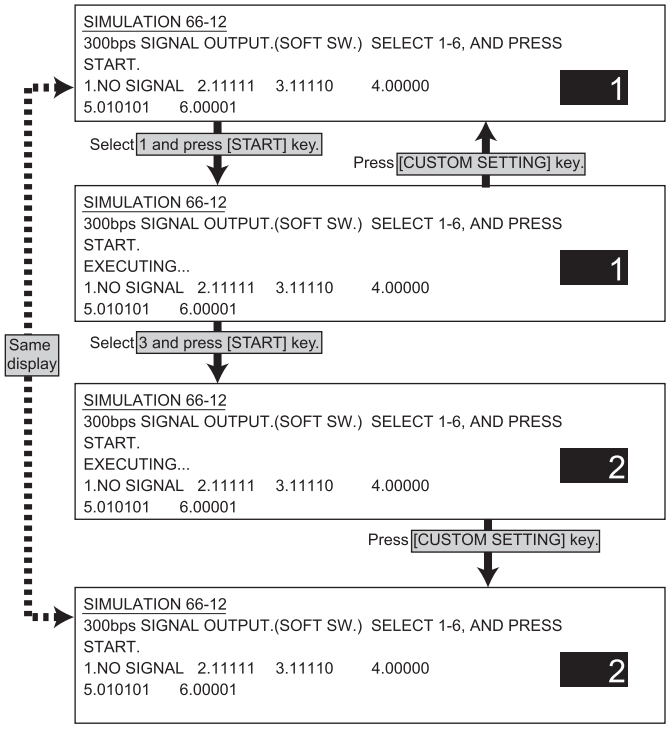


<List of set values>

1	NO SIGNAL	No signal
2	11111	
3	11110	
4	00000	
5	10101	
6	00001	

66-12

Purpose	Setup
Function (Content)	Used to check the output operation of FAX G3 mode 300BPS. (Used to check the MODEM operation.) Signals are sent in the send level set with the soft switch. (Only when FAX is installed.)
Section	FAX
Item	Operation
Operation/Procedure	A signal of 300bps is outputted. (Send level is set with SW.) Enter a number during execution to change the signal. Press START to start sending a voice message. Press CUSTOMSETTING to terminate.

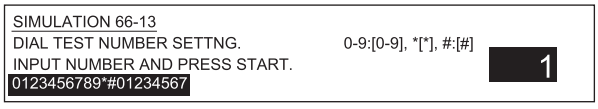


<List of set values>

1	NO SIGNAL	No signal
2	11111	
3	11110	
4	00000	
5	10101	
6	00001	

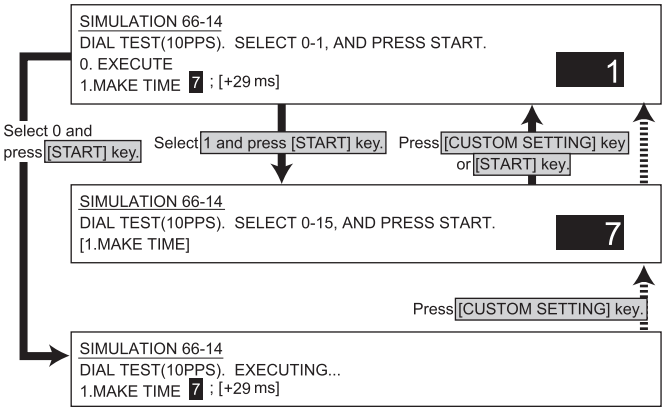
66-13

Purpose	Setup
Function (Content)	Used to select the FAX dial signal output test. (The dial number signal set with this simulation is outputted in the dial signal output test with SIM 66-14~16) (Only when FAX is installed.)
Section	FAX
Item	Data
Operation/Procedure	The dial test number is set. Enter a number with 10 digit key pad, * key, and # key. The upper limit is 20 digits. Press CLEAR to return to the initial state. Press START to register.



66-14

Purpose	Setup
Function (Content)	Used to add time to the FAX pulse dial mode (10PPS) and to test the dial signal output. (The dial number signal set with SIM 66-13 is outputted.) Used to check dialing troubles and the operation. (Only when FAX is installed.)
Section	Fax
Item	Operation
Operation/Procedure	The dial test is performed. (10PPS output) The additional time is set. When CUSTOM SETTING is pressed, the execution is terminated.



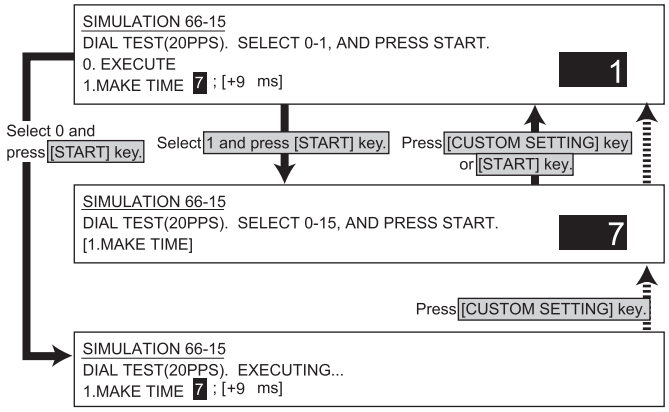
<List of set values>

0	Execution
1	Dial pulse make time setup (0 - 15)

* Dial is send with the setup value of +29ms.

66-15

Purpose	Setup
Function (Content)	Used to set the add time to the FAX pulse dial mode (20PPS) and to test the dial signal output. (The dial number signal set with SIM 66-13 is outputted.) Used to check dialing troubles and the operation. (Only when FAX is installed.)
Section	Fax
Item	Operation
Operation/Procedure	The dial test is performed. (20PPS output) The make time is set. When CUSTOM SETTING is pressed, the execution is terminated.



<List of set values>

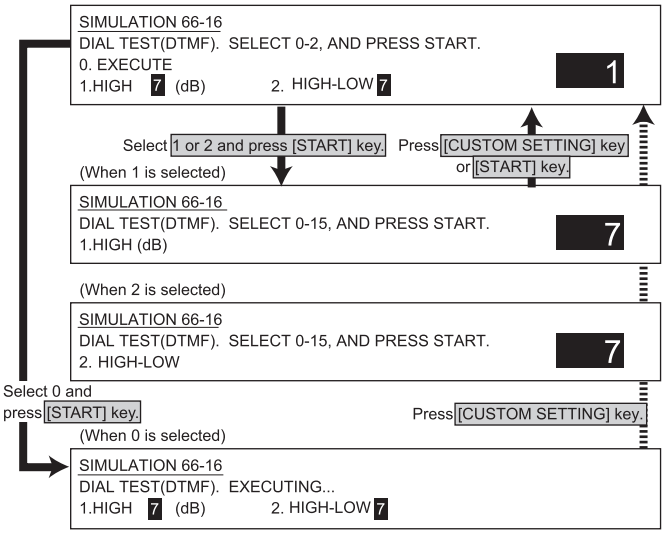
0	Execution
1	Dial pulse make time setup (0 - 15)

* Dial is set with the setup value of +19ms.

66-16

Purpose	Setup
Function (Content)	Used to test the dial signal (DTMF) output in the FAX tone dial mode. (The dial number signal set with SIM 66-13 is outputted.) The send level can be set to an optional level. Used to check dialing troubles and the operation.
Section	FAX
Item	Operation
Operation/Procedure	The dial test is performed. (DTMF signal output) 1) The level (dB) setup is made. (Set range: 0 - 15dB) 2) The difference between high group and low group is set. (Set range: 0 - 15) 3) When CUSTOM SETTING is pressed, the execution is terminated.

* For the set value, refer to the soft SW specifications.

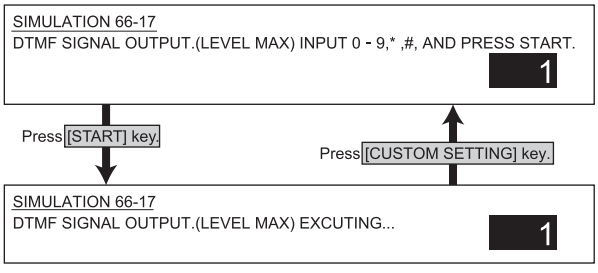


<List of set values>

0		Execution
1	HIGH	High group level
2	HIGH-LOW	High group - low group

66-17

Purpose	Setup
Function (Content)	Used to test the dial signal (DTMF) output in the Fax tone dial mode. Send level 0db (fixed). Used to check the dial IC operation. (Only when FAX is installed.)
Section	FAX
Item	Operation
Operation/Procedure	The DTMF signal output is checked. (Output level 0) When CUSTOM SETTING is pressed, the execution is terminated.

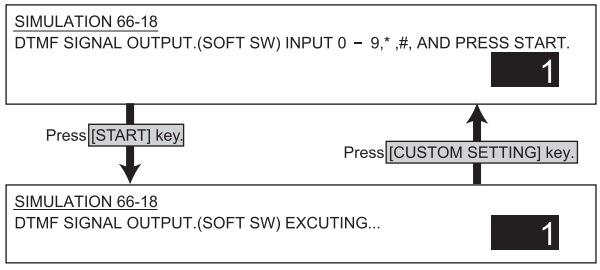


<DTMF signal>

1 - 9, 0, *, #

66-18

Purpose	Setup
Function (Content)	Used to test the dial signal (DTMF) output in the Fax tone dial mode. The send level set with the soft switch is outputted. Used to check the dial IC operation. (Only when FAX is installed.)
Section	FAX
Item	Operation
Operation/Procedure	The DTMF signal output is checked. (Output level is set with soft SW.) When CUSTOM SETTING is pressed, the execution is terminated.

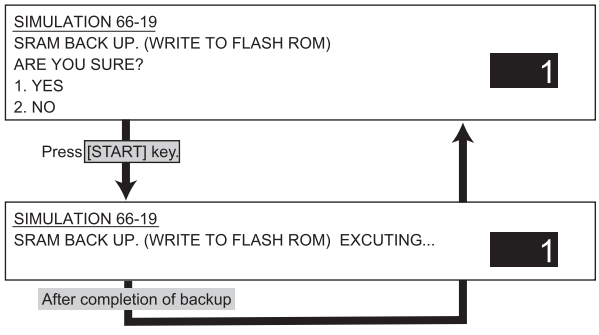


<DTMF signal>

1 - 9, 0, *, #

66-19

Purpose	Setup
Function (Content)	Used to backup the FAX SRAM data (Set values of rapid key dialing) into the flash Memory (AR-MM9). (When FAX is installed and FAX expansion memory is installed.)
Section	Fax
Item	Operation
Operation/Procedure	The content of SRAM is backed up into Flash Memory(AR-MM9).

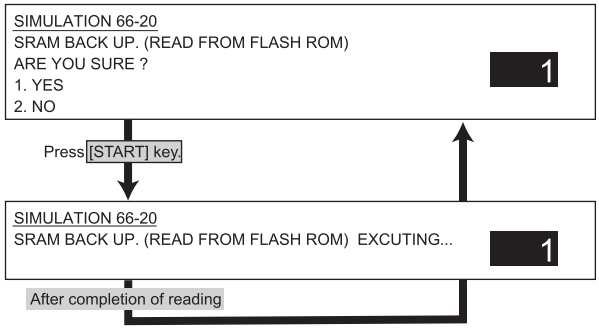


<Set values>

1	Backup executed
2	No backup

66-20

Purpose	Setup
Function (Content)	Used to restore the backup data (SIM 66-19) to SRAM. (When FAX is installed and FAX expansion memory is installed.)
Section	Fax
Item	Operation
Operation/Procedure	Read/write from Flash Memory(AR-MM9) to SRAM is performed.

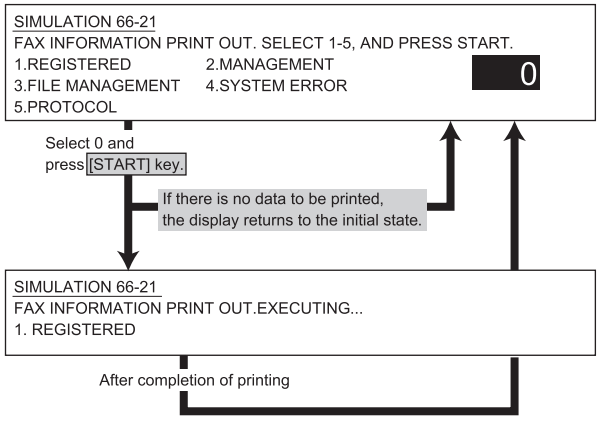


<Set value>

1	Read/Write executed
2	Read/write not executed

66-21

Purpose	Adjustment, setup, operation data output, check (display, print)
Function (Content)	Used to print the FAX information (registrations, communication management, file management, system errors). (Only when FAX is installed.)
Section	Fax
Item	Data
Operation/Procedure	Information related to FAX is printed. 1) Select information to be printed. 2) The selected information is printed. 3) The paper size is automatically selected by the size stored in the image memory.

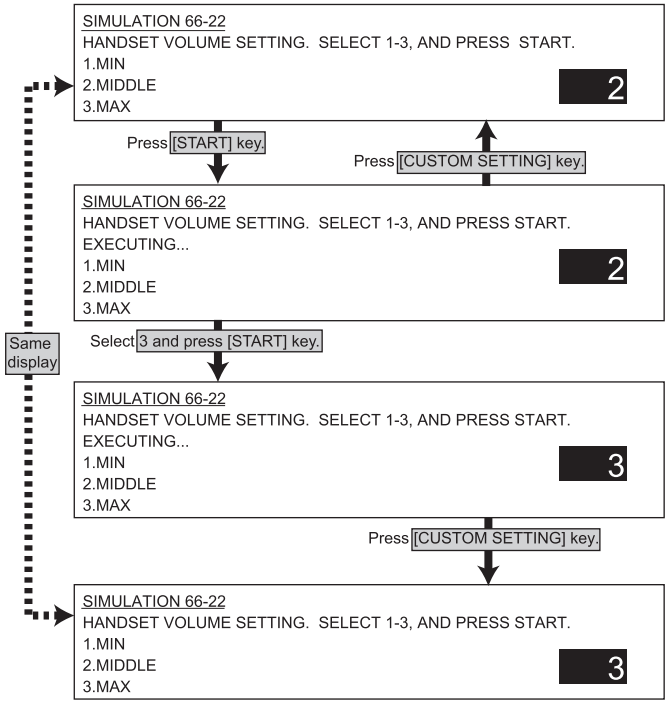


<List of set values>

1	REGISTERED	Various registered information
2	MANAGEMENT	Communication management information
3	FILE MANAGEMENT	Fine management information
4	SYSTEM ERROR	System error information
5	PROTOCOL	Protocol information

66-22

Purpose	Setup
Function (Content)	Used to adjust the handset sound volume. (Only when FAX is installed.)
Section	Fax
Item	Operation
Operation/Procedure	The hand set sound volume is set. 1) Press START to set. 2) During execution, selection of 1, 2, and 3 is possible.



<List of set values>

1	Min,
2	Middle
3	Max.

66-23

Purpose	Operation test, check
Function (Content)	Used to download the FAX program. (Only when FAX is installed.)
Section	FAX
Item	Operation
Operation/Procedure	The contents of ROM in the option memory (AR-MM9) installing section are copied as FAX program.

<This mode is for development, and inhibited in the market.>

SIMULATION 66-23
FAX PROGRAM DOWNLOAD.
EJECT PROTECT PIN, AND PRESS START.

66-24

Purpose	Operation test, check
Function (Content)	Used clear the FAST memory data. (Only when FAX is installed.)
Section	FAX
Item	Operation
Operation/Procedure	1) Select with 10 digit key pad, press START to execute the following. 1: Fast memory data clear 2: Not clear 2) After completion of memory clear, reset is made.

SIMULATION 66-24
FAST MEMORY DATA CLEAR.
ARE YOU SURE ?
1. YES
2. NO

66-25

Purpose	Setup
Function (Content)	Used to register the FAX number for MODEM dial-in. (Only when FAX is installed.)
Section	FAX
Item	Operation
Operation/Procedure	

<This mode is for development, and inhibited in the market.>

SIMULATION 66-25
M-D-IN FAX NUMBER SETTING. 0-9: [0-9],*: [*],#: [#]
INPUT NUMBER AND PRESS START.
0123456789*#01234567

66-26

Purpose	Setup
Function (Content)	Used to register the external telephone number for MODEM dial-in. (Only when FAX is installed.)
Section	FAX
Item	Operation
Operation/Procedure	

<This mode is for development, and inhibited in the market.>

SIMULATION 66-26
M-D-IN EXTEL NUMBER SETTING. 0-9: [0-9],*: [*],#: [#]
INPUT NUMBER AND PRESS START.
0123456789*#01234567

66-27

Purpose	Setup
Function (Content)	Used to register the voice-warp transfer number. (Only when FAX is installed.)
Section	FAX
Item	Operation
Operation/Procedure	

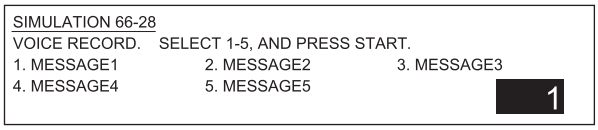
<This mode is for development, and inhibited in the market.>

SIMULATION 66-27
V-WP TRANSMIT NUMBER SETTING. 0-9: [0-9],*: [*],#: [#]
INPUT NUMBER AND PRESS START.
0123456789*#01234567

66-28

Purpose	Setup
Function (Content)	Used to record a sound message. Recording is available in 1 ~ 5, max. 6sec for one. (Only when FAX is installed.)
Section	FAX
Item	Operation
Operation/Procedure	1) Record a sound message from the handset. 2) Press CUSTOM SETTING to interrupt recording

<This mode is for development, and inhibited in the market.>



66-29

Purpose	Setup
Function (Content)	Used to clear the telephone directory.
Section	FAX
Item	Operation
Operation/Procedure	1) Select with 10 digit key pad and press START to execute the following. 1: Telephone directory clear 2: Telephone directory not clear

66-30

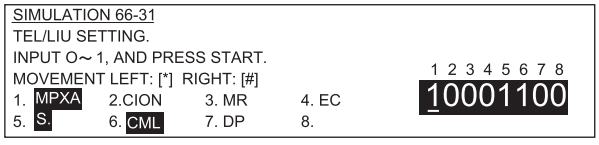
Purpose	Setup
Function (Content)	Used to check TEL/LIU status change. (Only when FAX is installed.)
Section	FAX
Item	Operation
Operation/Procedure	The TEL/LIU status can be checked. The display is highlighted when the status is changed.

<List of set values>

HS1	Polarity reverse signal
HS2	Polarity reverse signal
RHS	Handset hook SW
EXHS	External telephone hook SW

66-31

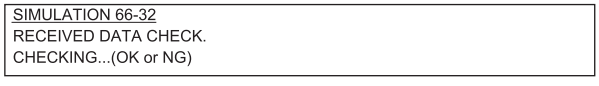
Purpose	Setup
Function (Content)	Used to set the TEL/LIU status. (Only when FAX is installed.)
Section	Fax
Item	Operation
Operation/Procedure	Entry of only 0 or 1 is effective. Shift the cursor to the bit to enter. Cursor shift keys : ← : * , → : #. The bits are 1, 2, 3, 4, 5, 6, 7, and 8 from the left. The entered bit is highlighted. Press STRT to select the relay.



66-32

Purpose	Setup
Function (Content)	Used to check the received data. (Only when FAX is installed.)
Section	FAX
Item	Operation
Operation/Procedure	The fixed data received from the line are checked.

<This mode is for development, and inhibited in the market.>



<Display message>

CHECKING	Checking
OK	Checking complete
NG	Checking end

66-33

Purpose	Setup
Function (Content)	Used to check signal detection.
Section	FAX
Item	Operation
Operation/Procedure	When the signal is detected, the display is highlighted.

<This mode is for development, and inhibited in the market.>

SIMULATION 66-33
SIGNAL DETECT CHECK.
BUSY TONE CNG CED FNET DTM

66-34

Purpose	Setup
Function (Content)	Used to measure and display the communication time.
Section	FAX
Item	Operation
Operation/Procedure	The time spent for communication is measured. Send/receives performed in the normal mode. The communication time is displayed with the simulation. (unit: ms)

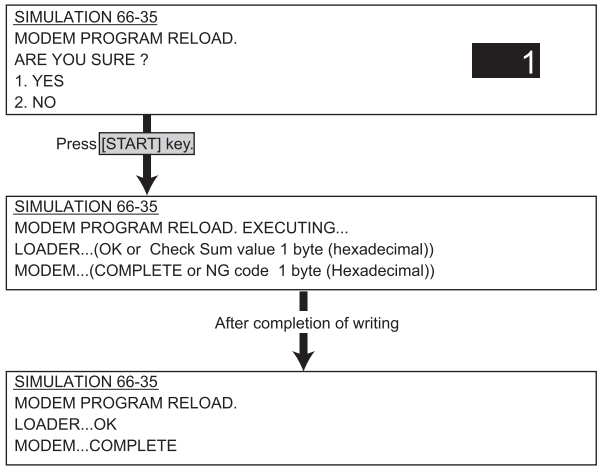
SIMULATION 66-34
COMMUNICATION TIME DISPLAY.
***** ms

<Setup for send>

Communication means	memory transmission
Image quality	Normal
Density	Thin
ECM	ON
Sender record	OFF

66-35

Purpose	Operation test, check
Function (Content)	Modem program rewriting.
Section	FAX
Item	Operation
Operation/Procedure	The modem program in the FAX program is rewritten. 1) Select with 10 digit key pad and press START to execute the following. 1: MODEM program rewrite 2:Not clear 2) Check the check sum value (loader). If it is OK, the test is normally completed. If NG, the check sum value (1 byte = hexadecimal) is displayed. 3) If the check sum value is NG, the MODEM result is also NG. 4) The Modem rewrite result is displayed.

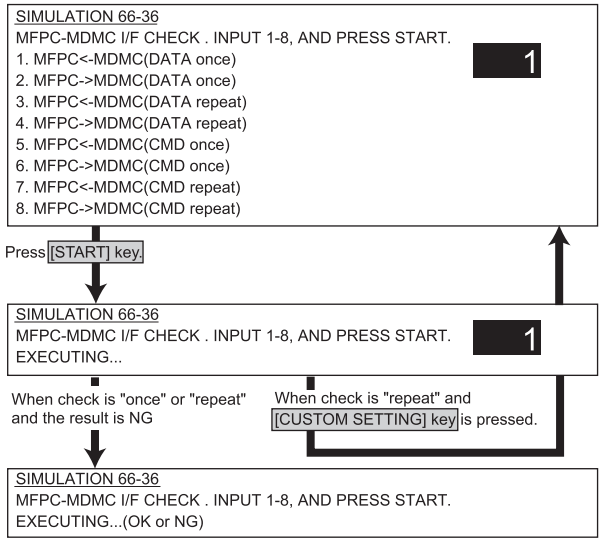


<Result of MODEM writing>

COMPLETE	Writing completed
81	Check sum error
82	Write error
83	Delete error
84	Verify error
NG	Due to loader error

66-36

Purpose	Operation test, check
Function (Content)	Used to check interface between MFPC and MDMC. Check is made in the data line or the command line.
Section	FAX
Item	Operation
Operation/Procedure	1) Select with 10 digit key pad and press START. 2) When check is "repeat," the operation is executed until the result becomes NG or CUSTOM SETTING is pressed.



<List of display values>

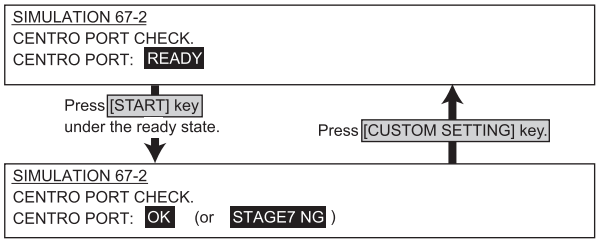
1	MFPC <- MDMC	Data line once only
2	MFPC -> MDMC	Data line once only
3	MFPC <- MDMC	Data line repeat
4	MFPC -> MDMC	Data line repeat
5	MFPC <- MDMC	Command line once only
6	MFPC -> MDMC	Command line once only
7	MFPC <- MDMC	Command line repeat
8	MFPC -> MDMC	Command line repeat

Main code 67

67-2

Purpose	Operation test, check
Function (Content)	Used to check the parallel I/F operation of the printer. (This simulation is made only in the production site and not in the market. It requires a special tool.)
Section	Printer
Item	Operation
Operation/Procedure	The Centro port is checked. 1) Insert the adjustment jig into the Centro port under the ready state, and press STRT. 2) The Centro port check is started. 3) If normal, OK is displayed. If abnormal, the stage number where an error occurred and NG are displayed.

<This simulation is used only for production, and inhibited in the market.>



<Display message>

WAITING	Waiting
READY	Check start OK
OK	Check complete (normal)
STAGE*NG	Check end (An error occurred in Stage *: 1-11)

67-11

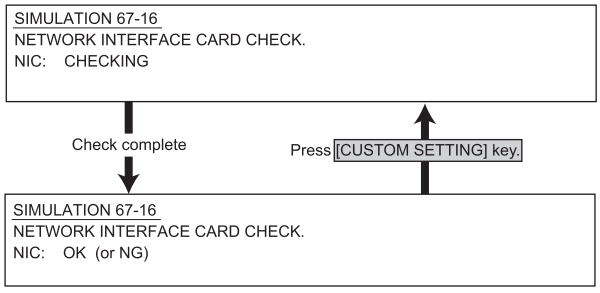
Purpose	Adjustment
Function (Content)	Used to set Enable/Disable of the parallel I/F select signal of the printer.
Section	Printer
Item	Operation
Operation/Procedure	The select signal of Centro port is set.
Press START to set.	

<Set values>

0	OFF
1	ON (Initial value)

67-16

Purpose	Operation test, check
Function (Content)	Used to check the operation of the network card.
Section	Printer
Item	Operation
Operation/Procedure	The network card is checked.



<Display message>

CHECKING	Checking
OK	Check complete (Normal)
NG	Check end (Abnormal)

[11] TROUBLE CODES

1.Trouble codes list

Trouble codes		Contents	Remark	Trouble detection
C1	00	MC trouble		PCU
E6	10	CIS shading trouble (Black correction)	When the scanner is installed	SCANNER
	11	CIS shading trouble (White correction)	When the scanner is installed	SCANNER
	14	CIS-ASIC communication trouble	When the scanner is installed	SCANNER
E7	02	Laser trouble		PCU
	03	HDD trouble	With HDD installed	Controller
	06	Decode error trouble		Controller
	10	Shading trouble (Black correction)	When the scanner is installed	SCANNER
	11	Shading trouble (White correction)	When the scanner is installed	SCANNER
	14	CCD-ASIC communication trouble	When the scanner is installed	SCANNER
	50	LSU connection trouble		PCU
	80	SCANNER PWB communication trouble	When the scanner is installed	ICU
	90	PCU communication trouble	When the scanner is installed	ICU
F1	00	Finisher communication trouble	With Finisher installed	PCU
	08	Finisher staple shift motor trouble	With Finisher installed	PCU
	10	Finisher stapler motor trouble	With Finisher installed	PCU
	11	Finisher bundle exit motor trouble	With Finisher installed	PCU
	15	Finisher lift motor trouble	With Finisher installed	PCU
	19	Finisher alignment motor trouble FRONT	With Finisher installed	PCU
	20	Finisher alignment motor trouble	With Finisher installed	PCU
	80	Finisher 24V power supply trouble	With Finisher installed	PCU
	87	Finisher staple rotation motor trouble	With Finisher installed	
F1	00	Mail bin stacker communication trouble	With Mail bin stacker installed	PCU
	02	mail bin stacker main drive motor trouble	With Mail bin stacker installed	PCU
	12	Mail bin stacker gate trouble	With Mail bin stacker installed	PCU
	80	Mail bin stacker 24V power supply trouble	With Mail bin stacker installed	PCU
F1	03	Console finisher paddle motor trouble	With Console Finisher installed	PCU
	06	Console finisher slide motor trouble	With Console Finisher installed	PCU
	10	Console finisher stapler motor trouble	With Console Finisher installed	PCU
	11	Console finisher bundle exit motor trouble	With Console Finisher installed	PCU
	15	Console finisher lift motor trouble	With Console Finisher installed	PCU
	19	Console finisher alignment motor trouble FRONT	With Console Finisher installed	PCU
	20	Console finisher alignment motor trouble	With Console Finisher installed	PCU
	30	Console finisher communication trouble	With Console Finisher installed	PCU
	31	Console finisher fold sensor trouble	With Console Finisher installed	PCU
	32	Console finisher punch unit communication trouble	With Console Finisher installed	PCU
	33	Console finisher punch side register motor trouble	With Console Finisher installed	PCU
	34	Console finisher punch motor trouble	With Console Finisher installed	PCU
	35	Console finisher punch side register sensor trouble	With Console Finisher installed	PCU
	36	Console finisher punch timing sensor trouble	With Console Finisher installed	PCU
	37	Console finisher backup RAM trouble	With Console Finisher installed	PCU
	38	Console finisher punch backup RAM trouble	With Console Finisher installed	PCU
	81	Console finisher transport motor trouble	With Console Finisher installed	PCU
F2	00	Toner concentration sensor open		PCU
	02	Toner supply abnormality		PCU
	04	Improper cartridge (Destination error, life cycle error)		PCU
	05	CRUM error		PCU
	39	Process thermistor breakdown		PCU
F3	12	Tray 1 lift-p trouble		PCU
	22	Tray 2 lift-up trouble (Multi-purpose tray)	Multi-purpose tray	PCU

Trouble codes		Contents	Remark	Trouble detection
F6	00	FAX board communication trouble	When the Fax board is installed	ICU
	01	FAX expansion Flash Rom abnormality	When the Fax board is installed	ICU
	04	FAX MODEM operation abnormality	When the Fax board is installed	FAX
F7	01	FAX board EEPROM read/write error	When the Fax board is installed	FAX
H2	00	Thermistor open (HL1)		PCU
	01	Thermistor open (HL2)		PCU
H3	00	Heat roller high temperature detection (HL1)		PCU
	01	Heat roller high temperature detection (HL2)		PCU
H4	00	Heat roller low temperature detection (HL1)		PCU
	01	Heat roller low temperature detection (HL2)		PCU
H5	01	5-time continuous POD1 not-reaching JAM detection		PCU
L1	00	Scanner feed trouble	When the scanner is installed	SCANNER
L3	00	Scanner return trouble	When the scanner is installed	SCANNER
L4	01	main motor lock detection		PCU
	02	Drum motor lock detection		PCU
L6	10	Polygon motor lock detection		PCU
L8	01	No full-wave signal		PCU
	02	Full-wave signal width abnormality		PCU
U6	00	Desk/LCC communication trouble	With Paper feed desk installed	PCU
	01	Desk/LCC1CS lift-up trouble (Multi-purpose tray)	With Paper feed desk installed	PCU
	02	Desk2 CS lift-up trouble/LCC1 lift-up trouble	With Paper feed desk installed	PCU
	03	Desk3 CS lift-up trouble/LCC2 lift-up trouble	With Paper feed desk installed	PCU
	10	Desk/LCC transport motor trouble	With Paper feed desk installed	PCU
EE	EL	Auto developer adjustment trouble (Over-toner)	Only during DIAG	PCU
	EU	Auto developer adjustment trouble (Under-toner)	Only during DIAG	PCU
F9	02	Centro port check error		Controller
	03	NIC port check error		Controller
U1	01	FAX Battery abnormality	With FAX board installed	Controller
	02	RTC read abnormality (common with FAX, on ICU PWB)	When the Fax board is installed	ICU

Trouble codes		Contents	Remark	Trouble detection
U2	00	EEPROM read/write error (Controller)		Controller
	11	Counter check sum error (Controller EEPROM)		Controller
	12	Adjustment value check sum error (Controller EEPROM)		Controller
	80	Scanner section EEPROM read/write error	When the scanner is installed	SCANNER
	81	Scanner section memory sum check error	When the scanner is installed	SCANNER
	90	PCU section EEPROM read/ write error		PCU
	91	PCU section memory sum check error		PCU
U7	00	PC/MODEM communication error		Controller
PF	--	RIC copy inhibit command reception		Controller
CH	--	Door open (CH ON)		PCU
	00	No developer cartridge		PCU
	01	No toner cartridge		PCU
--	--	Auditor not ready		Controller
PC	--	Personal counter not installed		Controller

2. Details of trouble codes

MAIN	SUB		
C1	00	Content	MC trouble
		Detail	Main charger output abnormality (Output open) Trouble signal is outputted from the high voltage transformer.
		Cause	The main charger is not installed properly. The main charger is not assembled properly. Disconnection of connector of high voltage transformer. High voltage harness disconnection or breakage.
		Check and remedy	Use the diag mode or DIAG to check the main charger output. Check for disconnection of the main charger. Replace the high voltage unit.
E6	10	Content	CIS shading trouble (Black correction)
		Details	The CIS black scan level is abnormal when the lamp is off.
		Cause	Abnormal harness installation to CIS unit CIS unit abnormality Scanner PWB abnormality
		Check & Remedy	Check CIS unit harness. Check CIS unit. Check scanner PWB.

MAIN	SUB		
E6	11	Content	CSI shading trouble (White correction)
		Details	The CIS white reference plate scan level is abnormal when the lamp is on.
		Cause	Abnormal harness installation to CIS unit Dirt on the white reference plate. CIS lighting error CIS unit installation trouble CIS unit abnormality Scanner PWB abnormality
		Check & Remedy	Clean the white reference plate. Check CIS light quantity (SIM 5-3) and lighting. Check CIS unit harness. Check scanner PWB.
	14	Content	CIS communication trouble
		Details	Communication trouble (clock sync) between scanner PWB and CIS-ASIC
		Cause	Abnormal harness installation to CIS unit CIS unit abnormality Scanner PWB abnormality
		Check & Remedy	Check CIS unit harness. Check CIS unit. Check scanner PWB.
E7	02	Content	Laser trouble
		Detail	BD signal from LSU is kept OFF, or ON.
		Cause	The connector of LSU or the harness in LSU is disconnected or broken. The polygon motor does not rotate normally. The laser home position sensor in LSU is shifted. The proper voltage is not supplied to the power line for laser. Laser emitting diode trouble PCU PWB trouble Controller PWB trouble
		Check and remedy	Check for disconnection of the LSU connector. Use DIAG (SIM 61-1) to check LSU operation. Check that the polygon motor rotates normally or not. Check light emission of laser emitting diode. Replace the LSU unit. Replace the PCU PWB. Replace the Controller PWB.
	03	Content	HDD trouble
		Detail	HDD does not operate properly in the machine with HDD installed.
		Cause	HDD is not installed properly to the Controller PWB. HDD does not operate properly in the Controller PWB. Controller PWB trouble
		Check and remedy	Check installation of HDD to the Controller PWB. Check connection of the harness of HDD to the Controller PWB. Use DIAG (SIM 62-2, -3) to check read/write of HDD. Replace HDD. Replace Controller PWB.

MAIN	SUB		
E7	06	Content	Decode error trouble
		Detail	A decode error occurs during making of an image.
		Cause	Data error during input from PCI to PM. PM trouble Data error during image compression/ transfer. Controller PWB abnormality
		Check and remedy	Check insertion of the PWB. (PCI bus) If the error occurred in a FAX job, check installation of the FAX PWB. For the other cases, check the Controller PWB. Replace the Controller PWB.
	10	Content	Shading trouble (Black correction)
		Details	CCD black scan level abnormality when the copy lamp is off.
		Cause	Abnormal installation of flat cable to CCD unit. CCD unit abnormality Scanner PWB abnormality
		Check & Remedy	Check installation of CCD unit flat cable. Check CCD unit. Check scanner PWB.
	11	Content	Shading trouble (White correction)
		Details	CCD white reference plate scan level abnormality when the copy lamp is ON.
		Cause	Abnormal installation of flat cable to CCD unit. Dirt on mirror, lens, white reference plate Copy lamp lighting abnormality Abnormal installation of CCD unit CCD unit abnormality Scanner PWB abnormality
		Check & Remedy	Clean mirror, lens, and white reference plate. Check copy lamp light quantity (SIM 5-3) and lighting. Check CCD unit. Check scanner PWB.
	14	Content	CCD communication trouble
		Details	Communication trouble (clock sync) between scanner PWB and CCD-ASIC
		Cause	Abnormal installation of harness to CCD unit CCD unit abnormality Scanner PWB abnormality
		Check & Remedy	Check CCD unit harness. Check CCD unit. Check scanner PWB.
	50	Content	LSU connection trouble
		Detail	An LSU which does not conform to the machine is installed.
		Cause	PCU PWB trouble LSU trouble
		Check and remedy	Check LSU PWB. Check PCU PWB. Check connection of the connector and the harness between PCU and LSU.

MAIN	SUB		
E7	80	Content	Communication trouble (ICU detection) between ICU and scanner
		Details	Communication establishment error/Fleming/ Parity/Protocol error
		Cause	Defective connection of slave unit PWB connector Defective harness between slave unit PWB and ICU PWB Slave unit PWB mother board connector pin breakage
		Check & Remedy	Check connector and harness of slave unit PWB and ICU PWB. Check grounding of machine.
	90	Content	PCU communication trouble
		Details	
		Cause	
		Check & Remedy	
F1	00	Content	Finisher (AR-FN6) communication trouble
		Detail	Communication cable test error after turning on the power or exiting from DIAG. Communication error with the finisher
		Cause	Improper connection or disconnection of connectors and harness between the machine and the finisher. Finisher control PWB trouble Control PWB (PCU) trouble Malfunction by noises
		Check and remedy	Canceled by turning OFF/ON the power. Check connectors and harness in the communication line. Replace the finisher control PWB or PCU PWB.
	08	Content	Finisher (AR-FN6) staple shift motor trouble
		Detail	Staple motor drive trouble
		Cause	Motor lock Motor rpm abnormality Overcurrent to the motor Finisher control PWB trouble
		Check and remedy	Use DIAG (SIM3-3) to check operations of the staple motor.
	10	Content	Finisher (AR-FN6) stapler motor trouble
		Detail	Stapler motor operation abnormality
		Cause	Motor lock Motor rpm abnormality Overcurrent to the motor Console finisher control PWB trouble
		Check and remedy	Use DIAG (SIM3-3) to check the motor operation.
	11	Content	Finisher (AR-FN6) bundle exit motor trouble
		Detail	Bundle exit motor operation abnormality
		Cause	Motor lock Motor rpm abnormality Overcurrent to the motor Console finisher control PWB trouble
		Check and remedy	Use DIAG (SIM3-3) to check the motor operation.
	15	Content	Finisher (AR-FN6) lift motor trouble
		Detail	Lift motor operation abnormality
		Cause	Motor lock Motor rpm abnormality Overcurrent to the motor Console finisher control PWB trouble

MAIN	SUB		
F1	19	Content	Finisher (AR-FN6) front alignment motor trouble
		Detail	Front alignment motor operation abnormality
		Cause	Motor lock Motor rpm abnormality Overcurrent to the motor Console finisher control PWB trouble
		Check and remedy	Use DIAG (SIM3-3) to check the motor operation.
	20	Content	Finisher (AR-FN6) rear alignment motor trouble
		Detail	Rear alignment motor operation abnormality
		Cause	Motor lock Motor rpm abnormality Overcurrent to the motor Console finisher control PWB trouble
		Check and remedy	Use DIAG (SIM3-3) to check the motor operation.
	80	Content	Finisher (AR-FN6) power abnormality
		Detail	The 24V power is not supplied to the finisher PWB.
		Cause	Improper connection or disconnection of connector and harness Finisher control PWB trouble Power unit trouble
		Check and remedy	Use DIAG (SIM3-2) to check the sensor.
	87	Content	Finisher (AR-FN6) staple rotation motor trouble
		Detail	Front staple rotation motor trouble
		Cause	Motor lock Motor rpm abnormality Overcurrent to the motor Finisher control PWB trouble
		Check and remedy	Use DIAG (SIM3-3) to check the motor operation.
F1	00	Content	Mail-bin stacker (AR-MS1) communication trouble
		Detail	Communication cable test error after turning on the power or exiting from DIAG. Communication error with the Mail-bin stacker.
		Cause	Improper connection or disconnection of connector and harness between the machine and the Mail-bin stacker. Mail-bin stacker control PWB trouble Control PWB (PCU) trouble Malfunction by noises
		Check and remedy	Canceled by turning OFF/ON the power. Check harness and connector in the communication line. Replace the Mail-bin stacker PWB or PCU PWB.
	02	Content	Mail-bin stacker (AR-MS1) transport motor abnormality
		Detail	Transport motor trouble
		Cause	Motor lock Motor rpm abnormality Overcurrent to the motor Mail-bin stacker control PWB trouble
		Check and remedy	Use DIAG (SIM3-21) to check the transport motor operation.

MAIN	SUB		
F1	12	Content	Mail-bin stacker (AR-MS1) gate trouble
		Detail	Gate operation abnormality
		Cause	Gate lock Mail-bin stacker control PWB trouble
		Check and remedy	Use DIAG (SIM3-21) to check the transport gate operation.
	80	Content	Mail-bin stacker (AR-MS1) power abnormality
		Detail	The 24V power is not supplied to the Mail-bin stacker PWB.
		Cause	Improper connection or disconnection of connector and harness Mail-bin stacker control PWB trouble Power unit (AR-DC1) trouble
		Check and remedy	Use DIAG (SIM3-20) to check the sensor operation.
F1	03	Content	Console finisher (AR-FN7) paddle motor trouble
		Detail	Paddle motor operation abnormality
		Cause	Motor lock Motor rpm abnormality Overcurrent to the motor Console finisher control PWB trouble
		Check and remedy	Use DIAG (SIM3-3) to check the motor operation.
	06	Content	Console finisher (AR-FN7) slide motor trouble
		Detail	Slide motor operation abnormality
		Cause	Motor lock Motor rpm abnormality Overcurrent to the motor Console finisher control PWB trouble
		Check and remedy	Use DIAG (SIM3-3) to check the motor operation.
	10	Content	Console finisher (AR-FN7) stapler motor trouble
		Detail	Stapler motor operation abnormality
		Cause	Motor lock Motor rpm abnormality Overcurrent to the motor Console finisher control PWB trouble
		Check and remedy	Use DIAG (SIM3-3) to check the motor operation.
	11	Content	Console finisher (AR-FN7) bundle exit motor trouble
		Detail	Bundle exit motor operation abnormality
		Cause	Motor lock Motor rpm abnormality Overcurrent to the motor Console finisher control PWB trouble
		Check and remedy	Use DIAG (SIM3-3) to check the motor operation.
	15	Content	Console finisher (AR-FN7) lift motor trouble
		Detail	Lift motor operation abnormality
		Cause	Motor lock Motor rpm abnormality Overcurrent to the motor Console finisher control PWB trouble
		Check and remedy	Use DIAG (SIM3-3) to check the motor operation.

MAIN	SUB		
F1	19	Content	Console finisher (AR-FN7) front alignment motor trouble
		Detail	Front alignment motor operation abnormality
		Cause	Motor lock Motor rpm abnormality Overcurrent to the motor Console finisher control PWB trouble
		Check and remedy	Use DIAG (SIM3-3) to check the motor operation.
	20	Content	Console finisher (AR-FN7) rear alignment motor trouble
		Detail	Rear alignment motor operation abnormality
		Cause	Motor lock Motor rpm abnormality Overcurrent to the motor Console finisher control PWB trouble
		Check and remedy	Use DIAG (SIM3-3) to check the motor operation.
	30	Content	Console finisher (AR-FN7) communication trouble
		Detail	Communication cable test error after turning on the power or exiting from DIAG. Communication error with the console finisher
		Cause	Improper connection or disconnection of connector and harness between the machine and the console finisher. Console finisher control PWB trouble Control PWB (PCU) trouble Malfunction by noises
		Check and remedy	Canceled by turning OFF/ON the power. Check connectors and harness in the communication line. Replace the console finisher control PWB or PCU PWB.
	31	Content	Console finisher (AR-FN7) fold sensor trouble
		Detail	Sensor input value abnormality
		Cause	Sensor breakage harness breakage Console finisher control PWB trouble
		Check and remedy	Use DIAG (SIM3-2) to check the sensor operation.
	32	Content	Communication trouble between the console finisher (AR-FN7) and the punch unit (AR-PN1).
		Detail	Communication err between the console finisher and the punch unit.
		Cause	Improper connection or disconnection of connector and harness between the console finisher and the punch unit. Console finisher control PWB trouble Control PWB (PCU) trouble Malfunction by noise
		Check and remedy	Canceled by turning OFF/ON the power. Check connectors and harness in the communication line. Replace the console finisher control PWB.

MAIN	SUB		
F1	33	Content	Console finisher (AR-FN7) punch (AR-PN1) side registration motor trouble
		Detail	Punch side registration motor operation abnormality
		Cause	Motor lock Motor rpm abnormality Overcurrent to the motor Console finisher control PWB trouble
		Check and remedy	Use DIAG (SIM3-3) to check the motor operation.
	34	Content	Console finisher (AR-FN7) punch (AR-PN1) motor trouble
		Detail	Punch motor operation abnormality
		Cause	Motor lock Motor rpm abnormality Overcurrent to the motor Console finisher control PWB trouble
		Check and remedy	Use DIAG (SIM3-3) to check the motor operation.
	35	Content	Console finisher (AR-FN7) punch (AR-PN1) side registration sensor trouble
		Detail	Sensor input value abnormality
		Cause	Sensor breakage Harness disconnection Console finisher control PWB trouble
		Check and remedy	Use DIAG (SIM3-2) to check the sensor operation.
	36	Content	Console finisher (AR-FN7) punch (AR-PN1) timing sensor trouble
		Detail	Sensor input value abnormality
		Cause	Sensor breakage Harness disconnection Console finisher control PWB trouble
		Check and remedy	Use DIAG (SIM3-2) to check the sensor operation.
	37	Content	Console finisher (AR-FN7) backup RAM trouble
		Detail	Backup RAM contents are disturbed.
		Cause	Console finisher control PWB trouble Malfunction by noise
		Check and remedy	Replace the console finisher control PWB.
	38	Content	Console finisher (AR-FN7) punch (AR-PN1) backup RAM trouble
		Detail	Punch unit backup RAM contents are disturbed.
		Cause	Punch control PWB trouble Malfunction by noise
		Check and remedy	Replace the punch control PWB.
	81	Content	Console finisher transport motor abnormality
		Detail	Transport motor trouble
		Cause	Motor lock Motor rpm abnormality Overcurrent to the motor Console finisher control PWB trouble
		Check and remedy	Use DIAG (SIM3-3) to check the motor operation.

MAIN	SUB		
F2	00	Content	Toner control sensor abnormality
		Detail	Toner control sensor output open
		Cause	Connector harness trouble Connector disconnection
		Check and remedy	Check connection of the toner control sensor. Check connection of connector and harness to the main PWB. Check for disconnection of harness.
	02	Content	Toner supply abnormality
		Detail	Toner control sensor output value becomes under-toner too earlier.
		Cause	Connector harness trouble Toner control sensor trouble The toner cartridge seal is not removed
		Check and remedy	Check connection of the connector in the toner motor section. Check connection of connector and harness to the main PWB. Check for disconnection of harness. Toner control sensor output check DIAG (SIM25-1) Remove the toner cartridge seal.
	04	Content	Improper cartridge (life cycle error, etc.)
		Detail	An improper process cartridge is inserted.
		Cause	IC chip trouble Improper cartridge
		Check and remedy	Insert a proper cartridge.
	05	Content	CRUM error
		Detail	Communication with IC chip cannot be made.
		Cause	IC chip trouble Improper cartridge
		Check and remedy	Insert a proper cartridge.
	39	Content	Process thermistor trouble
		Detail	Process thermistor open
		Cause	Process thermistor trouble Process thermistor harness disconnection PCU PWB trouble
		Check and remedy	Check connection of harness and connector of the process thermistor. Check PCU PWB.
F3	12	Content	Machine no. 1 tray lift-up trouble
		Detail	PED does not turn ON in the specified time. LUD does not turn ON in the specified time.
		Cause	PED/LUD trouble No. 1 tray lift-up trouble Check connection of harness between the PCVU PWB, lift-up unit, and paper feed unit.
		Check and remedy	Check PED, LUD, and their harness and connectors. Check the lift-up unit.
	22	Content	Multi purpose tray lift-up trouble
		Detail	MCPED does not turn ON in the specified time. MCLUD does not turn ON in the specified time.
		Cause	MCPED/MCLUD trouble Multi purpose tray lift-up motor trouble Harness disconnection f the PCU PWB, the lift-up unit, and the paper feed unit.
		Check and remedy	Check MCPED, PCLUD, and their harness and connectors. Check the lift-up unit.

MAIN	SUB		
F6	00	Content	Communication trouble (ICU detection) between ICU and FAX
		Details	Communication establishment error/Fleming/ Parity/Protocol error
		Cause	Slave unit PWB connector disconnection Harness abnormality between slave unit PWB and ICU PWB. Slave unit PWB mother board connector pin breakage Slave unit ROM abnormality/No ROM/ Reverse insertion of ROM/ROM pin breakable
		Check & Remedy	Check connector harness between slave unit PWB and ICU PWB. Check grounding of machine. Check slave unit PWB ROM.
	01	Content	FAX expansion flash memory abnormality (ICU detection)
		Details	Expansion flash memory with SRAM backup data is installed.
		Cause	SRAM backup data is detected in expansion flash memory. Expansion flash memory in which SRAM data are backed up with SIM 66-19 is installed.
		Check & Remedy	Restore backup data to SRAM with SIM 66-20, and clear expansion flash memory with SIM 66-10. If data are unnecessary, clear expansion flash memory with SIM 66-10.
	04	Content	FAX modem operation abnormality
		Details	FAX PWB modem chip operation abnormality
		Cause	The boot test pin in the FAX PWB is shorted and normal operation is tried. Modem chip operation abnormality in FAX PWB
		Check & Remedy	Turn on the power again without shorting the boot test pin in the FAX PWB. Replace FAX PWB.
F7	01	Content	FAX board EEPROM read/write error
		Details	EEPROM access error (read/write)
		Cause	EEPROM trouble FAX PWB EEPROM access circuit trouble
		Check & Remedy	Replace FAX PWB.
H2	00… HL1 (RT H1) 01… HL2 (RT H2)	Content	thermistor open Fusing unit not installed
		Detail	Thermistor is open. (An input voltage of 2.92V or above is detected.) Fusing unit not installed
		Cause	Thermistor trouble Control PWB trouble Fusing section connector disconnection AC power trouble Fusing unit not installed
		Check and remedy	Check harnesses and connectors from the thermistor to the control PWB. Use DIAG (SIM14) to clear the self diag display.

MAIN	SUB		
H3	00… HL1 (RT H1) 01… HL2 (RT H2)	Content	Fusing section high temperature trouble
		Detail	The fusing temperature exceeds 242°C. (An input voltage of 0.27V or above is detected.)
		Cause	thermistor trouble Control PWB trouble Fusing section connector disconnection AC power trouble
		Check and remedy	Use DIAG (SIM5-2) to check the heater lamp **Blinking operation.** If the heater lamp blinks normally: Check the thermistor and its harness. Check the thermistor input circuit in the control PWB. **If the heater lamp keep lighting:** Check the AC PWB and the lamp control circuit in the control PWB. Use DIAG (SIM14) to cancel the trouble
H4	00… HL1 (RT H1) 01… HL2 (RT H2)	Content	Fusing section low temperature trouble
		Detail	•The set temperature is not reached within the specified time (normally 3 min) when warming up or resetting from pre-heating. •Under the ready state. (An input voltage of 1.21V or below is detected 5 times continuously.)
		Cause	thermistor trouble Heater lamp trouble Control PWB trouble Thermostat trouble AC power trouble Interlock switch trouble
		Check and remedy	Use DIAG (SIM5-2) to check the heater lamp **Blinking operation.** If the heater lamp blinks normally: Check the thermistor and its harness. Check the thermistor input circuit in the control PWB. **If the heater lamp does not light:** Check for heater lamp disconnection and thermostat disconnection. Check the interlock switch. Check the AC PWB and the lamp control circuit in the control PWB. Use DIAG (SIM14) to cancel the trouble.
H5	01	Content	5-time continuous POD1 not-reaching jam detection
		Detail	5-time continuous POD1 not-reaching jam detection
		Cause	A fusing section jam is not properly removed. (Jam paper remains.) POD1 sensor trouble, or harness disconnection Improper installation of fusing unit
		Check and remedy	Check jam paper in the fusing section. (winding, etc.) Check POD1 sensor harness, and check the fusing unit installation. Use DIAG (SIM14) to cancel the trouble.
L1	00	Content	Scanner feed trouble
		Details	Scanner feed is not completed within the specified time.
		Cause	Scanner unit abnormality Scanner wire disconnection
		Check & Remedy	Check scanning with SIM 1-1.

MAIN	SUB		
L3	00	Content	Scanner return trouble
		Details	Scanner return is not completed within the specified time.
		Cause	Scanner unit abnormality Scanner wire disconnection
		Check & Remedy	Check scanning with SIM 1-1.
L4	01	Content	Main motor lock detection
		Detail	The motor lock signal is detected for 1.5sec during rotation of the main motor.
		Cause	main motor trouble Check connection of harness between the PCU PWB and the main motor. Control circuit trouble
		Check and remedy	Use DIAG (SIM25-1) to check the main motor operation. Check harness and connector between the PCU PWB and the main motor.
	02	Content	Drum motor lock detection
		Detail	The motor lock signal is detected for 1.5sec during rotation of the drum motor.
		Cause	Drum motor trouble Improper connection of harness between the PCU PWB and the drum motor. Control circuit trouble
		Check and remedy	Use DIAG (SIM25-1) to check the drum motor operation. Check harness and connector between the PCU PWB and the drum motor.
L6	10	Content	Polygon motor lock detection
		Detail	It is judged that the polygon motor lock signal is not outputted. Lock signal is checked in the interval of 10sec after starting the polygon motor, and it is judged that the polygon motor does not rotate normally.
		Cause	The LSU connector or harness in the LSU is disconnected or broken. Polygon motor trouble
		Check and remedy	Use DIAG (SIM61-1) to check the polygon motor operation. Check connector and harness connection. Replace LSU.
L8	01	Content	No fullwave signal
		Detail	Full wave signal is not detected.
		Cause	The PCU PWB connector or the power unit harness is disconnected or broken. PCU PWB trouble Power unit trouble
		Check and remedy	Check connection of the harness and connector. Replace PCU PWB. Replace the power unit.
	02	Content	Full wave signal width abnormality
		Detail	It is judged as full wave signal frequency abnormality. (When the detection cycle is judged as 69Hz or above or 42.5Hz or below)
		Cause	The connector or harness of the PCU PWB and the power PWB is disconnected. PCU PWB trouble Power unit trouble
		Check and remedy	Check connection of the harness and connector. Replace the PCU PWB. Replace the power unit.

MAIN	SUB		
U6	00	Content	Desk/LCC communication trouble
		Detail	Desk/LCC communication error Communication cable test error after turning on the power or exiting DIAG.
		Cause	Improper connection or disconnection of connector and harness Desk control PWB trouble Control PWB (PCU) trouble Noise or interference
		Check and remedy	Canceled by turning OFF/ON the power. Check connection of the harness and connector in the communication line.
	01	Content	Desk/LCC No. 1 tray lift-up trouble
		Detail	Desk/LCC No. 1 tray lift-up trouble
		Cause	Sensor trouble Desk control PWB trouble Gear breakage Lift-up motor trouble
		Check and remedy	Use DIAG (SIM4-2) to check the lift-up sensor detection. Use DIAG (SIM4-3) to check the lift-up motor operation.
	02	Content	Desk No. 2 tray/LCC1 lift-up trouble
		Detail	Desk No. 2 tray/LCC lift-up trouble
		Cause	Sensor trouble Desk control PWB trouble Gear breakage Lift-up motor trouble
		Check and remedy	Use DIAG (SIM4-2) to check the lift-up sensor detection. Use DIAG (SIM4-3) to check the lift-up motor operation.
	03	Content	Desk No. 3 tray/LCC2 lift-up trouble
		Detail	Desk no. 3 tray lift-up trouble
		Cause	Sensor trouble Desk control PWB trouble Gear breakage Lift-up motor trouble
		Check and remedy	Use DIAG (SIM4-2) to check the lift-up sensor detection. Use DIAG (SIM4-3) to check the lift-up motor operation.
	10	Content	Desk/LCC transport motor trouble
		Detail	Desk/LCC transport motor operation trouble
		Cause	Motor lock Motor rpm abnormality Overcurrent to the motor Desk control PWB trouble
		Check and remedy	Use DIAG (SIM4-3) to check the transport motor operation.

MAIN	SUB		
EE	EL	Content	Auto developer adjustment trouble (Over-toner)
		Detail	The sample data is at 68 or below when auto developer adjustment is performed.
		Cause	Toner concentration sensor trouble Charging voltage, developing voltage abnormality Insufficient toner concentration Developing unit trouble PCU PWB trouble
		Check and remedy	Use DIAG (SIM25-2) to perform auto developer adjustment.
	EU	Content	Auto developer adjustment trouble (Under-toner)
		Detail	The sample data is of 168 or above when auto developer adjustment is performed.
		Cause	Insufficient toner concentration Charging voltage, developing voltage abnormality Insufficient toner concentration Developing unit trouble PCU PWB trouble
		Check and remedy	Use DIAG (SIM25-2) to perform auto developer adjustment.
F9	02	Content	PRT Centro port check error
		Detail	Controller Centro port trouble
		Cause	Centro port trouble Controller PWB trouble
		Check and remedy	Replace the Controller PWB.
	03	Content	NIC port check error
		Detail	NIC port check error
		Cause	NIC port trouble NIC PWB trouble Controller PWB trouble
		Check and remedy	Replace the NIC PWB. Replace the Controller PWB.
U1	01	Content	FAX Battery abnormality
		Detail	Backup SRAM battery voltage fall
		Cause	Battery life Battery circuit abnormality
		Check and remedy	Check that the battery voltage is about 2.5V or above. Check the battery circuit.
	02	Content	RTC read abnormality (common with FAX, on ICU PWB)
		Details	The value read from RTC on ICU PWB is [EE]h (abnormal).
		Cause	RTC circuit abnormality Battery voltage fall Battery circuit abnormality
		Check & Remedy	Set the time again with key operation, and check that time advances properly. Check RTC circuit. Check that battery voltage is about 2.5V or above. Check battery circuit.

MAIN	SUB		
U2	00	Content	EEPROM read/write error (Controller)
		Detail	EEPROM write error
		Cause	EEPROM trouble EEPROM is not initialized. Controller PWB EEPROM access circuit trouble
		Check and remedy	Check that EEPROM is properly inserted. Save the counter/adjustment values with the DIAG simulation. Use DIAG (SIM16) to cancel U2 trouble. Replace the Controller PWB.
	11	Content	Counter check sum error (Controller)
		Detail	Counter data area check sum error
		Cause	EEPROM trouble Control circuit trouble by noise Controller PWB EEPROM access circuit trouble
		Check and remedy	Check that EEPROM is properly inserted. Save the counter/adjustment values with the DIAG simulation. Use DIAG (SIM16) to cancel U2 trouble. Replace the Controller PWB.
	12	Content	Adjustment value check sum error (Controller)
		Detail	Adjustment data area check sum error
		Cause	EEPROM trouble Control circuit trouble by noise Controller PWB EEPROM access circuit trouble
		Check and remedy	Check that EEPROM is properly inserted. Save the counter/adjustment values with the DIAG simulation. Use DIAG (SIM16) to cancel U2 trouble. Replace the Controller PWB.
	80	Content	EEPROM read/write error (Scanner)
		Details	Scanner EEPROM write error
		Cause	EEPROM abnormality EEPROM which is not initialized is installed. Hang of control circuit due to noises Scanner PWB EEPROM access circuit abnormality
		Check & Remedy	Check that EEPROM is set properly. Record counter/adjustment values with the simulation to protect the data from being deleted. Cancel U2 trouble with SIM 16. Replace scanner PWB.
	81	Content	Memory check sum error (Scanner)
		Details	Scanner memory check sum error
		Cause	EEPROM trouble Control circuit freeze by noises Scanner PWB EEPROM access circuit trouble
		Check & Remedy	Check that EEPROM is set properly. Record counter/adjustment values with the simulation to protect the data from being deleted. Cancel U2 trouble with SIM 16. Replace scanner PWB.

MAIN	SUB		
U2	90	Content	EEPROM read/write error (PCU)
		Detail	PCU EEPROM write error
		Cause	EEPROM trouble EEPROM is not initialized. Hang of control circuit due to noises PCU PWB EEPROM access circuit trouble
		Check and remedy	Check that EEPROM is properly inserted. Save the counter/adjustment values with the DIAG simulation. Use DIAG (SIM16) to cancel U2 trouble. Replace the Controller PWB.
	91	Content	Memory check sum error (PCU)
		Detail	PCU memory check sum error
		Cause	EEPROM trouble EEPROM is not initialized. PCU PWB EEPROM access circuit trouble Uninitialized EEPROM installed.
		Check and remedy	Check that EEPROM is properly inserted. Save the counter/adjustment values with the DIAG simulation. Use DIAG (SIM16) to cancel U2 trouble. Replace the Controller PWB.
U7	00	Content	RIC communication trouble
		Detail	RIC communication trouble Communication cable test error after turning on the power or exiting DIAG.
		Cause	Disconnection of connector and harness RTC control PWB trouble Control PWB (Controller) trouble Noise or interference
		Check and remedy	Canceled by turning OFF/ON the power. Check connector and harness in the communication line.
PF	00	Content	RIC copy inhibit signal is received.
		Detail	Copy inhibit command from RIM (host) is received.
		Cause	Judged by the host.
		Check and remedy	Inform to the host.

3. Network communication error

•Error code table

Error code	Content of error
CE-01	The print server card (AR-NC5J) is broken down or is not installed.
CE-02	The specified mail server or FTP server is not found.
CE-03	Communication with the specified server is interrupted during image transmission.
CE-04	The account name or the password for the FTP server is invalid.
CE-05	The directory of the FTP server is invalid.
CE-00	A communication error other than the above is generated, such as NIC cable disconnection

4. Fatal / Non-Fatal Error Tables

A. Troubles where the machine can be operated depending on the conditions (Include Multi Function)

Trouble	Judgment block	Trouble code	Operation-possible mode					
			Copy read (interruption, etc.)	FAX send	Email send	FAX print	Print	List print
Scanner section troubles (Mirror motor, lens, copy lamp)	SCANNER	L1,L3,U2 (80,81)	X	X	X	O	O	O
FAX board trouble	Controller/ FAX	F6,F7	O	X	O	X	O	O
FAX power OFF	Controller		O	X	O	X	O	O
Network error	Controller	CE	O	O	X	O	O	O
Staple trouble	PCU	F1(10)	△1	O	O	△1	△1	△1
Paper feed tray trouble	PCU	F3, U6 (Desk)	△2	O	O	△2	△2	△2
PCU section troubles (Motor, fusing, etc.)	PCU		X	O	O	X	X	X
After-work trouble	PCU		△3	O	O	△3	△3	△3
Laser trouble	PCU	E7 (02 only), L6	X	O	O	X	X	X
HDD trouble	Controller	E7 (03)	X	X	X	X	X	X
CCD troubles (Shading, etc.)	SCANNER	E7 (10, 11, 13)	X	X	X	O	O	O
Scanner communication trouble	Controller	E7 (80)	X	X	X	O	O	O
PCU communication trouble	Controller	E7 (90)	X	O	O	X	X	X
Backup battery voltage fall	Controller	U1 (01, 02)	O	X	X	O	O	O

O : Operation possible X : Operation impossible △ : Operation possible depending on conditions

△1 :Operation possible except for the staple mode
△2 :Operation possible except for the trouble tray
△3 :Operation possible except for the trouble paper exit section

B. Operation inhibited

Trouble	Judgment block	Trouble code	Operation-possible mode					
			Copy read (interruption, etc.)	FAX send	Email send	FAX print	Print	List print
Memory trouble (Expansion RAM not installed, etc.)	Controller	U2 (00, 11, 12)	X	X	X	X	X	X
External communication invalid (RIC)	Controller	U7, PF	X	X	X	X	X	X
Image memory trouble, decode error	Controller	E7(01, 06)	X	X	X	X	X	X

X : Operation impossible

C. Operation mode in FAX send/receive operations

Trouble	Trouble code	Operation enable mode				
		Send reservation	Print	Send call	Receive call	Note
PCU general troubles		O	X	O	O Note	Possibly causing memory full.
Paper feed tray trouble	F3,U6	O	△ 1	O	O	
Paper exit section trouble	F1	O	△ 3	O	O	
Scanner general troubles		X	O	O	O	
FAX trouble	F6,F7	X	X	X	X	
ICU trouble	E7(01,06,80,90)	X	X	X	X	
ICU memory error	U2(00,11,12)	X	X	X	X	
RIC external communication trouble, PF	U7	X	X	X	X	
Backup battery voltage fall	U1	X	△ 2	X Note	X	Transfer enable
Door open		O	X	O	O Note	Possibly causing memory full.
Toner empty		O	X	O	O Note	Possibly causing memory full.
No process cartridge, etc.		O	X	O	O Note	Possibly causing memory full.
Paper empty		O	X	O	O Note	Possibly causing memory full.
Paper jam		O	X	O	O Note	Possibly causing memory full.
Document jam		X	O	O	O	
Simulation		X	X	X	X	
Key operation (Communication disable)		X	X	X	X	

O : Operation enable X : Operation disable

△ 1 : Enable in other than trouble tray
△ 2 : Go to FAX status check menu, and printing of list is allowed.
: Received document is outputted.
△ 3 : Paper exit enable to other tray than trouble one.

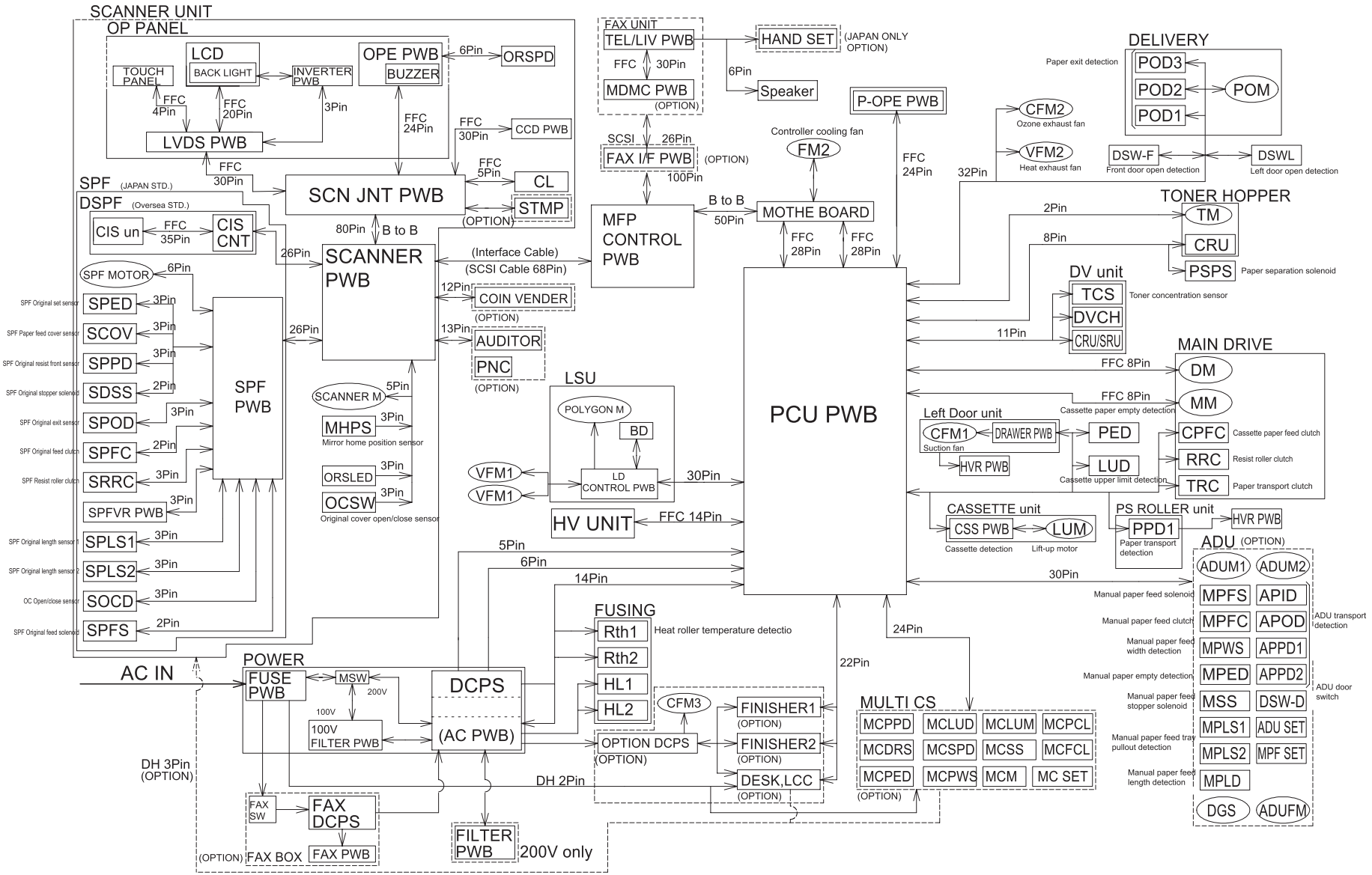
D. Trouble mode process

Machine operation possible depending on conditions	Operations except for the trouble mode are possible (READY). For the mode where operations are impossible, only setup can be allowed, and the message is provided to show that operations are impossible. (NOT READY in this case.) **(Display)** A dialog is shown in case of a trouble. For the mode where operations are possible, the OK button is added to the message. For the mode where operations are impossible, the OK button is not shown, and the process to cancel is indicated.
Machine operation is impossible	The trouble display is always shown, and all setup operations are invalid.

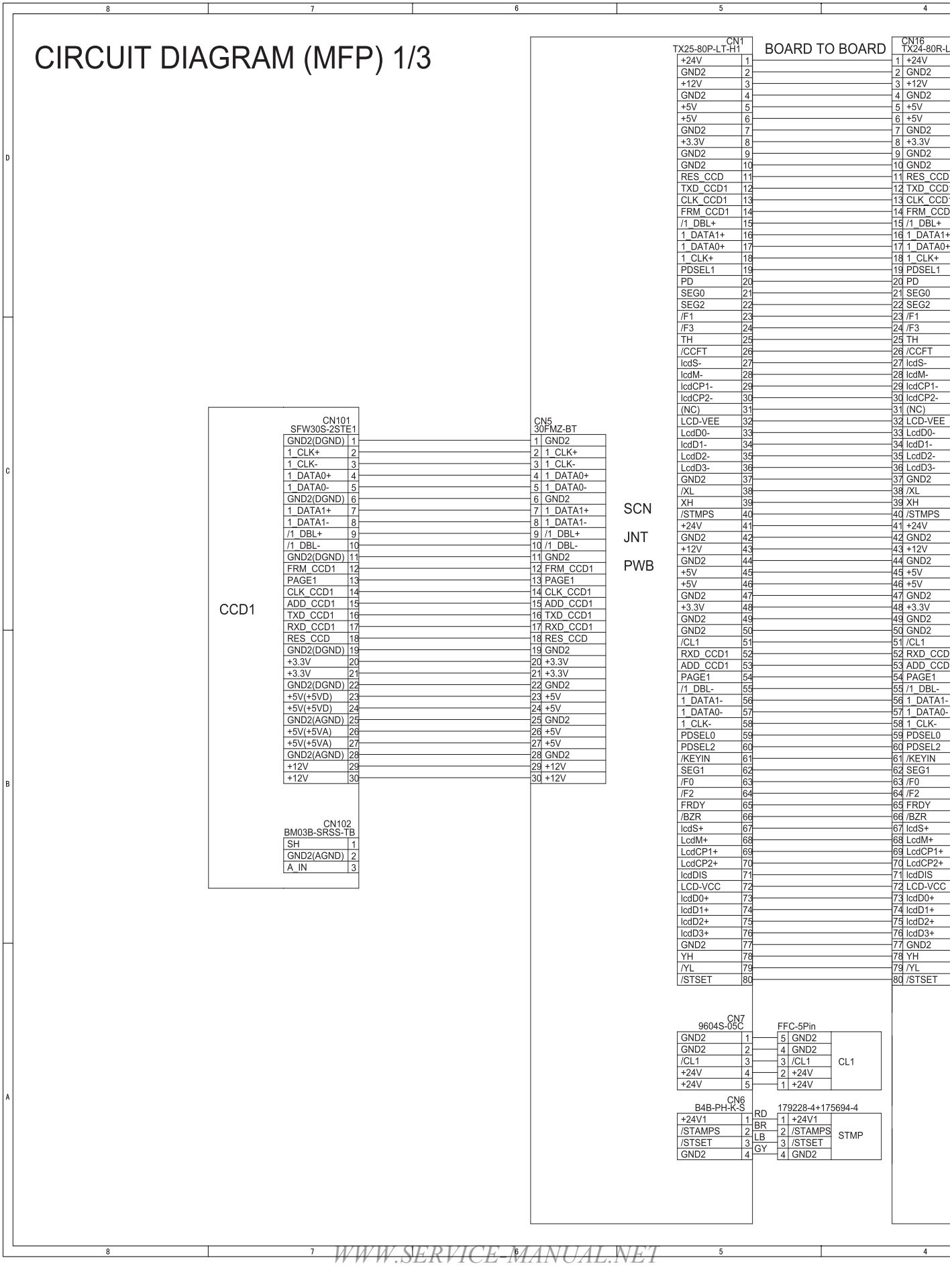
E. Writing to the trouble memory

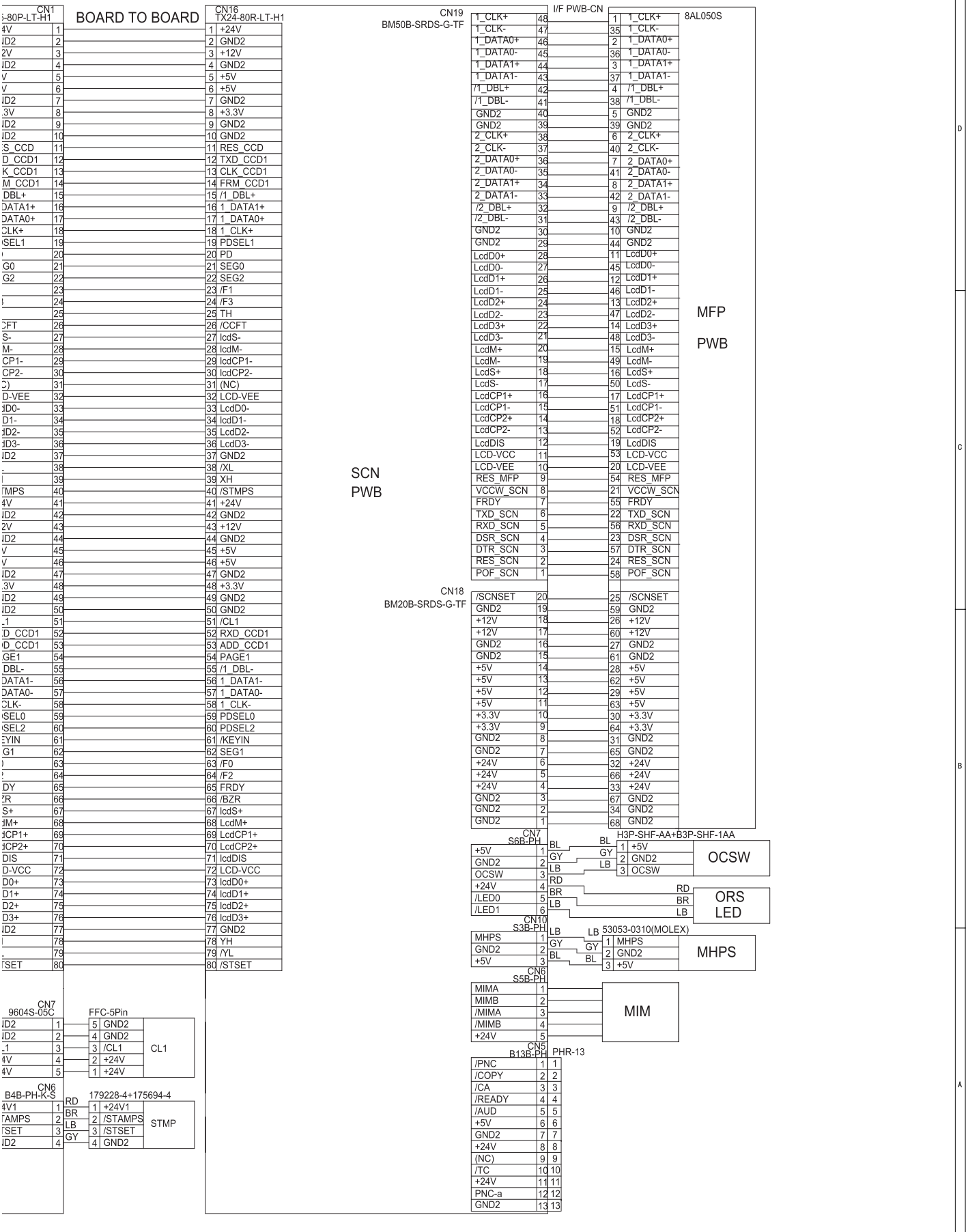
In this series, the simulation (diag) allows to select whether the same trouble is written to the trouble memory when it occurs. If the DIAG simulation is set as above, when any trouble occurs, its hysteresis is written to the trouble memory. DIAG(SIM 26-35)

0: The same trouble as the previous one is not recorded. (Default)
1: When a trouble occurs, it is written to the trouble memory without exception.

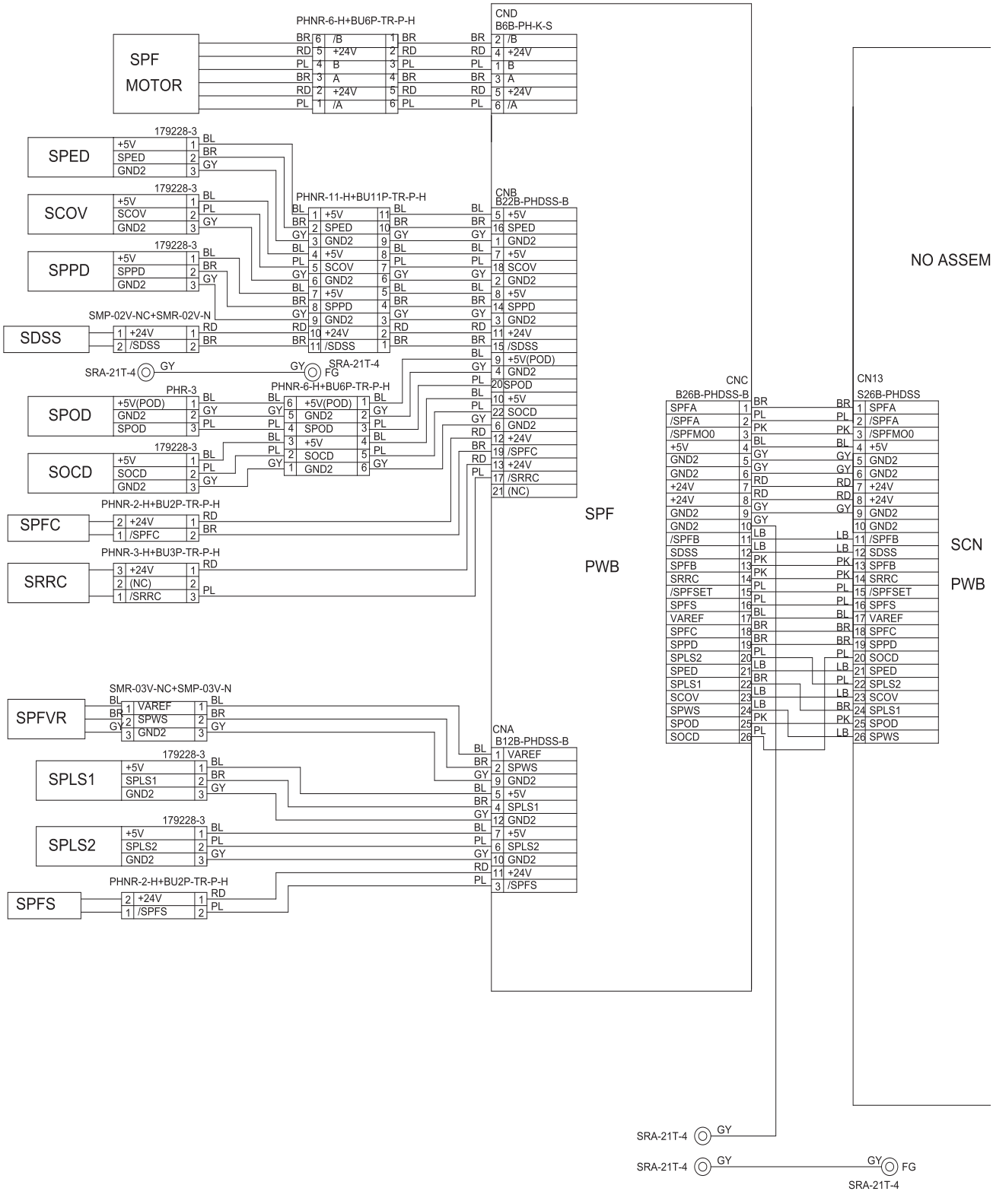


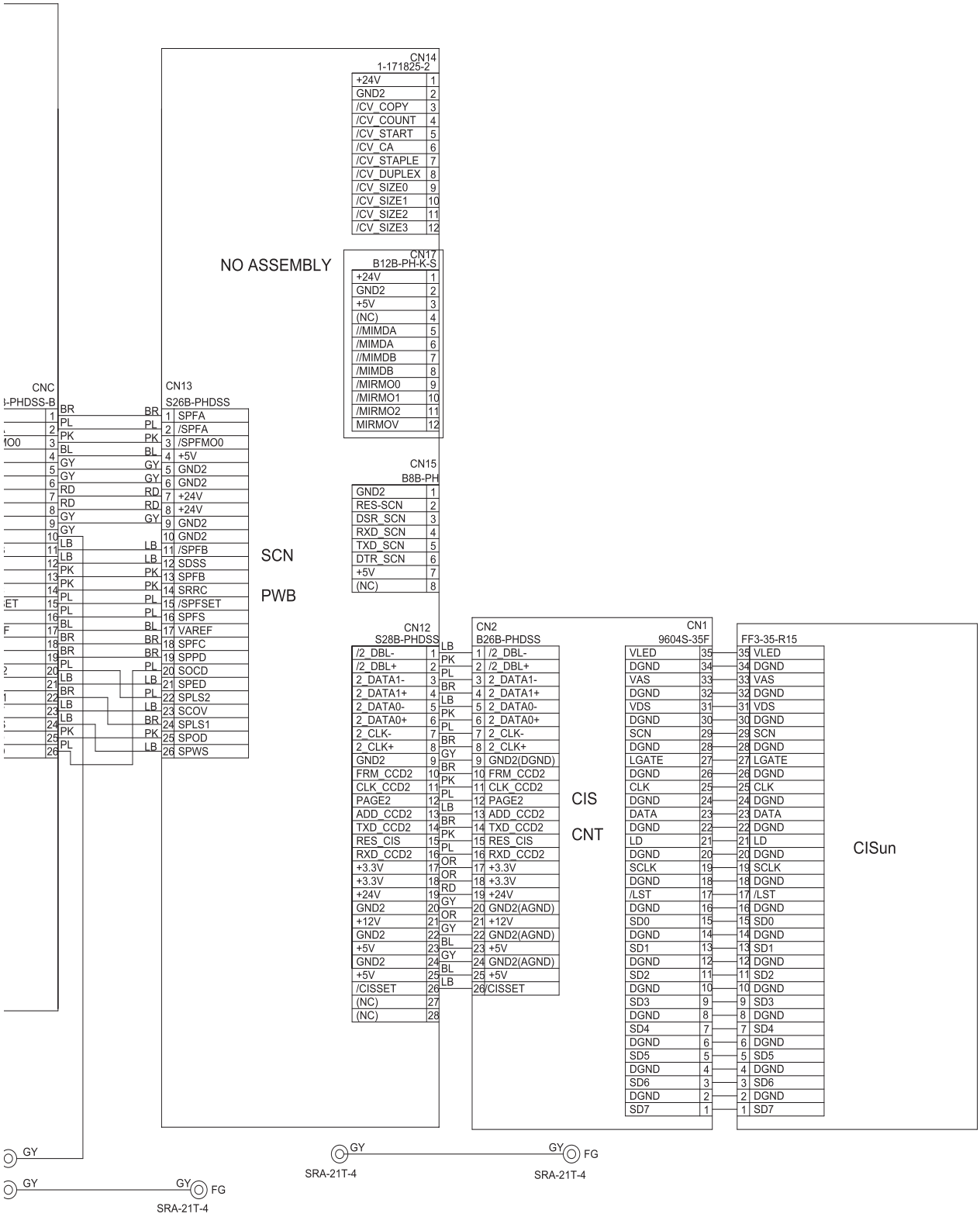
2. Circuit Diagram



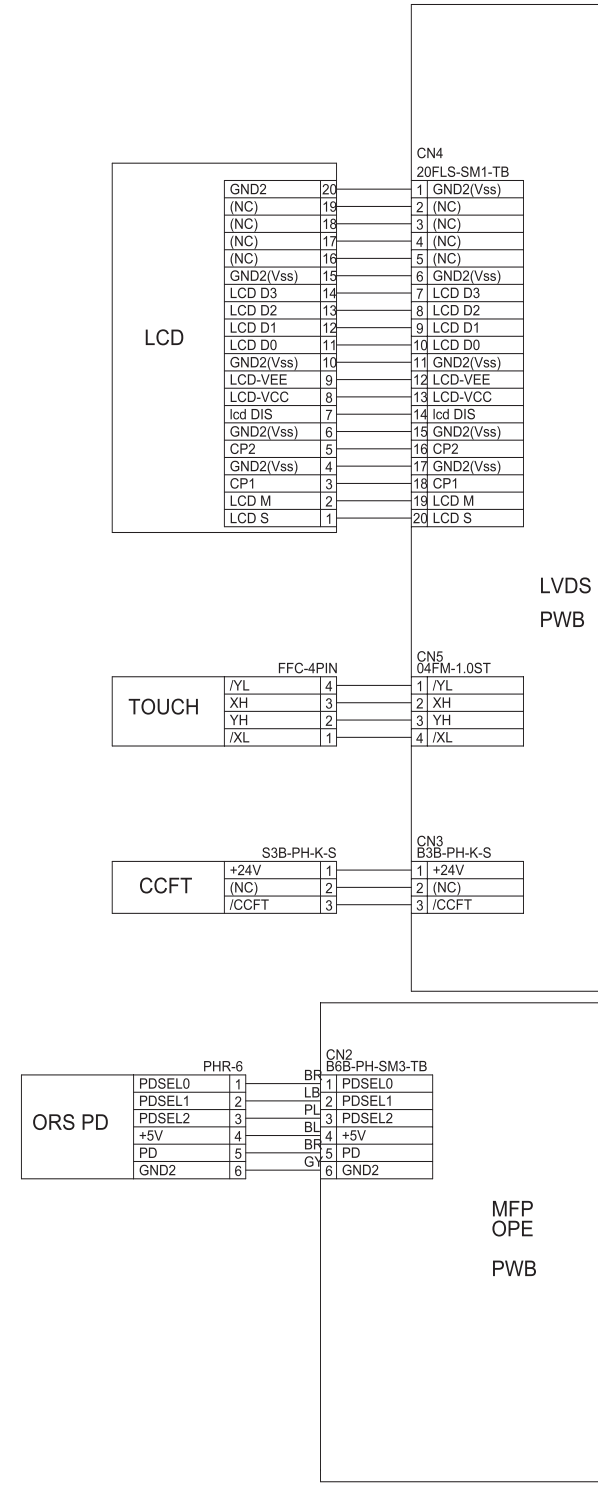


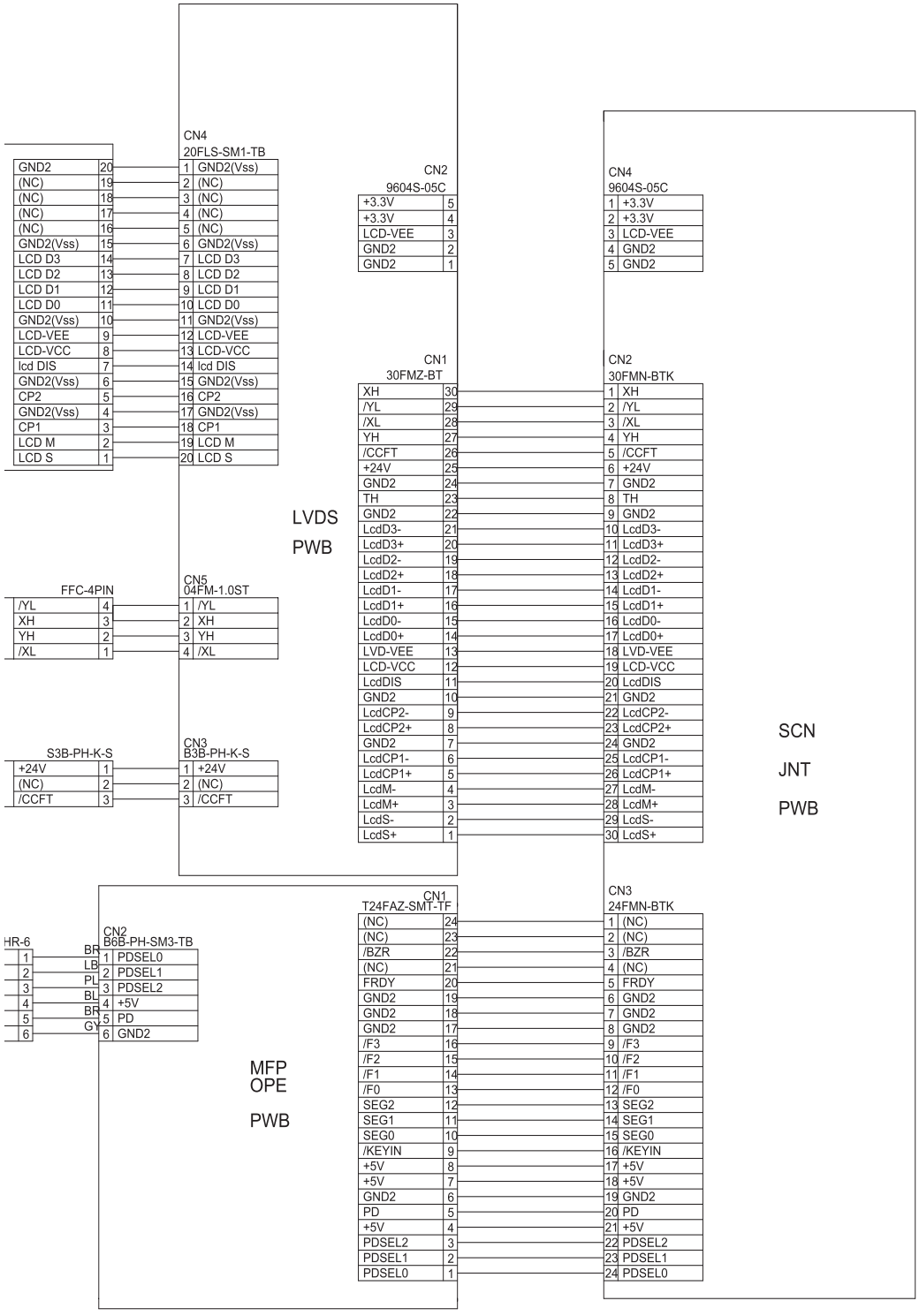
CIRCUIT DIAGRAM (MFP) 2/3



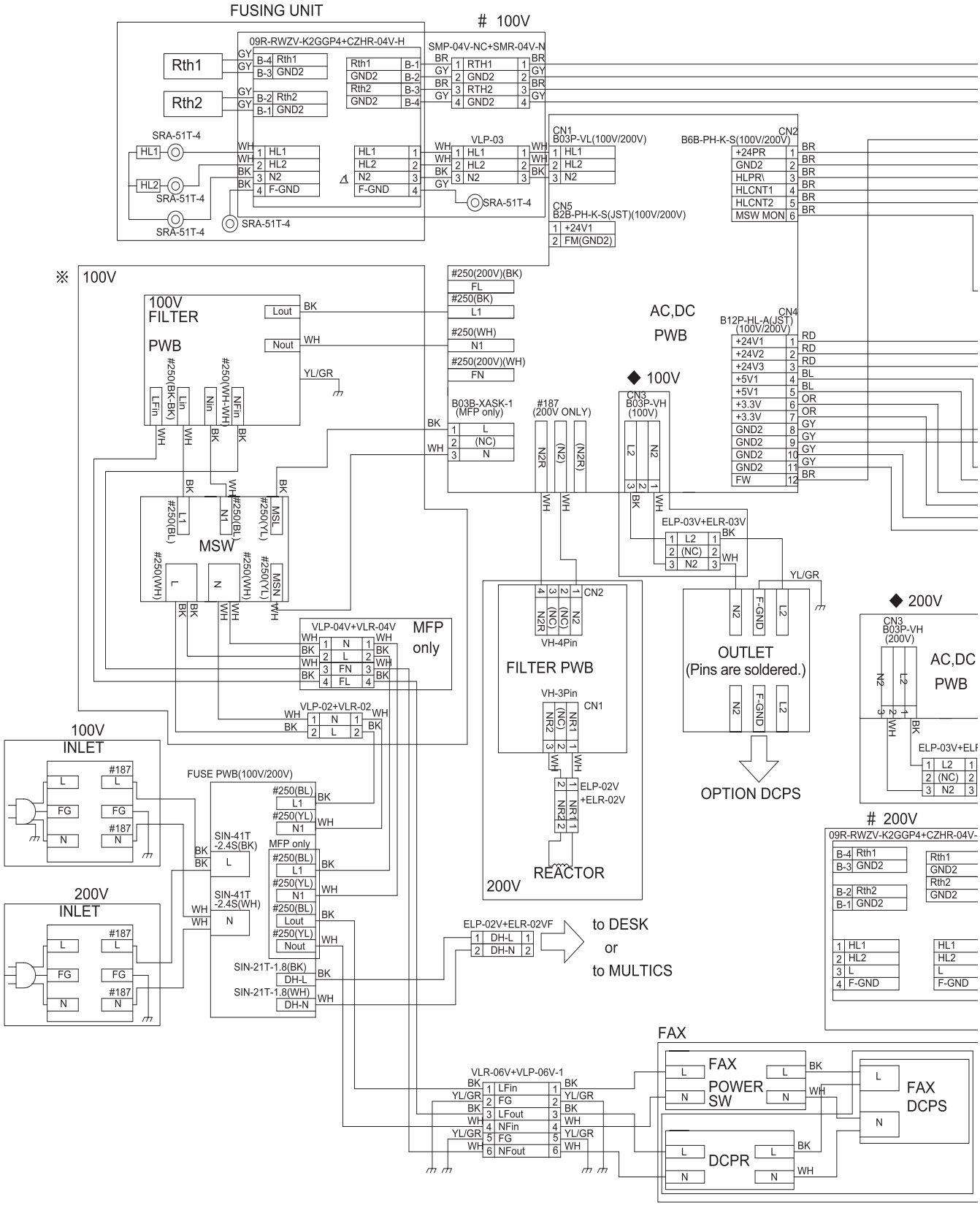


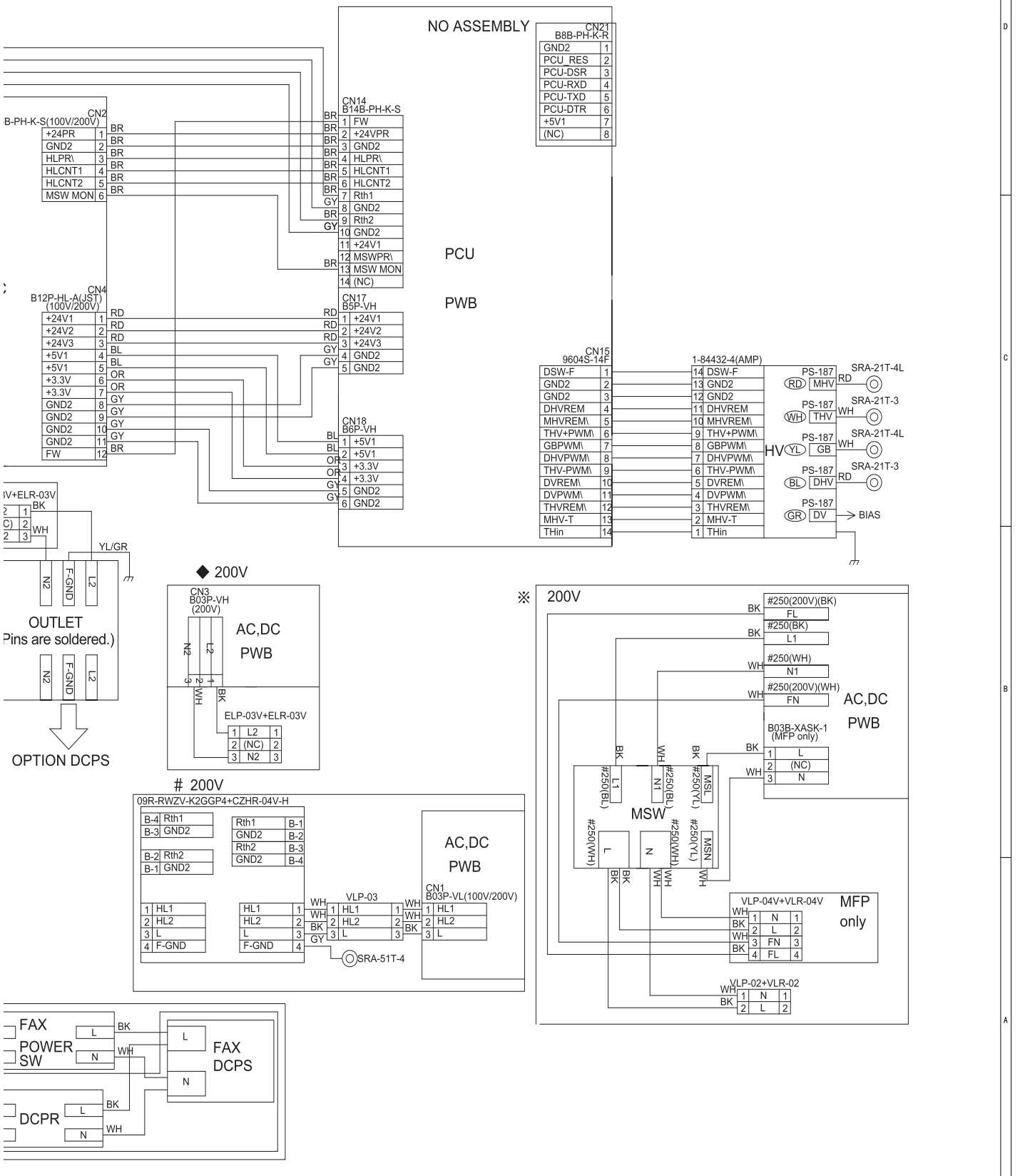
CIRCUIT DIAGRAM (MFP) 3/3





CIRCUIT DIAGRAM [ENGINE 3] 3/4





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)

Contains lithium-ion battery. Must be disposed of properly.
Remove the battery from the product and contact
federal or state environmental
agencies for information on recycling and disposal options.

SHARP

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