

# SHARP SERVICE MANUAL

CODE: 00ZARC330/F1E



## DIGITAL FULL COLOR COPYING MACHINE

### MODEL **AR-C330**

#### CONTENTS

[1] CONFIGURATION .....	1-1
[2] SPECIFICATIONS .....	2-1
[3] CONSUMABLE PARTS .....	3-1
[4] SETUP .....	4-1
[5] EXTERNAL VIEW AND INTERNAL STRUCTURE .....	5-1
[6] MACHINE OPERATIONS .....	6-1
[7] SETTING AND ADJUSTMENTS .....	7-1
[8] SIMULATION .....	8-1
[9] USER PROGRAM .....	9-1
[10] SELF DIAG MESSAGE AND TROUBLESHOOTING .....	10-1
[11] MAINTENANCE AND DISASSEMBLY/ASSEMBLY .....	11-1
[12] BLOCK DIAGRAM .....	12-1
[13] ACTUAL WIRING CHART .....	13-1
[14] OTHERS .....	14-1

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.

## Cautions on laser

Wave length	785 nm +10 nm -15 nm
Pulse times	North America: (3.4 $\mu$ s $\pm$ 3.4 ns)/7 mm Europe: (5.6 $\mu$ s $\pm$ 5.6 ns)/7 mm
Output power	0.2 - 0.55 mW

### Caution

This product contains a low power laser device. To ensure continued 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 Copier is rated Class 1 and complies with 21 CFR 1040.10 and 1040.11 of the CDRH standards. This means that the copier 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 copier's exterior covers contain several safety interlock switches. Do not bypass any safety interlock by inserting wedges or other items into switch slots.

For Europe:

CLASS 1 LASER PRODUCT

LASER KLASSE 1

LUOKAN 1 LASERLAITE

KLASS 1 LASERAPPARAT

### CAUTION

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

### VORSICHT

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

### ADVARSEL

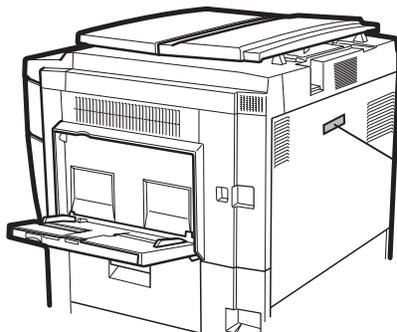
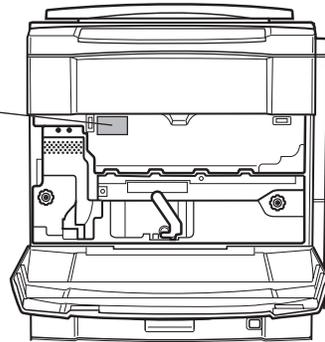
USYNLIG LASERSTRÅLNING VED ÅBNING, NÅR SIKKERHEDSBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSAETTELSSE FOR STRÅLNING.

### 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.



CLASS 1  
LASER PRODUCT

LASER KLASSE 1

### (Caution on power source)

Before servicing, be sure to disconnect the power plug from the power outlet.

# CONTENTS

## [1] CONFIGURATION

1. Main unit and option lineup . . . . . 1-1
2. Block diagram . . . . . 1-2

## [2] SPECIFICATIONS

1. Basic specifications . . . . . 2-1
2. Operating specifications . . . . . 2-1
  - A. Common operations . . . . . 2-1
  - B. Copy mode . . . . . 2-1
3. Engine specifications . . . . . 2-6
  - A. Operation (display/operation) section . . . . . 2-6
  - B. Paper feeding, paper conveyance, and discharge section . . . . . 2-6
  - C. Scanner section (read) . . . . . 2-7
  - D. Scanner section (write) . . . . . 2-7
  - E. Image processing section . . . . . 2-7
  - F. Fuser section . . . . . 2-8
  - G. Drive section . . . . . 2-9
  - H. Engine controller . . . . . 2-9
  - I. Image processing controller . . . . . 2-9
  - J. Memory . . . . . 2-9
  - K. Power source . . . . . 2-9
4. Safety and environmental protection standards . . . . . 2-9
  - A. Safety standards . . . . . 2-9
  - B. Environmental standards . . . . . 2-9
5. Ambient conditions . . . . . 2-10
  - A. Space required . . . . . 2-10
  - B. Operating ambient conditions . . . . . 2-10
  - C. Ambient storage conditions . . . . . 2-10
  - D. Ambient conditions for transporting . . . . . 2-10
  - E. Standard temperature and humidity . . . . . 2-10

## [3] CONSUMABLE PARTS

1. Consumable parts list . . . . . 3-1
2. Compatibility of Supplies for AR-C150/C250/C160/C270/C330 (Overseas) . . . . . 3-3
3. Photoconductor, developer, toner . . . . . 3-4
  - A. Serial number identification . . . . . 3-4
4. Paper . . . . . 3-5
5. Environmental conditions . . . . . 3-5

## [4] SETUP

1. Installing (using) environment check . . . . . 4-1
2. Transport and installation . . . . . 4-2
3. Unpacking . . . . . 4-2
  - A. Unpacking procedures . . . . . 4-2
  - B. Consumable parts required for setup . . . . . 4-3
  - C. Accessories . . . . . 4-4
4. Lock release . . . . . 4-4
  - A. External fitting section . . . . . 4-5
  - B. Scanner section . . . . . 4-5
  - C. Transfer section . . . . . 4-5
  - D. Fusing and paper exit section . . . . . 4-7
  - E. Paper feed, paper transport section . . . . . 4-7
5. Cleaning . . . . . 4-7
  - A. Main charger . . . . . 4-7
  - B. Document table . . . . . 4-8
6. Consumable parts setup . . . . . 4-8
  - A. Fusing oil setup . . . . . 4-8
  - B. Developer setup . . . . . 4-9
  - C. Toner setup . . . . . 4-10
  - D. Paper setup . . . . . 4-12
7. Parts setup . . . . . 4-12
8. Copy quality check . . . . . 4-13
9. Specification setup . . . . . 4-14
10. Function and operation check . . . . . 4-14
11. Recording of setup and adjustment data . . . . . 4-14
12. Procedures for transit . . . . . 4-14

## [5] EXTERNAL VIEW AND INTERNAL STRUCTURE

1. External view and operation parts . . . . . 5-1
2. Internal operation parts . . . . . 5-2
3. Operation panel . . . . . 5-2
4. Touch panel . . . . . 5-3
5. Internal parts . . . . . 5-4
6. Functional parts . . . . . 5-23

## [6] MACHINE OPERATIONS

1. Operation mode . . . . . 6-1
2. Operation menu . . . . . 6-2
3. Pre-heat mode and sleep mode operations . . . . . 6-5
  - A. Operation timing . . . . . 6-5
  - B. Pre-heat mode and sleep mode operations . . . . . 6-5
4. Consumable parts life and machine operation . . . . . 6-7

## [7] SETTING AND ADJUSTMENTS

1. Adjustment/setup items list . . . . .	7-1
[ADJ M1] DV doctor gap adjustment . . . . .	7-2
[ADJ M2] DV roller main pole position adjustment . . . . .	7-2
[ADJ M3] Toner concentration control reference level setting . . . . .	7-3
[ADJ M4] High voltage adjustment . . . . .	7-3
[ADJ M6] Image density sensor adjustment . . . . .	7-5
[ADJ M5] Paper skew adjustment . . . . .	7-5
[ADJ M7] Image skew adjustment (Scanner (Writing) unit) . . . . .	7-6
[ADJ M8] Photoconductor phase adjustment . . . . .	7-7
[ADJ M9A] Image resist adjustment (Auto adjustment) . . . . .	7-8
[ADJ M9] Main scanning direction copy magnification ratio adjustment (Manual adjustment) (Scanner (Writing) unit) Main scanning direction image registration adjustment (Manual adjustment) (Scanner (Writing) unit) . . . . .	7-10
[ADJ M10] Sub scanning direction color image resist adjustment (Manual adjustment) (Scanner (Writing) unit) (Color) . . . . .	7-12
[ADJ M11] Image distortion adjustment . . . . .	7-16
[ADJ M12] Image focus (main scanning direction copy magnification ratio) adjustment (CCD position adjustment) . . . . .	7-18
[ADJ M13] Sub scanning direction copy magnification ratio adjustment . . . . .	7-19
[ADJ M14] Image position adjustment (Main scanning direction) (Print engine) . . . . .	7-19
[ADJ M15] Image position adjustment (Main scanning direction) (Scanner (Writing)) . . . . .	7-20
[ADJ M16] Image position, image loss, void area adjustment . . . . .	7-20
[ADJ M17] Copy quality adjustment . . . . .	7-22
[ADJ M18] Document size sensor adjustment . . . . .	7-39
[ADJ M19] Waste toner full detection level adjustment . . . . .	7-40
[ADJ M20] Touch panel coordinates setting . . . . .	7-40
[ADJ M21] Transfer belt level adjustment (Transfer belt traveling adjustment) . . . . .	7-40
[ADJ M22] Fusing pressure adjustment . . . . .	7-41
[ADJ M23] Power voltage adjustment . . . . .	7-41
[ADJ M25] OHP sensor adjustment . . . . .	7-42
[ADJ M24] Manual paper feed size detection level adjustment . . . . .	7-42

## [8] SIMULATION

1. Outline and purpose . . . . .	8-1
2. Code system simulation . . . . .	8-1
A. Operating procedures and operations . . . . .	8-1
B. Simulation list . . . . .	8-3
C. Details of simulation . . . . .	8-11

## [9] USER PROGRAM

A. Outline . . . . .	9-1
B. Key operator program . . . . .	9-1
C. Key operator program list . . . . .	9-2

## [10] SELF DIAG MESSAGE AND TROUBLESHOOTING

1. Outline . . . . .	10-1
2. Function and purpose . . . . .	10-1
3. Self diag message kinds . . . . .	10-1
4. Self diag operation . . . . .	10-1
A. Self diag operation and related work flow . . . . .	10-1
5. List . . . . .	10-2
6. Details . . . . .	10-6

## [11] MAINTENANCE AND DISASSEMBLY/ASSEMBLY

1. Necessary procedure for maintenance and servicing . . . . .	11-1
2. List . . . . .	11-4
3. Details . . . . .	11-25

## [12] BLOCK DIAGRAM

1. Overall block diagram . . . . .	12-1
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## [13] ACTUAL WIRING CHART

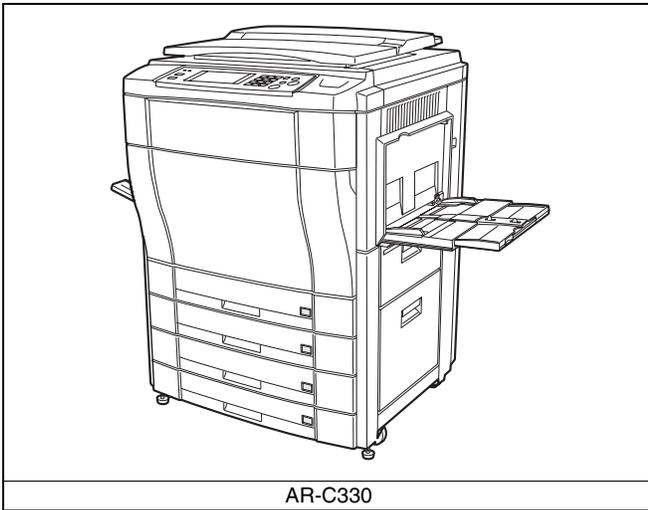
## [14] OTHERS

[Flash ROM Version Up] . . . . .	14-1
1. Outline . . . . .	14-1
A. Target Flash ROM for version up . . . . .	14-1
B. When version up of Flash ROM is required . . . . .	14-1
C. Flash ROM version up method . . . . .	14-1
2. Precautions . . . . .	14-3
3. Necessary items for version up (copy) of Flash ROM . . . . .	14-3
4. Flash ROM version up procedure . . . . .	14-4
A. By using a computer and the ICU MAIN PWB, the program data of Flash ROM is written from the computer to the Flash FOM of the ICU MAIN PWB. . . . .	14-4
B. Method using two Flash ROM sockets on the ICU MAIN PWB to copy between Flash ROM's . . . . .	14-6
[List of adjustment/setup values] . . . . .	14-8
[Necessary works when replacing the PWB or in case of memory trouble]. . . . .	14-15

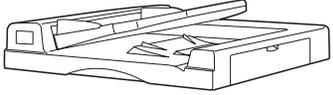
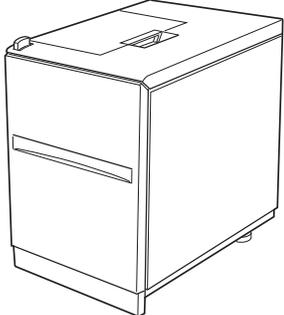
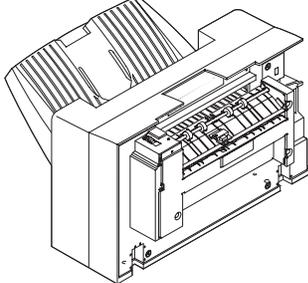
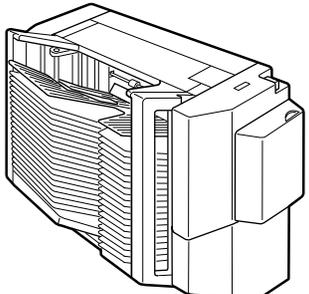
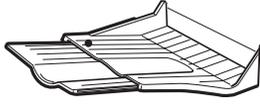
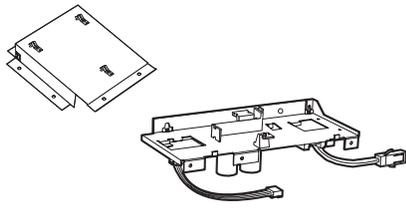
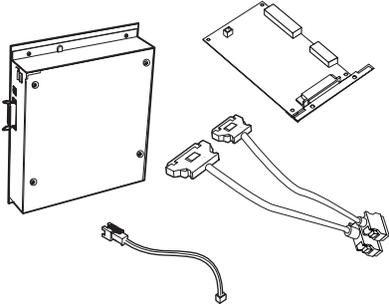
# [1] CONFIGURATION

## 1. Main unit and option lineup

### (1) Main unit lineup



### (2) Option lineup

		
<p>AR-RF1 / Reversing automatic document feeder</p>	<p>AR-VR2 / Original cover</p>	<p>AR-LC9 / Large capacity tray</p>
		
<p>AR-FN4 / Finisher</p>	<p>AR-SS2 / 20 bin staple sorter</p>	<p>AR-TE1 / Exit tray</p>
		
<p>AR-PX5 / Printer power unit</p>	<p>AR-PE3 / Built-in type printer controller (with I/F PWB)</p>	

NOTE: For USA and UK, the paper exit tray (AR-TE1) is an option. For the other destinations, it is a standard provision.

### (3) Option combinations

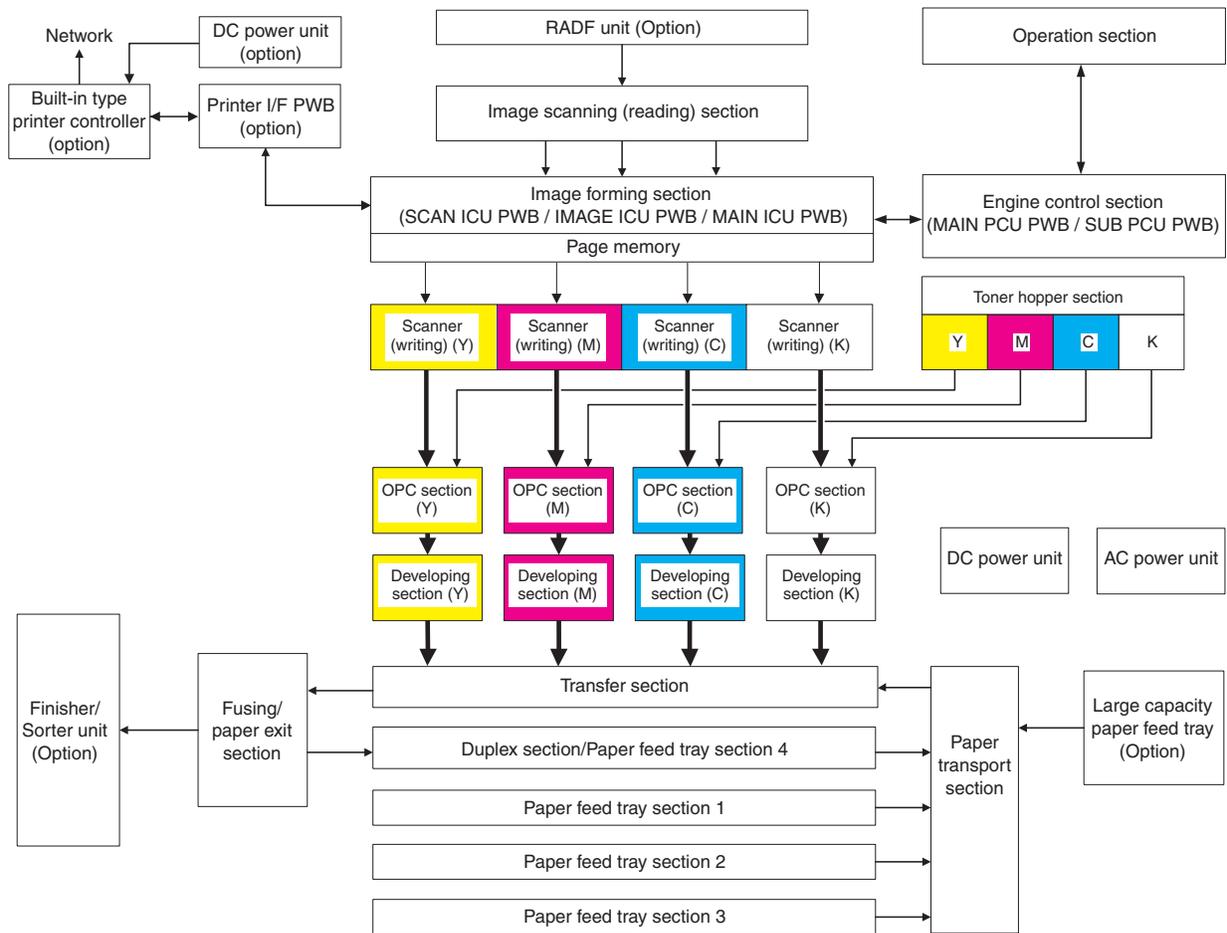
Option		Power source	Note
Item	Model		
Large capacity tray	AR-LC9	Supplied from the copier body.	
Reversing automatic document feeder	AR-RF1	Supplied from the copier body.	
20 bin staple sorter	AR-SS2	Supplied from the copier body.	
Fiery printer controller (built-in type, with printer connection kit)/DC power unit	AR-PE3/ AR-PX5	Supplied from the exclusive DC power unit.	
Original cover	AR-VR2		
Finisher	AR-FN4	Supplied from the copier body	Sorting is disabled in the copy mode.

### (4) Conditions of option combinations

Item	Model	Finisher	Fiery Printer controller	20 bin staple sorter	LCC	RADF
RADF	AR-RF1	○	○	○	○	—
LCC	AR-LC9	○	○	○	—	—
20 bin staple sorter	AR-SS2	×	○	—	—	—
Fiery printer controller (built-in type, with printer connection kit)/DC power unit	AR-PE3/ AR-PX5	○	—	—	—	—
Finisher	AR-FN4	—	—	×	—	—

○: Possible    ×: Not possible    ▲: Possible; however, only operational in copy mode (does not operation in printer mode)

## 2. Block diagram



## [2] SPECIFICATIONS

### 1. Basic specifications

#### (1) Type

Type	Console
Operation mode	Format
Copy mode	Full-color digital (electronic photographic)

#### (2) Target users

Mode	Volume of usage	
Copy mode	Scope	5,000 to 20,000 sheets/month
	Average copy volume	8,000 to 12,000 sheets/month

#### (3) External dimensions

Main unit	750 × 695 × 1010mm (29.5 × 27.4 × 39.8) (height: floor to glass surface) 750 × 695 × 1060mm (29.5 × 27.4 × 41.7) (height: floor to OC top surface)
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### B. Copy mode

#### (1) Document size

Scan mode	Paper type	Location	Paper size		Paper sizes
			Min.	Max.	
Original stand mode	AB Series	Other A	A5	A3	A3, B4, A4, A4R, A5
		Other B	B5		A3, B4, A4, A4R, B5, B5R
	Inch Series		8.5 × 5.5	11 × 17	11 × 17, 8.5 × 14, 8.5 × 11, 8.5 × 11R, 8.5 × 5.5
RADF mode	AB Series	Other A	A5	A3	A3, B4, A4, A4R, A5
		Other B			A3, B4, A4, A4R, B5, B5R, A5
	Inch Series		8.5 × 5.5	11 × 17	11 × 17, 8.5 × 14, 8.5 × 11, 8.5 × 11R, 8.5 × 5.5

#### (2) Paper size

Paper type	Paper size		Paper sizes
	Min.	Max.	
AB Series	A6R	A3 wide (305 × 457 mm)	A3 wide (305 × 457 mm), A3, B4, A4, A4R, B5, B5R, A5
Inch Series	8.5 × 5.5	12 × 18	12 × 18, 11 × 17, 8.5 × 14, 8.5 × 13, 8.5 × 11, 8.5 × 11R, 8.5 × 5.5

#### (4) Weight

Packaged	About 174.6Kg (385 lbs)
Main unit	162Kg (357 lbs)

#### (5) Machine life

Total (copy and print) volume	800,000 sheets
Lifetime	5 years

## 2. Operating specifications

### A. Common operations

#### (1) Warm-up time/Jam recovery time

##### a. Warm-up time (ambient temp. of 20°C)

After turned on	Max. 360 seconds
Recovery from warm-up mode	30 seconds

##### b. Jam recovery time

Jam recovery time	Under 30 seconds (conditions: door open/ fusing unit drawn)
	Under 8 seconds (conditions: door open)

**(3) Exposure**

**a. Exposure mode**

Copy mode			Image process, gradation control	Note	
Color	Copy document mode	Text/Printed Photo mode	Manual	Area separation, filter process, dither pattern	Pre-scan operation allowed
		Printed Photo mode	Manual	Filter process, dither pattern	Pre-scan operation allowed
		Text mode	Manual	Area separation, filter process, dither pattern	Pre-scan operation allowed
	Normal mode	Text mode	Manual	Area separation, filter process, dither pattern	Color balance, density fixed.
			Auto		
		Text/Printed Photo mode	Manual	Filter process, dither pattern	Color balance, density fixed.
			Auto		
		Printed Photo mode	Manual	Filter process, dither pattern	
		Photo mode	Manual		
		Text/Photo mode	Manual	Area separation, filter process, dither pattern	Color balance, density fixed.
			Auto		
	Map mode	Manual	Filter process, dither pattern		
	Color enhancement mode	Text mode	Manual	Area separation, filter process, dither pattern	Pre-scan operation allowed
			Auto		Pre-scan operation allowed
		Text/Printed Photo mode	Manual	Filter process, dither pattern	Pre-scan operation allowed
			Auto		Pre-scan operation allowed
		Printed Photo mode	Manual	Filter process, dither pattern	Pre-scan operation allowed
		Photo mode	Manual		
		Text/Photo mode	Manual	Area separation, filter process, dither pattern	Pre-scan operation allowed
			Auto		Pre-scan operation allowed
Map mode	Manual	Filter process, dither pattern	Pre-scan operation allowed		
Monochrome	Copy document mode	Text/Printed Photo mode	Manual	Area separation, filter process, dither pattern	
		Printed Photo mode	Manual	Filter process, dither pattern	
		Text mode	Manual	Area separation, filter process, dither pattern	
	Normal mode	Text mode	Manual	Area separation, filter process, dither pattern	Pre-scan operation can be inhibited with the user program.
			Auto (Non pre-scan mode)		
			Auto (Pre-scan mode)		
		Text/Printed Photo mode	Manual	Filter process, dither pattern	Pre-scan operation can be inhibited with the user program.
			Auto (Non pre-scan mode)		
			Auto (Pre-scan mode)		
		Printed Photo mode	Manual	Filter process, dither pattern	
		Photo mode	Manual		
	Text/Photo mode	Manual	Area separation, filter process, dither pattern	Pre-scan operation can be inhibited with the user program.	
		Auto (Non pre-scan mode)			
		Auto (Pre-scan mode)			
	Map mode	Manual	Filter process, dither pattern		

## Copy mode

Copy mode			Image process, gradation control	NOTE			
Color	Copy document mode	Manual	TEXT/PRINTED PHOTO MODE	Area separation, filter process, dither pattern	Pre-scan operation allowed		
		Manual	PRINTED PHOTO MODE	Filter process, dither pattern	Pre-scan operation allowed		
		Manual	TEXT MODE	Area separation, filter process, dither pattern	Pre-scan operation allowed		
	Normal mode	Manual	Manual	TEXT MODE	Area separation, filter process, dither pattern		
			Auto				
		Manual	Manual	TEXT/PRINTED PHOTO MODE	Filter process, dither pattern	Color balance, density fixed.	
			Auto				
		Manual	Manual	PRINTED PHOTO MODE	Area separation, filter process, dither pattern		
			Auto				
		Manual	Manual	PHOTO MODE	Area separation, filter process, dither pattern	Color balance, density fixed.	
			Auto				
		Manual	Manual	TEXT/PHOTO MODE	Filter process, dither pattern		
	Auto						
	Manual	Manual	MAP MODE	Area separation, filter process, dither pattern	Pre-scan operation allowed		
		Auto					
	Color enhancement mode	Manual	Manual	TEXT MODE	Area separation, filter process, dither pattern	Pre-scan operation allowed	
			Auto			Pre-scan operation allowed	
			Manual	TEXT/PRINTED PHOTO MODE		Pre-scan operation allowed	
		Manual	Manual	PRINTED PHOTO MODE	Filter process, dither pattern	Pre-scan operation allowed	
			Auto			Pre-scan operation allowed	
			Manual	PHOTO MODE		Pre-scan operation allowed	
Manual		Manual	TEXT/PHOTO MODE	Area separation, filter process, dither pattern	Pre-scan operation allowed		
		Auto			Pre-scan operation allowed		
		Manual	MAP MODE		Filter process, dither pattern	Pre-scan operation allowed	
Monochrome	Copy document mode	Manual	TEXT/PRINTED PHOTO MODE	Area separation, filter process, dither pattern			
		Manual	PRINTED PHOTO MODE	Filter process, dither pattern			
		Manual	TEXT MODE	Area separation, filter process, dither pattern			
	Normal mode	Manual	Manual	TEXT MODE	Area separation, filter process, dither pattern	Pre-scan operation can be inhibited with the user program.	
			Auto (Non pre-scan mode)				
			Auto (Pre-scan mode)				
		Manual	Manual	TEXT/PRINTED PHOTO MODE	Filter process, dither pattern	Pre-scan operation can be inhibited with the user program.	
			Auto (Non pre-scan mode)				
			Auto (Pre-scan mode)				
		Manual	Manual	PRINTED PHOTO MODE	Area separation, filter process, dither pattern		
			Auto (Non pre-scan mode)				
			Auto (Pre-scan mode)				
	Manual	Manual	PHOTO MODE	Area separation, filter process, dither pattern	Pre-scan operation can be inhibited with the user program.		
		Auto (Non pre-scan mode)					
		Auto (Pre-scan mode)					
Manual	MAP MODE	Filter process, dither pattern					

### b. Relationship between pre-scan operations and the copy mode

Copy mode		Color Copy			B/W Copy	
		COPY OF COPY mode ON	COPY OF COPY mode OFF	Color enhancement mode	COPY OF COPY mode ON	COPY OF COPY mode OFF
AUTO	TEXT/PRTD.PHOTO	NO (Switch to Manual mode)	YES	YES	NO (Switch to Manual mode)	YES
	TEXT/PHOTO	NO (Switch to Manual mode)	YES	YES	NO (Switch to Manual mode)	YES
	TEXT	NO (Switch to Manual mode)	YES	YES	NO (Switch to Manual mode)	YES
MANUAL	TEXT/PRTD.PHOTO	YES	YES	YES	YES	YES
	TEXT/PHOTO	NO Key is not displayed	YES [COPY OF COPY] key is not displayed	YES	NO Key is not displayed	YES [COPY OF COPY] key is not displayed
	PRINTED PHOTO	YES	YES	YES	YES	YES
	PHOTO	NO Key is not displayed	YES [COPY OF COPY] key is not displayed	YES	NO Key is not displayed	YES [COPY OF COPY] key is not displayed
	TEXT	YES	YES	YES	YES	YES
	MAP	NO Key is not displayed	YES [COPY OF COPY] key is not displayed	YES	NO Key is not displayed	YES [COPY OF COPY] key is not displayed

**c. Resolution**

- Read

Main scanning direction	Sub scanning direction
Basic resolution	Basic resolution
600dpi	600dpi

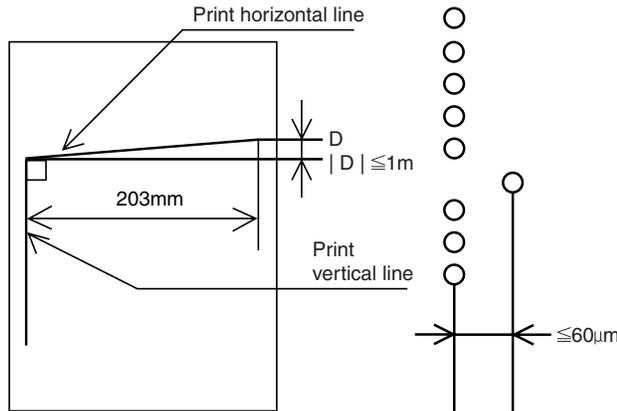
- Write

Main scanning direction	Sub scanning direction
Basic resolution	Basic resolution
600dpi	600dpi

**d. Gradation/image processing**

Scanning	Printing
256 gradations (8bit)	256 gradations (8bit)

**e. Distortion**



**f. Toner save mode**

Toner save percentage	Approx 15% * Can only be set for monochrome mode (set by key operator) (Set by simulation in the U.K.)
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**(4) Copy magnification**

**a. Copy magnification (independent magnification by direction is possible)**

Main scanning direction		Sub scanning direction	
Mode	Magnification range/fixed magnification	Mode	Magnification range/fixed magnification
Zoom mode	25 to 400% *	Zoom mode	25 to 400%
Fixed magnification mode (AB Series)	25, 50, 70, 81, 86, 100, 115, 122, 141, 200, 400%	Fixed magnification mode (AB Series)	25, 50, 70, 81, 86, 100, 115, 122, 141, 200, 400%
Fixed magnification mode (Inch Series)	25, 50, 64, 77, 95, 100, 121, 129, 141, 200, 400%	Fixed magnification mode (Inch Series)	25, 50, 64, 77, 95, 100, 121, 129, 141, 200, 400%

**b. Copy magnification precision**

Main scanning direction		Sub scanning direction	
Copy magnification	Magnification precision	Copy magnification	Magnification precision
Normal copy	100% ± 0.8%	Normal copy	100% ± 0.8%
Enlargement copy	Set magnification ± 1.0%	Enlargement copy	Set magnification ± 1.0%
Reduction copy	Set magnification ± 1.0%	Reduction copy	Set magnification ± 1.0%

**c. Zoom method**

Main scanning direction	Performed through image processing
Sub scanning direction	Performed by changing image processing and scanning speed

**(5) Job speed**

Copy method for each copy mode

	Black-and-white copy		Color copy		A3 wide copy
	Up to A4/LT	B4/RG to A3/WLT	Up to A4/LT	B4/RG to A3/WLT	
Single-side copy	1 scan/multi-copy	1 scan/multi-copy	1 scan/multi copy	1 scan/multi copy	1 scan/multi copy (B/W) Multi scan/copy (color)
Duplex copy	1 scan/multi-copy	1 scan/multi copy	1 scan/multi copy	Multi scan/copy *	—

\* No multi-copy mode, only single copy

**a. First copy time**

- Original stand mode (non RADF mode)

The values below are values under the highest speed. (Unit: sec.)

Paper supply mode	Paper size	Color	Monochrome
Manual paper feed	8.5 × 11, A4 (Normal paper)	9.6	13.7
	A4, 11 × 8.5 (OHP)	84.8	94.5
	B5, A4, 11 × 8.5 (thick paper) (Mode 1) (106 – 130g/m²)	69.8	79.5
	B5, A4, 11 × 8.5 (thick paper) (Mode 2) (131 – 280g/m²)	119.8	129.5
1st paper feed tray	A4	9.4	13.7
	8.5 × 11	9.4	13.7
2nd paper feed tray	A4	11.0	13.7
	8.5 × 11	11.0	13.7
3rd paper feed tray	A4	11.6	13.7
	8.5 × 11	11.6	13.7
LCC	A4	9.4	13.7
	8.5 × 11	9.4	13.7

\* 1st paper feed tray is installed for optional slot.

**b. Multi-copy speed**

(Conditions) Scanner speed: 15 cpm, using A4/letter standard paper, and no prescan

(Conditions) S → S color: One copy of A4 (L1) original (10 sheets), no optional settings other than RADF, and not including fast copy

Copy mode	Paper size	Color/Single color			Monochrome			
		1 scan: Multiple copy			1 scan: Multiple copy			
		Copy magnification			Copy magnification			
		Reduction copy (25%)	Normal copy (100%)	Enlargement copy (400%)	Reduction copy (25%)	Normal copy (100%)	Enlargement copy (400%)	
Original stand mode	S → S (1, 2 paper feed tray)	A4	33	33	33	33	33	33
		LT	33	33	33	33	33	33
		A3/WLT	15	15	15	15	15	15
		A3 wide (12" × 18")	7	7	7	7	7	7
		B4/LGL/F.S.	17	17	17	17	17	17
		B5/A5/INV	33	33	33	33	33	33
		A4R/B5R/LT-R	22	22	22	22	22	22
		OHP (A4/LT) (Speed mode)	20	20	20	20	20	20
		OHP (A4/LT) (Quality mode)	10	10	10	10	10	10
		Thick paper 1 (B5/A4/LT/A5/INV)	20	20	20	20	20	20
		Thick paper 1 (B5R/A4R/B4/A3/F.S./LT-R/LG/WLT)	5	5	5	5	5	5
		Thick paper 2 (B5/A4/LT/A5/INV)	10	10	10	10	10	10
		Thick paper 2 (B5R/A4R/B4/A3/F.S./LT-R/LG/WLT)	5	5	5	5	5	5

When the 3rd or the 4th paper cassette or LCC is used.

Copy mode	Paper size	Color/Single color			Monochrome			
		1 scan: 1 copy			1 scan: Multiple copy			
		Copy magnification			Copy magnification			
		Reduction copy (25%)	Normal copy (100%)	Enlargement copy (400%)	Reduction copy (25%)	Normal copy (100%)	Enlargement copy (400%)	
Original stand mode	S → S (3, 4 paper feed tray/LCC)	A4/LT	25 (24*1)	25 (24*1)	25 (24*1)	32 (31*1)	32 (31*1)	32 (31*1)
		A3/WLT	13	13	13	15	15	15
		B4/LGL/F.S.	15	15	15	17	17	17
		B5/A5/INV	25	25	25	32	32	32
		A4R/B5R/LT-R	19	19	19	22	22	22

\*1: The copy speed when the 4th paper cassette is used.

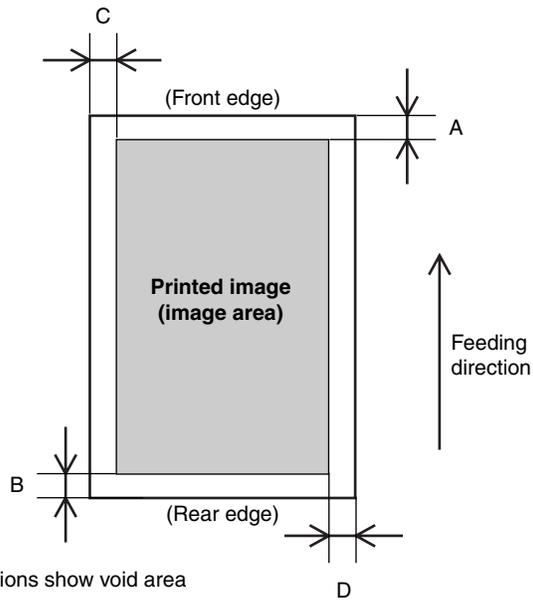
**c. Maximum no. of copies**

Multi max. quantity	999 sheets
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- Maximum number of copies that can be set for each copy mode

	Black-and-white copy		Color copy		A3 wide copy
	Up to A4/LT	B4/RG to A3/WLT	Up to A4/LT	B4/RG to A3/WLT	
Single-side copy	999	999	999	999	999
Duplex copy	999	999	999	1	—

## (6) Copy area



Copy area	297 × 432mm (11.7 × 17)
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### • Image loss

	Front edge (A)	Rear edge (B)	Total (C + D)	Left edge (C)	Right edge (D)
One side copy (excluding A3 (11 × 17))	Max. 5mm	Max. 5mm	Max. 6mm	Max. 3.0mm	Max. 3.0mm
One side copy for A3 (11 × 17)	Max. 5mm	Max. 7mm	Max. 6mm	Max. 3.0mm	Max. 3.0mm
Duplex copying	Max. 5mm	Max. 7mm	Max. 6mm	Max. 3.0mm	Max. 3.0mm
OHP copying	Max. 10mm	Max. 10mm	Max. 6mm	Max. 3.0mm	Max. 3.0mm

\* 0mm image loss for A3 originals and A3 wide copying.

### • Void area

	Front edge (A)	Rear edge (B)	Total (C + D)	Left edge (C)	Right edge (D)
One side/Duplex copy (excluding A3 (11 × 17))	Max. 5mm	Max. 5mm	Max. 6mm	Max. 3.0mm	Max. 3.0mm
One side/Duplex copy for A3 (11 × 17)	Max. 5mm	Max. 7mm	Max. 6mm	Max. 3.0mm	Max. 3.0mm
OHP copying	Max. 10mm	Max. 10mm	Max. 6mm	Max. 3.0mm	Max. 3.0mm

## (7) Languages supported

English (USA/UK), German, French, Spanish, Italian, Dutch, Swedish, Norwegian, Finnish, Danish

## (8) Internal auditor

Format	Key operation
No. of departments	400

## 3. Engine specifications

### A. Operation (display/operation) section

Display	Large mono-color LCD display
Operating procedure	Touch-panel input

### B. Paper feeding, paper conveyance, and discharge section

#### (1) Paper feeding performance

##### a. Paper feed ability

Paper feed mode (section)	Paper type	Paper size			Paper weight	Capacity	Note
		Min.	Max.	Paper sizes			
Manual feed section (Multi paper feed)	AB Series	A6R	A3 wide (12 × 18)	A3 wide, A3, B4, A4, A4R, B5, A5, A6R, 11 × 17, 8.5 × 14, 8.5 × 11, 7.25 × 10.5R (Paper guide display: A3 wide, A3/A4, B4/B5, A4R/A5, B5R, A5R, 11, 8.5)	60 to 280g/m <sup>2</sup> (16 to 75 lbs)	100 sheets (11mm) (max. 80g/m <sup>2</sup> paper)	Special paper (OHP film) and thick paper
	Inch Series	8.5 × 5.5	12 × 18	12 × 18, 11 × 17, 8.5 × 14, 8.5 × 11, 8.5 × 11R, 5.5 × 8.5, 7.25 × 10.5R, A3, B4, A4, B5, A6R (Paper guide display: 12, 11, 8.5, 5.5, A3/A4, B4/B5)			
Manual feed section (Single paper feed)	AB Series	A6R	A3 wide (12 × 18)	A3 wide, A3, B4, A4, A4R, B5, A5, A6R, 11 × 17, 8.5 × 14, 8.5 × 11, 7.25 × 10.5R (Paper guide display: A3 wide, A3/A4, B4/B5, A4R/A5, B5R, A5R, 11, 8.5)	60 to 280g/m <sup>2</sup> (16 to 75 lbs.)	100 sheets (11mm) (max. 80g/m <sup>2</sup> paper)	Special paper (OHP film) and thick paper
	Inch Series	8.5 × 5.5	12 × 18	12 × 18, 11 × 17, 8.5 × 14, 8.5 × 11, 8.5 × 11R, 5.5 × 8.5, 7.25 × 10.5R, A3, B4, A4, B5, A6R (Paper guide display: 12, 11, 8.5, 5.5, A3/A4, B4/B5)			
1st to 4th cassette feeding unit	AB Series	A5	A3	A3, B4, A4, A4R, B5, A5, 8.5 × 11, EXTRA	60 to 105g/m <sup>2</sup> (16 to 28 lbs.)	500 sheets × 3 (4) (max. 64g/m <sup>2</sup> paper)	
	Inch Series	8.5 × 5.5	11 × 17	11 × 17, 8.5 × 14, 8.5 × 13, 8.5 × 11, 8.5 × 11R, 5.5 × 8.5, A4, EXTRA			

## b. Document detection

Paper feed mode (section)	Paper type	Detection size	Paper detection size and detection method	Size switching method	Note
Manual feed section	AB Series	A3 wide, A3, B4, A4, A4R, B5, A5, A6R, 11 × 17, 8.5 × 14, 8.5 × 11, 7.25 × 10.5R	Electrical resistance changes according to position of paper width guide (volume sensor)	Aligns with paper width guide (sliding type)	
	Inch Series	12 × 18, 11 × 17, 8.5 × 14, 8.5 × 11, 8.5 × 11R, 8.5 × 5.5, A3, B4, A4, B5, A6R, 7.25 × 10.5R			
1st to 3rd cassette feeding unit	AB Series	A3, B4, A4, A4R, B5, A5, 8.5 × 11, EXTRA	Detection method by switch signal combination (switches paper detection block position)	Aligns universal guide (sliding type)	Remaining amount detector
	Inch Series	11 × 17, 8.5 × 14, 8.5 × 13, 8.5 × 11, 8.5 × 11R, 8.5 × 5.5, A4, EXTRA			

\* When setting the paper size switch to EXTRA, it is necessary to set the paper size by key operation.

\* For A and B sizes, it is necessary to set the paper size switch to EXTRA for 13" and B5R.

## (2) Finishing performance

Facing mode	Paper size	Paper weight	Capacity	Note
Face up	All paper sizes	All paper sizes that can be fed	250 sheets	

## C. Scanner section (read)

### (1) Type

Scanning method	By 3-color (RGB) CCD image sensor
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### (2) Original standard position, scanning size, and scanning area

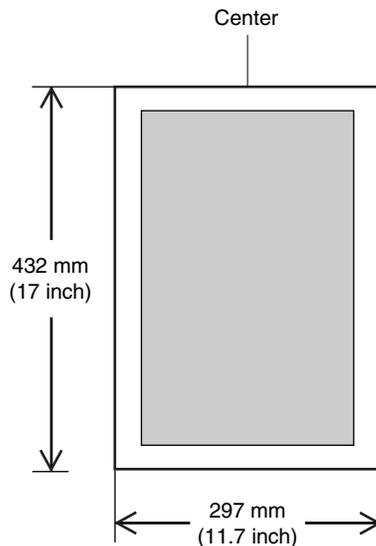
#### a. Original standard position

Left-center
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#### b. Scanning size

Max. original size	AB Series	A3
	Inch Series	11 × 17

#### c. Scanning area



### (3) Resolution

Main scanning direction	Sub scanning direction
Basic resolution	Basic resolution
600dpi	600dpi

### (4) Gradation

	Input	Output
Monochrome	256 gradations (8bit)	256 gradations (8bit)
Color	256 gradations (8bit)	256 gradations (8bit)

## (5) Scanning speed

Scan mode	Scan	Return	Scans per minute	Original size	
				A4 (11" × 8.5")	A3 (11" × 17")
Color	117 mm/sec	468 mm/sec	16 sheets/min	16 sheets/min	7 sheets/min
Monochrome	117 mm/sec	468 mm/sec	16 sheets/min	16 sheets/min	7 sheets/min

## (6) Light source

Type	Halogen lamp
Drive voltage	70V
Power consumption	170W

## (7) Scanning sensor

Type	3-line color CCD
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## (8) Color separation method

Color separation by 3-color (RGB) CCD image sensor
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## D. Scanner section (write)

### (1) Type

Type	Laser scanning
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### (2) Laser unit specifications

Speed of rotation	33,070rpm
Mirror surfaces	6 surfaces
Laser power	5mW
Laser beam size	60 × 70μm
Laser wavelength	785μm
Scan width (sub scan direction)	AB Series: 420mm Inch Series: 432mm

### (3) Resolution

Main scanning direction	Sub scanning direction
600dpi	600dpi

### (4) Gradation

Monochrome	256 gradations (8bit)
Color	256 gradations (8bit)

## E. Image processing section

### (1) Imaging speed

Monochrome	140 mm/sec
Color	140 mm/sec

### (2) Photosensitive drum

		Black
Type	OPC φ40mm (3 pieces) (C, M, Y)	OPC φ40mm (1 pieces) (K)
Life	40,000 sheets	80,000 sheets

**(3) Toner**

	Black	Color (C, M, Y)
Type	—	
Capacity	650g	300g
Form	Cartridge	

**(4) Developer**

	Black	Color (C, M, Y)
Type	Ferrite type	
Capacity	630g	630g
Life	80,000 sheets	40,000 sheets each

**(5) Charging system**

Charging system	DC negative scorotron (saw tooth electrode)
Voltage	-320V to -830V

**(6) Exposure**

Method	Exposure from laser diode
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**(7) Developing system**

Developing system	Dry, 2-component magnetic brush development
Voltage	-120V to -600V

**(8) Transfer**

Method	DC positive static electricity transfer (transfer belt method)
Voltage	1.75 to 5KV

**(9) Paper separation system**

Method	Curvature release
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**(10) Discharging**

Method	Discharging lamp method
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**(11) Cleaning**

Method	Blade method
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**(12) Toner compartment capacity**

	Black	Color (C, M, Y)
Capacity	650g	300g

**(13) Waste toner collector capacity**

Capacity	—
Printed sheets	40K (Conditions of each color 5% coverage, total 20% coverage)

**(14) Correction functions**

Correction functions	Toner density correction (toner density control level correction)
	Drum sensitivity correction (laser power control level correction)
	Transfer-ability correction (transfer voltage control level correction)
	Developing-ability correction (developing bias voltage control level correction)
	Halftone correction (laser power duty control level correction)

**F. Fuser section****(1) Type**

Fusing system	Heat roller system (oil usage)
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**(2) Lamp**

Main unit voltage ratings	Lamp	Type	Lamp rating	
			Voltage	Power consumption
100V	Main heater lamp	Halogen lamp	100V	1000W
	Sub heater lamp	Halogen lamp	100V	700W
110V	Main heater lamp	Halogen lamp	—	—
	Sub heater lamp	Halogen lamp	—	—
120V	Main heater lamp	Halogen lamp	120V	1200W
	Sub heater lamp	Halogen lamp	120V	700W
127V	Main heater lamp	Halogen lamp	—	—
	Sub heater lamp	Halogen lamp	—	—
220 to 230V	Main heater lamp	Halogen lamp	230V	1300W
	Sub heater lamp	Halogen lamp	230V	700W
240V	Main heater lamp	Halogen lamp	230V	1300W
	Sub heater lamp	Halogen lamp	230V	700W

**(3) Fuser temperature**

Mode			Control temperature						NOTE
			U.S.A	Canada	Inch	Europe	U.K	AB_A	
Ready condition	Ready condition control temperature (HL1)	Upper heat roller	182	182	182	177	177	177	
	Ready condition control temperature (HL2)	Lower heat roller	152	152	152	147	147	147	
Copy/Print mode	Normal mode control temperature (HL1)	Upper heat roller	170	170	170	170	170	170	
	Normal mode control temperature (HL2)	Lower heat roller	125	125	125	125	125	125	
	Thick paper mode 1 control temperature (HL1)	Upper heat roller	185	185	185	185	185	185	
	Thick paper mode 1 control temperature (HL2)	Lower heat roller	155	155	155	155	155	155	
	Thick paper mode 2 control temperature (HL1)	Upper heat roller	200	200	200	200	200	200	
	Thick paper mode 2 control temperature (HL2)	Lower heat roller	155	155	155	155	155	155	
	OHP mode control temperature (HL1)	Upper heat roller	185	185	185	185	185	185	Quality mode
	OHP mode control temperature (HL2)	Lower heat roller	175	175	175	175	175	175	Quality mode
	OHP mode control temperature (HL1)	Upper heat roller	185	185	185	185	185	185	Speed mode
Pre-heat mode	OHP mode control temperature (HL2)	Lower heat roller	175	175	175	175	175	175	Speed mode
	Energy saving mode control temperature (HL1)	Upper heat roller	146	146	146	146	146	146	
Sleep mode	Control temperature when resetting from pre-heat to B/W (HL1)	Upper heat roller	158	158	158	158	158	158	
	HL1	Upper heat roller	OFF	OFF	OFF	OFF	OFF	OFF	
	HL2	Lower heat roller	OFF	OFF	OFF	OFF	OFF	OFF	

**(4) Heat roller**

Type	Silicone rubber roller $\phi$ 50mm
Life	40K

**(5) Pressure roller**

Type	Silicone rubber roller $\phi$ 50mm
Life	40K

**(6) Release method**

Forced release by releasing tabs
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## G. Drive section

Drive section	Motor name	Motor type
Toner hopper (C, M, Y, K)	Toner motor (Y, M, C, K)	Synchronous motor
Photosensitive drum (C, M, Y, K)	Drum motor (Y, M, C, K)	Stepping motor
Image scanner	Scanner motor	Stepping motor
Developing (C, M, Y, K)	Developing motor (Y, M, C, K)	DC brush-less motor
Paper feed and conveyance	Paper feed motor	DC brush-less motor
Transfer belt	Transfer belt motor	Stepping motor
Fusing	Fusing motor	DC brush-less motor

## H. Engine controller

Processor	M68334
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## I. Image processing controller

Processor	MCF5202
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## J. Memory

Type	Capacity	Memory contents	Location
DRAM	256MB	Image data	ICU MAIN PWB
Flash ROM	32Mbit (16Mbit x 2)	Program data	ICU MAIN PWB
	16Mbit	Program data	PCU MAIN PWB
	16Mbit	Program data	Operation control PWB
EEPROM	256Kbit	Setting, adjustment, counter data, etc.	PCU MAIN PWB
	64Kbit	Setting, adjustment, counter data, etc.	ICU MAIN PWB

## K. Power source

### (1) DC power supply

Type	Output	
	Voltage	Capacity (current)
DC power supply	24V	10A
	5.1V	12A
	3.4V	9A

### (2) Dehumidifier functionality

Section	Paper conveyor section	Image scanner section (optional)
Method	Surface heater * With ON/OFF switch	Surface heater

### (3) Operating voltage/power consumption

Power supply voltage/ frequency		Power consumption							
		Main unit				With full options			
		Preheat condition	Ready condition	Sleep mode condition	Max.	Preheat condition	Ready condition	Sleep mode condition	Max.
120V	50/60Hz	Max. 132.05wh	—	Max. 15W	1440W	—	—	—	1500W
220 to 240V	50/60Hz	Max. 132.05wh	—	Max. 15W	1800W	—	1325W	—	1800W

## 4. Safety and environmental protection standards

### A. Safety standards

Item	Standard	Country
Safety standards	UL	U.S.A
	SEMKO	Sweden
	GS Mark	Germany
Environmental standards	FCC	U.S.A
	CE	Europe

### B. Environmental standards

#### (1) Power consumption and environmental standards

Item	Standard	Country
Power consumption	Energy Star	U.S.A, Europe
	ECP, Nordic	Canada
Environmental standards	Swan, Nordic	Sweden

#### (2) Ozone level

Max. 0.02mg/m <sup>3</sup>
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#### (3) Noise level

Max. 68 dB
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## 5. Ambient conditions

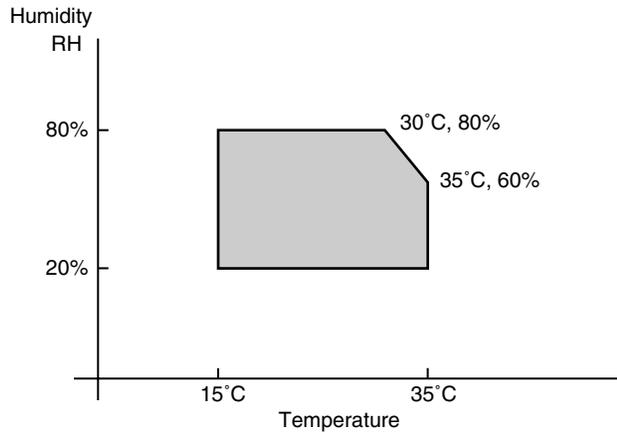
### A. Space required

#### (1) Area required

Main unit	1412 × 695mm (55.6" × 27.4")
With full options	(With AR-SS2) 1454 × 761mm (57.2" × 30.0") (With AR-FN4) 1668 × 761mm (65.7" × 30.0")

### B. Operating ambient conditions

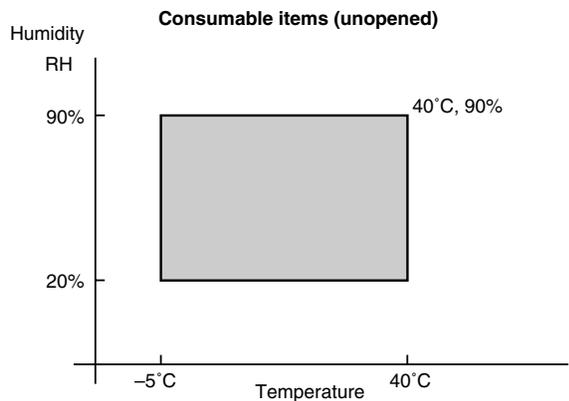
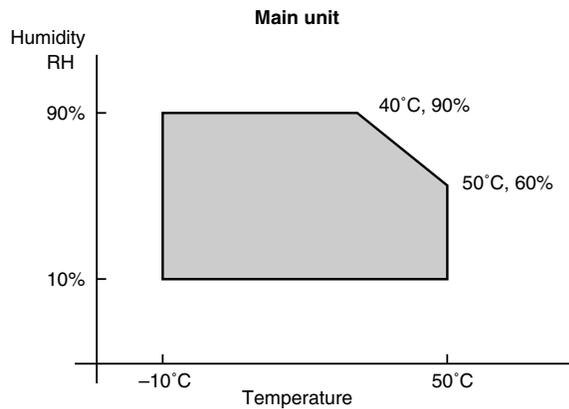
#### (1) Temperature/Humidity



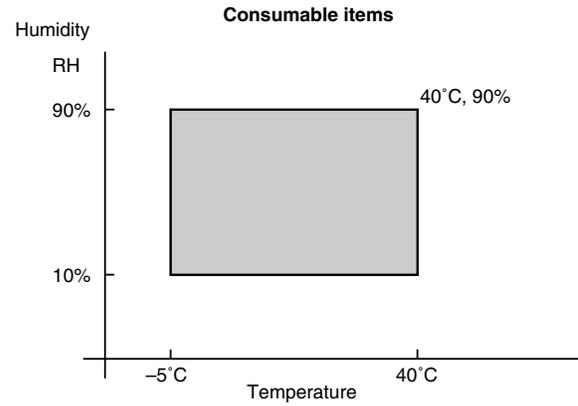
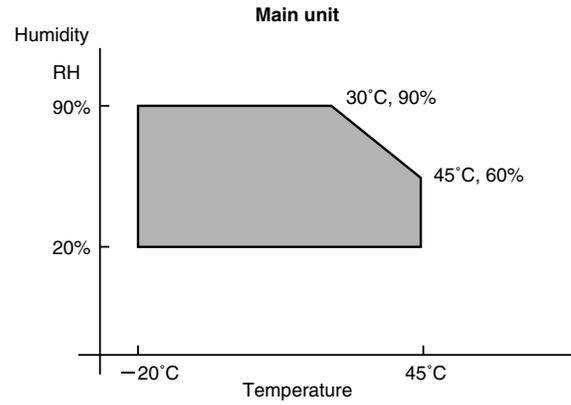
#### (2) Power supply voltage and frequency

Power supply voltage	Rated voltage ± 10%
Power supply frequency	Rated frequency ± 2%

### C. Ambient storage conditions



### D. Ambient conditions for transporting



### E. Standard temperature and humidity

Temperature	20 to 25°C
Humidity	65 ± 5%

### [3] CONSUMABLE PARTS

#### 1. Consumable parts list

##### Supply List (U.S.A/Canada)

	NAME	CONTENT (S)	LIFE	MODEL	Commonality with other machine	REMARK
1	Toner Cartridge (cyan)	Toner Cartridge (cyan) (300g) Instruction Sheet	x 10 x 10	97K (9.7k x 10)	AR-C25MT6	Common (AR-C270/C160) (AR-C250/C150) Life: A4 size at area coverage 5% (AR-C25NT6) x 10 = AR-C25MT6
2	Toner Cartridge (magenta)	Toner Cartridge (magenta) (300g) Instruction Sheet	x 10 x 10	97K (9.7K x 10)	AR-C25MT7	Common (AR-C270/C160) (AR-C250/C150) Life: A4 size at area coverage 5% (AR-C25NT7) x 10 = AR-C25MT7
3	Toner Cartridge (yellow)	Toner Cartridge (yellow) (300g) Instruction Sheet	x 10 x 10	97K (9.7K x 10)	AR-C25MT8	Common (AR-C270/C160) (AR-C250/C150) Life: A4 size at area coverage 5% (AR-C25NT8) x 10 = AR-C25MT8
4	Toner Cartridge (black)	Toner Cartridge (black) (650g) Instruction Sheet	x 10 x 10	217K (21.7K x 10)	AR-C16MT1	Common (AR-C270/C160) (AR-C250/C150) Life: A4 size at area coverage 5% (AR-C16NT1) x 10 = AR-C16MT1 The AR-C25MT1 or AR-C16MT1 can be used.
5	Color Developer kit (cyan/magenta/yellow)	Developer (cyan/magenta/yellow 630g each)	x 3	120K (40K x 3)	AR-C33MD9	Common *1 (AR-C270/C160) (AR-C250/C150) (AR-C33ND9) x 3 = AR-C33MD9 *1: AR-DW1N and firmware for AR-C33MD9 are required
6	Black Developer kit	Developer (Black) (630g)	x 10	800K (80K x 10)	AR-C18MD1	Common (AR-C270/C160) (AR-C18ND1) x 10 = AR-C18MD1 Not applicable for AR-C150 and AR-C250.
7	Drum Unit	Drum Unit (Drum/Unit Parts included) Charger Unit Cleaning Blade	x 1 x 1 x 1	40K	AR-C33DU	Common (AR-C270/C160) *2 (AR-C250/C150) *3 *2: only for color *3: for black and color
8	Drum Kit	Drum Charger Unit Cleaning Blade Toner Receiving Seal	x 1 x 1 x 1 x 1	40K	AR-C33DK	Common (AR-C270/C160) *2 (AR-C250/C150) *3 *2: only for color *3: for black and color
9	Drum (only for black)	Drum	x 1	80K	AR-C16DR	Common (AR-C270/C160) Not applicable for AR-C150 and AR-C250.
10	Charger Unit kit (only for black)	Charger Unit Cleaning Blade Toner Receiving Seal RS roller cleaner	x 1 x 1 x 1 x 1	40K	AR-33MK	AR-C330 only

##### Supply system (U.S.A/Canada)

No.	Name	Content	Life	Model	Remark	
1	Developer unit kit	Developer unit	x 4	-	AR-DW1N	
2	Waste toner container kit	Drum waste toner container (AS) Transfer waste toner tank unit	x 1 x 1	40K	AR-C15HB	5% coverage of each of C/M/Y/K, total 20% coverage
3	Fusing oil	Fusing oil (800g)	x 10	40K x 10	AR-C15LL	AR-C15LL = AR-C15SL x 10
4	Upper heat roller kit	Upper heat roller unit Upper cleaning roller	x 1 x 1	40K	AR-C16UH	
5	Lower heat roller kit	Lower heat roller unit Fusing separation pawl lower	x 1 x 5	40K	AR-C16LH	
6	Fusing oil applying kit	Oil applying unit Oil filter unit Applying unit mini oil bottle	x 1 x 1 x 1	40K	AR-C25KH	
7	Filter kit	Process ozone filter Toner duct ozone filter Toner filter	x 2 x 1 x 1	80K	AR-C15FL	
8	Transfer belt kit Transfer roller kit	Transfer belt Transfer roller	x 1 x 4	160K	AR-C33TT	
9	Staple cartridge	Staple cartridge (SF-SC11)	x 3	5,000 x 3	SF-SC11	For AR-SS2. Common with FN1.
10	Fusing unit	Fusing unit (Except for motor, PWB, upper/lower lamps)	x 1		AR-C16FU	(For servicing)
11	Transfer unit	Transfer unit (Except for motor)	x 1		AR-C33TU	(For servicing)
12	DV seal kit	DV seal unit (assemble)	x 3	80K	AR-C15DS	
13	Staple cartridge	Staple cartridge		3,000 x 3	AR-SC1	For AR-FN4
14	Transfer belt cleaning blade kit	Transfer belt cleaning blade	x 1	80K	AR-C16TG	AR-C16TG = AR-C160G x 10 (for USA)
	Transfer belt cleaning blade kit	Transfer belt cleaning blade	x 1	80K	AR-C16TK	AR-C16TK = AR-C160K x 10 (for Canada)

## Supply List (Europe)

	NAME	CONTENT (S)	LIFE	MODEL	INCOMPATIBILITY	REMARK
1	Toner Cartridge (cyan)	Toner Cartridge (cyan) (300g) x 10 Instruction Sheet x 10	97K (9.7K x 10)	AR-C25LT6	Common (AR-C270/C160) (AR-C250/C150)	Life: A4 size at area coverage 5% (AR-C25T6) x 10 = AR-C25LT6
2	Toner Cartridge (magenta)	Toner Cartridge (magenta) (300g) x 10 Instruction Sheet x 10	97K (9.7K x 10)	AR-C25LT7	Common (AR-C270/C160) (AR-C250/C150)	Life: A4 size at area coverage 5% (AR-C25T7) x 10 = AR-C25LT7
3	Toner Cartridge (yellow)	Toner Cartridge (yellow) (300g) x 10 Instruction Sheet x 10	97K (9.7K x 10)	AR-C25LT8	Common (AR-C270/C160) (AR-C250/C150)	Life: A4 size at area coverage 5% (AR-C25T8) x 10 = AR-C25LT8
4	Toner Cartridge (black)	Toner Cartridge (black) (650g) x 10 Instruction Sheet x 10	217K (21.7K x 10)	AR-C16LT1	Common (AR-C270/C160) (AR-C250/C150)	Life: A4 size at area coverage 5% (AR-C16T1) x 10 = AR-C16LT1 The AR-C25LT1 can be used.
5	Starter Kit	Toner cartridge (cyan/magenta/yellow 300g each, black 650g each) Developer (cyan/magenta/yellow 630g each) Fuser oil x 1	–	AR-C33SK1	Common *1 (AR-C270/C160) (AR-C250/C150)	*1: AR-DW1N and firmware for AR-C33LD9 are required
6	Color Developer kit (cyan/magenta/yellow)	Developer (cyan/magenta/yellow 630g each) x 3	120K (40K x 3)	AR-C33LD9	Common *1 (AR-C270/C160) (AR-C250/C150)	(AR-C33DV9) x 3 = AR-C33LD9 *1: AR-DW1N and firmware for AR-C33LD9 are required
7	Black Developer kit	Developer (black) (630g) x 1 x 10	800K (80K x 10)	AR-C18LD1	Common (AR-C270/C160)	(AR-C18DV1) x 10 = AR-C18LD1 Not applicable for AR-C150 and AR-C250.
8	Drum Unit	Drum Unit (Drum/Unit Parts included) x 1 Charger Unit x 1 Cleaning Blade x 1	40K	AR-C33DU	Common (AR-C270/C160) *2 (AR-C250/C150) *3	*2: only for color *3: for black and color
9	Drum Kit	Drum x 1 Charger Unit x 1 Cleaning Blade x 1 Toner Receiving Seal x 1	40K	AR-C33DK	Common (AR-C270/C160) *2 (AR-C250/C150) *3	*2: only for color *3: for black and color
10	Drum (only for black)	Drum	80K	AR-C16DR	Common (AR-C270/C160)	Not applicable for AR-C150 and AR-C250.
11	Charger Unit Kit (only for black)	Charger Unit x 1 Cleaning Blade x 1 Toner Receiving Seal x 1 RS Roller Cleaner x 1	40K	AR-33MK	–	AR-C330 only

## Supply system (Europe)

No.	Name	Content	Life	Model	Remark
1	Developer unit kit	Developer unit x 4	–	AR-DW1N	
2	Waste toner container kit	Drum waste toner container (AS) x 1 Transfer waste toner tank unit x 1	40K	AR-C15HB	5% coverage of each of C/M/Y/K, total 20% coverage
3	Fusing oil	Fusing oil (80g) x 10	40K x 10	AR-C15LL	AR-C15LL = AR-C15SL x 10
4	Upper heat roller kit	Upper heat roller unit x 1 Upper cleaning roller x 1	40K	AR-C16UH	
5	Lower heat roller kit	Lower heat roller unit x 1 Fusing separation pawl lower x 5	40K	AR-C16LH	
6	Fusing oil applying kit	Oil applying unit x 1 Oil filter unit x 1 Applying unit mini oil bottle x 1	40K	AR-C25KH	
7	Filter kit	Process ozone filter x 2 Toner duct ozone filter x 1 Toner filter x 1	80K	AR-C15FL	
8	Transfer belt kit	Transfer belt x 1 Transfer roller x 4	160K	AR-C33TT	
9	Transfer belt cleaning blade	Transfer belt cleaning blade x 1	80K	AR-C16TK	AR-C16TK = AR-C160K x 10
10	Staple cartridge	Staple cartridge (SF-SC11) x 3	5,000 x 3	SF-SC11	For AR-SS2. Common with FN1.
11	Fusing unit	Fusing unit x 1 (Except for motor, PWB, upper/lower lamps)		AR-C16FU	(For servicing)
12	Transfer unit	Transfer unit (Except for motor) x 1		AR-C33TU	(For servicing)
13	DV seal kit	DV seal unit (assemble) x 3	80K	AR-C15DS	
14	Staple cartridge	Staple cartridge	3,000 x 3	AR-SC1	For AR-FN4

## 2. Compatibility of Supplies for AR-C150/C250/C160/C270/C330 (Overseas)

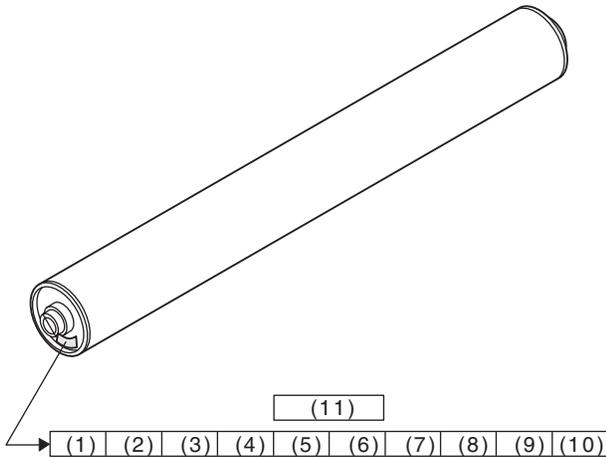
□ - Target Model, ○ - Usable, △ - Usable (under some conditions), × - Not usable, Colored portions: To be discontinued after the current stock is used up.

Item	Content	Model Name	Product ID Model Name	AR-C150	AR-C250	AR-C160/ C270	AR-C330	Remarks
Toner (Black)	Toner (Black) 600g	AR-C15MT1/LT1/CT1	A3ARC15MT1/LT1/CT1	○	○	○	○	Some of initial 15MT1 lot don't have a heat seal which is an action for highland region.
	Toner (Black) 600g	AR-C25MT1/LT1/CT1	A3ARC25MT1/LT1/CT1	○	○	○	○	
	Toner (Black) 650g	AR-C16MT1/LT1/CT1	A3ARC16MT1/LT1/CT1	□	□	□	□	
Color Toner (Cyan)	Color Toner (Cyan) 267g	AR-C15MT6/LT6/CT6	A3ARC15MT6/LT6/CT6	○	○	○	○	Using increased toner (300g) provides merit cost-wise.
	Color Toner (Cyan) 300g	AR-C25MT6/LT6/CT6	A3ARC25MT6/LT6/CT6	□	□	□	□	
Color Toner (Magenta)	Color Toner (Magenta) 267g	AR-C15MT7/LT7/CT7	A3ARC15MT7/LT7/CT7	○	○	○	○	Using increased toner (300g) provides merit cost-wise.
	Color Toner (Magenta) 300g	AR-C25MT7/LT7/CT7	A3ARC25MT7/LT7/CT7	□	□	□	□	
Color Toner (Yellow)	Color Toner (Yellow) 267g	AR-C15MT8/LT8/CT8	A3ARC15MT8/LT8/CT8	○	○	○	○	Using increased toner (300g) provides merit cost-wise.
	Color Toner (Yellow) 300g	AR-C25MT8/LT8/CT8	A3ARC25MT8/LT8/CT8	□	□	□	□	
Developer (Black)	Developer (Black) 630g	AR-C15MD1/LD1/CD1	A3ARC15MD1/LD1/CD1	□	□	×	×	With black developer (for 80K), coating material of carrier changed.
	Developer (Black) 630g/ for 80K	AR-C16MD1/LD1/CD1	A3ARC16MD1/LD1/CD1	×	×	□	□	
Color Developer	Color Developer Kit (Cyan/Magenta/Yellow) 630g/for 40K	AR-C15MD9/LD9/CD9	A3ARC15MD9/LD9/CD9	□	□	□	□	
Starter Kit	Starter Kit	AR-C25SK1	A3ARC25SK1	□	□	×	×	With black developer (for 80K), coating material of carrier changed.
	Starter Kit (includes 80K black developer)	AR-C16SK1	A3ARC16SK1	×	×	□	□	
Drum	Drum Unit	AR-C15DU	A3ARC15DU	○	×	×	×	15DU/DK cannot be used for AR-C250/160/C270/C330, because doing so will cause a defect such as white streak on paper edge.
	Drum Kit	AR-C15DK	A3ARC15DK	○	×	×	×	
	Drum Unit	AR-C25DU	A3ARC25DU	○	○	○	○	
	Drum Kit	AR-C25DK	A3ARC25DK	○	○	○	○	
	Drum Unit	AR-C33DU	A3ARC33DU	□	□	□	□	
	Drum Kit	AR-C33DK	A3ARC33DK	□	□	□	□	
	Drum for Black	AR-C16DR	A3ARC16DR	×	×	□	□	
	Main Charger Kit	AR-C16MK	A3ARC16MK	×	×	□	×	
	Main Charger Kit	AR-C33MK	A3ARC33MK	×	×	×	□	

### 3. Photoconductor, developer, toner

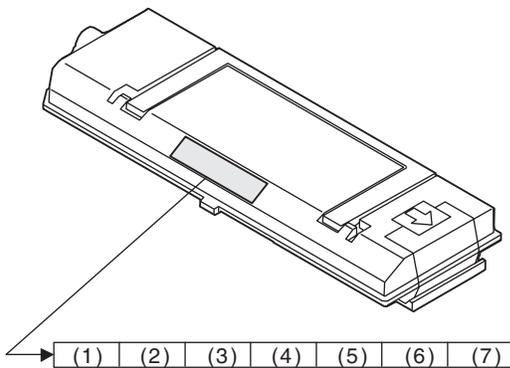
#### A. Serial number identification

##### (1) Photoconductor



- (1) Figure  
Indicates the sensitivity of the photoconductor.
- (2) (3) Alphabet  
Indicates the model code. This machine's code is PD.
- (4) Figure  
Indicates the end digit of the production year.
- (5) Figure or X, Y, Z  
Indicates the production month. X= October, Y= November, Z= December
- (6) Figure  
Indicates the production lot.
- (7) Figure  
Indicates the sub lot division.
- (8) Figure or X, Y, Z  
Indicates the packing month. X= October, Y= November, Z= December
- (9) (10) Figure  
Indicates the packing date.
- (11) Figure or alphabet  
Indicates the product name of the drum.

##### (2) Developer

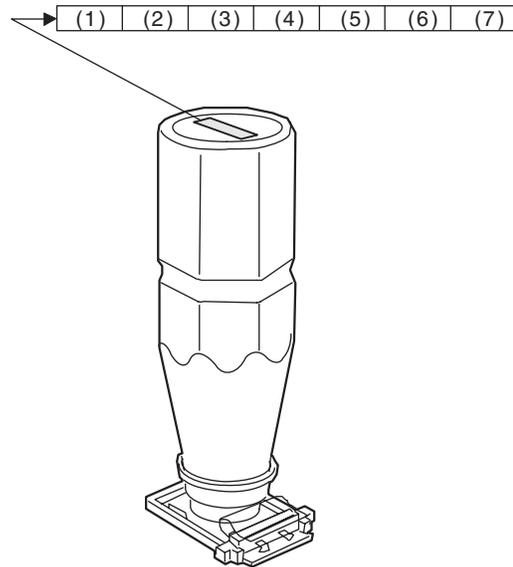


- (1) (2) Alphabet  
Indicates the developer color as shown below:

Color	Alphabet
Yellow	YZ
Magenta	MZ
Cyan	CZ
Black	KX

- (3) Figure, alphabet  
Indicates the production month. X= October, Y= November, Z= December
- (4) (5) Figure  
Indicates the production date.
- (6) Figure  
Indicates the end digit of the production year.
- (7) Alphabet  
Indicates the management code. (A to Z)

##### (3) Toner



- (1) (2) Alphabet  
Indicates the toner color as shown below:

Color	Alphabet
Yellow	RY
Magenta	RM
Cyan	RC
Black	SK

- (3) Figure, alphabet  
Indicates the production month. X= October, Y= November, Z= December
- (4) (5) Figure  
Indicates the production date.
- (6) Figure  
Indicates the end digit of the production year.
- (7) Alphabet  
Indicates the management code. (A to Z)

## 4. Paper

### (1) Color print paper

The recommendable color print paper is shown below.

Use of the recommendable paper provides the best copy quality.

The standard paper follows it.

Kind	Model	Supplier	Specification	Note
Recommend paper	Hammermill LASER PRINT	Hammermill	[11 x 8.5", 90g/m <sup>2</sup> ] [11 x 17", 90g/m <sup>2</sup> ]	
	Neusiedler Color Copy (90g/m <sup>2</sup> )	Neusiedler	[A4, 90g/m <sup>2</sup> ] [A3, 90g/m <sup>2</sup> ]	
Standard paper	Necosa	Necosa	[11 x 8.5", 75g/m <sup>2</sup> ] [11 x 17", 75g/m <sup>2</sup> ]	
	Hammermill DP	Hammermill	[11 x 8.5", 75g/m <sup>2</sup> ] [11 x 17", 75g/m <sup>2</sup> ]	
	Igepa	Igepa	[A4, 80g/m <sup>2</sup> ] [A3, 80g/m <sup>2</sup> ]	
OHP sheet (Specified paper)	BG74.6	FOREX	A4 size, 140g/m <sup>2</sup>	Made by FOLEX

When paper of low white level is used, normal copy quality (color reproduction) may not be obtained.

For OHP sheet, be sure to use the specified one.

### (2) Monochrome print paper

For monochrome print, the following specifications serve as the criteria of applicable or not.

(Values are under 20 ± 1°C, 65 ± 2%RH)

Item	Standard paper	Applicable paper
Weight	60 - 90g/m <sup>2</sup>	60 - 120g/m <sup>2</sup>
Smoothness	Front: ≥ 20s Back : ≥ 20s (BEEK method)	Front: ≥ 20s Back : ≥ 18s (BEEK method)
Vesicularity	≥ 7s (BEEK method)	Same as the left.
Opaqueness	≥ 77%	Same as the left.
Surface resistance	1 x 10 <sup>10</sup> - 5 x 10 <sup>10</sup> Ω cm (20 ± 1°C, 65 ± 2%RH)	≥ 5.0 x 10 <sup>8</sup> Ω cm (20 ± 1°C, 65 ± 2%RH)
Hardness	Vertical: ≥ 17cm Horizontal: ≥ 13cm (CLARK method)	Same as the left.
Water content	4.5 % - 7.0%	Same as the left.
Thickness	75 μm - 110 μm	Same as the left.
Dimensions	Standard ± 1mm (*)	Same as the left.

### (3) Print paper dimension specification

(\*) Standard dimensions are as follows:

- B5 (182 ± 1 x 257 ± 1mm)
- B6 (128 ± 1 x 182 ± 1mm)
- A4 (210 ± 1 x 297 ± 1mm)
- A5 (148 ± 1 x 210 ± 1mm)
- A6 (105 ± 1 x 148 ± 1mm)
- 8.5" ± 5/128 x 14" ± 5/128 inch
- 8.5" ± 5/128 x 11" ± 5/128 inch
- 8.5" ± 5/128 x 8.5" ± 5/128 inch
- 8.5" ± 5/128 x 13" ± 5/128 inch

#### (Note)

(Paper which cannot be used)

The following paper cannot be used for printing.

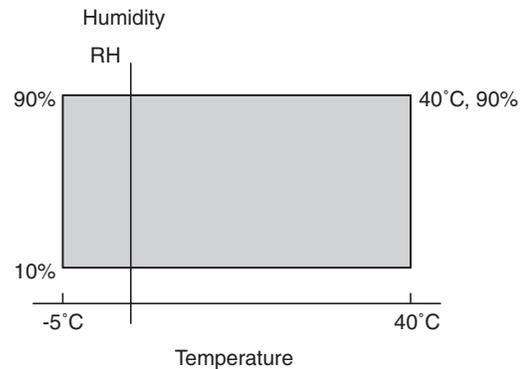
- Paper with coated surface
- Paper with rough surface, or too smooth surface
- Documents which are separated from a pasted book
- Broken paper, folded paper, embossed paper, dry paper, wet paper, curled paper
- Paper with metal tab or clip
- Paper with holes, cutout, or perforations

## 5. Environmental conditions

### (1) Transit environment (sealed)

Max. change: Temperature 15°C/hour,

Relative humidity 15%RH/hour, without dew

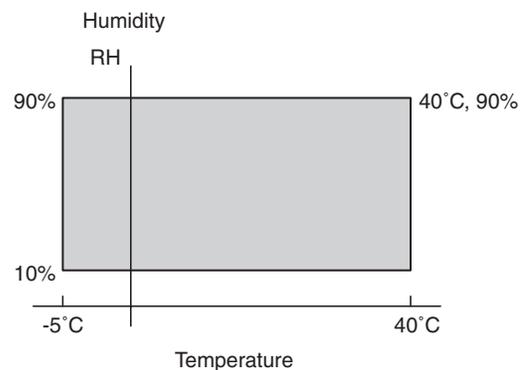


Temperature (min)	Humidity (min)	Temperature (mid)	Humidity (mid)	Temperature (max)	Humidity (max)	Period
-5°C	10%			40°C	90%	—

### (2) Storage environment (sealed)

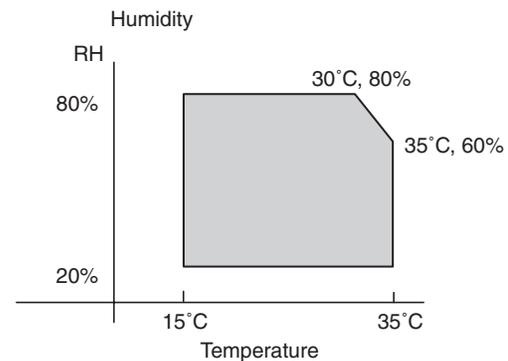
Max. change: Temperature 15°C/hour,

Relative humidity 15%RH/hour, without dew



Temperature (min)	Humidity (min)	Temperature (mid)	Humidity (mid)	Temperature (max)	Humidity (max)	Period
-5°C	10%			40°C	90%	—

(Unsealed condition)



Temperature (min)	Humidity (min)	Temperature (mid)	Humidity (mid)	Temperature (max)	Humidity (max)	Period
15°C	20%	30°C	80%	35°C	60%	—

## [4] SETUP

### 1. Installing (using) environment check

Before installation of the machine, check the installing (using) environment as follows:

If the installing environment does not satisfy the following conditions, the machine may not display its performance fully, and may result in troubles, causing safety problems. If the environment is not satisfactory, arrange it before installation and setup of the machine.

No.	Content
1	Delivery space
2	Installing space
3	Power specifications (Capacity, fluctuation, safety)
4	Floor strength
5	Direct sunlight, dust, temperature, humidity, gases, chemicals

#### (1) Delivery space

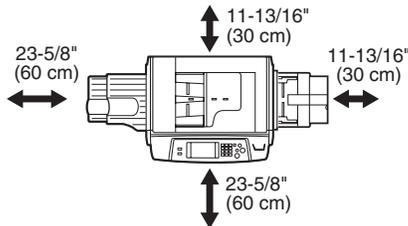
If the door size is too small to deliver the machine in, delivery cannot be made. Check the delivery space in advance.

#### (2) Installation space

Allow the following installation space around the machine for proper operations and performances.

The space for options must be also considered.

Allow enough space at the back of the machine. If the back space is insufficient, heat radiation and the dust proof function are prevented, suppressing the machine performances and causing trouble.



#### (3) Power source (capacity, voltage, frequency, safety, plug)

If the power source requirements are not satisfied, the machine cannot display full performances, causing troubles.

Be sure to follow the instructions below.

##### 1) Power source capacity

Check that the power capacity is enough as specified below. If it is insufficient, it must be corrected.

Current capacity

EX100V: 15A or above

EX200V: 10A or above

##### 2) Power voltage

Measure the power voltage during copying to check that it is within the range of the rated voltage  $\pm 10\%$ .

If the voltage is not within the above range, use wider wires to reduce impedance. (Electrical work is required.)

There is a method to use a step-up transformer. In this case, use the transformer of greater capacity than the machine's max. power consumption.

##### 3) Power frequency, waveform

The frequency fluctuation must be the specified level  $\pm 2\%$ . If the power waveform is distorted, trouble may be caused.

##### 4) Safety

Be sure to ground the machine.

##### 5) Power plug

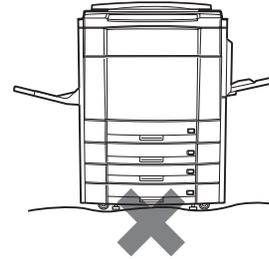
Check the shape of the power plug. Do not use a plug of different shape.

#### (4) Floor strength and level

The machine is heavy, and options add further weight. Be sure to check the floor strength for safety.

If the machine is not leveled properly, the toner concentration control is not performed properly, affecting copy quality adversely.

It may cause color shift or image distortion.

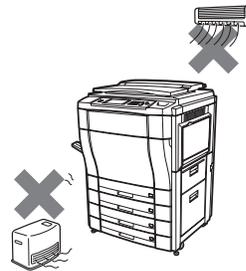


#### (5) Direct sunlight, dust, temperature, humidity, gases, chemicals, vibrations

##### 1) Temperature, humidity

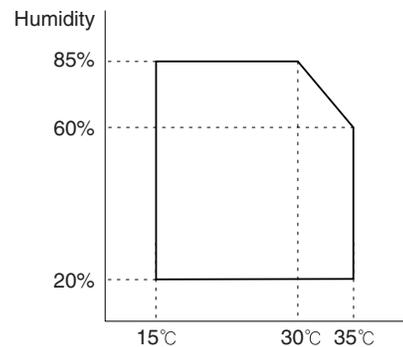
The operation of this machine is assured under the following conditions of storage (temperature, humidity).

Especially when the humidity is too high, paper absorbs moisture to cause paper jams and dirty copy.



(Do not install near a stove, a humidifier, or a cooler.)

Do not install the copier near a heater, a cooler, or a humidifier. If installed, the copier may form dew and cause troubles. Be careful of ventilation, too.



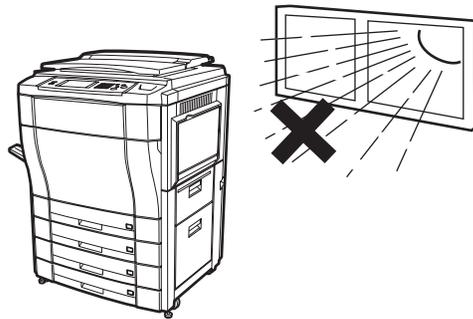
##### 2) Dust

If dust enters the copier, dirty copy, paper jams, and short life-time.



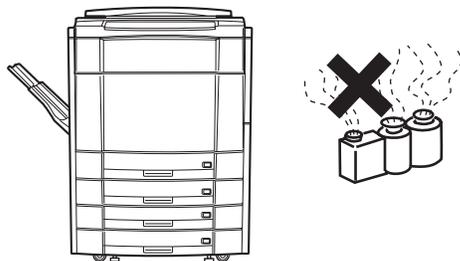
3) Direct sunlight

If the copier is exposed to direct sunlight, the external section may be discolored, causing poor copy quality.



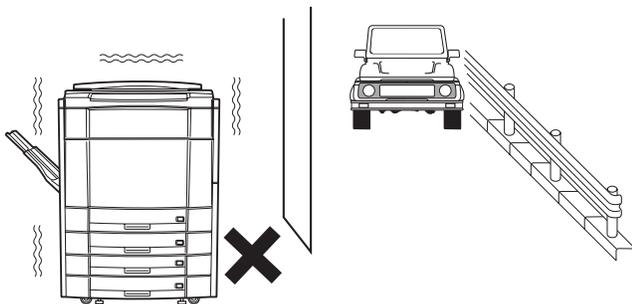
4) Gases and chemicals

Do not install the copier near gases and chemicals. Especially be careful of a diazo-type copier, which may produce ammonium gas. The copy quality may be adversely affected, causing troubles.



5) Vibrations

Do not install machines which produce vibrations around the copier. If vibrations are applied to the copier, copies may be blurred and troubles may be caused.



## 2. Transport and installation

No.	Content	Method
1	Facility, equipment, man power	Use a forklift. (If a forklift is not available, 4 persons are required to install.)
2	Delivery form	Transported in packed conditions.

### (1) Equipment, facility, man power

It is advisable to use a forklift for efficiency and safety.

If a forklift is not available, six persons are required to move the machine. The copier is very heavy. Consider safety in delivery and installation work.

The copier must be transported in the packed condition to the installing site (building).

### (2) Delivery form

Remove the copier from the packing case outside the installing building, then carry it inside the building.

## 3. Unpacking

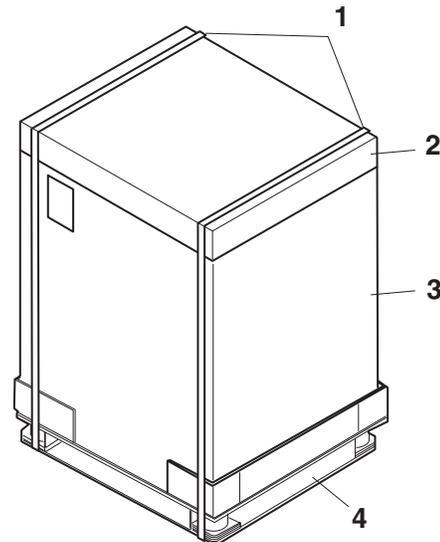
### A. Unpacking procedures

1	PP band
2	Top case
3	Packing case
4	Skid unit
5	Top pad R
6	Top pad L
7	Polyethylene bag

8	Bottom case unit
9	Accessory unit
10	Paper exit tray AS
11	Accessory sleeve
12	Waste toner bottle
13	Operation Manual
-	-

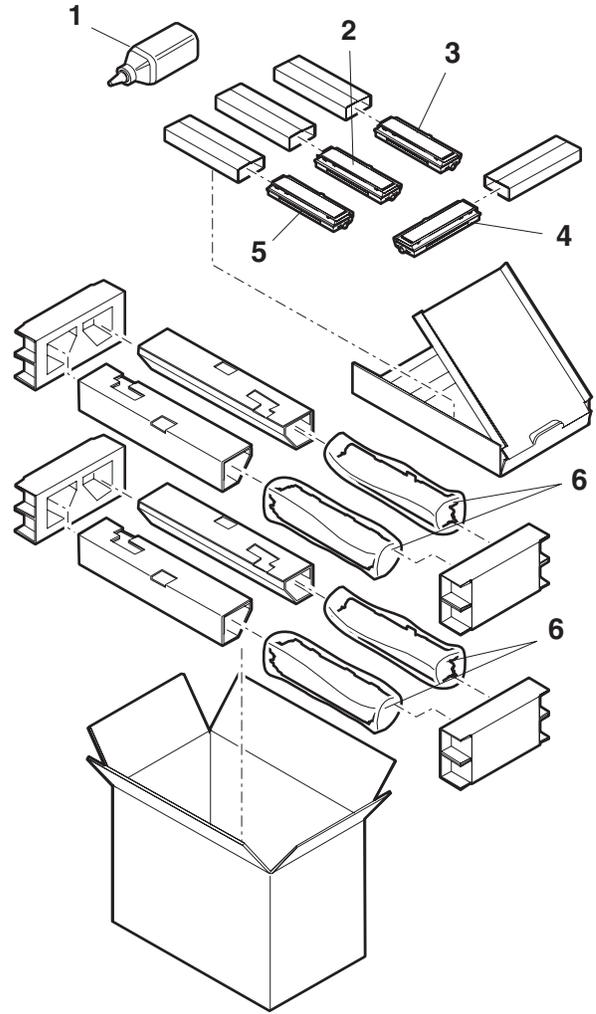
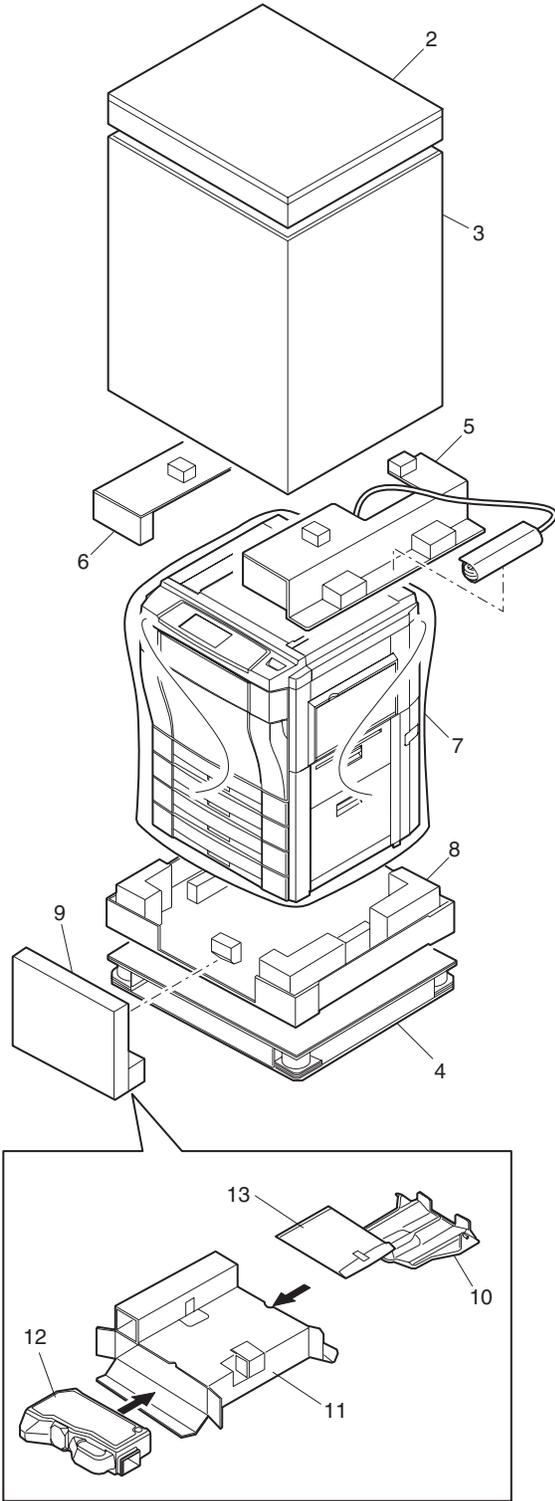
Unpack in the following procedures.

- 1) Remove the PP band.
- 2) Remove the top case and the packing case.
- 3) Remove the internal packing material and packed items.
- 4) Remove the machine.



## B. Consumable parts required for setup

No.	Name	Content
1	Oil bottle	AR-C15SL
2	Developer cartridge (Y)	Color developer kit (Y, M, C) Black developer (K)
3	Developer cartridge (M)	
4	Developer cartridge (C)	
5	Developer cartridge (K)	
6	Developing unit	AR-DW1N (Developing unit x 4)
	Toner	Y, M, C, K



## C. Accessories

Accessories for each destination

Destination	USA	Canada	U.K.	Other Europe
OPC drum x 4 pcs	Installed when shipping	Installed when shipping	Installed when shipping	Installed when shipping
Toner collecting container x 2 *1	Installed when shipping	Installed when shipping	Installed when shipping	Installed when shipping
Toner collection container for transfer belt	Installed when shipping	Installed when shipping	Installed when shipping	Installed when shipping
Original cover	Option	Option	Option	Option
Paper exit tray	Option	Option	Option	○
Installed language ROM (Default)	English	English	English	English
(Installed language)	German	German	German	German
Set with SIM 26-22.	French	French	French	French
	Spanish	Spanish	Spanish	Spanish
	Italian	Italian	Italian	Italian
	Dutch	Dutch	Dutch	Dutch
	Swedish	Swedish	Swedish	Swedish
	Norway	Norway	Norway	Norway
	Finland	Finland	Finland	Finland
	Denmark	Denmark	Denmark	Denmark
Key sheet	English	English/French	English	None *2
Paper tray size display sheet	Inch series x 3	Inch series x 3	AB series x 3	AB series x 3
Operation Manual	English	English/French	English	None *3
Delivery and installation report	×	×	×	○
Maintenance card	○	○	○	○
Maintenance sheet	○	○	○	○
Polyethylene sheet	○	○	○	○
Polyethylene gloves	○	○	○	○
Polyethylene bags	○	○	○	○
MSDS card	○	○	○	×
Energy star mark	○	○	○	○
ECP label	○	○	×	×
Warranty registration	×	×	○	×

\*1: One of two toner collection containers is installed to the machine when shipping. The installed one has no cap.

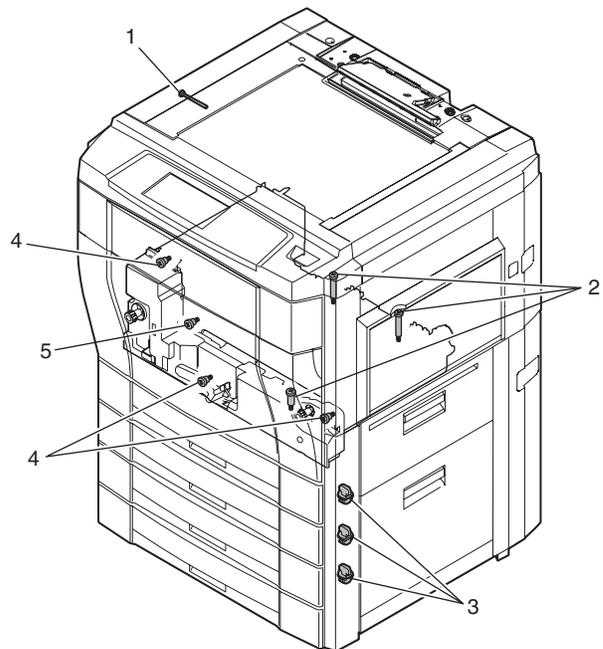
\*2: The Key sheet for Europe is included in the Operation Manual Kit.

\*3: The Operation Manual and the key operator guide are separate for USA. For the other destinations, they are bound together into one.

Operation Manual kit

Language	Model name	Content	Note
English	AR-33SE	Operation Manual (Bound together with Key Operator Guide), Operation panel sheet	25 sets
Germany	AR-33SG		
French	AR-33SF		
Spanish	AR-33SS		
Italian	AR-33SI		
Dutch	AR-33SH		
Swedish	AR-33SW		
Norway	AR-33SN		
Finland	AR-33SA		
Denmark	AR-33SD		

## 4. Lock release



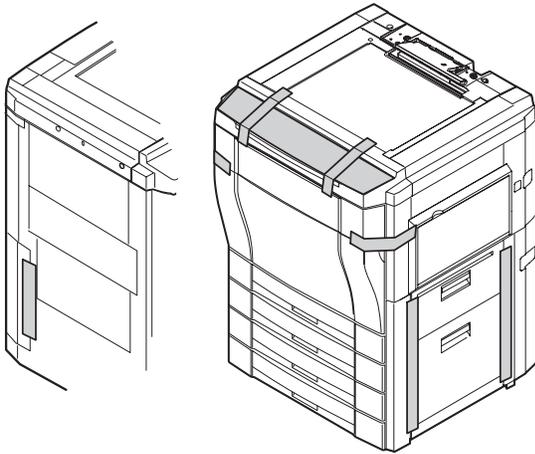
No.	Parts name
1	No. 2/3 mirror base lock screw
2	Belt unit fixing screw B
3	Tray rotating plate fixing material
4	Fusing, transfer unit fixing screw A
5	Paper guide lock screw

### A. External fitting section

- 1) Remove the fixing tape and packing material from the copier body.

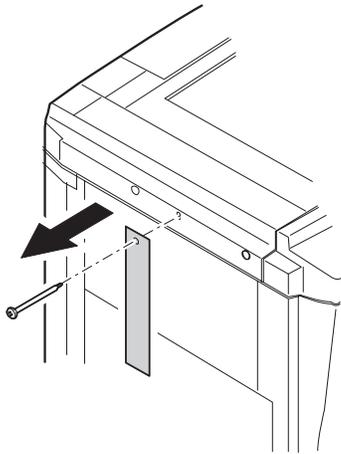
[Paper exit side]

[Paper feed side]



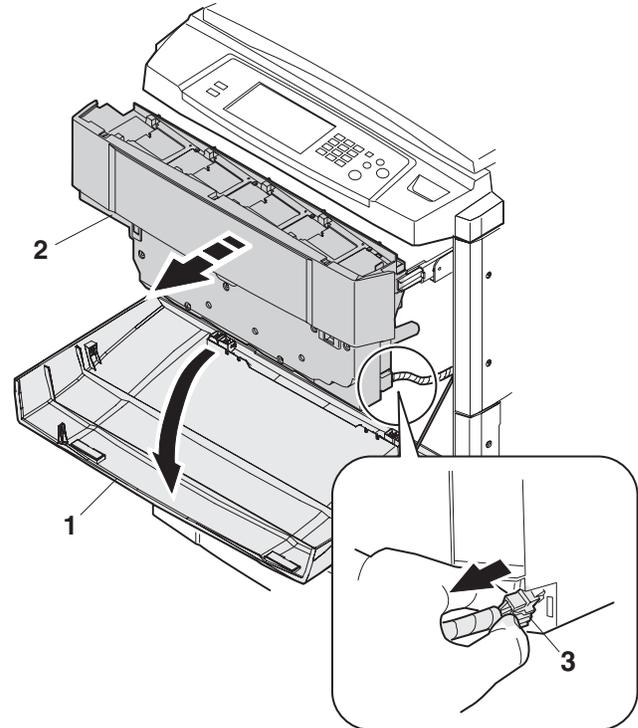
### B. Scanner section

- 1) Release the No. 2/3 mirror unit lock.  
(Remove the fixing screw, washer, and note label of No. 2/3 mirror unit on the left side.)

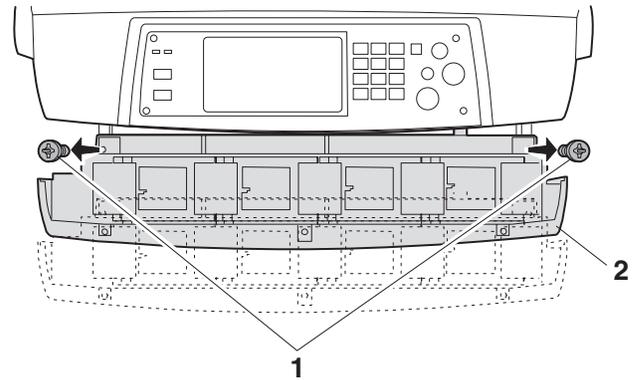


### C. Transfer section

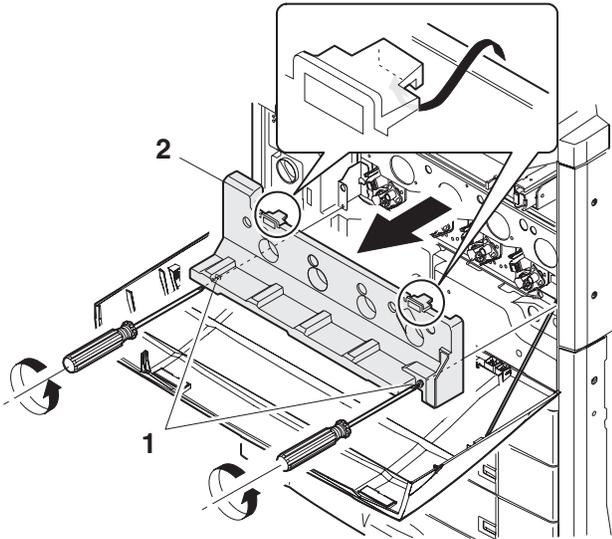
- 1) Open the front cover (1), and remove the toner hopper unit (2).
- 2) Remove the connector (3).



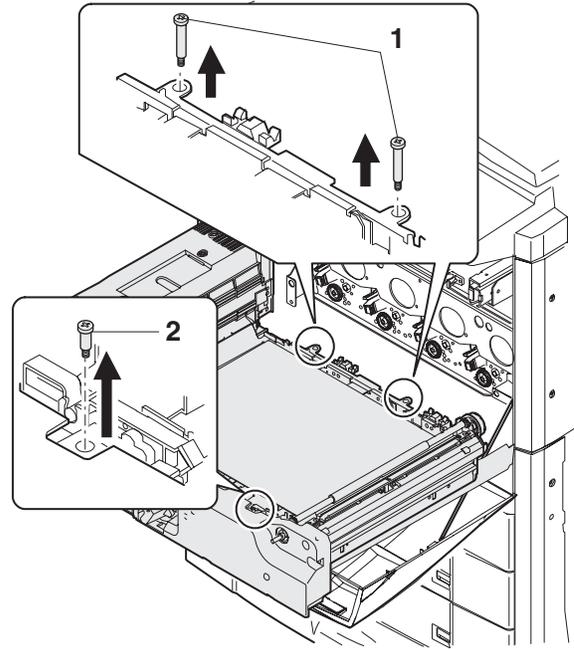
- 3) Remove the blue screw (1), and remove the toner hopper unit (2).



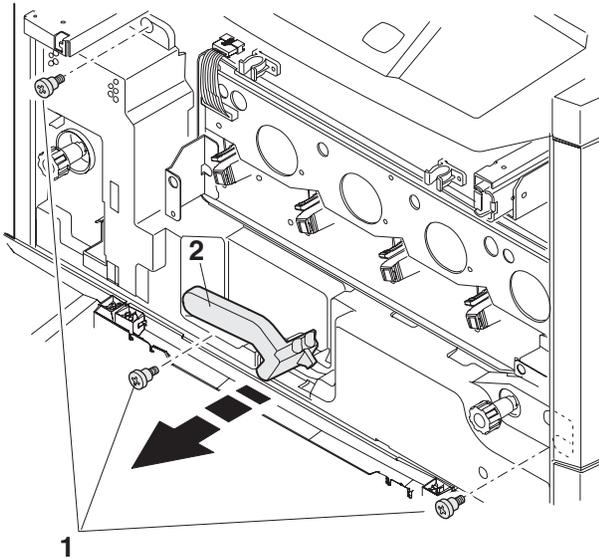
- 4) Loosen the blue screw (1), and remove the process frame cover (2).



- 7) Remove the unit fixing screw B (1) and the unit fixing screw A (2).

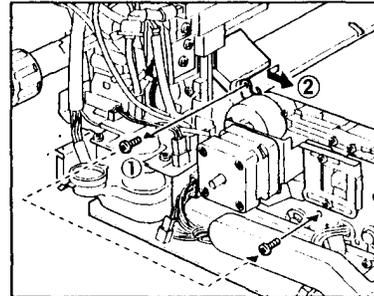


- 5) Remove the unit fixing screw (1), and hold the lever (2) to remove.

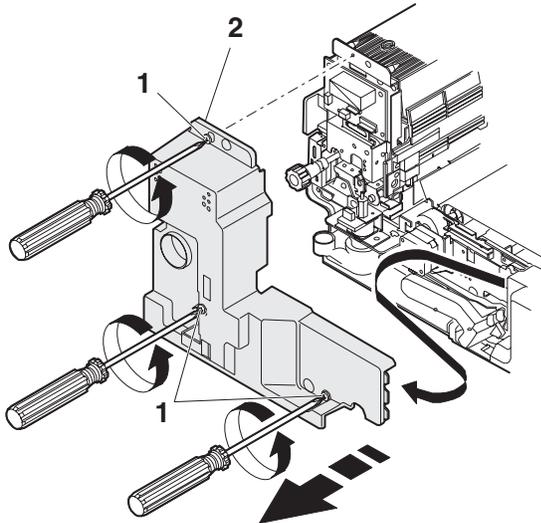


- 8) Remove the fusing front paper guide fixing screw (1) and the protector (2).

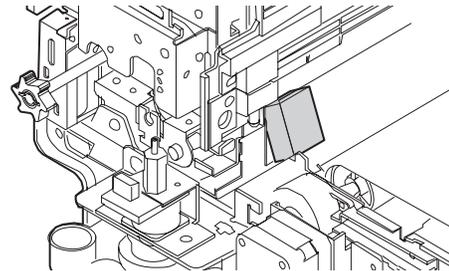
Keep the removed screw in the screw hole in the transfer section. When in transit of the machine, fix the fusing front paper guide with this screw.



- 6) Loosen the blue screw (1), and remove the fusing front cover (2) in the arrow direction.

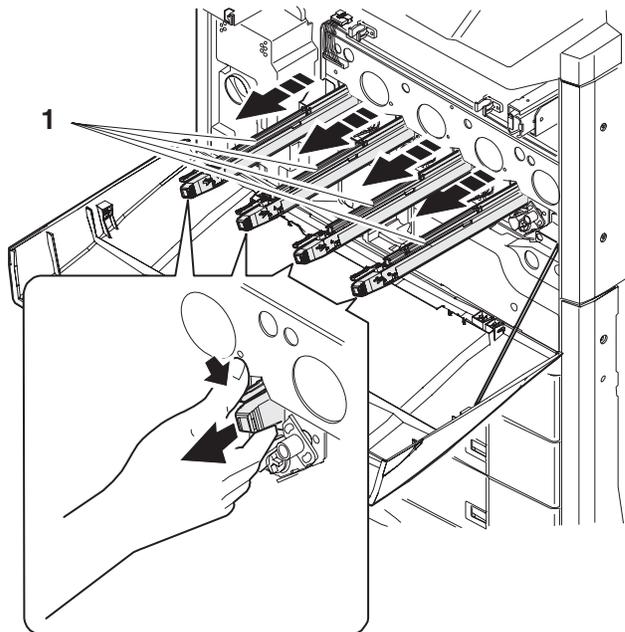
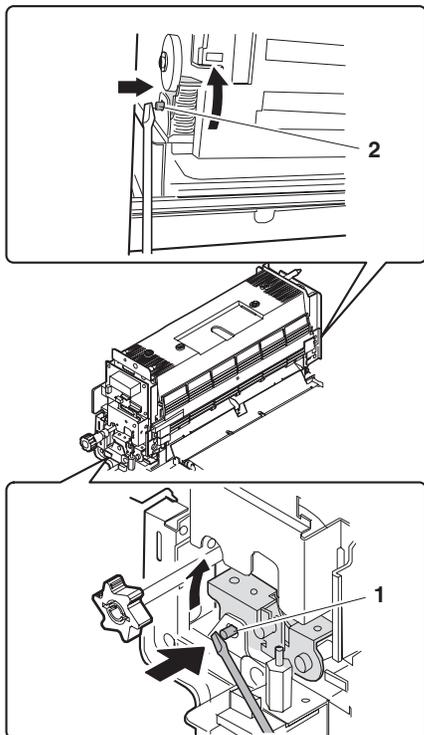


- 9) Remove the fixing material.



## D. Fusing and paper exit section

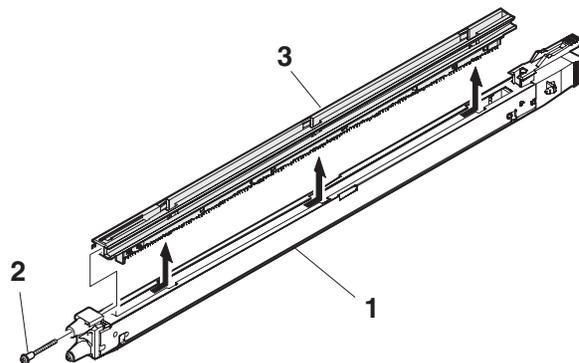
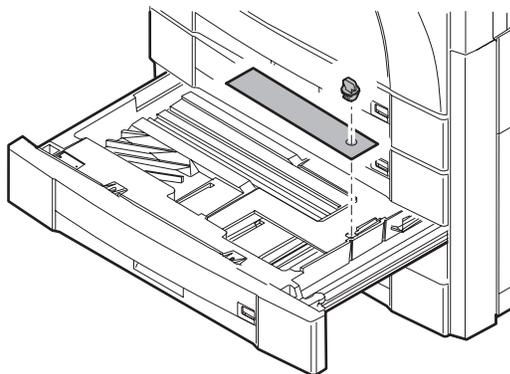
- 1) Insert and press the front side shaft (1) with a screwdriver.
- 2) Insert and press the rear side shaft (2) with a screwdriver.



- 5) Remove the electrode section fixing screw (2) of the main charger unit (1), and remove the electrode section (3).

## E. Paper feed, paper transport section

- 1) Remove the rotating plate fixing material of the paper feed tray, and remove the caution label.



- 6) Clean the tip of the electrode by pushing the electrode cleaner through it. (Repeat 2 or 3 times.)

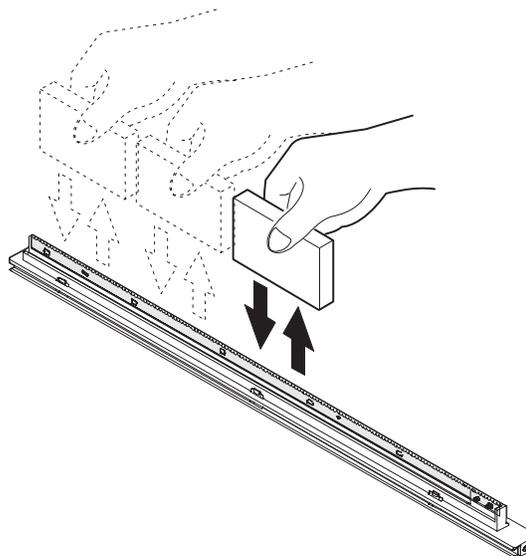
(Note) Do not move the cleaner when it is pushed through the cleaner. When cleaning, clean the whole area evenly.

- 7) Install the electrode section to the original position, and fix it with the fixing screw.

## 5. Cleaning

### A. Main charger

- 1) Open the front cover.
- 2) Remove the toner hopper unit.
- 3) Remove the process frame cover.
- 4) Press the main charger unit hook section and releaser the lock. Remove the main charger unit (1) from the copier.



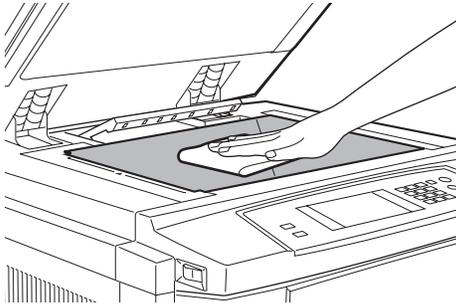
- 8) Insert the main charger unit fully into the machine along the copier guide.

## B. Document table

### (1) Document table cleaning

If the document table is dirty, the dirt is copied.

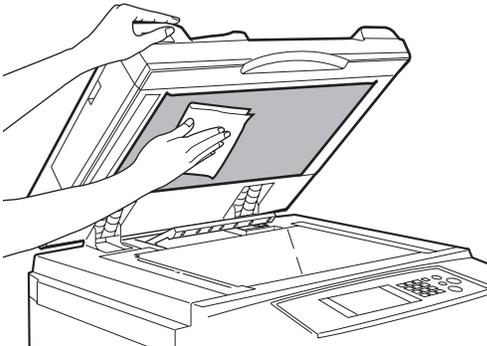
Wipe and clean with soft cloth with water, then wipe with dry cloth.



### (2) Document cover cleaning

If the document cover is dirty, the copy is dirtied or the document size is erroneously detected.

Wipe and clean with soft cloth with water, then wipe with dry cloth.

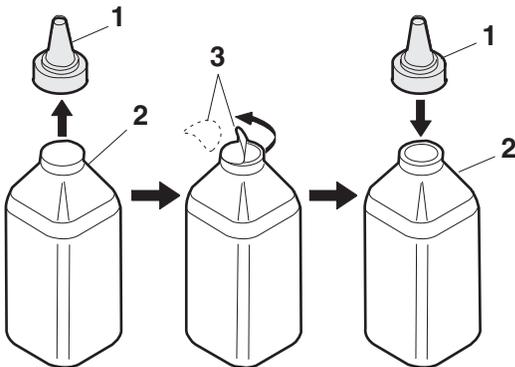


- (Note)
- If the dirt cannot be removed easily, wipe with soft cloth immersed in water or neutral detergent, then wipe with dry cloth.
  - Do not use benzene or thinner for cleaning, which may change the parts in quality or discolor.

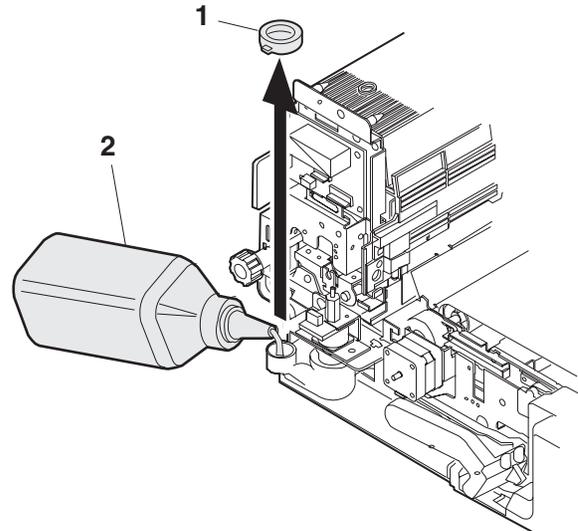
## 6. Consumable parts setup

### A. Fusing oil setup

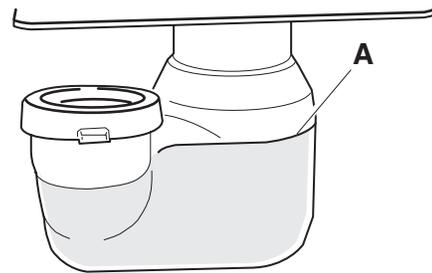
- 1) Remove the cap (1) from the oil bottle (2), and remove the inner cap. Set the cap (3) again.



- 2) Remove the oil tank cover (1) from the oil tank, and fill oil from the oil tank (2).



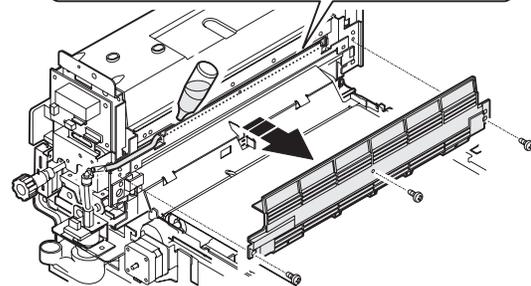
- (Note) Do not exceed line A when filling oil.



### (Fusing oil handling)

#### (1) Print operation check procedure without filling oil in the oil tank

- 1) Remove the fusing oil applying section cover.

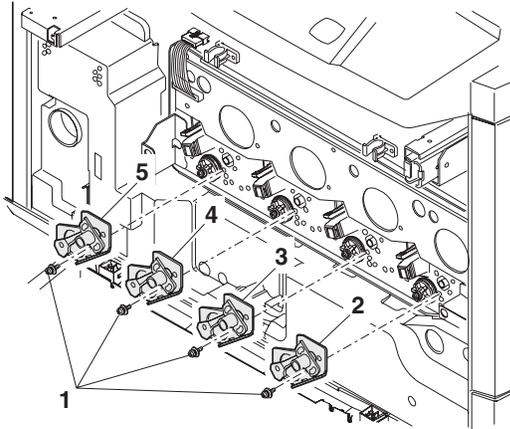


- 2) Supply 10 – 15cc of fusing oil all over the oil pipe and the oil blade. Use of fusing oil YYOK-0059FC31 (15cc) is advisable. This allows to print about 100 pages.

## B. Developer setup

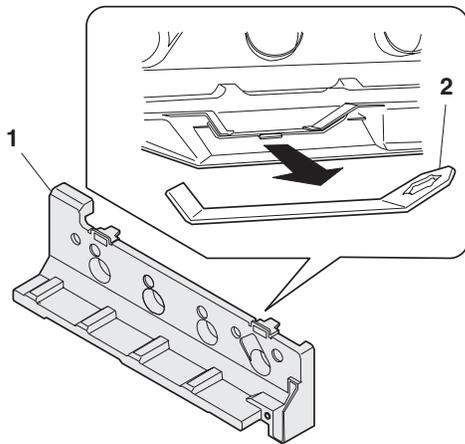
### (1) Developer setup

- 1) Remove the blue screw (1), and remove the DSD holder (2) (3) (4) (5).

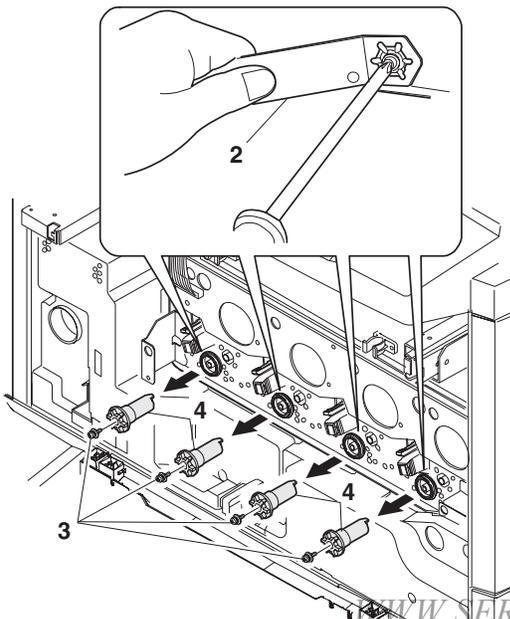


(Note) A color label is attached to each DSD holder for identification of the color. When installing the DSD holders, be sure to match the label color with the color on the machine.

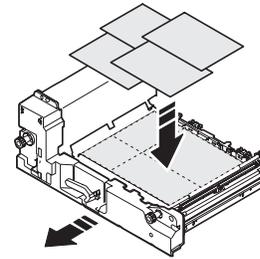
- 2) Remove the special tool (2) from the back of the process cover (1).



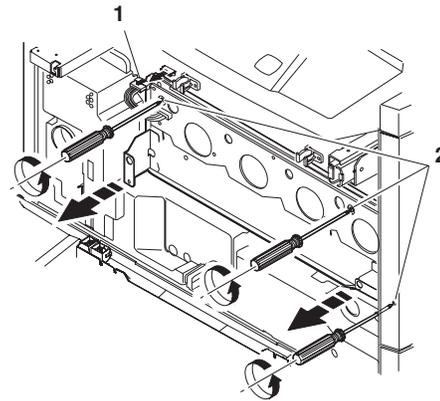
- 3) Fix the drum holder (4) with the special tool (2), and remove the blue screw (3).



- 4) Pull out the transfer unit, cover the whole surface of the transfer belt with paper, and insert the transfer unit. At that time, keep the lock handle released. This procedure is performed in order to prevent against dirt by toner dropped from the process frame unit.

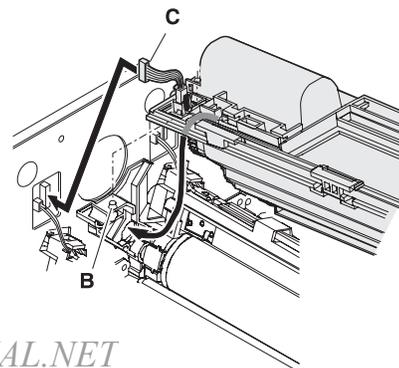
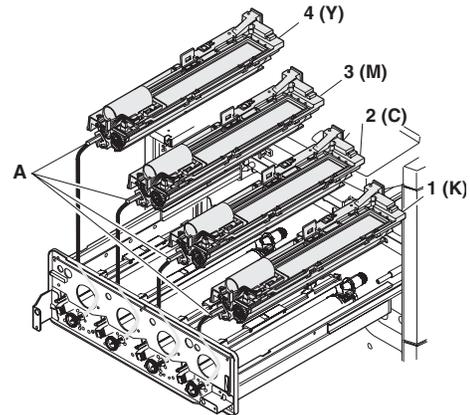


- 5) Remove the connector (1) and loosen the blue screw (2).
- 6) Remove the process frame unit from the arrow section.

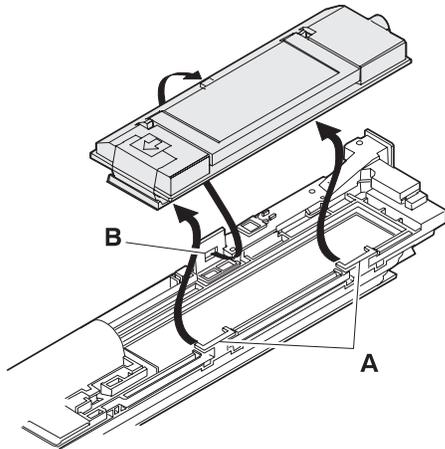


- 7) Set the developer units in the sequence of (1) to (4).

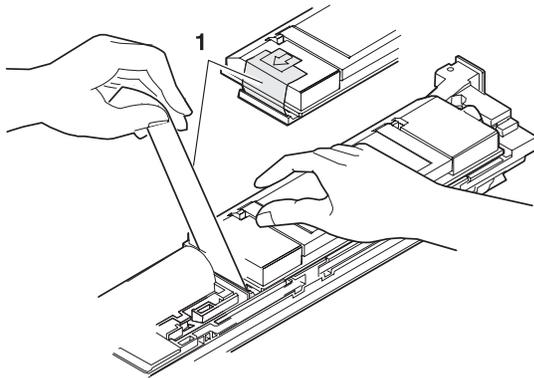
(Note) Insert section A into the hole along the arrow indication. Fit the projection B with the hole in the developer unit, and connect the connector C. Set each developer unit to its position. Be careful not to mistake the position.



- 8) Set the developer cartridges in the sequence of black, cyan, magenta, and yellow.
  - 9) Put the developer cartridge on the developer unit pawl A, and press is until pawl P clicks.
- (Note) Check that the developer color and the developer unit color are the same.



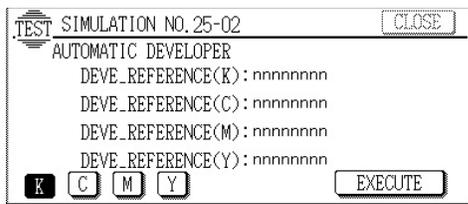
- 10) Pull out the developer cartridge film sheet (1). (4 positions for each color)



(After completion of the above procedures, attach the removed cover and the cabinet.)

## (2) Toner concentration reference control level setup

- 1) Enter SIM 25-2 mode with the front cabinet open.



- 2) Close the front cabinet.
- 3) Select the developing unit to be adjusted. (Select the all.)
- 4) Press the EXECUTE key and it is highlighted. The OPC drum motor rotates and the toner concentration sensor detects toner concentration and the output value is displayed. After 3 minutes of stirring, the average value of the toner concentration sensor detection level is set (stored) as the reference toner concentration control value.

(Note) If the adjustment is stopped within 3 minutes, the setup result is not stored.

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

If "EE-EU" or "EE-EL" is displayed, the reference toner concentration control value is not set normally.

EE-EL: The value is less than 79 (1.59V).

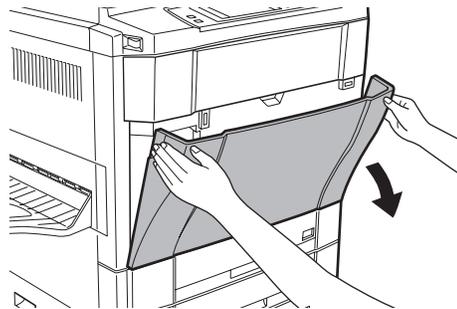
EE-EU: The value is over 177 (3.41V).

- 5) Clear the developer counter with SIM 24-5.
- 6) Execute SIM 44-27 to reset the half tone correction data (correction conditions) to the default level.

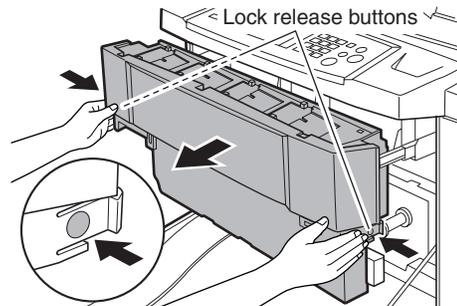
- (Note)
- 1) The developers of yellow, magenta, and cyan must be replaced at a time. If individual developer is replaced, color balance is changed and cannot be adjusted. The black developer can be replaced individually.
  - 2) After replacement of the developers and the photoconductor, execute SIM 44-27 to reset the half tone correction data (correction conditions) to the default level. If the above procedure is missed, half tone correction may not be performed properly.
  - 3) Reset the developer counter with SIM 24-5.

## C. Toner setup

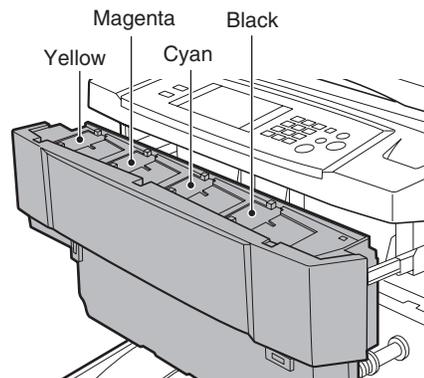
- 1) Open the front cover.



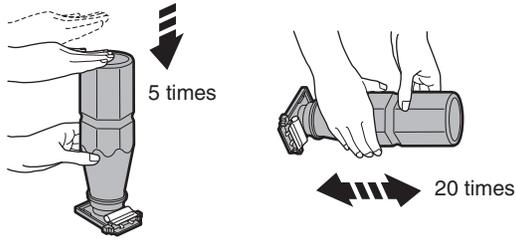
- 2) Remove the toner box.
- 3) Press the lock release buttons on the both sides to release lock and pull the toner box out.



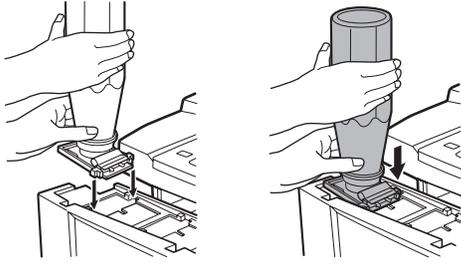
- 4) The toner supply ports on the toner box are arranged as shown below.



- 5) Tap the toner cartridge top 5 times, and shake it horizontally 20 times.

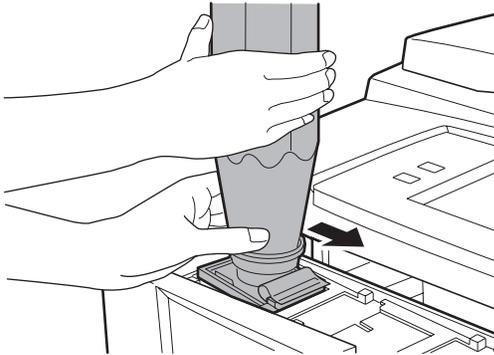


- 6) Attach the toner cartridge to the toner box to be refilled.  
 (Example) When refilling yellow toner:  
 Securely insert two projections of the toner cartridge into the toner supply port.

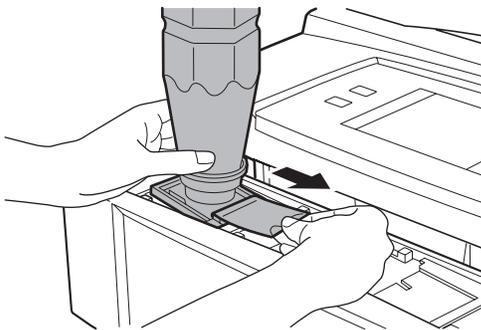


Be sure to check the color.  
 The toner cartridge must be attached to the toner supply port of the same color.

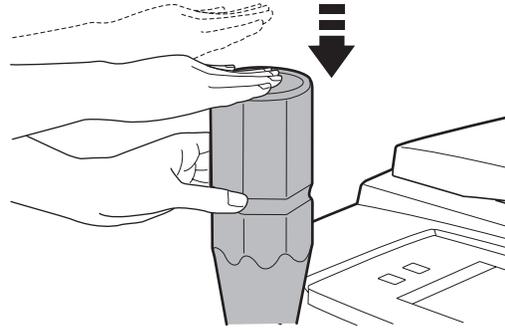
- 7) Move the toner cartridge in the arrow direction until it stops.



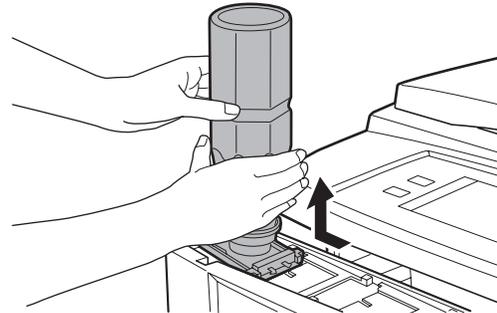
- 8) Remove the seal.  
 9) Hold the toner cartridge and remove the seal.  
 10) It takes about 40 sec to supply toner in the toner cartridge to the toner box.



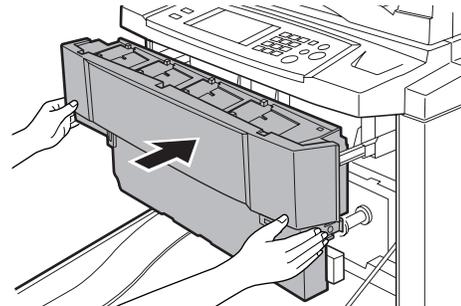
- 11) Tap the toner cartridge top several times.  
 12) Drop the toner attached to the inside of the toner cartridge completely.



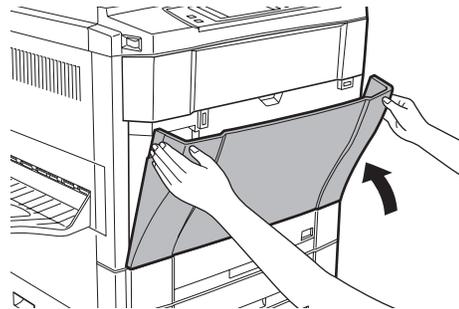
- 13) Move the empty toner cartridge in the arrow direction and remove it.



- 14) Insert the toner box into the original position.

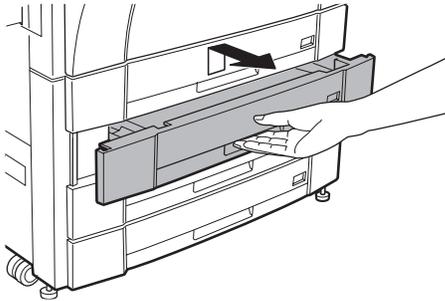


- 15) Close the front cover.

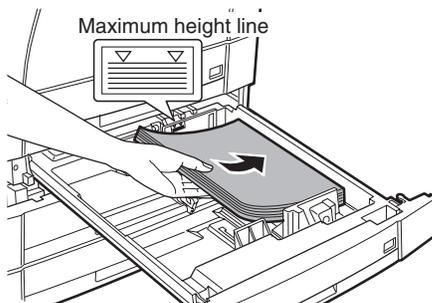


## D. Paper setup

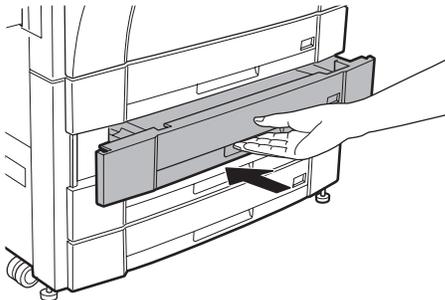
- 1) Lift the grip upward, and pull out the paper tray slowly until it stops.



- 2) Set the paper below the indication line.  
At that time, set the paper size detection lever according to the set paper size.



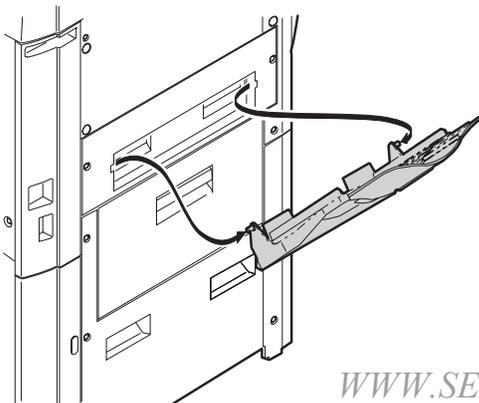
- (Note)
- Curled paper, folded paper or copied paper may cause paper jams.
  - When pulling out the tray, do not put a heavy thing on it or do not press it.
- 3) Push the tray into the machine slowly and securely.



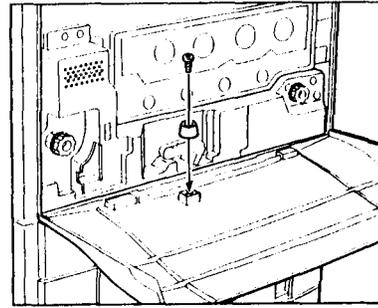
- (Note)
- When a tray is pulled out during copying, a paper jam may occur. When a paper jam occurs in the tray, if the tray is pulled out, the jammed paper may be torn.

## 7. Parts setup

### (1) Paper exit tray setup



### (2) Front cabinet stopper setup



### (3) Horizontal level check and adjustment

If the copier is tilted back and forth, the following troubles may be caused.

- Oil leak from the fusing section
- Image distortion and color image resist

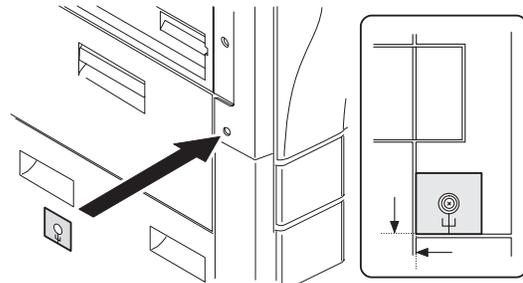
To avoid the above troubles, check the horizontal level of the copier back and forth and adjust if necessary. A small tilt in left and right direction is allowed due to the margins.

#### a. Necessary tools

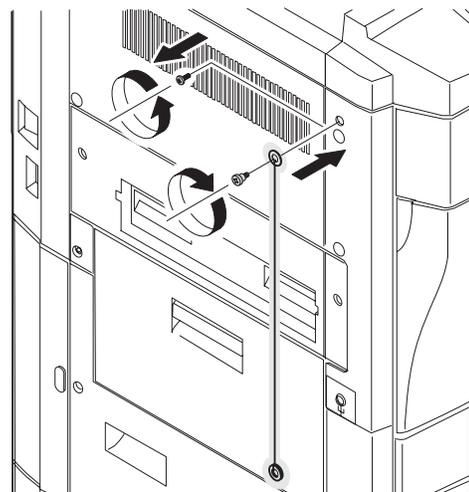
- Horizontal level check sheet (UKOG-0286FCZZ)
- Screw (LX-BZ0870FCZZ)  
4 lock release/C transfer section/Use screws other than the screws removed in Procedure 7).
- Horizontal level check string (with washer) (UKOG-0285FCZZ)
- Spacer disk (UKOG-0287FCZZ)
- Spacer (UKOG-0288FCZZ)

#### b. Check and adjustment

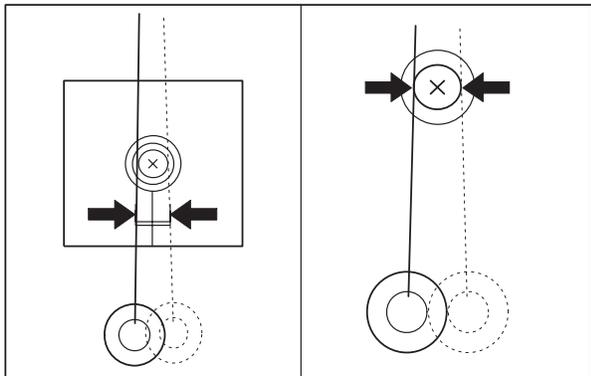
- 1) Paste and attach the horizontal level check sheet to the edge of the cabinet.



- 2) Remove the cabinet fixing screw.



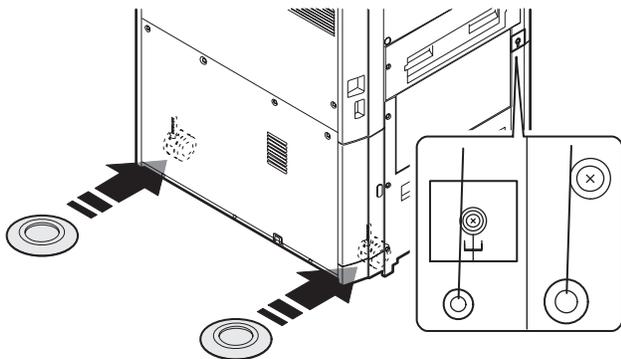
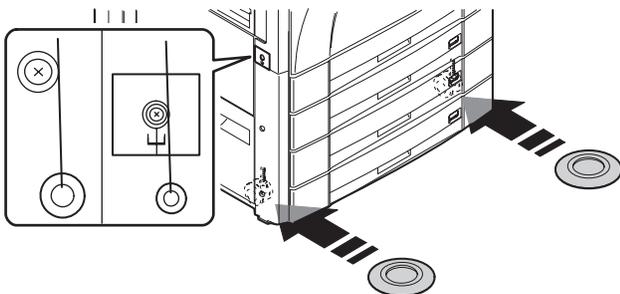
- 3) Pass the washer of the horizontal level check string into the screw (LX-BZ0870FCZZ) and attach it to the copier.
- 4) Check that the horizontal level check string is in the frame mark of the horizontal level check sheet. If the horizontal check sheet is not available, check that the horizontal level check string is within the cabinet fixing screw width.



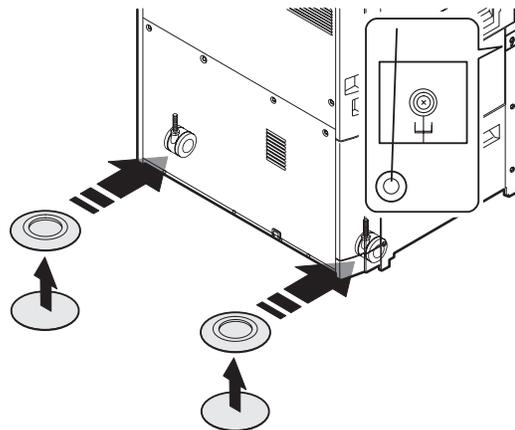
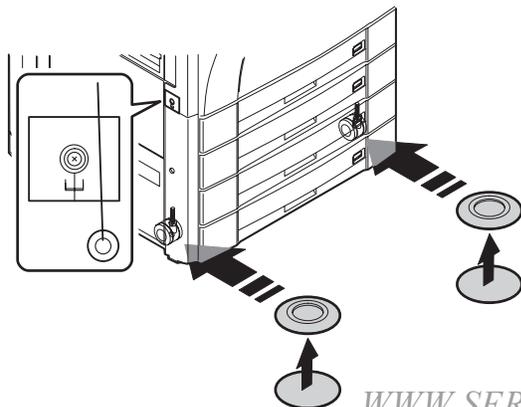
If the above condition is satisfied, no need to make further adjustment.

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

- 5) Put the spacer disk under the caster.

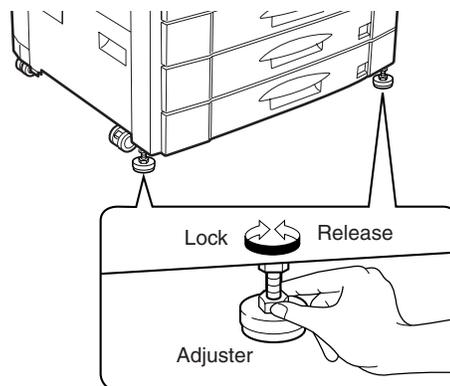


If the adjustment cannot be performed only with the spacer disk, use the spacer together.



#### (4) Adjuster setup

- 1) As shown in the figure below, turn the adjuster until it makes contact with the floor securely.



## 8. Copy quality check

Check the following items. For the adjustment and check procedures, refer to the section of adjustments.

- (1) Focus (resolution) (Refer to ADJ M12.)
- (2) Copy image off- and center (Refer to ADJ M14 and ADJ M15.)
- (3) Image loss, void area (Refer to ADJ M16.)

#### (4) Image resist

Check the following items. If the adjustment is improper, make an adjustment again.

- Main scanning direction image resist adjustment (Refer to ADJ M9.)
- Sub scanning direction image resist adjustment (Refer to ADJ M10.)

#### (5) Copy color balance, density (Refer to ADJ M17.)

There are two check methods.

- \* Set the color balance (copy density) setup of each copy mode to the center. Make a copy of the gray scale chart (UKOG-0162FCZZ) and a copy of the color test chart (UKOG-0283FCZZ). Check that the color balance and the density level are within the specified range.

For details and the judgment criteria, refer to "Copy mode color balance and density check" in ADJ M17.

- \* Perform procedure 1) of ADJ M17 ADJ 3 in the adjustment section to check the color balance and the density level.

(Note) When performing checking only, do not change the adjustment value.

For details and the judgement criteria, refer to ADJ M17 ADJ3.

If the color balance and the density level are not within the specified range, make an adjustment according to the flowchart of ADJ M17.

## 9. Specification setup

Execute SIM 26 to set the specifications according to the customer's need.

Sim No.	Content
26	1 Used to set options. (When installing an option, use this simulation to set the option (software).)
	2 1) Used to set the paper size of the large capacity tray. (When the paper size is changed, this simulation must be executed to change the paper size in software.) 2) Used to detect 8.5 x 13" size paper and documents and to set the display mode. (All paper feed modes) 3) Used to set the paper size in the manual paper feed mode.
3	Used to set the auditor specification mode. Setting must be made according to the use conditions of the auditor.
5	Used to set the count mode of the total counter, the developer counter, and the maintenance counter.
6	Used to set the specifications (paper, fixed copy magnification ratio, machine operations at an image (process) correction error depending on the destination.
15	Used to set the fusing operation mode (paper curl prevention mode).
18	Used to set Enable/Disable of the toner save operation. (The function of this simulation is effective only in UK version. (Depending on the setting of SIM 6-6 (Destination).) For the other destinations, the same setting can be made with the user program P22.
22	Used to set the destination specifications (language display).
28	Used to set the AC power voltage. (For the fusing section heater lamp power control)
30	Used to set the CE mark complying operation mode. (Soft start when driving the fusing heater lamp.)
35	Used to set whether the trouble history display of SIM 22-4 is displayed as one time trouble or continuous troubles when the same trouble repeatedly occurred.

## 10. Function and operation check

Check the following operations.

Check item	Note	
Paper feed operation (manual paper feed)		
Paper feed by the paper tray		
Paper feed by the large capacity paper feed tray	When the large capacity tray is installed.	
Paper size detection		
Document size detection		
RADF copy (S-S mode)	When RADF is installed.	
RADF copy (S-D mode)	When RADF is installed	When the duplex unit is installed.
RADF copy (D-D mode)	When RADF is installed	When the duplex unit is installed.
RADF copy (D-S mode)	When RADF is installed	
Sort mode copy	When RADF is installed.	
Group mode copy	When RADF is installed	
Staple	When RADF is installed	

## 11. Recording of setup and adjustment data

Execute SIM 22-6 to print and keep the various setup data and the adjustment data (list).

In case of memory trouble, when the PCU PWB or the ICU PWB is replaced, if there is not the above information, all adjustment must be made from the beginning.

With the record of the above information, the setup data and the adjustment data can be directly inputted efficiently.

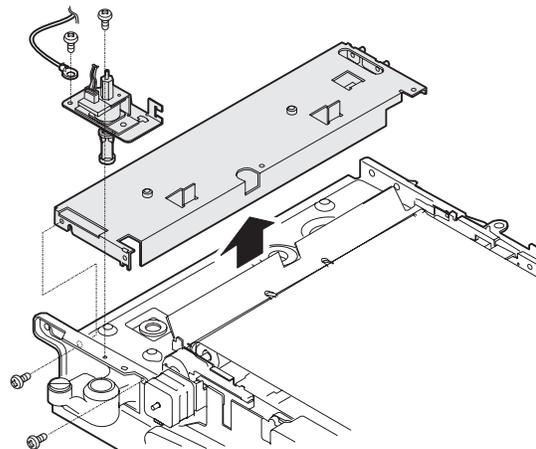
## 12. Procedures for transit

When moving the copier, the following procedures must be performed.

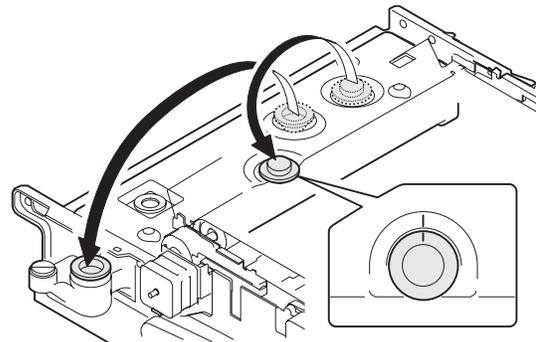
- (1) Remove paper from the paper trays.
- (2) Remove the developing unit from the copier.
- (3) Lock all the locks again.
- (4) Remove the fusing unit.
- (5) Remove the fusing oil bottle.

After removing the fusing unit, perform the following procedures.

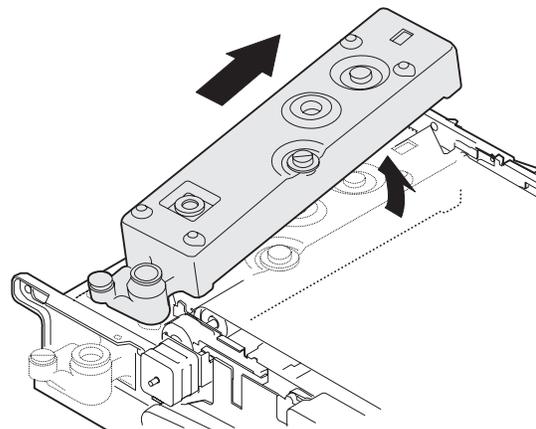
- 1) Remove the fusing oil bottle cover.



- 2) Attach the caps (which are appended to the fusing oil bottle) to the three holes in the fusing oil bottle.

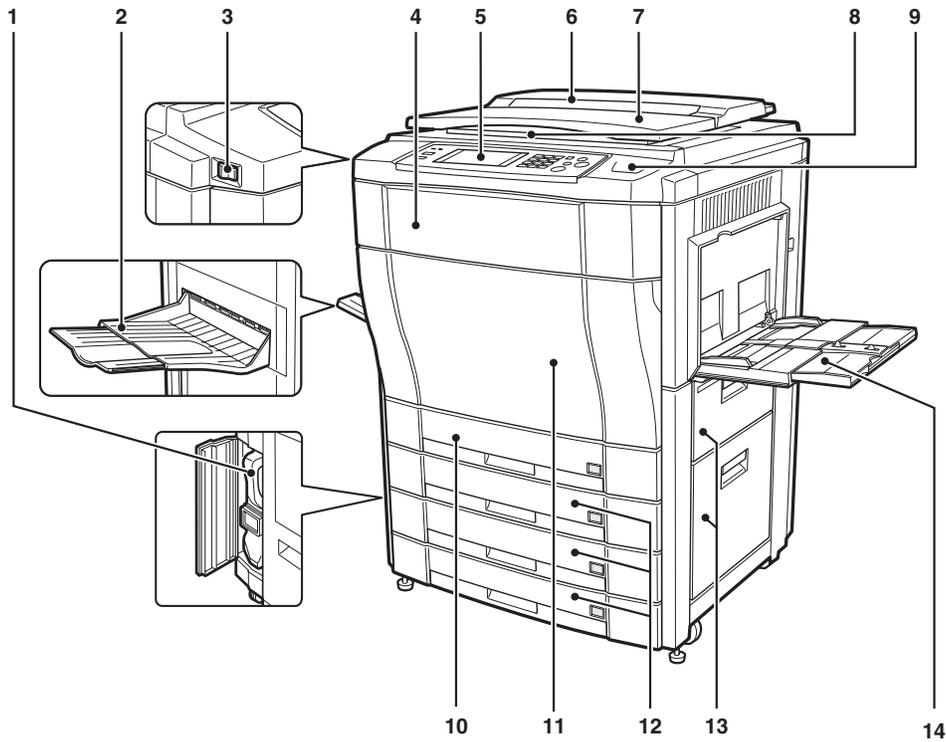


- 3) Remove the fusing oil bottle from the copier.



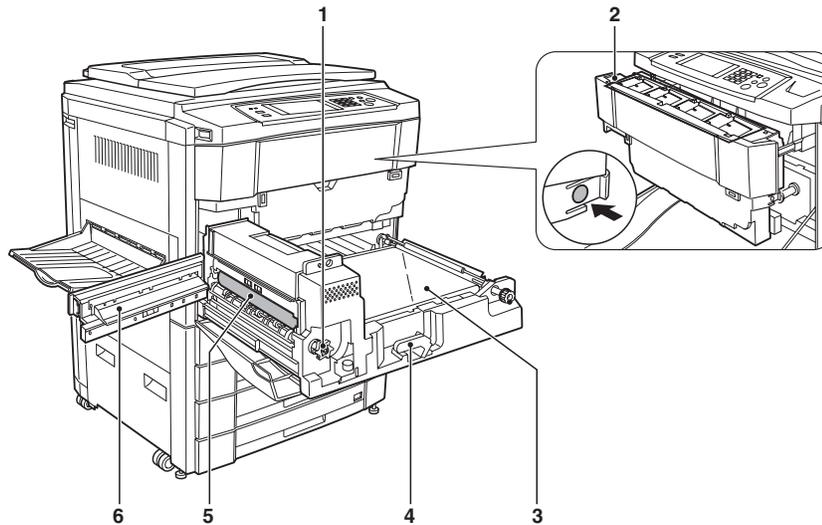
## [5] EXTERNAL VIEW AND INTERNAL STRUCTURE

### 1. External view and operation parts



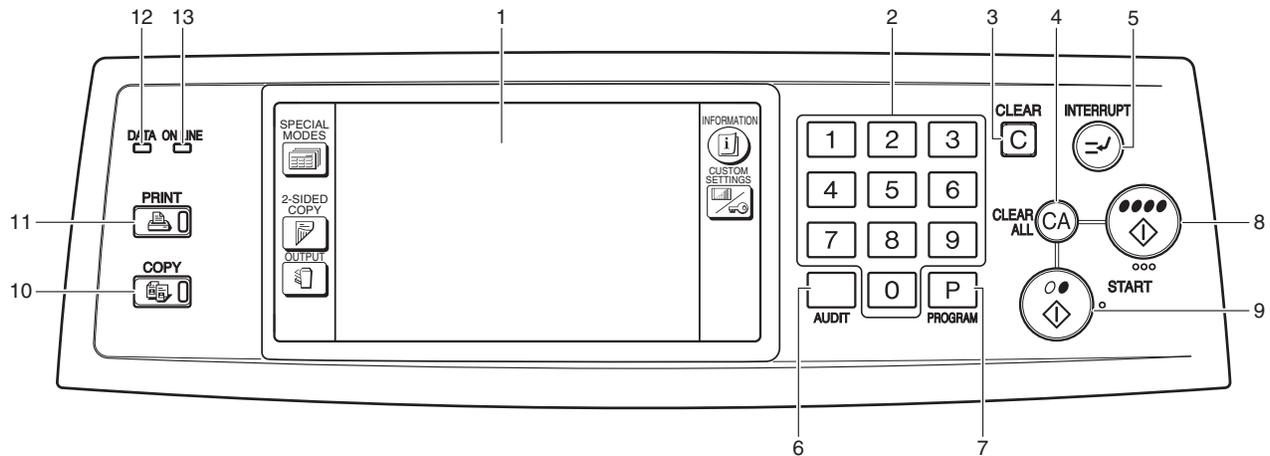
No.	Parts		NOTE
	Name	Function and operation	
1	Waste toner bottle	Collect waste toner from the image process section.	
2	Paper exit tray	Receives printed paper.	
3	Main power switch	Turns on/off the power.	
4	Toner hopper cover	Toner container section	
5	Operation panel	Used to perform various setups, displays, and simulations.	
6	Original stacker	Stacks originals.	
7	Original cover	Presses an original and prevents against leakage of light from the scanner lamp.	Optional
8	Original table	An original to be scanned is set on this table. (Left edge reference)	
9	Paper clips tray	Used to put paper clips on it.	
10	Duplex module	When duplex copying is performed, paper is automatically reversed here.	
11	Front cover	This cover is opened to remove and install the photoconductor cartridge, the developer cartridge, the transfer unit, and the fusing unit, and remove jam paper.	
12	Paper tray	Used to set paper on it.	
13	Right doors	These doors are opened to remove jammed paper from the paper transport section.	
14	Manual feed tray	In manual paper feed copy, inset paper from this tray.	

## 2. Internal operation parts



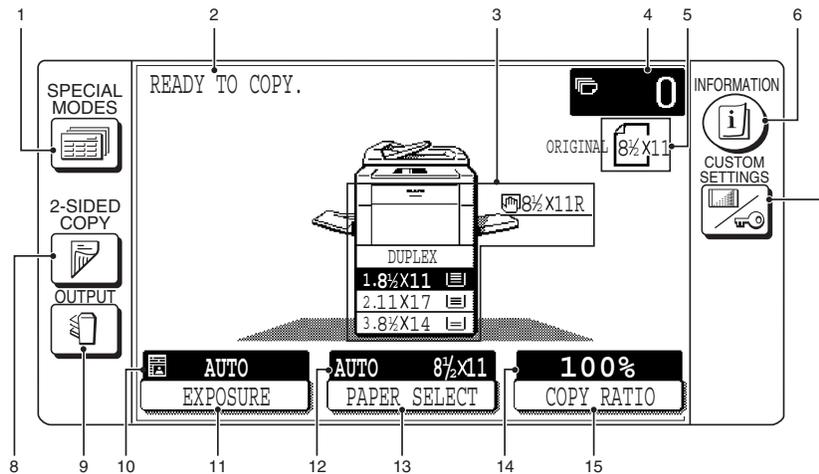
No.	Parts	
	Name	Function and operation
1	Fusing roller rotation knob	Turn this knob to remove jammed paper from the fusing section.
2	Toner hopper	Stores toner of Black, Cyan, Magenta, and Yellow.
3	Transfer belt	Transfers toner image on the photoconductor to the paper
4	Lift-up lever	Used to lift up and down the transfer unit. (Used when pulling out and installing the transfer unit.)
5	Heat roller	Fuses toner image on the paper by heat and pressure.
6	Paper exit transport guide	Opened to remove jammed paper from the fusing section.

## 3. Operation panel



No.	Parts	
	Name	Function and operation
1	Touch panel	Used to display various information and make various setups.
2	10-key	Used to enter set values.
3	Clear key	Used to clear set items and cancel multi copy operation.
4	Clear all key	Used to reset all setups to the default values.
5	Interruption key	Used to interrupt during multi copy.
6	Auditor key	Used to use the internal auditor.
7	Program key	Used to program copy conditions.
8	Start key/lamp for color copy	Used to start color copy or monochrome copy. (When the machine is ready to copy, the lamp in the start key is lighted.)
9	Start key/lamp for black/white copy	Used to start black/white copy. (When the machine is ready to copy, the lamp in the start key is lighted.)
10	Copy mode key/lamp	Used in the copy mode. When the machine is set to copy mode, the lamp is lighted.
11	Printer mode key/lamp	Used in the printer mode. When the machine is set to copy mode, the lamp is lighted.
12	Data lamp	Blinks when data is received from the print server.
13	Online lamp	Lights when communication with the print server is enabled.

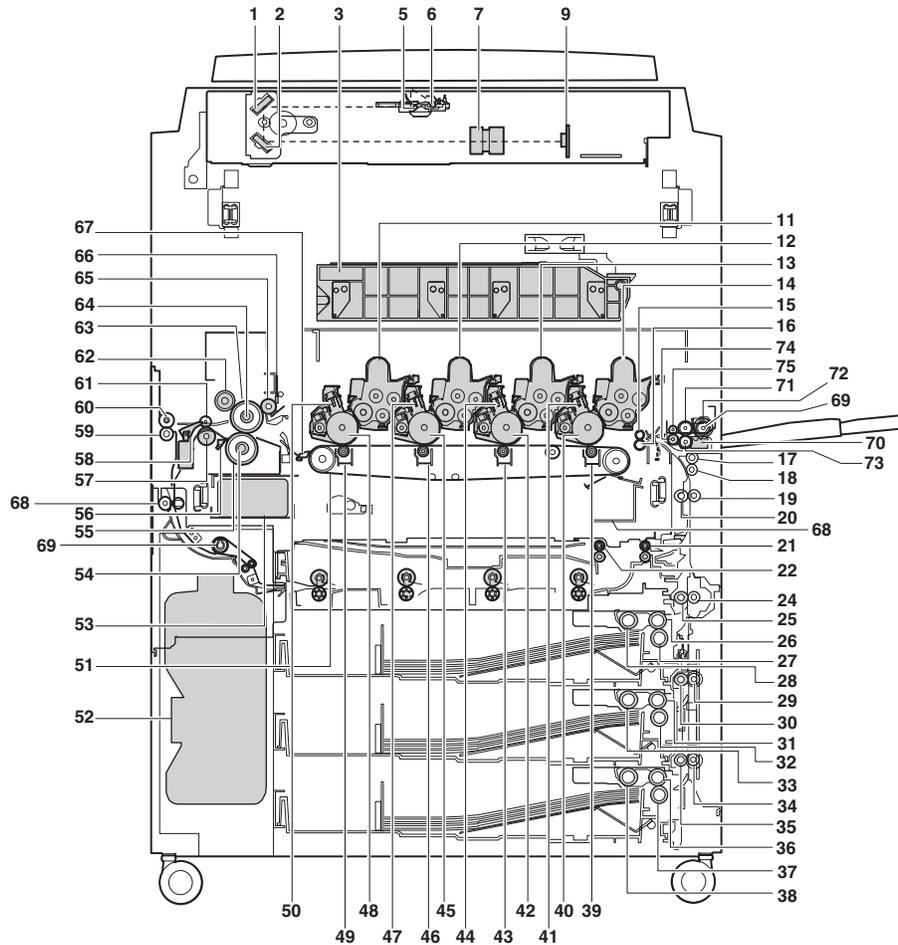
## 4. Touch panel



No.	Parts	
	Name	Function and operation
1	SPECIAL MODES key	Press to select special functions.
2	Message display	Messages are displayed regarding copier status and operation.
3	Paper size display	The sizes of loaded copy paper are displayed and the selected paper feed location is highlighted. ☰ indicates the amount of copy paper.
4	Copy quantity display	Displays the specified number of copies.
5	Original size display	The original paper size is displayed.
6	INFORMATION key	Press for operation guidance on use of various features of this copier. Press for guidance when a misfeed occurs, when adding toner, or when used toner must be disposed of.
7	CUSTOM SETTINGS key	Press to set key operator programs or adjust the contrast of the touch panel.
8	2-SIDED COPY key	Press to select the 1-sided to 1-sided, 1-sided to 2-sided, 2-sided to 2-sided* or 2-sided to 1-sided* copy mode. * To select the 2-sided to 1-sided or 2-sided to 2-sided copy mode, an optional RADF must be installed.
9	OUTPUT key	Press to select the sorter mode when an optional staple sorter (AR-SS2) is installed.
10	EXPOSURE display	Indicates the selected exposure mode.
11	EXPOSURE key	Press to select the exposure mode: AUTO or MANUAL and TEXT/PRTD. PHOTO, TEXT/PHOTO, TEXT, PHOTO, PRINTED PHOTO or MAP. The COPY OF COPY and COLOR TONE ENHANCEMENT modes can also be selected with this key.
12	PAPER SELECT display	Displays the selected paper size. When "AUTO" is displayed, paper size matching the original and copy ratio will be automatically selected.
13	PAPER SELECT key	Press to select the desired paper tray.
14	COPY RATIO display	Displays the copy ratios for reductions or enlargements.
15	COPY RATIO key	Press to select a reduction or enlargement copy ratio or select the automatic copy ratio selection mode.

## 5. Internal parts

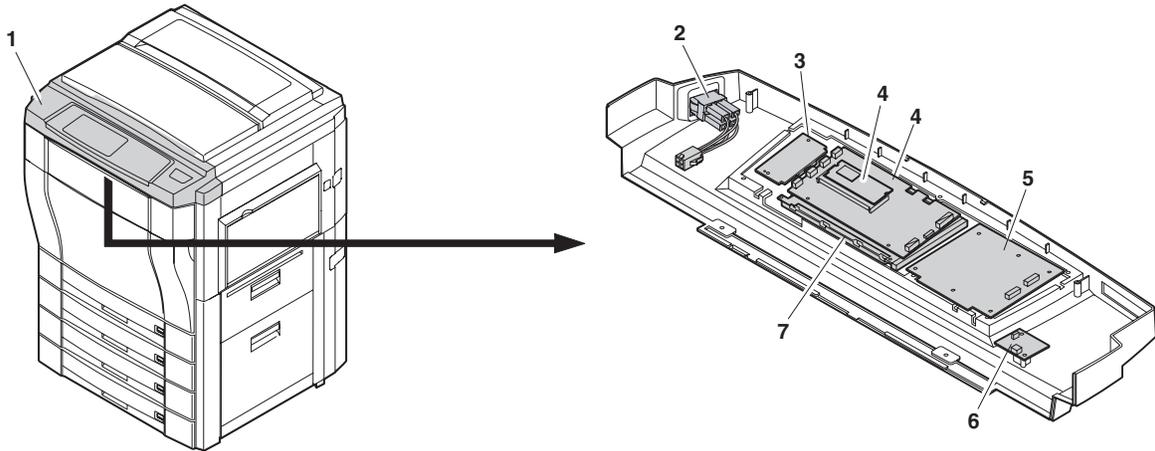
### (1) Cross section



No.	Parts		Note
	Name	Function and operation	
1	No. 2 mirror	Sends the original image to No. 3 mirror.	
2	No. 3 mirror	Send the original image to the CCD.	
3	LSU unit	Converts image signals sent from the ICU PWB into laser beams, and radiates them onto the OPC drum.	
5	No. 1 mirror	Sends the original image to No. 2 mirror.	
6	Scanner lamp	Radiates light to the CCD for scanning the original image.	
7	CCD lens	Reduces the original image (light) and project it to the CCD.	
9	CCD PWB	Reads the original image and converts it into electrical signals.	
11	Developing roller (Y)	Attaches toner on the OPC drum. (Y)	
12	Developing roller (M)	Attaches toner on the OPC drum. (M)	
13	Developing roller (C)	Attaches toner on the OPC drum. (C)	
14	Developing roller (K)	Attaches toner on the OPC drum. (K)	
15	Upper resist roller	Transports paper to the transfer section.	
16	Lower resist roller	Transports paper to the transfer section.	
17	Paper transport roller 1	Transports paper to the transfer resist roller.	
18	Idle roller	Applies pressure to paper and the transport roller.	
19	Idle roller	Prevents against paper skew.	
20	Paper transport roller 1	Transports paper to the transfer section (transfer resist roller).	
21	Discharge roller	Discharge roller after reverse.	
22	Reverse roller	Transport roller to the reverse section.	
24	Idle roller	Applies pressure to paper and the transport roller.	
25	Paper transport roller 2	Transports paper to the transport roller 1.	
26	Paper feed roller (No. 2 paper roller)	Feeds paper to the paper transport section.	
27	Separation roller (No. 2 paper tray)	Separates paper and prevents against double feed.	

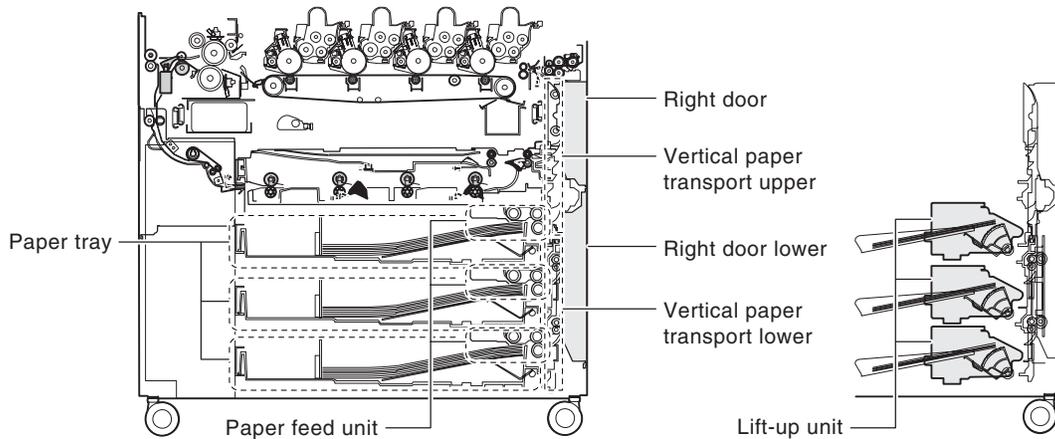
No.	Parts		Note
	Name	Function and operation	
28	Paper pickup roller (No. 2 paper tray)	Sends paper to the paper feed roller.	
29	Idle roller	Applies pressure to paper and the transport roller.	
30	Paper transport roller 3	Transports paper to the transport roller 2.	
31	Paper feed roller (No. 3 paper tray)	Feeds paper to the paper transport section.	
32	Separation roller (No. 3 paper tray)	Separates paper and prevents against double feed.	
33	Paper pickup roller (No. 3 paper tray)	Feeds paper to the paper feed roller.	
34	Idle roller	Applies pressure to paper and the transport roller.	
35	Paper transport roller 4	Transports paper to the transport roller 3.	
36	Paper feed roller (No. 4 paper tray)	Feeds paper to the paper transport section.	
37	Separation roller (No. 4 paper tray)	Separates paper and prevents against double feed.	
38	Paper pickup roller (No. 4 paper tray)	Sends paper to the paper feed roller.	
39	Transfer roller (K)	Applies a transfer voltage to the transfer belt.	
40	OPC drum unit (K)	Forms black latent electrostatic images.	
41	Main charger unit (K)	Charges the black OPC drum negatively.	
42	OPC drum unit (C)	Forms cyan latent electrostatic images.	
43	Transfer roller (C)	Applies a transfer voltage to the transfer belt.	
44	Main charger unit (C)	Charges the cyan OPC drum negatively.	
45	OPC drum unit (M)	Forms magenta latent electrostatic images.	
46	Transfer roller (M)	Applies a transfer voltage to the transfer belt.	
47	Main charger unit (M)	Charges the magenta OPC drum negatively.	
48	OPC drum unit (Y)	Forms yellow latent electrostatic images.	
49	Transfer roller (Y)	Applies a transfer voltage to the transfer belt.	
50	Main charger unit (Y)	Charges the yellow OPC drum negatively.	
51	Transfer belt	Transfers toner images on the OPC drum to paper.	
52	Waste toner bottle	Collects waste toner.	
53	Oil tank	Stores oil.	
54	Lower heater lamp	Heats the lower heat roller.	
55	Lower heat roller	Applies a pressure and heat to toner and fuses it to paper.	
56	Lower separation pawl	Separates paper mechanically from the lower heat roller.	
57	Fusing transport roller	Transports paper to the paper exit roller.	
58	ADU gate	Switches the paper route in the duplex mode.	
59	Paper exit roller	Discharges paper outside the machine.	
60	Idle roller	Applies pressure to paper and the paper exit roller.	
61	Idle roller	Applies pressure to paper and the transport roller.	
62	Upper cleaning roller	Cleans the fusing roller.	
63	Upper heat roller	Applies a pressure and heat to toner and fuses it to paper.	
64	Upper heat lamp	Heats the upper heat roller.	
65	Oil roller	Applies oil to the upper heat roller.	
66	Oil blade	Controls oil quantity on the oil roller to be even.	
67	Separation pawl	Separates paper from the transfer belt mechanically.	
68	Decurler paper exit roller	Paper-in roller to the decurler unit.	
69	Belt drive roller	Decurler unit transport roller	
70	Paper pickup solenoid	Presses paper onto the paper pickup roller.	
71	Manual paper feed roller	Feeds paper to the paper transport section.	
72	Manual paper feed clutch	Transmits the paper feed drive motor power to the manual paper feed unit. (Controls ON/OFF of the manual paper feed unit.)	
73	Separation roller	Separates paper to prevent against double feed.	
74	Manual transport roller	Applies a pressure to paper and the transport roller to give the transport roller power to the paper.	
75	Idle roller	Applies a pressure to paper and the transport roller and gives a transport power of the transport roller to the paper.	

## (2) Operation section

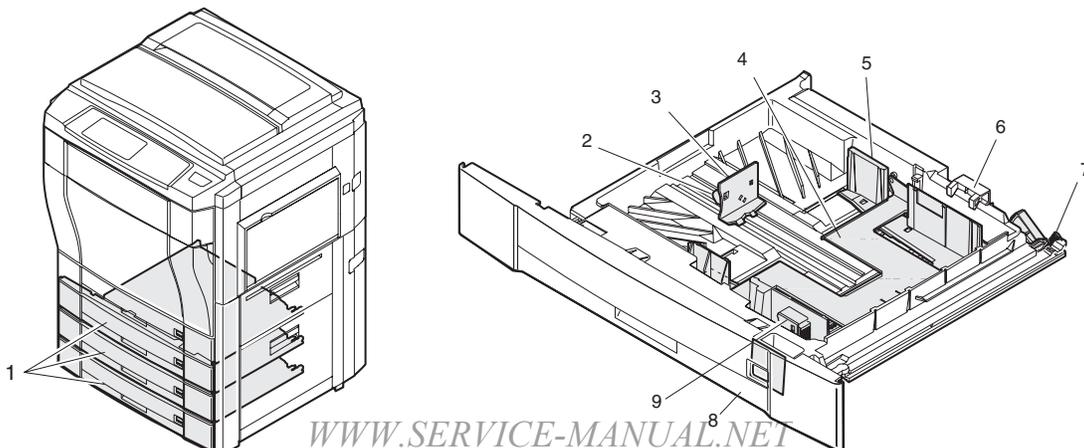


No.	Parts					
	Code	Signal name	Name	Type	Function/Operation	Active condition
1			Operation UN		Displays various information and makes setups.	
2	MAIN SW		Main switch	Rocker switch	Turns on/off the main power.	
3			Operation PWB L		Outputs key operation signals.	
4			OP control PWB		Controls the whole operation unit. (Displays information from PCU PWB and sends operational information to PCU PWB.)	
5			Operation PWB R		Outputs key operation signals.	
6			LCD back light inverter PWB		Drives the LCD back light.	
7			LCD	LCD	Displays various information. Functions as a key.	

## (3) Paper feed, transport section



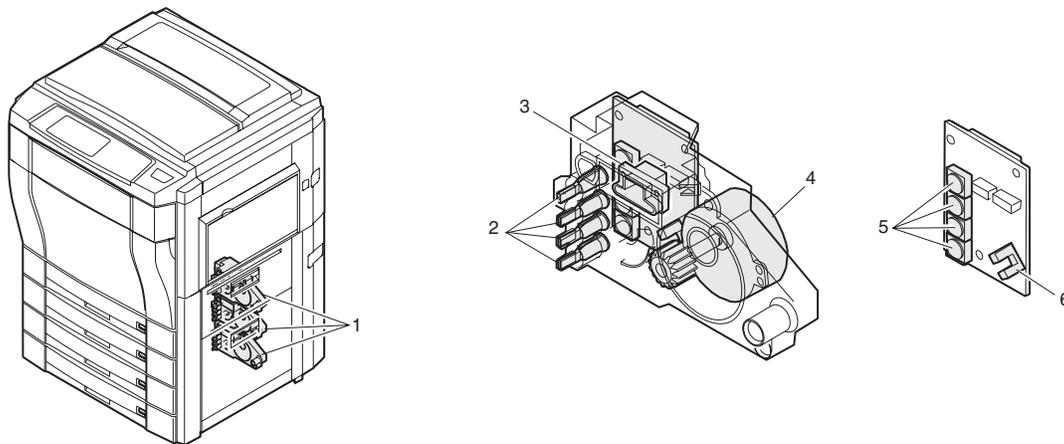
### a. Paper tray



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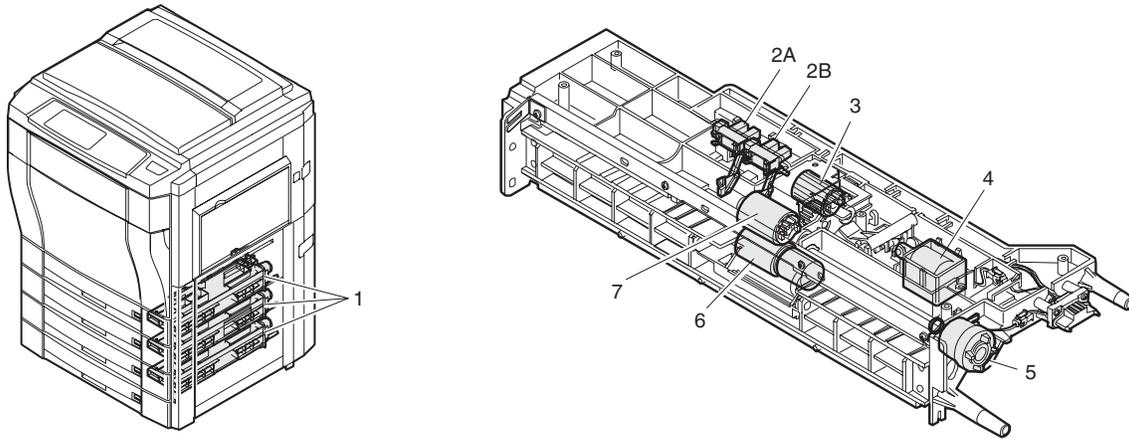
No.	Parts					
	Code	Signal name	Name	Type	Function/Operation	Active condition
1			Paper trays		Stores print paper.	
2			Paper position (longitudinal direction) adjustment plate lock lever		Locks or releases the paper position (longitudinal direction) adjustment plate.	
3			Paper position (longitudinal direction) adjustment plate		Positions paper (longitudinal direction).	
4			Lift plate		Lifts up paper to press it onto the pickup roller.	
5			Paper position (traverse direction) adjustment plate		Positions paper (traverse direction).	
6			Paper size set block		Makes the paper size detector detect the paper size.	
7			Lift gear		Transmits the lift motor power to the lift plate.	
8			Paper size display plate		Displays the paper size.	
9			Paper position (traverse direction) adjustment plate lock lever		Locks or releases the paper position (traverse direction) adjustment plate.	

**b. Paper tray lift unit**



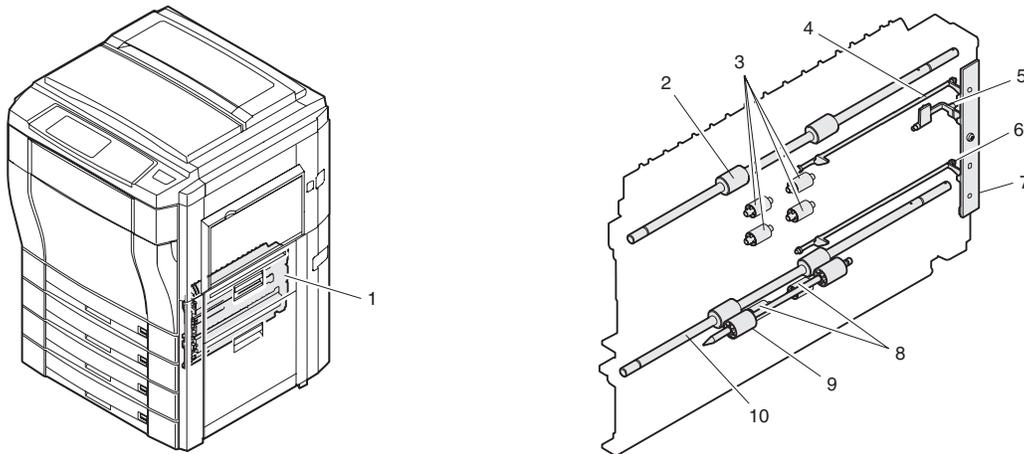
No.	Parts						Note
	Code	Signal name	Name	Type	Function/Operation	Active condition	
1			Paper tray lift unit		Drives the paper tray lift plate.		
2			Paper size detection actuator		Transmits protrusion pattern of the paper size set block to the paper size detector.		
3			Paper tray lift unit control PWB		Controls the paper tray lift unit.		
4	LUMx	LUMx	Lift motor	Synchronous motor	Drives the lift plate.		The numbering is made in the sequence of 1 - 4 from the top to the bottom.
5	CxSSx	CxSSx	Paper size detector (SW)	Tact switch	Detects the paper size set by the paper size set block.		The numbering is made in the sequence of 1 - 4 from the top to the bottom.
6	CxPDx	CxPDx	Lift position sensor	Photo sensor (Photo transmission)	Detects the lift plate position. (Detects paper quantity.)	H when detecting	The numbering is made in the sequence of 1 - 4 from the top to the bottom.

**c. Paper tray paper feed unit**



No.	Parts					
	Code	Signal name	Name	Type	Function/Operation	Active condition
1			Paper tray paper feed unit		Feeds paper in the paper tray to the paper transport section.	
2A	PEDx	PEDx	Paper empty detector	Photo sensor (Photo transmission)	Detects paper empty in the paper tray.	L(0V) when paper is detected.
2B	LUDx	LUDx	Paper upper limit detector	Photo sensor (Photo transmission)	Detects the paper upper limit (Keeps friction between the paper pickup roller and paper constant).	L when the paper upper limit is detected
3			Paper pickup roller		Feeds paper to the paper feed roller.	
4	CPFSx	CPFSx	Pickup solenoid		Presses paper onto the paper pickup roller.	
5	CPFCx	CPFCx	Paper feed clutch	Electromagnetic clutch	Controls ON/OFF of the paper feed roller.	
6			Separation roller		Separates paper and prevents against double feed.	
7			Paper feed roller		Feed paper to the paper transport section.	

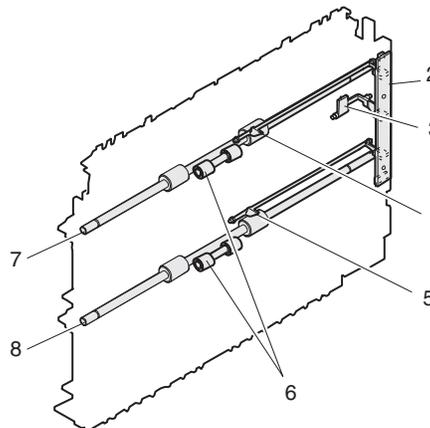
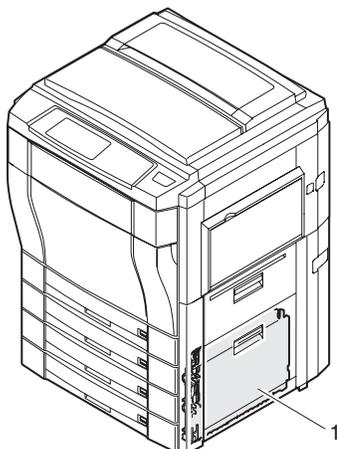
**d. Paper transport unit (upper)**



No.	Parts					
	Code	Signal name	Name	Type	Function/Operation	Active condition
1			Paper transport unit (Upper)		Transports paper to the transfer section.	
2			Paper transport roller 1		Transports paper to the transfer resist roller.	
3			Idle roller		Reduces the load of paper transport power.	
4	PFD1	PFD1	Paper detector (Actuator) 1	Photo sensor (Photo transmission)	No. 1 paper tray (Duplex) paper exit detection	L with paper presence
5	RDSW-U	RDSW-U	Right upper door open/close detector (Actuator)	Photo sensor (Photo transmission)	Right upper door open/close detection	H when the door is open
6	PFD2	PFD2	Paper detector (Actuator) 2	Photo sensor (Photo transmission)	No. 2 paper tray paper exit detection	L with paper presence

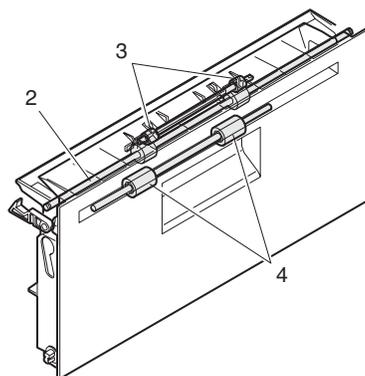
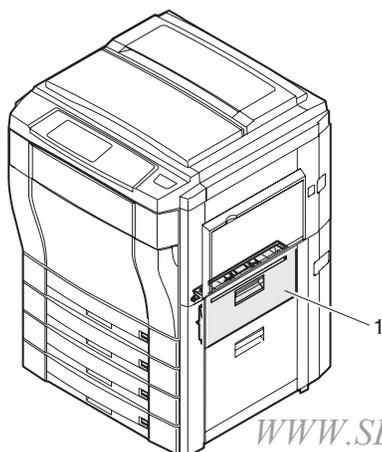
No.	Parts					
	Code	Signal name	Name	Type	Function/Operation	Active condition
7			IFD PWB	Photo sensor (Photo transmission)	Provided with No. 1/2 paper tray paper exit detector and the right upper door open/close detector.	
8			Idle roller		Reduces the load of paper transport power.	
9			Idle roller		Applies a pressure to paper and the transport roller to give the transport roller power to the paper.	
10			Paper transport roller 2		Transports paper to the transport roller 1.	

**e. Paper transport unit (lower)**



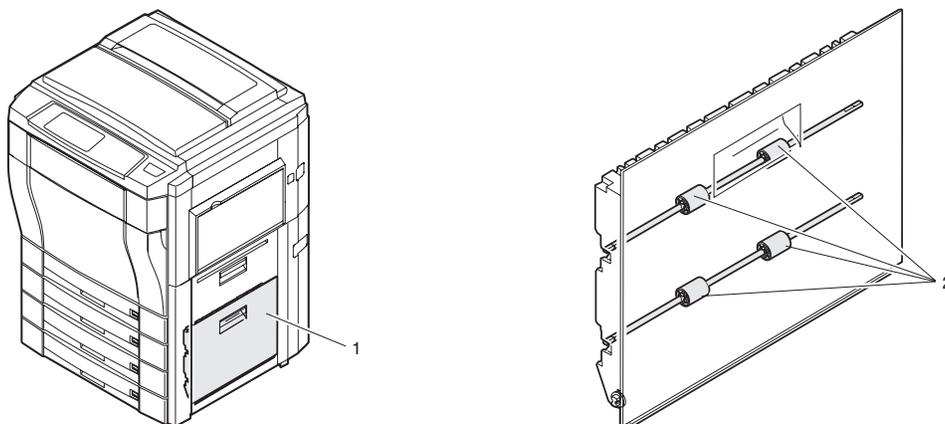
No.	Parts					
	Code	Signal name	Name	Type	Function/Operation	Active condition
1			Paper transport unit (lower)		Transports paper to the transfer section.	
2			PFD PWB	Photo sensor (Photo transmission)	Provided with No. 3/4 paper tray paper exit detector and the right lower door open/close detector.	
3	RDSW-L	RDSW-L	Right lower door open/close detector (actuator)	Photo sensor (Photo transmission)	Right lower door open/close detection	H when the door is open
4	PFD3	PFD3	Paper detector (actuator) 3	Photo sensor (Photo transmission)	No. 3 paper tray paper exit detection	L when the upper limit is detected
5	PFD4	PFD4	Paper detector (actuator) 4	Photo sensor (Photo transmission)	No. 4 paper tray paper exit detection	L with paper presence
6			Idle roller		Reduces the load of paper transport power.	
7			Paper transport roller 3		Transports paper to the transport roller 2.	
8			Paper transport roller 4		Transports paper to the transport roller 3.	

**f. Right door upper unit**



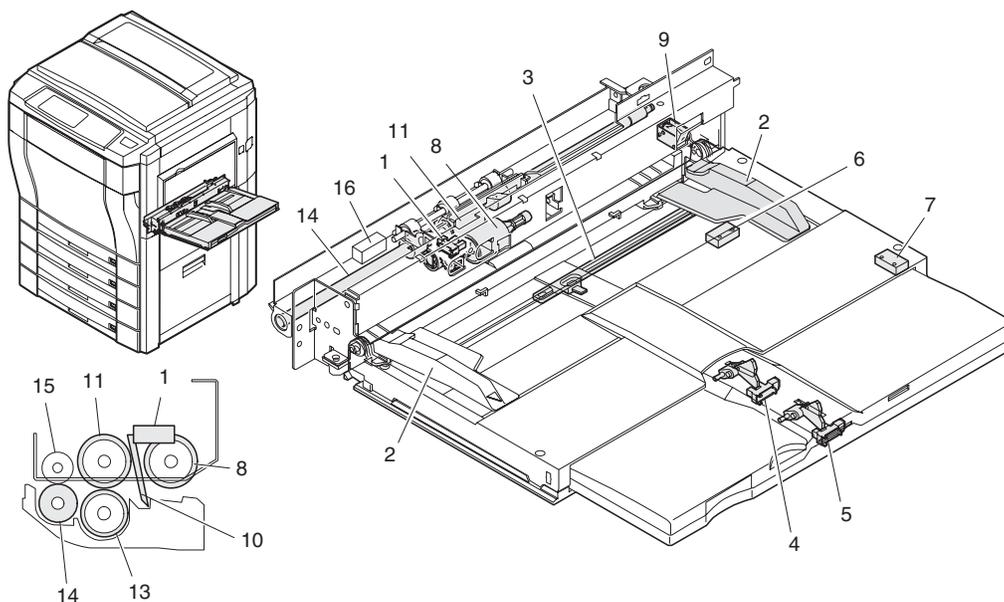
No.	Parts					
	Code	Signal name	Name	Type	Function/Operation	Active condition
1			Right door upper unit			
2			Large capacity paper tray transport roller		Transports paper fed from the large capacity tray to the transfer section.	
3			Idle roller		Applies a pressure to paper and the transport roller to give the transport roller power to the paper.	
4			Idle roller		Applies a pressure to paper and the transport roller to give the transport roller power to the paper.	

**g. Right door lower unit**



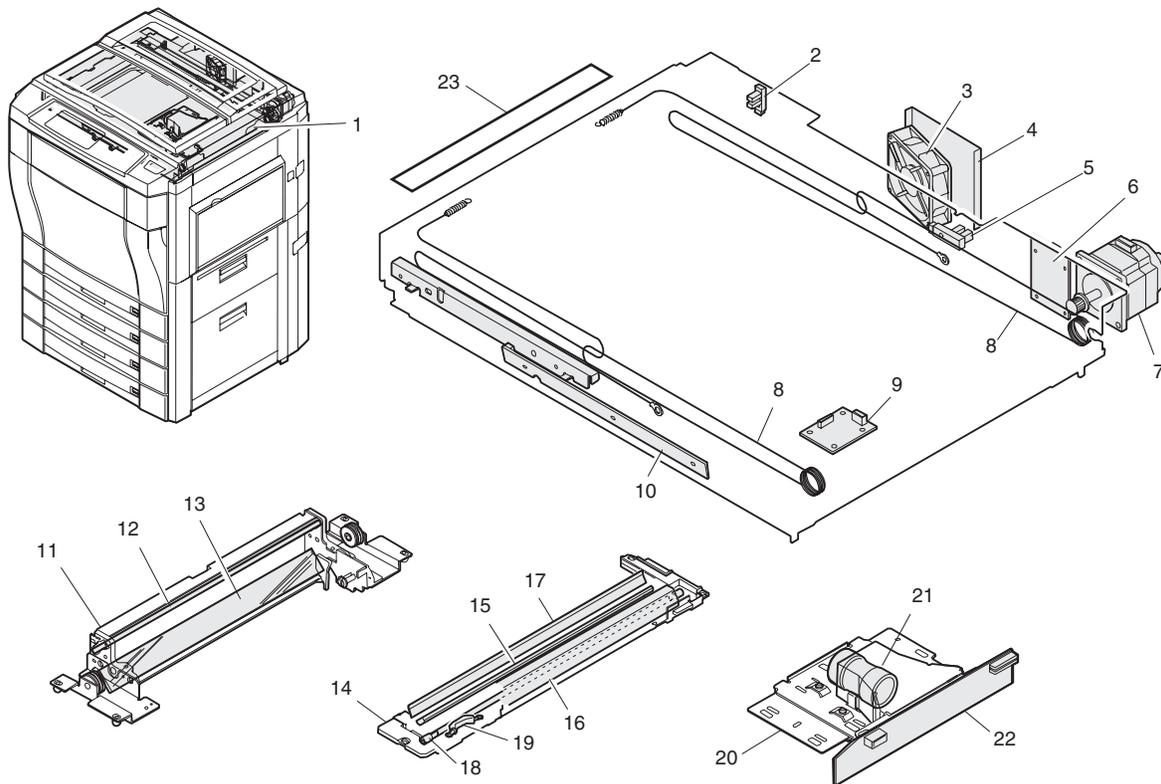
No.	Parts					
	Code	Signal name	Name	Type	Function/Operation	Active condition
1			Right door lower unit		Presses paper onto the vertical transport roller at a proper pressure.	
2			Idle roller		Applies a pressure to paper and the transport roller to give the transport roller power to the paper.	

**h. Manual paper feed unit**



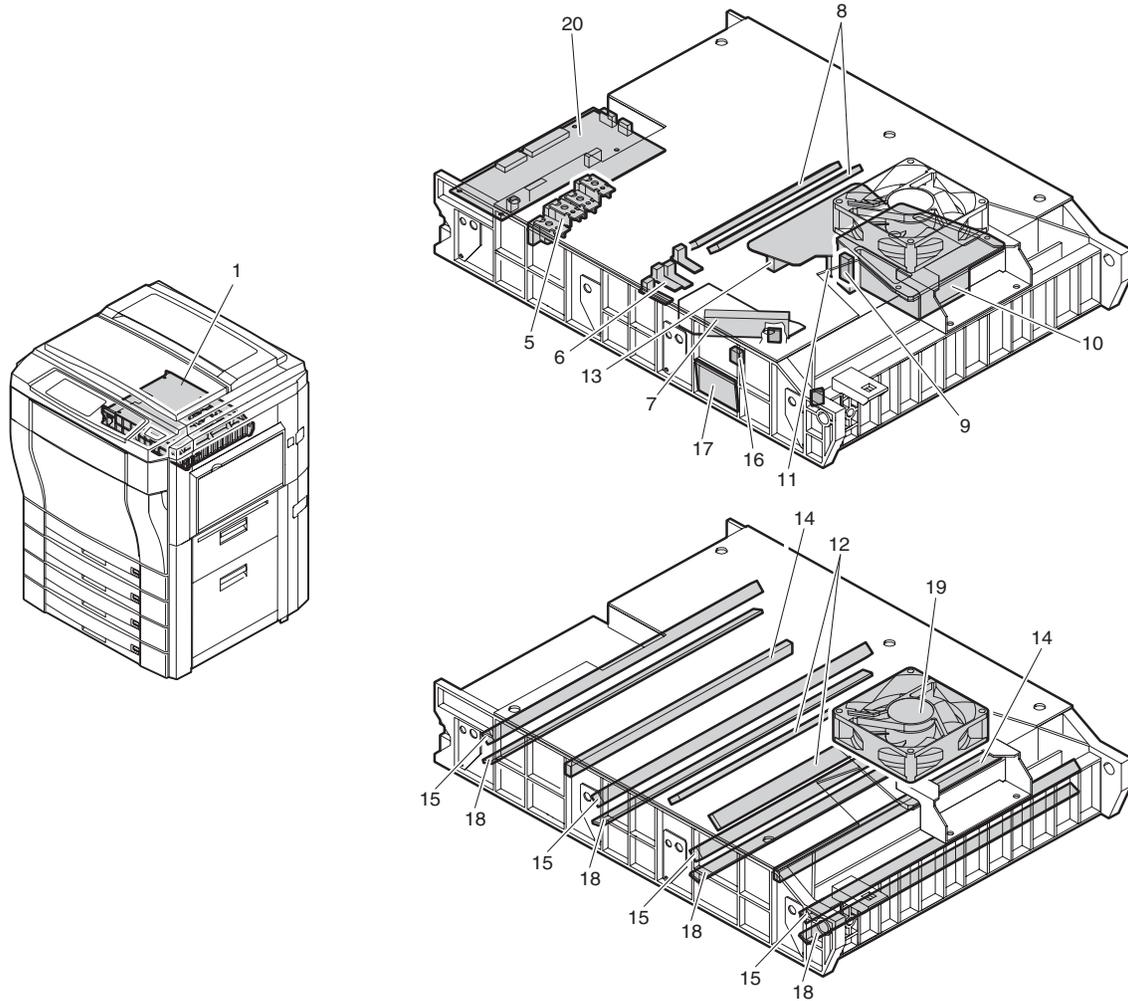
No.	Parts					
	Code	Signal name	Name	Type	Function/Operation	Active condition
1	MPED	MPED	Paper detector	Photo sensor (Photo transmission)	Detects paper on the paper tray.	L when paper presence
2			Paper size (width) adjuster		Adjusts the paper position.	
3	MPWS	MPWS	Paper size (width) sensor	Variable resistor	Detects the paper width.	
4	MPLD1	MPLD1	Paper size (length) detector 1	Photo sensor (Photo transmission)	Detects the paper length.	L when paper presence
5	MPLD2	MPLD2	Paper size (length) detector 2	Photo sensor (Photo transmission)	Detects the paper length.	L when paper presence
6	MTOP1	MTOP1	Tray position detector 1	Contact SW	Detects the paper tray position.	L when collecting
7	MTOP2	MTOP2	Tray position detector 2	Contact SW	Detects the paper tray position.	H when collecting
8			Paper pickup roller		Feeds paper to the paper feed roller.	
9	MPFS	MPFS	Paper pickup solenoid		Presses the paper pickup roller onto the paper.	
10			Paper stopper		Prevents against double feed.	
11			Manual paper feed roller		Feeds paper to the paper transport section.	
13			Separation roller		Separates paper to prevents against double feed.	
14			Manual transport roller		Transports paper to the resist roller.	
15			Idle roller		Applies a pressure to the transport roller to give the transport roller power to the paper.	
16			OHP sensor		Detects an OHP sheet. (Identifies an OHP sheet from normal paper.)	Analog input

#### (4) Scanner (reading) section



No.	Parts						Note
	Code	Signal name	Name	Type	Function/Operation	Active condition	
1			Scanner unit		Scans an original and converts the image into electrical signals.		
2	MHPS	MHPS	Scanner home position sensor	Photo sensor (Photo transmission)	Detects the scanner home position.	H in the home position	
3	CFM	CFM	Cooling fan (motor)	Axial fan	Cools the scanner section.		
4			Filter		Prevents dusts from entering the scanner section.		
5	OCSW	OCSW	Original cover open/close sensor	Photo transmission	Detects open/close of the original cover.	L when the cover is open	
6			Scanner motor control PWB		Controls the scanner motor.		
7	SM	SM	Scanner motor	Stepping motor	Drives the scanner unit.		
8			Scanner drive wire		Transmits the scanner motor power to the scanner unit.		
9			CCD power PWB		POWER source for the CCD PWB circuit.		
10			Original size detection light reception PWB		Receives light for detection of the original size.		
11			Mirror unit		Pass the original image to the CCD.		
12			No. 2 mirror		Passes the original image to No. 3 mirror.		
13			No. 3 mirror		Passes the original image to the CCD.		
14			Scanner unit A (Mirror unit)		Passes the original image to the scanner unit B.		
15			No. 1 mirror		Passes the original image to No. 2 mirror.		
16			Reflector		Converges lights from the light source to reflect onto an original.		
17			Sub reflector		Reflects lights from the light source onto an original.		
18			Scanner lamp	Halogen lamp	Reflect light for the CCD to scan the original image.		
19			Thermal fuse		Prevents against overheating due to abnormal lighting of the scanner lamp.		
20			CCD unit	3 line color CCD	Scans the original image (photo signals) and converts it into electrical signals.		
21			Lens		Reduces the original image (photo signals) to reflect onto the CCD.		
22			CCD PWB		Scans the original image (photo signals) and converts it into electrical signals.		Digital (8bit)
23			Shading sheet		Shading correction reference sheet		

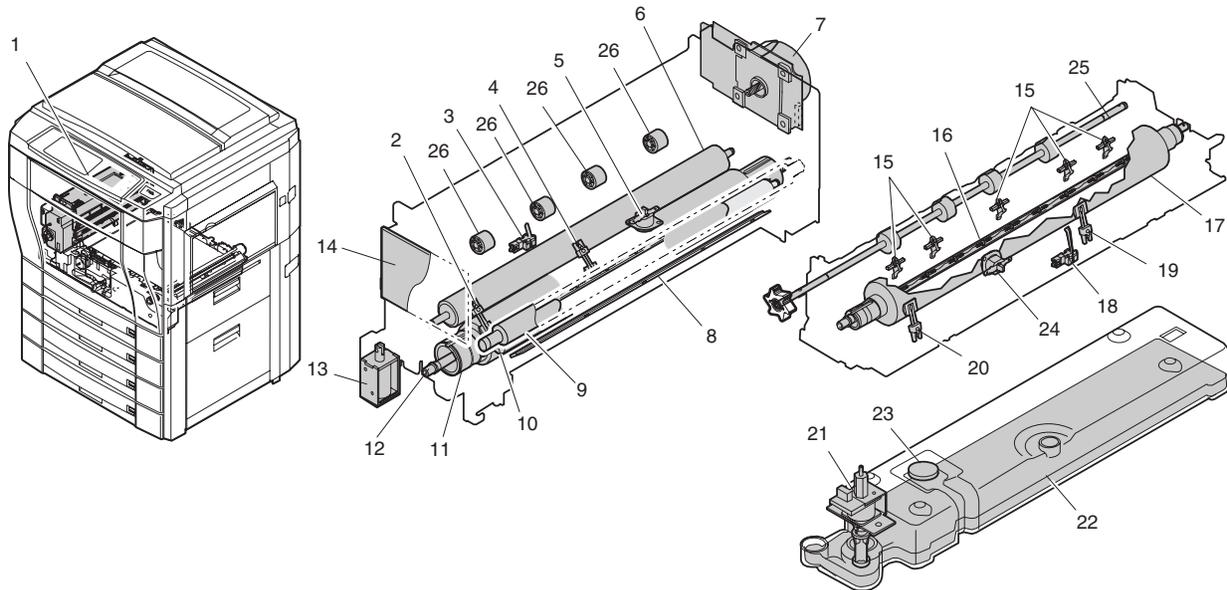
(5) Scanner (writing) section



No.	Parts						Active condition
	Code	Signal name	Name	Type	Function/Operation		
1			LSU unit		Converts image signals sent from the ICU PWB into laser beams to reflect onto the OPC drum.		
5			Laser diode (integrated with the control PWB)		Generates laser beams. (Controls ON/OFF for forming images and PWM modulation.)		
6			No. 1 cylindrical lens		Laser beam convergence and position correction		
7			No. 1 mirror		Passes laser beams to the scanning mirror.		
8			No. 2 mirror		Passes laser beams to No. 3 mirror.		
9			Filter glass		Prevent dust from attaching to the scanning mirror.		
10			Scanning mirror		Scans laser beams and forms images.		
11			No. 1 f $\theta$ lens		Corrects the shape and the pitch of laser beams.		
12			No. 3 mirror		Passes laser beams to No. 4 mirror.		
13			No. 2 f $\theta$ mirror		Corrects the shape and the pitch of laser beams.		
14			No. 4 mirror		Passes laser beams to the cylindrical mirror.		
15			Cylindrical mirror		Passes laser beams to the OPC drum./Performs jitter correction in the sub scanning direction.		
16			Sensor lens		Converges laser beams and passes to the laser beam sensor.		
17	SYNC	SYNC IN	Laser beam sensor	Photo diode	Detects the laser beam position. The left image print start position is controlled by this sensor signal.		
18			Filter glass		Prevents dusts from entering the scanner unit.		
19			Polygon motor cooling fan		Cooling to polygon motor.		
20			LSU PWB		LD light emitting, polygon motor operation control.		

## (6) Fusing, paper exit section

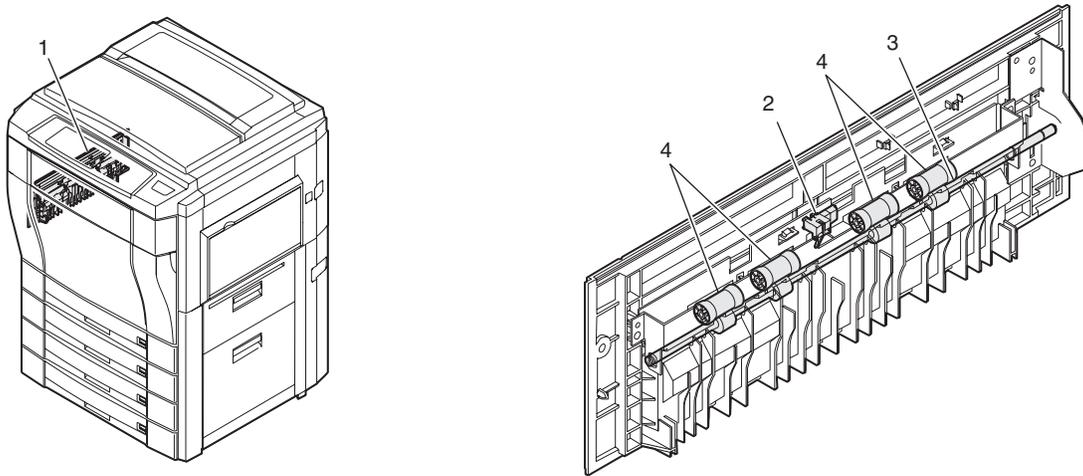
### a. Fusing unit



No.	Parts						Note
	Code	Signal name	Name	Type	Function/Operation	Active condition	
1			Fusing unit		Heats and presses toner on the paper to fuse it onto the paper.		
2	THS3	THS3	Fusing main temperature sensor (upper)	Thermistor	Detects the heat roller surface temperature.	Analog input	
3	DPID	DPID	Duplex paper entry detector	Photo sensor (Photo transmission)	Detects paper entry to the duplex unit.	L when paper entry	
4	THS1	THS1	Fusing sub temperature sensor (upper)	Thermistor	Detects the heat roller surface temperature.	Analog input	When a temperature difference from the fusing main temperature sensor (upper) is detected, it is judged that paper is wrapped around the fusing roller.
5	HLTSU	HLTSU	Thermostat (upper)		Cuts conduction of the heater lamp when the temperature rises abnormally.		
6			Cleaning roller (upper)		Cleans the fusing roller (upper) surface.		
7	FUSM	FUSM	Fusing drive motor		Drives the fusing unit.		
8			Oil felt		Supplies oil to the oil roller.		
9			Oil blade		Controls the oil quantity on the oil roller to be even.		
10			Oil roller		Applies oil to the upper heat roller.		
11			Upper heat roller		Heats and presses toner on the paper to fuse it onto the paper.		
12	HL1	HL1	Upper heater lamp	Halogen lamp	Heats the heat roller.		1000W
13	DGS	DGS	Duplex gate solenoid		Drives (open/close) the duplex paper entry gate.		
14			Fusing control PWB (AC sub PWB)		Interfaces the heater lamp drive control, sensor, and detector signals.		
15			Lower separation pawl		Separate paper mechanically which was not separated from the lower heat roller.		
16	HL2	HL2	Lower heater lamp	Halogen lamp	Heats the heat roller.		700W

No.	Parts						Note
	Code	Signal name	Name	Type	Function/Operation	Active condition	
17			Lower heat roller		Heats toner on the paper to fuse it onto the paper.		
18	BPD	BPD	Fusing paper entry detector	Photo sensor (Photo transmission)	Detects paper entry in the fusing section.	L when paper entry in the fusing section	
19	THS2	THS2	Fusing main temperature sensor (lower)	Thermistor	Detects the heat roller surface temperature.	Analog input	
20	THS4	THS4	Fusing sub temperature sensor (lower)	Thermistor	Detects the heat roller surface temperature.	Analog input	When a temperature difference from the fusing main temperature sensor (lower) is detected, it is judged that paper is wrapped around the fusing roller.
21	FOP	FOP	Oil pump		Sends oil to the oil roller.		
22			Oil tank		Stores oil.		
23	OEMP	OEMP	Oil sensor	Photo sensor (Photo refraction)	Detects oil empty.	H when empty	
24	HLTSD	HLTSD	Thermostat (lower)		Cuts conduction to the heater lamp when the temperature rises abnormally.		
25			Fusing transport roller		Transports paper to the paper exit roller.		
26			Idle roller		Applies a pressure to the paper and the transport roller to give the transport roller power to the paper.		

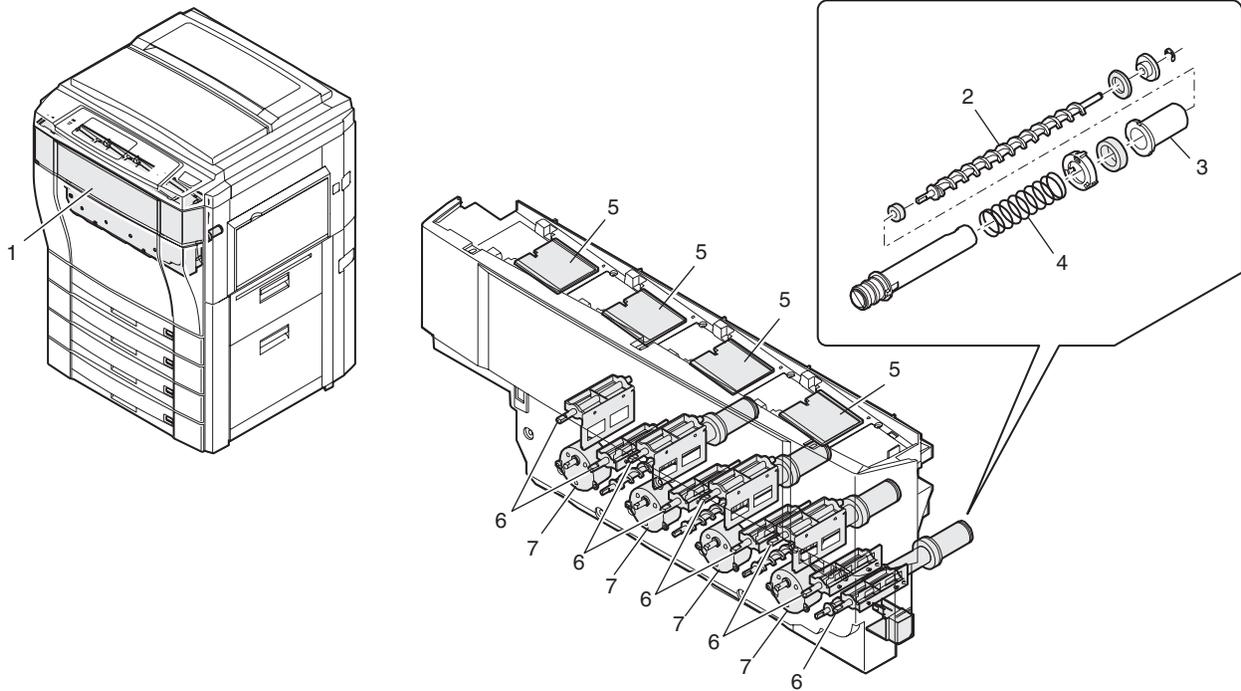
**b. Paper exit unit**



No.	Parts						Active condition
	Code	Signal name	Name	Type	Function/Operation		
1			Paper exit unit		Discharges the fused paper outside the machine.		
2	POD	POD	Paper exit detector	Photo sensor (Photo transmission)	Detects paper exit.	L with paper presence	
3			Paper exit roller		Discharges paper outside the machine.		
4			Idle roller		Applies a pressure to the paper and the paper exit roller to give the paper exit roller power to the paper.		

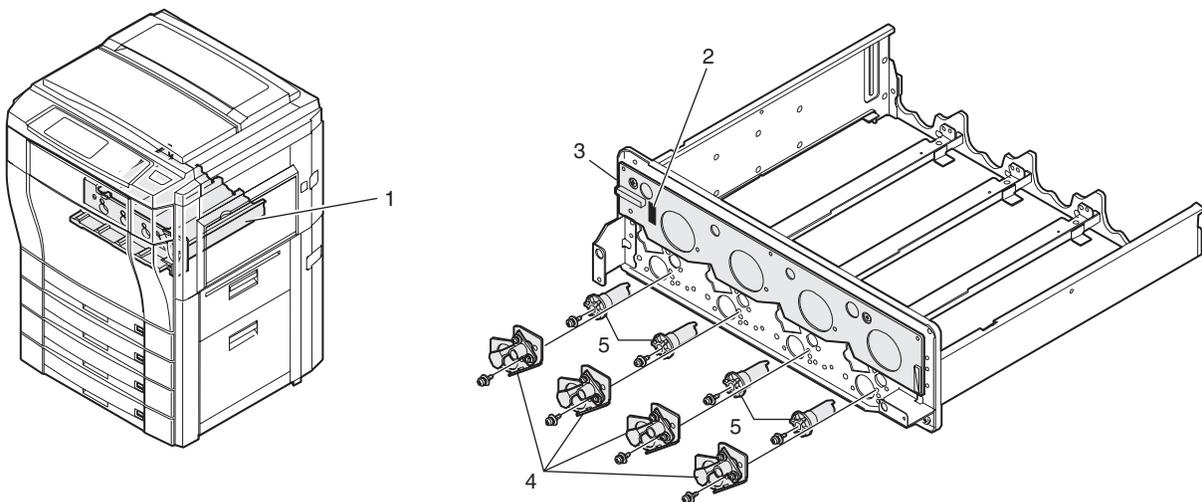
## (7) Image process section

### a. Toner hopper unit



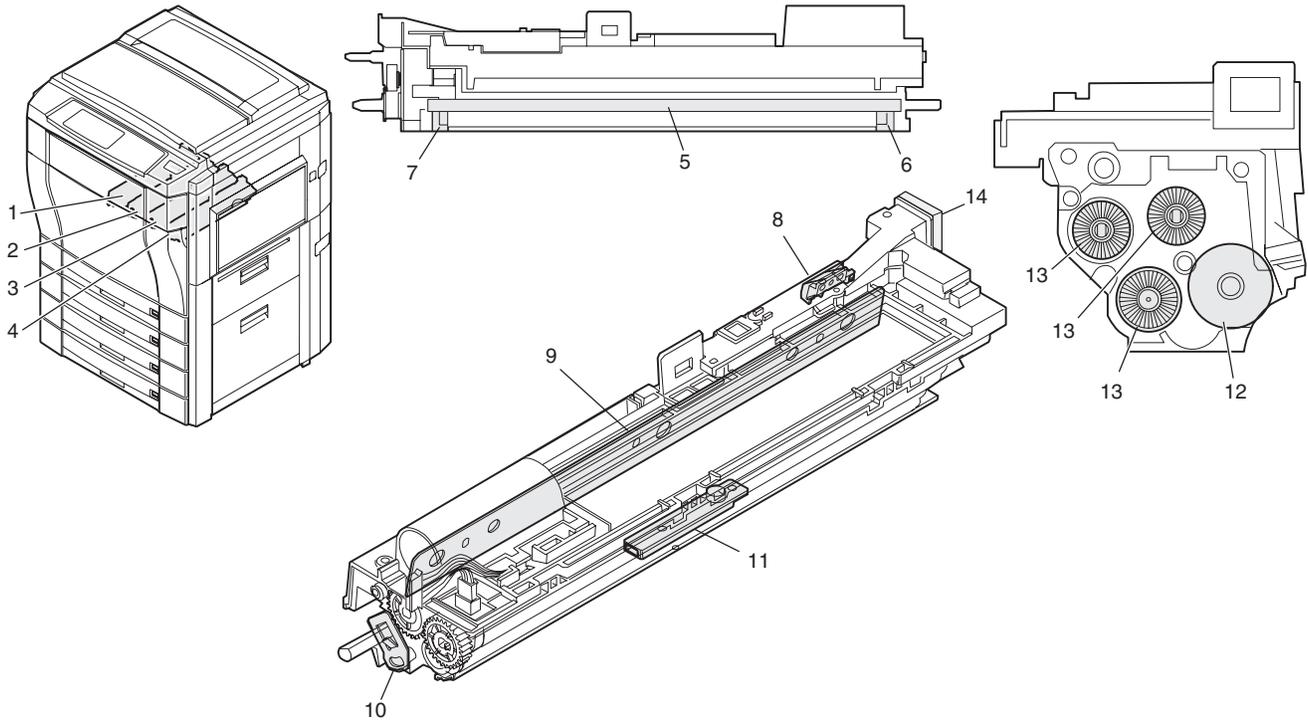
No.	Parts					
	Code	Signal name	Name	Type	Function/Operation	Active condition
1			Hopper unit		Stores toner and transports toner to the developing unit.	
2			Toner transport screw		Transports toner to the developing unit.	
3			Toner pipe shutter		Prevents toner from spilling.	
4			Shutter spring		Spring for the shutter	
5			Toner hopper shutter		Shutter for the toner supply port.	
6			Toner stirring plate		Stirs toner in the toner hopper.	
7	TM (Y, M, C, K)	TM (Y, M, C, K)	Toner supply motor	Synchronous motor	Transports toner to the developing unit, and stirs toner.	

### b. Image process frame section



No.	Parts						Note
	Code	Signal name	Name	Type	Function/Operation	Active condition	
1			Image process frame unit		Mounts the developing unit and the OPC drum unit on it.		
2	PTHS	PTHS	Temperature sensor	Thermistor	Detects temperature in the image process section.	Analog input	Each correction of image process section is made by this sensor data.
3			Process control PWB		Interface the developing unit, the OPC drum unit, high voltage PWB, and PCU PWB.		
4			DSD holder F		Keeps the distance between the OPC drum and the developing roller constant.		
5			OPC drum fixing sleeve		Fixes the OPC drum shaft.		

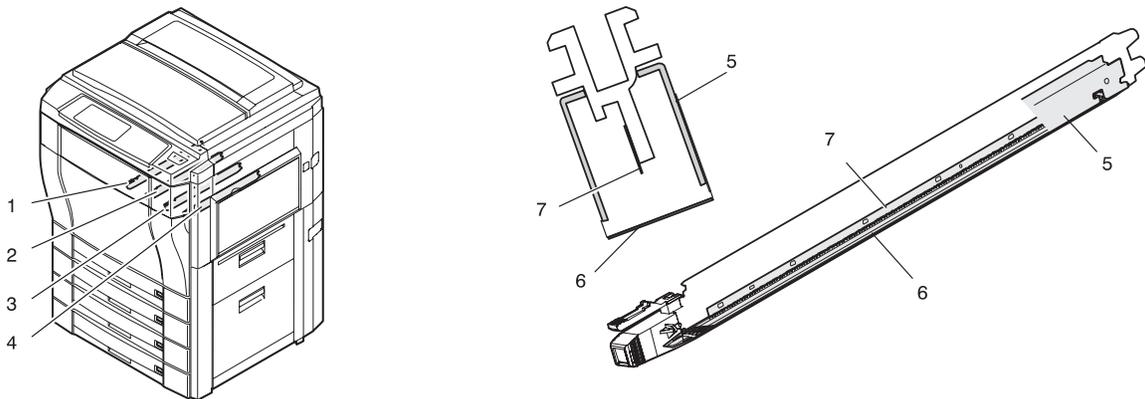
### c. Developing unit



No.	Parts						Note
	Code	Signal name	Name	Type	Function/Operation	Active condition	
1			Developing unit (Y)		Changes yellow latent electrostatic images to visible toner images.		
2			Developing unit (M)		Changes magenta latent electrostatic images to visible toner images.		
3			Developing unit (C)		Changes cyan latent electrostatic images to visible toner images.		
4			Developing unit (K)		Changes black latent electrostatic images to visible toner images.		
5			DV seal		Shields and prevents toner from leaking.		
6			DV side seal F		Shields and prevents toner from leaking.		
7			DV side seal R		Shields and prevents toner from leaking.		
8	DMS (Y, M, C, K)	DMS (Y, M, C, K)	Drum mark sensor	Photo sensor (Photo reflection)	Detects the mark on the OPC drum.	Analog input	Controls the OC drum phase and identifies it.
9			Doctor		Controls toner quantity on the developing roller to be even.		

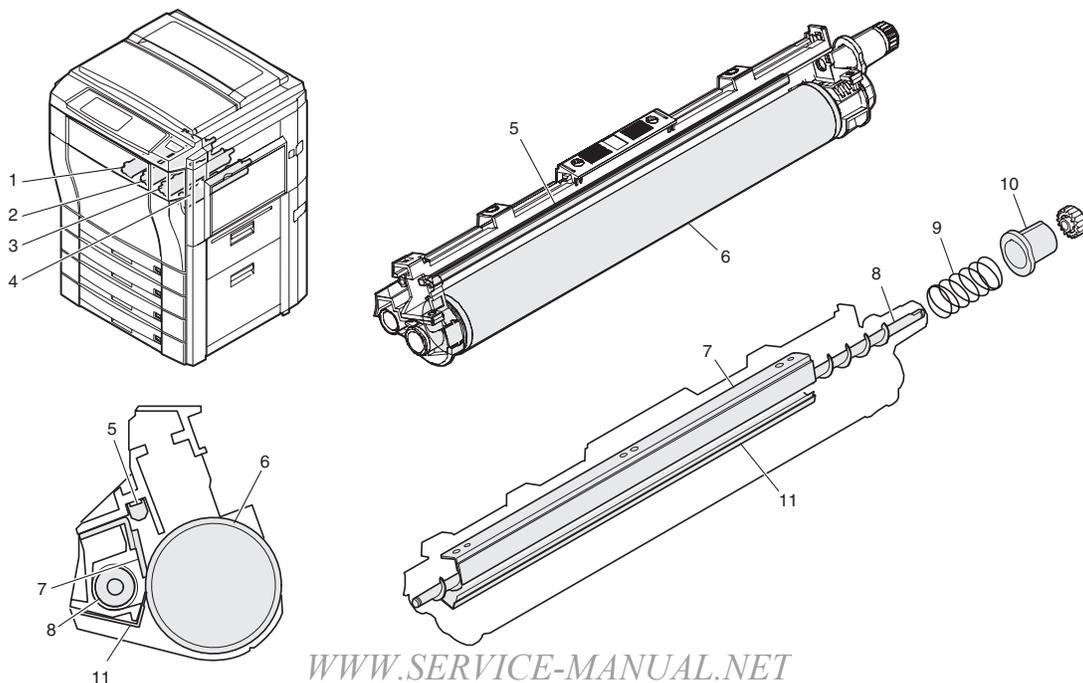
No.	Parts						Note
	Code	Signal name	Name	Type	Function/Operation	Active condition	
10			Developing roller main pole position adjustment plate		Adjusts the developing roller main pole position.		
11	TCS (Y, M, C, K)	TCS (Y, M, C, K)	Toner concentration sensor	Magnetic	Detects the ratio of carrier and toner in the developing unit.	Analog input	Installed to each developing unit.
12			Developing roller		Adheres toner onto the OPC drum.		
13			Toner mixing roller		Stirs toner and carrier to make the toner concentration even and charges the both.		
14			Absorbing duct		Removes toner dispersed around the developing roller.		Prevents against dirty copy by dispersed toner.

#### d. Main charger unit



No.	Parts					
	Code	Signal name	Name	Type	Function/Operation	Active condition
1			Main charger unit (Y)		Charges yellow photoconductor negatively.	
2			Main charger unit (M)		Charges magenta photoconductor negatively.	
3			Main charger unit (C)		Charges cyan photoconductor negatively.	
4			Main charger unit (K)		Charges black photoconductor negatively.	
5			Charger case		Case for charging	
6			Charger grid		Controls the photoconductor charging potential.	
7			Charger electrode		Electrode for charging	

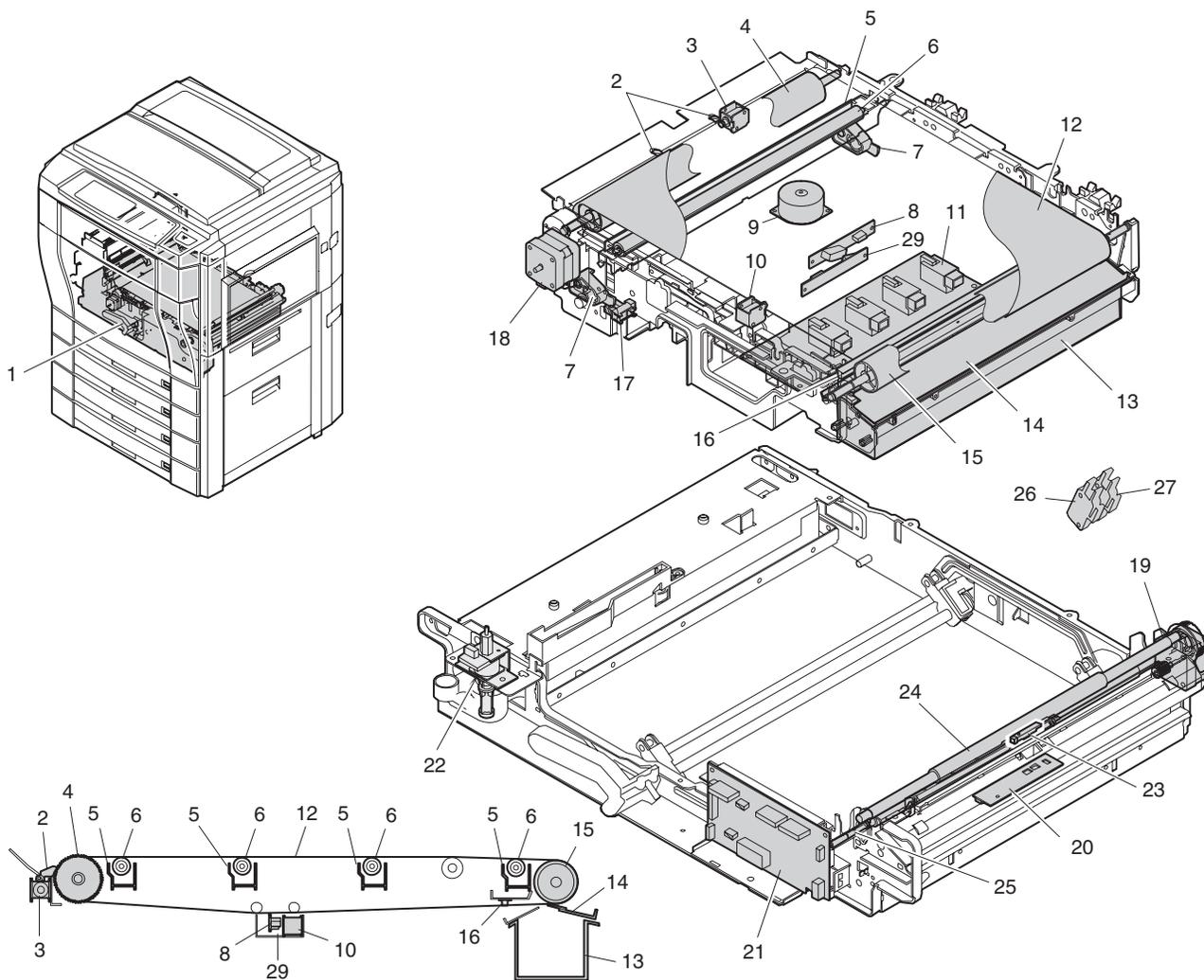
#### e. OPC drum unit



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No.	Parts					
	Code	Signal name	Name	Type	Function/Operation	Active condition
1			OPC drum unit (Y)		Forms yellow latent electrostatic images.	
2			OPC drum unit (M)		Forms magenta latent electrostatic images.	
3			OPC drum unit (C)		Forms cyan latent electrostatic images.	
4			OPC drum unit (K)		Forms black latent electrostatic images.	
5	DL	DL	Discharge lamp		Discharges electric charges on the OPC drum.	
6			OPC drum		Forms latent electrostatic images.	
7			Cleaning blade		Cleans residual toner from the OPC drum.	
8			Waste toner transport screw		Discharges waste toner from the OPC drum unit.	
9			Shutter spring		Spring for the shutter	
10			Shutter		Prevents toner from dispersing.	
11			Toner seal		Shields toner to prevent against leakage.	

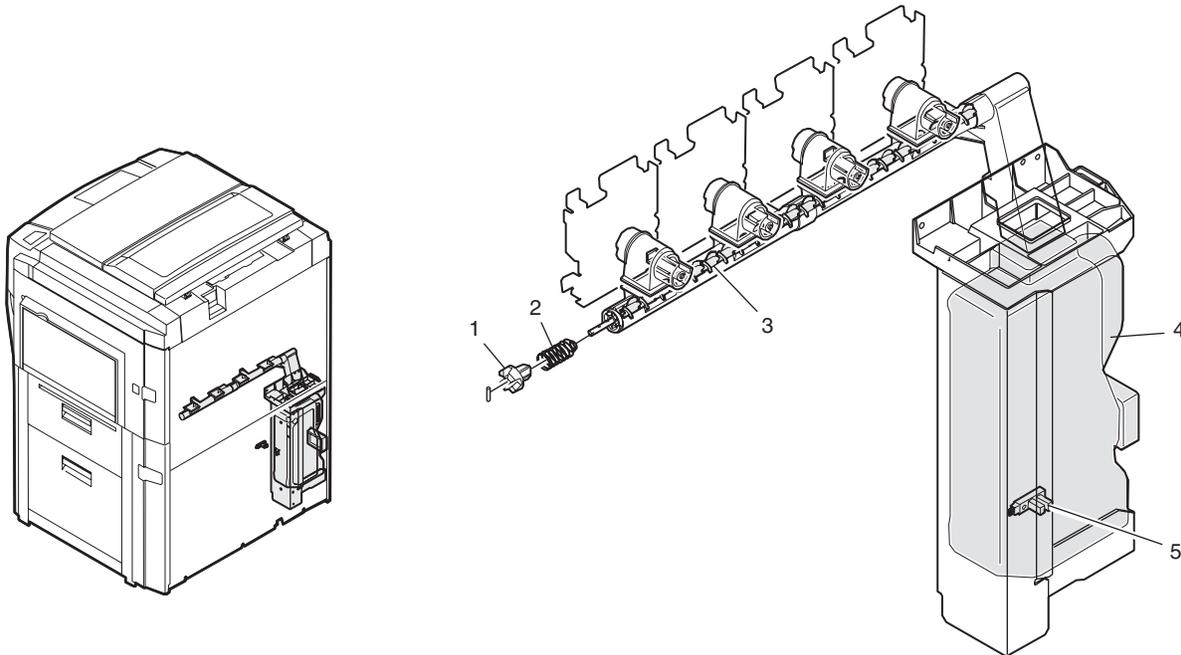
**f. Transfer section**



No.	Parts						Model	Note
	Code	Signal name	Name	Type	Function/Operation	Active condition		
1			Transfer unit		Transfers toner from the OPC drum to paper.			
2			Transfer belt separation pawl		Separates paper from the transfer belt mechanically.			
3	BPSS	BPSS	Separation pawl solenoid		Drives the separation solenoid.			
4			Transfer belt drive roller		Drives the transfer belt.			
5			Transfer discharge electrode		Discharges electric charges of the transfer belt.		4 pcs (Y, M, C, K)	
6			Transfer roller		Applies a transfer voltage to the transfer belt.		4 pcs (Y, M, C, K)	
7			Lift cam		Transmits the transfer belt lift motor power to the transfer unit.		Lifted up in color print mode, and lifted down in monochrome mode.	
8	PCS	PCS	Image density sensor	Photo sensor (Photo reflection)	Detects toner patch density in image density correction.	Analog input		
9	BLUM	BLUM	Transfer belt motor	Stepping motor	Lifts the transfer belt unit.			
10	CALS	CALS	Sensor switch solenoid		Selects the image density sensor.		Switches the sensor angle depending on detection of color toner patch density or black toner patch density.	
11			TC high voltage power PWB		Generates the high voltage for transfer.			
12			Transfer belt		Transfers toner images on the OPC drum onto paper.			
13			Waste toner tank		Collects toner of toner patch used in image density correction.			
14			Transfer belt cleaning blade		Cleans toner of toner patch used in image density correction.			
15			Transfer belt idle roller		Applies a tension to the transfer belt.			
16			Transfer belt cleaning pad		Cleans the back of the transfer belt.			
17	BLUD	BLUD	Transfer belt position sensor	Photo sensor (Photo transmission)	Detects that the transfer belt is lifted up or down.	L when lifting up H when lifting down		
18	BTM	BTM	Transfer belt drive motor	Stepping motor	Drives the transfer belt.			
19	PSM	PSM	Resist roller drive motor	Stepping motor	Drives the resist roller and controls ON/OFF.			
20	HUD	HUD	Temperature sensor		Detects humidity in the machine.	Analog input	Each correction of image process section is made according to this sensor data.	
21			PCU sub PWB		Controls the image process section.			
22			Oil pump		Supplies fusing oil to the fusing roller.			

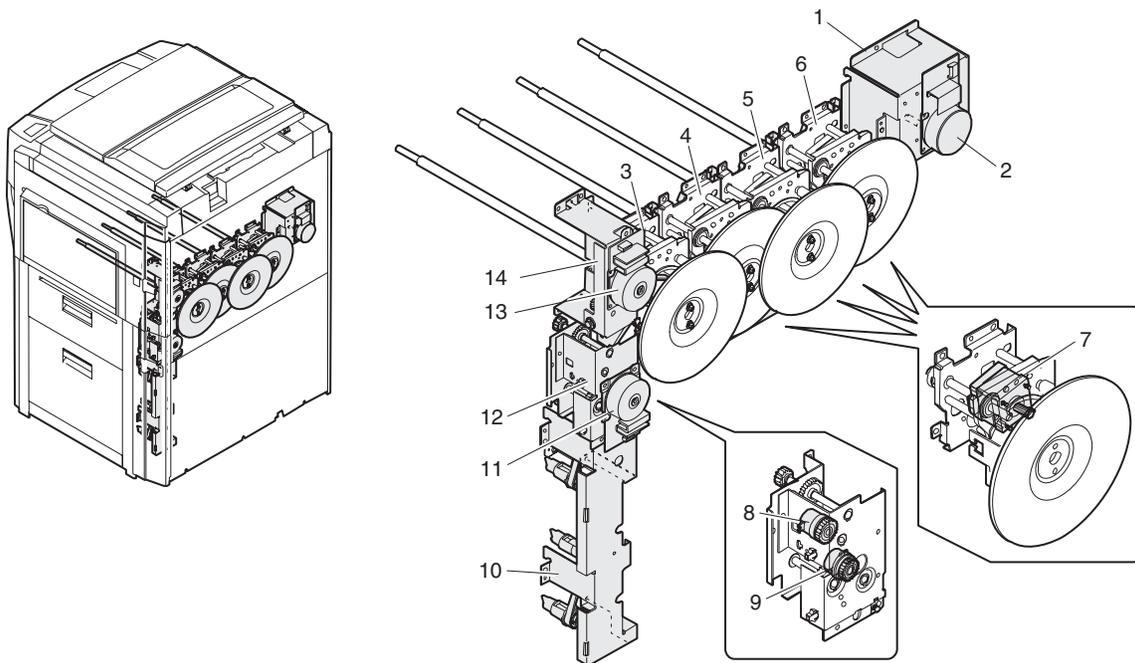
No.	Parts						Model	Note
	Code	Signal name	Name	Type	Function/Operation	Active condition		
23	PPD1	PPD1	Paper detector in front of resist roller	Photo sensor (Photo transmission)	Detects paper in front of the resist roller.	L with paper presence		This detector signal serves as the paper transport timing control signal to the transfer section.
24			Upper resist roller		Transports paper to the transfer section.			
25			Lower resist roller		Transports paper to the transfer section.			The operation timing is controlled by the resist roller motor.
26	BELTCH1	BELTCH1	Transfer belt installation detection switch (+24V)	Micro switch	Turns ON/OFF the +24V power line from the DC main power PWB to the PCU PWB.	ON when the transfer unit operation is allowed.		
27	BELTCH2	BELTCH2	Transfer belt installation detection switch (+5V)	Micro switch	Turns ON/OFF the +5V power line from the DC main power PWB to the PCU PWB.	ON when the transfer unit operation is allowed.		
28			Resist roller cleaner		Cleaning the resist roller			
29	REGS	REGS	Registration adjustment sensor	Photo sensor (Photo reflection)	Detects the toner patch density in automatic registration adjustment.	Analog input		

**g. Waste toner collection unit**



No.	Parts					
	Code	Signal name	Name	Type	Function/Operation	Active condition
1			Coupler		Transmits the black developing drive motor power to the waste toner transport screw.	
2			Coupler spring		Applies a tension to the coupler.	
3			Waste toner screw		Transports waste toner to the waste toner bottle.	
4			Waste toner bottle		Collects waste toner.	
5	TFD	TFD	Waste toner full sensor	Photo sensor (Photo transmission)	Detects waste toner full.	H when bottle empty and waste toner full

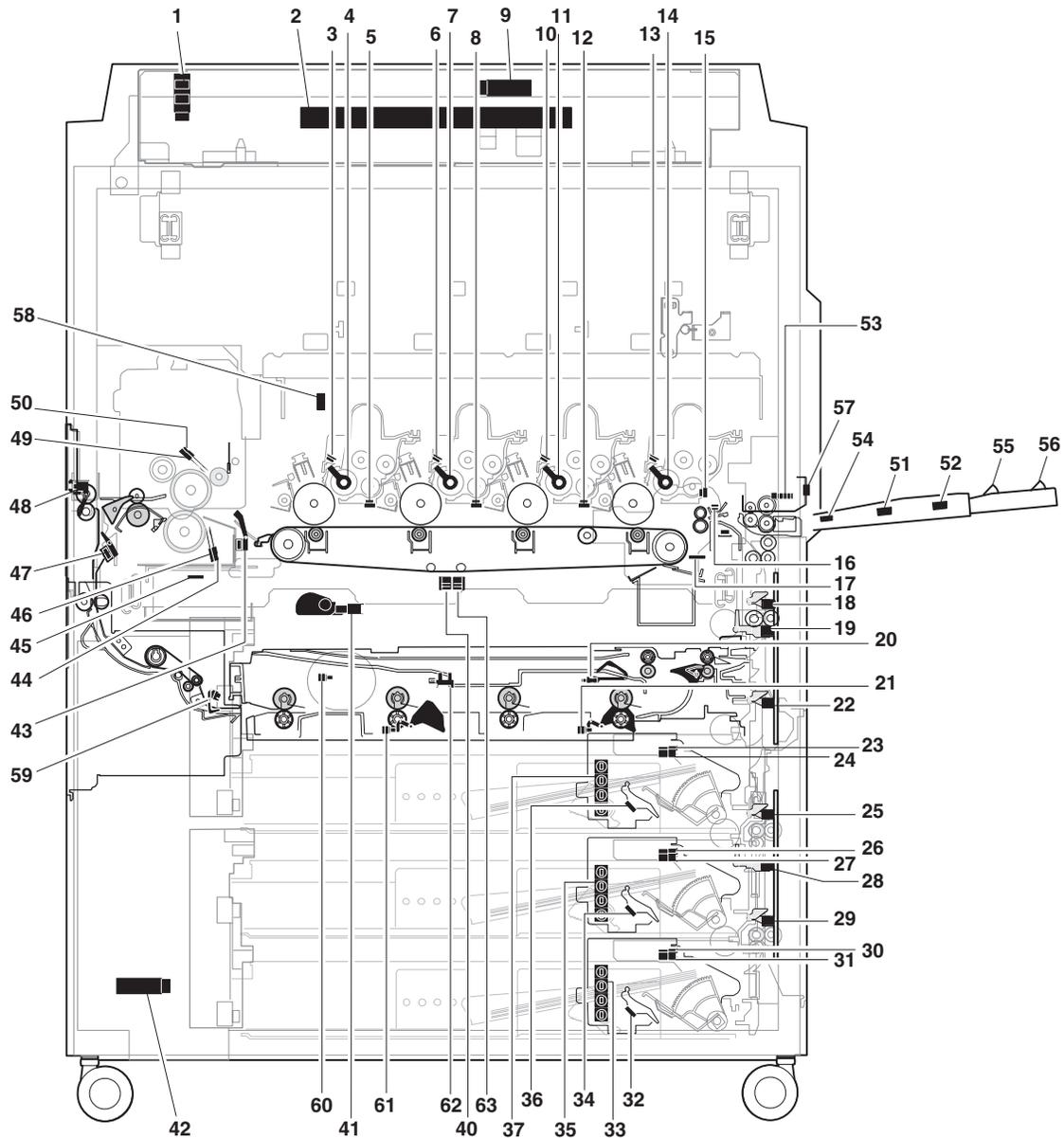
**(8) Drive section**



No.	Parts					
	Code	Signal name	Name	Type	Function/Operation	Active condition
1			Developing drive unit (Color)		Drives the color developing unit.	
2	DVCM	DVCM	Developing drive motor (Color)	DC brushless motor	Drives the color developing unit.	
3			OPC drum drive unit (K)		Drives black OPC drum unit.	
4			OPC drum drive unit (C)		Drives cyan OPC drum unit.	
5			OPC drum drive unit (M)		Drives magenta OPC drum unit.	
6			OPC drum drive unit (Y)		Drives yellow OPC drum unit.	
7	DMK	DMK	OPC drum drive motor (K)	Stepping motor	Drives black OPC drum unit.	
	DMC	DMC	OPC drum drive motor (C)	Stepping motor	Drives cyan OPC drum unit.	
	DMM	DMM	OPC drum drive motor (M)	Stepping motor	Drives magenta OPC drum unit.	
	DMY	DMY	OPC drum drive motor (Y)	Stepping motor	Drives yellow OPC drum unit.	
8	MPFC	MPFC	Manual paper feed clutch	Electromagnetic clutch	Transmits the paper feed motor power to the manual paper feed unit. (Controls ON/OFF.)	
9	TRC	TRC	Paper transport clutch	Electromagnetic clutch	Transmits the paper feed motor power to each transport roller. (Controls ON/OFF.)	
10			Paper transport drive unit		Transmits the paper feed motor power to each transport roller.	
11	PFM	PFM	Paper feed drive motor	DC brushless motor	Drives the paper feed section and the paper transport section.	
12			Paper feed drive motor		Transmits the paper feed motor power to the paper transport section and the manual paper feed section.	
13	DVKM	DVKM	Developing drive motor (Black)	DC brushless motor	Drives the black developing unit.	
14			Developing drive unit (Black)		Drives the color developing unit.	

## 6. Functional parts

### (1) Sensors and detectors



No.	Parts						Note
	Code	Signal name	Name	Type	Function/Operation	Active condition	
1	MHPS	MHPS	Scanner home position sensor	Photo sensor (Photo transmission)	Detects the scanner home position.	H in the home position	
2	PD	PD	Document size sensor	Photo sensor (Photo transmission)	Detects the original size.	Analog input	
3	DMSY	DMSY	Drum mark sensor (Y)	Photo sensor (Photo reflection)	Detects the mark on the OPC drum.	Analog input	Controls the OPC drum phase and identifies the OPC drum.
4	DVCHY	DVCHY	Developing unit installation detection (Y)	Short harness	Detects the developing unit installation and identifies it.	Analog input	
5	TCSY	TCSY	Toner density sensor (Y)	Magnetic	Detects the ratio of toner and carrier in the developing unit.	Analog input	
6	DMSM	DMSM	Drum mark sensor (M)	Photo sensor (Photo reflection)	Detects the mark on the OPC drum.	Analog input	Controls the OPC drum phase and identifies the OPC drum.

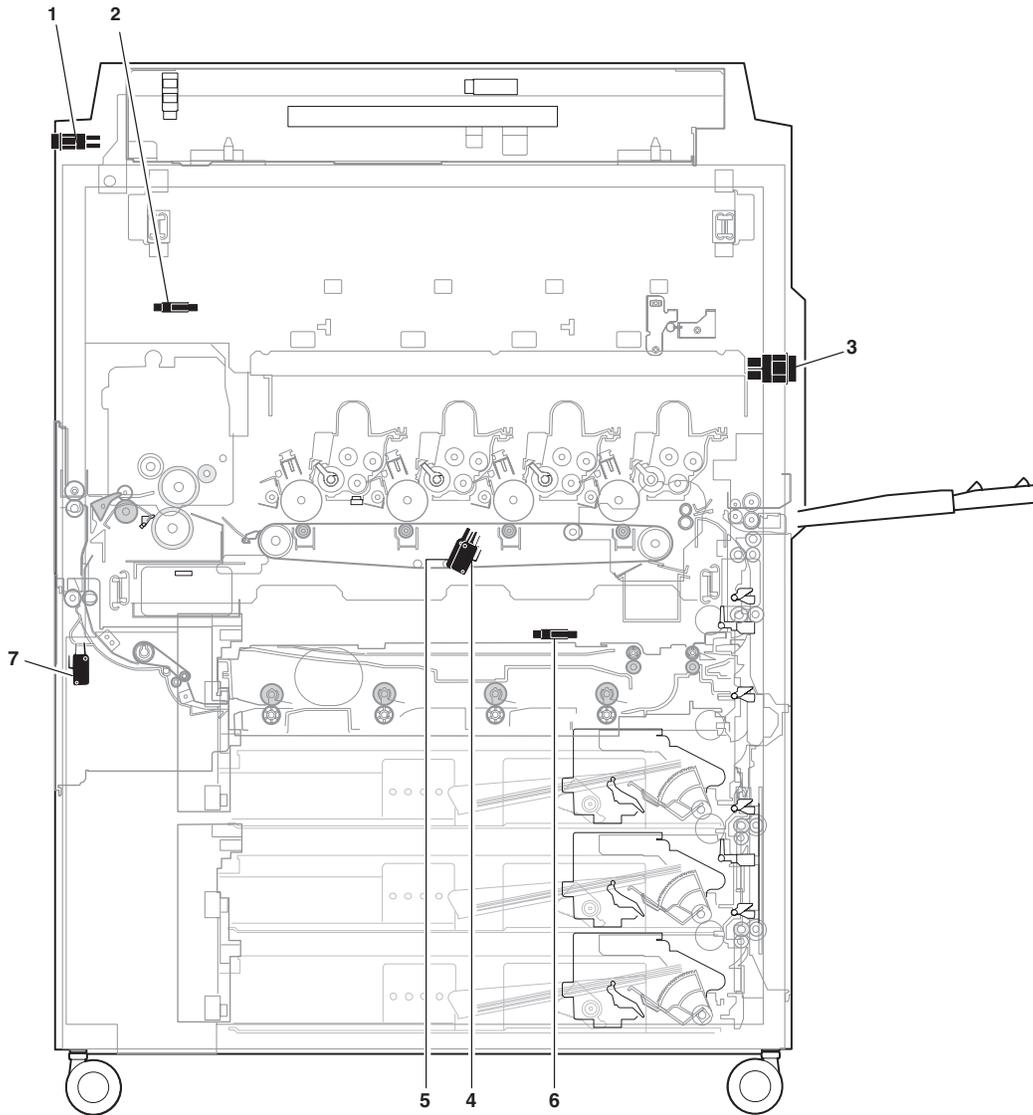
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No.	Parts						Note
	Code	Signal name	Name	Type	Function/Operation	Active condition	
7	DVCHM	DVCHM	Developing unit installation detection (M)	Short harness	Detects the developing unit installation and identifies it.	Analog input	
8	TCSM		Toner density sensor (M)	Magnetic	Detects the ratio of toner and carrier in the developing unit.	Analog input	
9	OCSW	OCSW	Original cover open/close sensor	Photo sensor (Photo transmission)	Detects open/close of the original cover. (Generates the timing signal for detection of the original size.)	L when the cover is open	
10	DMSC	DMSC	Drum mark sensor (C)	Photo sensor (Photo reflection)	Detects the mark on the OPC drum.	Analog input	Controls the OPC drum phase and identifies the OPC drum.
11	DVCHC	DVCHC	Developing unit installation detection (C)	Short harness	Detects the developing unit installation and identifies it.	Analog input	
12	TCSC	TCSC	Toner density sensor (C)	Magnetic	Detects the ratio of toner and carrier in the developing unit.	Analog input	
13	DMSK	DMSK	Drum mark sensor (K)	Photo sensor (Photo reflection)	Detects the mark on the OPC drum.	Analog input	Controls the OPC drum phase and identifies the OPC drum.
14	DVCHK	DVCHK	Developing unit installation detection (K)	Short harness	Detects the developing unit installation and identifies it.	Analog input	
15	TCSK	TCSK	Toner density sensor (K)	Magnetic	Detects the ratio of toner and carrier in the developing unit.	Analog input	
16	PPD1	PPD1	Paper feed detector in front of resist roller	Photo sensor (Photo transmission)	Detects paper in front of the resist roller.	L with paper presence	This detector signal serves as the paper transport timing control signal to the transfer section.
17	HUD	HUD	Humidity sensor	Humidity sensor	Detects humidity in the image process section.	Analog input	Each correction of image process section is made by this sensor data.
18	PFD1	PFD1	Paper detector 1	Photo sensor (Photo transmission)	Detects paper exit from No. 1 paper tray (duplex).	L with paper presence	
19	RDSW-U	RDSW-U	Right upper door open/close detector (actuator)	Photo sensor (Photo transmission)	Detects open/close of the right upper door.	H when the door is open	
20	DPPD1	DPPD1	Transport sensor 1	Photosensor	ADU paper-in sensor		
21	DPPD2	DPPD2	Transport sensor 2	Photosensor	ADU transport sensor		
22	PFD2	PFD2	Paper detector 2	Photo sensor (Photo transmission)	Detects paper exit from No. 2 paper tray (duplex).	L with paper presence	
23	LUD2	LUD2	Paper upper limit detector (No. 2 paper feed tray)	Photo sensor (Photo transmission)	Detects the upper limit of paper. (Makes the friction between the paper pickup roller and paper constant.)	L when the upper limit is detected	
24	PED2	PED2	Paper empty detector (No. 2 paper feed tray)	Photo sensor (Photo transmission)	Detects paper empty on the paper tray.	L (0V) when detecting paper presence.	
25	PFD3	PFD3	Paper detector 3	Photo sensor (Photo transmission)	Detects paper exit from No. 3 paper tray (duplex).	L with paper presence	
26	LUD3	LUD3	Paper upper limit detector (No. 3 paper feed tray)	Photo sensor (Photo transmission)	Detects the upper limit of paper. (Makes the friction between the paper pickup roller and paper constant.)	L when the upper limit is detected	

No.	Parts						Note
	Code	Signal name	Name	Type	Function/Operation	Active condition	
27	PED3	PED3	Paper empty detector (No. 3 paper feed tray)	Photo sensor (Photo transmission)	Detects paper empty on the paper tray.	L (0V) when detecting paper presence.	
28	RDSW-L	RDSW-L	Right lower door open/close detector (actuator)	Photo sensor (Photo transmission)	Detects open/close of the right lower door.	H when the door is open	
29	PFD4	PFD4	Paper detector 4	Photo sensor (Photo transmission)	Detects paper exit from No. 4 paper tray (duplex).	L with paper presence	
30	LUD4	LUD4	Paper upper limit detector (No. 4 paper feed tray)	Photo sensor (Photo transmission)	Detects the upper limit of paper. (Makes the friction between the paper pickup roller and paper constant.)	L when the upper limit is detected	
31	PED4	PED4	Paper empty detector (No. 4 paper feed tray)	Photo sensor (Photo transmission)	Detects paper empty on the paper tray.	L (0V) when detecting paper presence.	
32	C4PD1	C4PD1	Lift position sensor 1 (No. 4 paper tray)	Photo sensor (Photo transmission)	Detects the lift plate position. (Detects the paper quantity.)	H when detecting.	
33	C4SS1 - 4	C4SS1 - 4	Paper size detector (Switch)	Tact switch	Detects the paper size set with the paper size set block.		
34	C3PD1	C3PD1	Lift position sensor 1 (No. 3 paper feed tray)	Photo sensor (Photo transmission)	Detects the lift plate position. (Detects the paper quantity.)	H in the sensor position	
35	C3SS1 - 4	C3SS1 - 4	Paper size detector (Switch)	Tact switch	Detects the paper size set with the paper size set block.		
36	C2PD1	C2PD1	Lift position sensor 1 (No. 2 paper feed tray)	Photo sensor (Photo transmission)	Detects the lift plate position. (Detects the paper quantity.)	H in the sensor position	
37	C2SS1 - 4	C2SS1 - 4	Paper size detector (Switch)	Tact switch	Detects the paper size set with the paper size set block.		
40	PCS	PCS	Image density sensor	Photo sensor (Photo transmission)	Detects the toner patch density in image density correction.	Analog input	
41	BLUD	BLUD	Transfer belt position sensor	Photo sensor (Photo transmission)	Detects that the transfer belt is lifted up or down.	L when lifting up H when lifting down	
42	TFD	TFD	Waste toner full detector	Photo sensor (Photo transmission)	Detects waste toner full.	H when bottle empty and waste toner full	
43	BPD	BPD	Fusing section paper entry detector	Photo sensor (Photo transmission)	Detects paper entry in the fusing section.	L when paper entry in the fusing section	
44	THS2	THS2	Fusing main temperature sensor (lower)	Thermistor	Detects the heat roller surface temperature.	Analog input	
45	OEMP	OEMP	Oil sensor	Photo sensor (Photo refraction)	Detects oil empty.	H when empty (in the air)	
46	THS4	THS4	Fusing sub temperature sensor (lower)	Thermistor	Detects the heat roller surface temperature.	Analog input	When a difference from the fusing main temperature sensor (upper) is detected, it is judged that paper is winding around the fusing roller.
47	DPID	DPID	Duplex paper entry detector	Photo sensor (Photo transmission)	Detects paper entry in the duplex unit.	L when paper entry	
48	POD	POD	Paper exit detector	Photo sensor (Photo transmission)	Detects paper exit.	L with paper presence	
49	THS1	THS1	Fusing main temperature sensor (upper)	Thermistor	Detects the heat roller surface temperature.	Analog input	

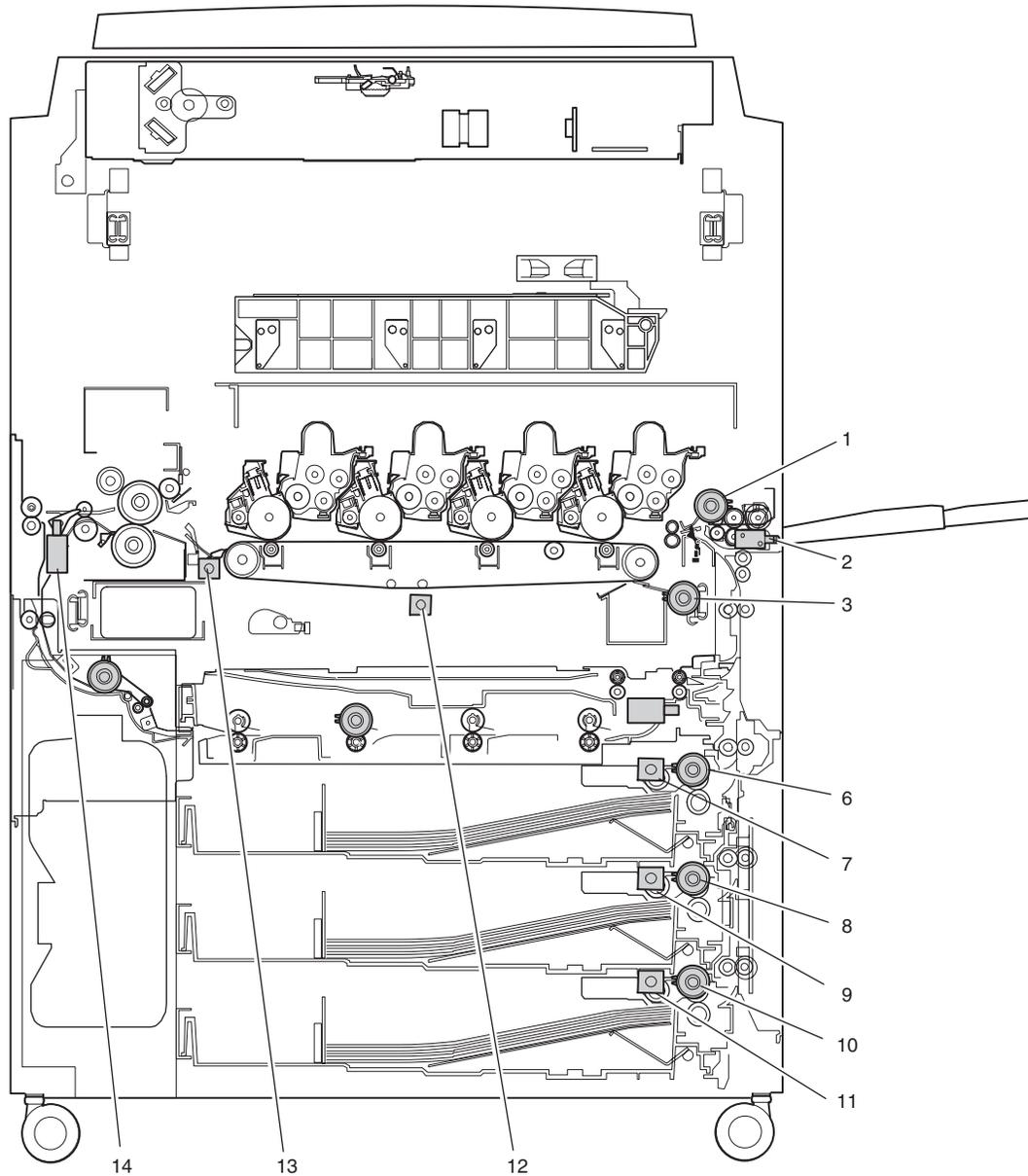
No.	Parts						Note
	Code	Signal name	Name	Type	Function/Operation	Active condition	
50	THS3	THS3	Fusing sub temperature sensor (upper)	Thermistor	Detects the heat roller surface temperature.	Analog input	When a difference from the fusing main temperature sensor (upper) is detected, it is judged that paper is winding around the fusing roller.
51	MTOP1	MTOP1	Tray position detector 1	Contact switch	Detects the paper tray position.	L when collecting	
52	MTOP2	MTOP2	Tray position detector 2	Contact switch	Detects the paper tray position.	H when collecting	
53	MPED	MPED	Paper detector	Photo sensor (Photo transmission)	Detects paper empty on the paper tray.	L when paper presence	
54	MPWS	MPWS	Paper size (width) sensor	Variable resistor	Detects the paper width.		
55	MPLD1	MPLD1	Paper size (length) detector 1	Photo sensor (Photo transmission)	Detects the paper length.	L when paper presence	
56	MPLD2	MPLD2	Paper size (length) detector 2	Photo sensor (Photo transmission)	Detects the paper length.	L when paper presence	
57	OHPD	OHPD	OHP paper sensor	Photo sensor (Photo reflection)	Detects OHP paper	Analog input	
58	PTHS	PTHS	Temperature sensor	Thermistor	Detects temperature in the image process section.	Analog input	Each correction of image process section is made by this sensor data.
59	DTD	DTD	Decurler sensor	Photosensor	Transport sensor for decurler unit		
60	DMRE	DMRE	Transport motor encoder	Photosensor	Transport motor speed control sensor		
61	DPPD1	DPPD1	Transport sensor 1	Photosensor	ADU paper-in sensor		
62	DPHPS	DPHPS	Alignment home position sensor	Photosensor	Alignment plate home position detection		
63	REGS	REGS	Resist sensor	Photosensor (Photo transmission)	Detect resist in image resist correction	Analog input	

(2) Switches



No.	Parts					
	Code	Signal name	Name	Type	Function/Operation	Active condition
1	MSW	MSW	Main power switch	Rocker switch	Turns ON/OFF the main power.	
2	DSWF	DSWF	Front door switch	Micro switch	Turns ON/OFF the power line (+5V) to the front door open/close detection and the scanner (writing) unit.	
3	DHSW	DHSW	Dehumidifier heater switch	Rocker switch	Turns ON/OFF the power line to the dehumidifier heater installed in the scanner (reading) section and the paper feed section.	
4	BELTCH1	BELTCH1	Transfer belt installation detection switch (+24v)	Micro switch	Turns ON/OFF the +24V power line from the DC main sub power PWB to the PCU PWB.	Turns ON when the transfer unit is set in the operating position.
5	BELTCH2	BELTCH2	Transfer belt installation detection switch (+24v)	Micro switch	Turns ON/OFF the +24V power line from the DC main sub power PWB to the PCU PWB.	Turns ON when the transfer unit is set in the operating position.
6	ADUSW	ADUSW	ADU switch	Micro switch	Turn ON/OFF the +24V supplied to the ADU main PCB for removal and installation of the ADU	
7	DDSW	DDSW	Decurler switch	Micro switch	Turn ON/OFF the +24V supplied to the ADU main PCB for opening and closing of the decurler doors	

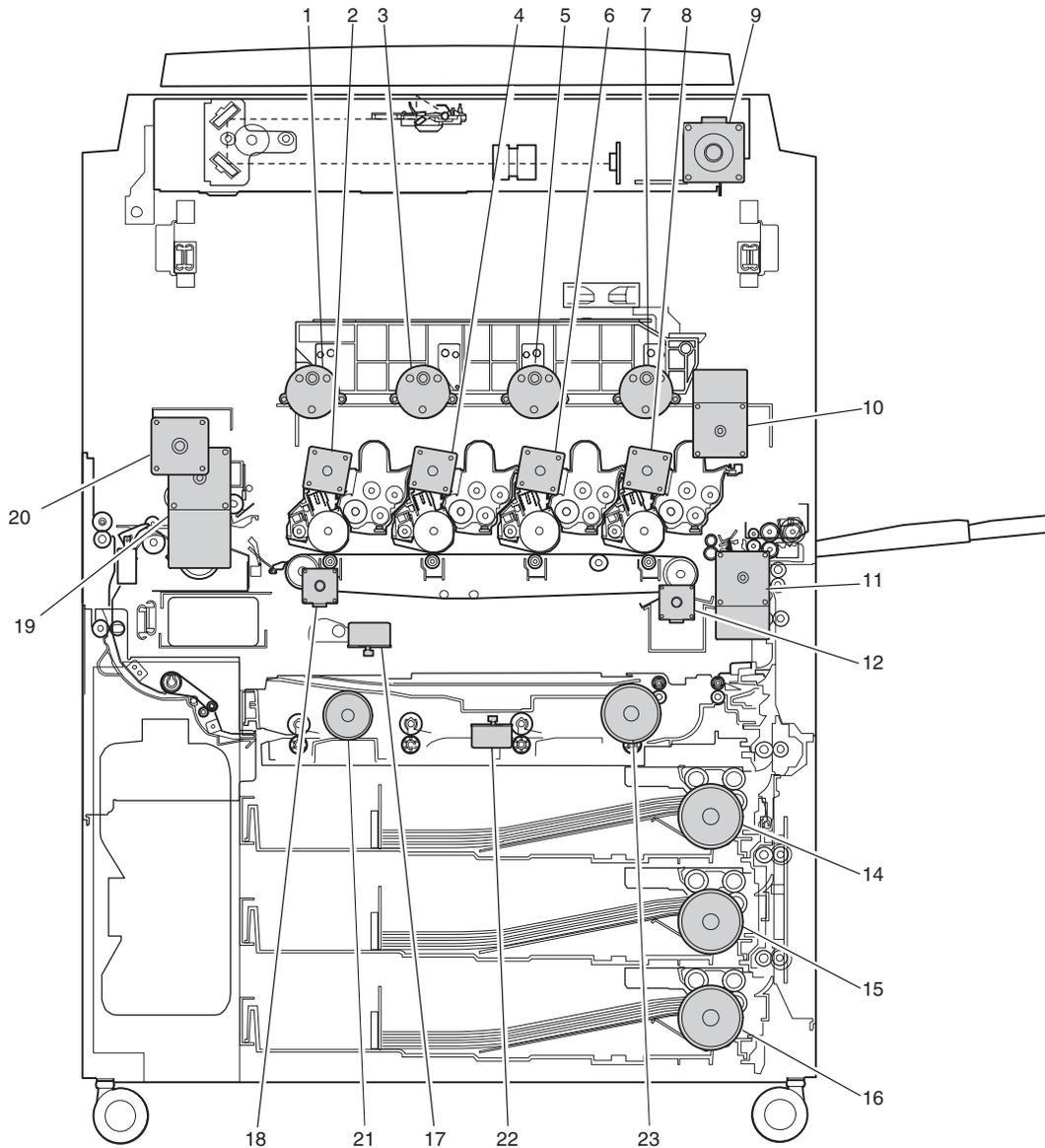
### (3) Clutch solenoids



No.	Parts						Note
	Code	Signal name	Name	Type	Function/Operation	Active condition	
1	MPFC	MPFC	Manual paper feed clutch	Magnetic clutch	Transmits the paper feed motor power to the manual paper feed unit. (Controls ON/OFF.)		
2	MPFS	MPFS	Manual paper feed solenoid		Controls ON/OFF of the paper feed roller. Presses the paper pickup roller onto paper.		
3	TRC	TRC	Paper transport clutch	Magnetic clutch	Transmits the paper feed motor power to the transport rollers. (Controls ON/OFF.)		
6	CPFC1	CPFC1	Paper feed clutch (No. 1 paper feed tray)	Magnetic clutch	Turns ON/OFF the paper feed roller.		
7	CPFS1	CPFS1	Pickup solenoid (No. 1 paper feed tray)		Presses the paper pickup roller onto paper.		
8	CPFC2	CPFC2	Paper feed clutch (No. 2 paper feed tray)	Magnetic clutch	Turns ON/OFF the paper feed roller.		
9	CPFS2	CPFS2	Pickup solenoid (No. 2 paper feed tray)		Presses the paper pickup roller onto paper.		
10	CPFC3	CPFC3	Paper feed clutch (No. 3 paper feed tray)	Magnetic clutch	Turns ON/OFF the paper feed roller.		
11	CPFS3	CPFS3	Pickup solenoid (No. 3 paper feed tray)		Presses the paper pickup roller onto paper.		

No.	Parts						Note
	Code	Signal name	Name	Type	Function/Operation	Active condition	
12	CALS	CALS	Sensor switch solenoid		Switches the image density sensor.		Switches the sensor angle when color toner patch density or black toner patch density is detected.
13	BPSS	BPSS	Separation pawl solenoid		Drives the transfer separation pawl.		
14	DGS	DGS	Duplex gate solenoid		Drives the duplex paper entry gate.		

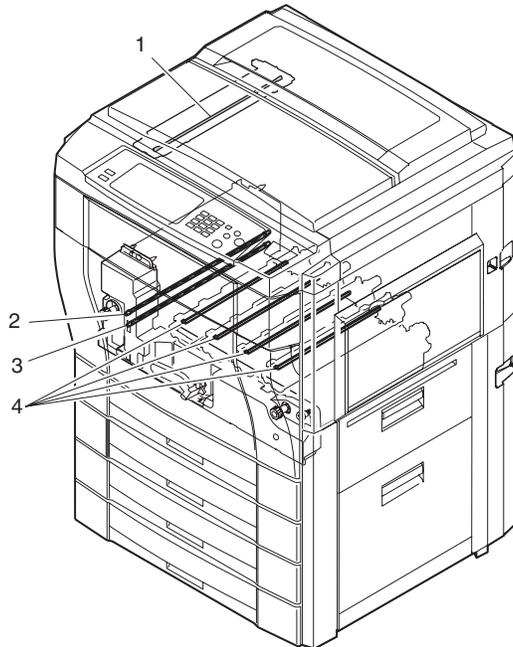
#### (4) Drive motors



No.	Parts						Active condition
	Code	Signal name	Name	Type	Function/Operation		
1	TMY		Toner supply motor (Y)	Synchronous motor	Transports toner to the developing unit. Stirs toner.		
2	DMY	DMY	OPC drum drive motor (Y)	Stepping motor	Drives Yellow OPC drum unit.		
3	TMM	TMM	Toner supply motor (M)	Synchronous motor	Transports toner to the developing unit. Stirs toner.		
4	DMM	DMM	OPC drum drive motor (M)	Stepping motor	Drives magenta OPC drum unit.		
5	TMC	TMC	Toner supply motor (C)	Synchronous motor	Transports toner to the developing unit. Stirs toner.		
6	DMC	DMC	OPC drum drive motor (C)	Stepping motor	Drives cyan OPC drum unit.		

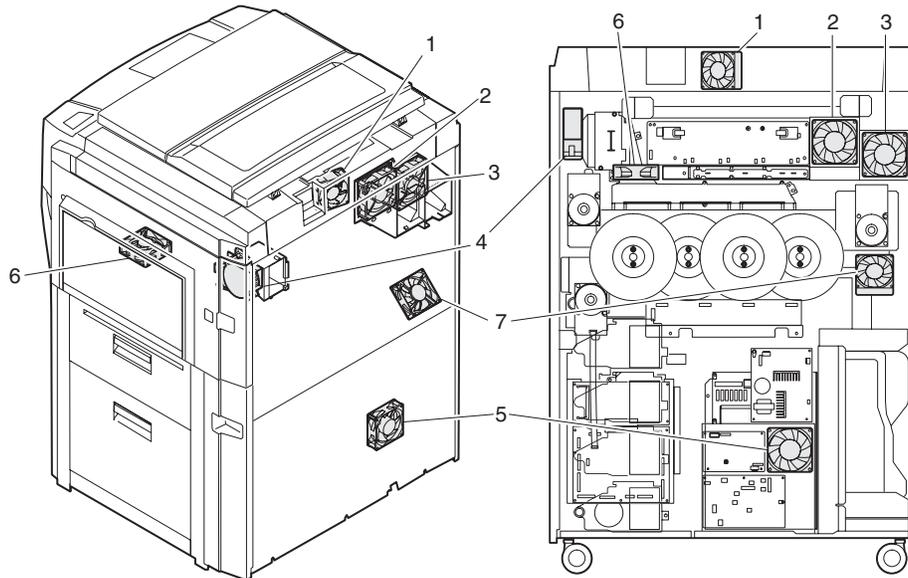
No.	Parts					
	Code	Signal name	Name	Type	Function/Operation	Active condition
7	TMK	TMK	Toner supply motor (K)	Synchronous motor	Transports toner to the developing unit. Stirs toner.	
8	DMK	DMK	OPC drum drive motor (K)	Stepping motor	Drives black OPC drum unit.	
9	SM	SM	Scanner motor	Stepping motor	Drives the scanner unit.	
10	DVKM	DVKM	Developing drive motor (Black)	DC brushless motor	Drives the black developing unit.	
11	PFM	PFM	Paper feed drive motor	DC brushless motor	Drives the paper feed section and the paper transport section.	
12	PSM	PSM	Resist roller drive motor	Stepping motor	Drives the resist roller and controls ON/OFF.	
14	LLM1	LLM1	Lift motor (No. 1 paper feed tray)	Synchronous motor	Drives the lift plate.	
15	LLM2	LLM2	Lift motor (No. 2 paper feed tray)	Synchronous motor	Drives the lift plate.	
16	LLM3	LLM3	Lift motor (No. 3 paper feed tray)	Synchronous motor	Drives the lift plate.	
17	BLUM	BLUM	Transfer belt drive motor	Stepping motor	Lifts the transfer belt unit.	
18	BTM	BTM	Transfer belt drive motor	Stepping motor	Drives the transfer belt.	
19	DVCM	DVCM	Developing drive unit (Color)	DC brushless motor	Drives the color developing units.	
20	FUSM	FUSM	Fusing drive motor	DC brushless motor	Drives the fusing unit.	
21	DDM	DDM	Transport motor	DC motor	ADU transport roller, decurler unit transport roller driver from the coupler pulley	
22	PAM	PAM	Alignment motor	Stepping motor	Alignment guide drive	
23	DRM	DRM	Reverse motor	Stepping motor	Reverse roller drive for paper feed and paper exit for reverse section	

#### (5) Lamps



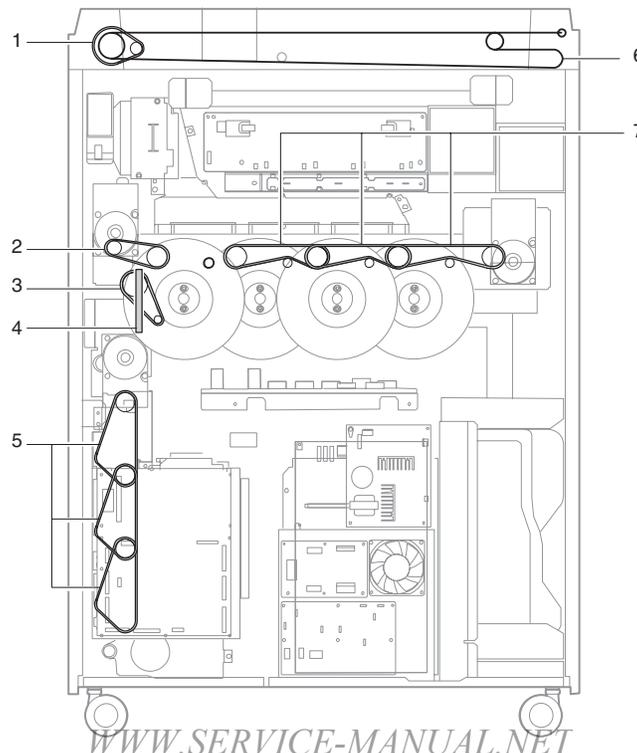
No.	Parts						Note
	Code	Signal name	Name	Type	Function/Operation	Active condition	
1	CL	CL	Scanner lamp	Halogen lamp	Radiates lights to the CCD to read original images.		
2	HL2	HL2	Lower heater lamp	Halogen lamp	Heats the heat roller.		1000W
3	HL1	HL1	Upper heater lamp	Halogen lamp	Heats the heat roller.		700W
4	DL (Y, M, C, K)	DL (Y, M, C, K)	Discharge lamp		Discharges electric charges on the OPC drum.		Installed in each OPC drum unit.

## (6) Fans



No.	Parts						Note
	Code	Signal name	Name	Type	Function/Operation	Active condition	
1	CFM	CFM	Cooling fan (motor)	Axial fan	Cools the scanner (reading) section.		PWM control
2	LSUFM	LSUFM	LSU (Scanner (writing) unit) cooling fan (motor)	Axial fan	Cools the scanner (writing) section.		PWM control
3	VFM	VFM	Fusing ventilation/cooling fan (motor)	Axial fan	Ventilates and cools the fusing section.		PWM control
4	OZFM	OZFM	Ozone ventilation fan (motor)	Silocco fan	Ventilate ozone and toner from the image process section.	ON only in copying	Rotation only in copying
5	DCFM	DCFM	Power cooling fan		Cools the DC power		
6			Polygon motor cooling fan	Axial fan	Cools the scanner (writing) section.		PWM control
7	DVCFM	DVCFM	Development color motor cooling fan motor		Cools the DVCM (Developing drive motor (Color))		

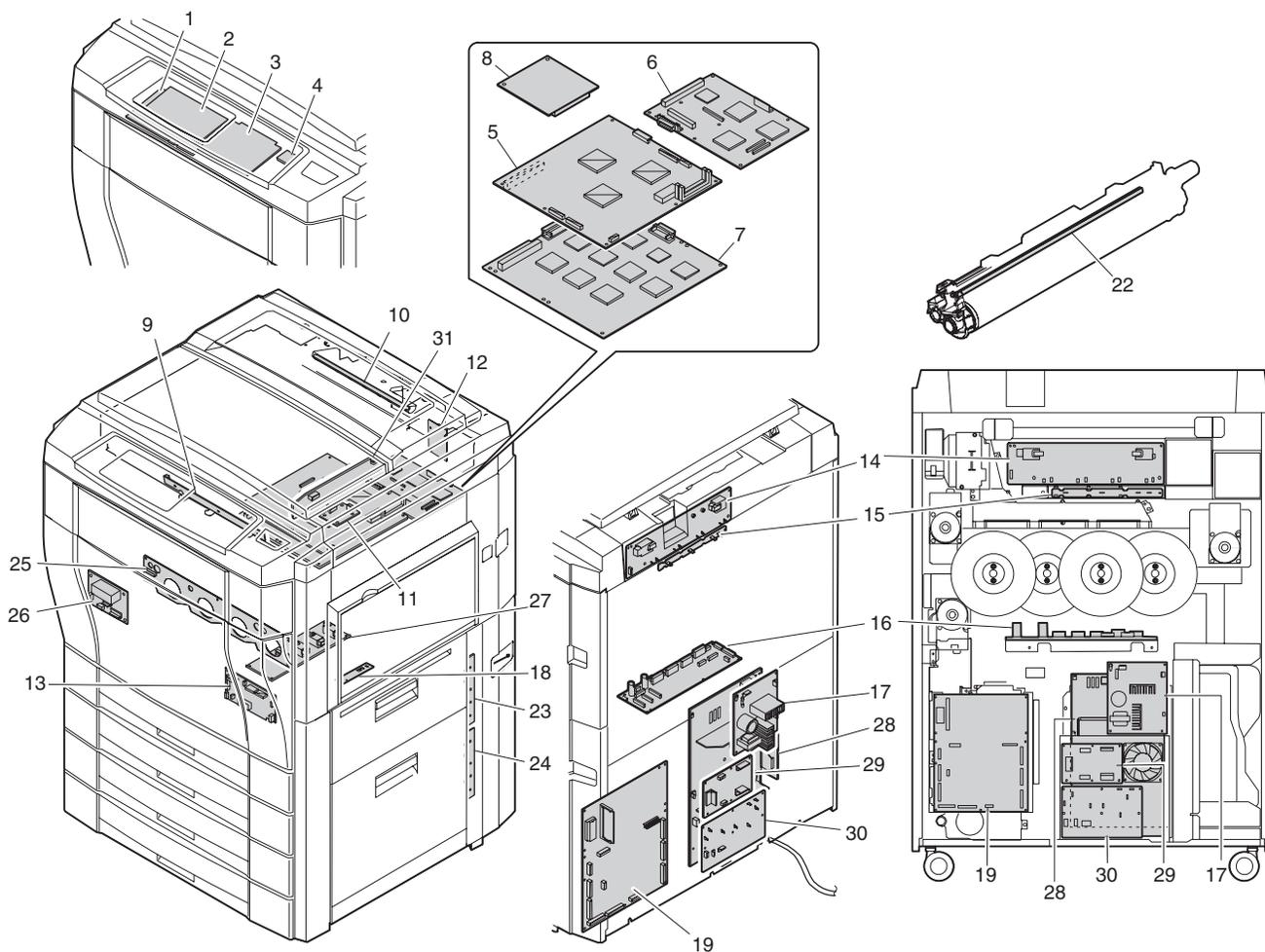
## (7) Belts, drive wire



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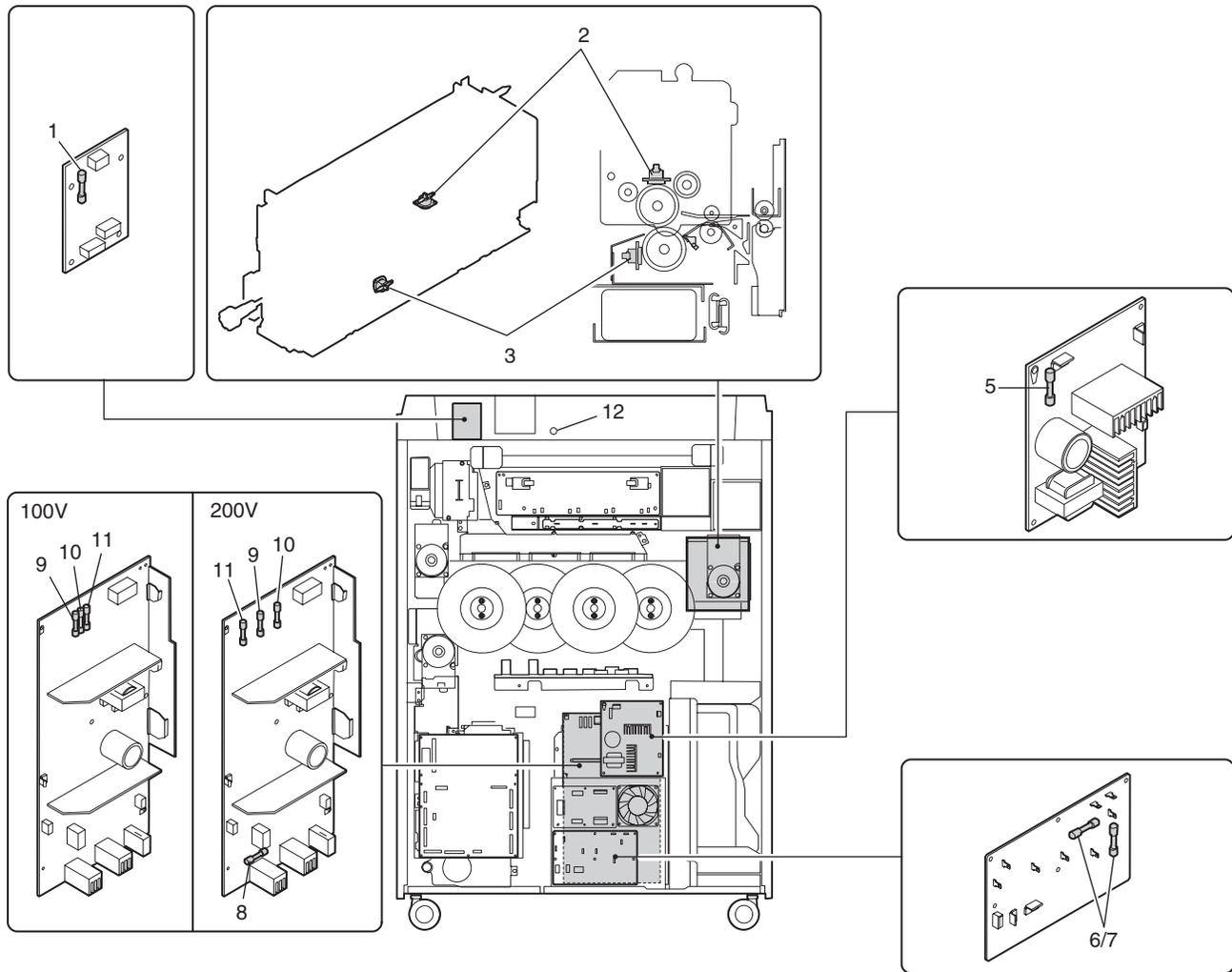
No.	Parts	
	Name	Function/Operation
1	Scanner drive belt	Transmits the scanner motor power to the scanner unit.
2	Developing drive belt (K)	Transmits the black developing drive motor power to the developing unit.
3	Resist roller drive belt	Transmits the resist roller drive motor power to the resist roller.
4	Waste toner screw drive belt	Transmits the black developing drive motor power to the waste toner screw.
5	Paper feed drive belt	Transmits the paper feed motor power to the paper feed section and the paper transport section.
6	Scanner wire	Transmits the scanner motor power to the scanner unit.
7	Developing drive belt (Y, M, C)	Transmits the color developing drive motor power to the developing unit.

**(8) PWB**



No.	Parts		Note
	Name	Function/Operation	
1	Operation PWB L	Outputs the key operation signals.	
2	OP control PWB	Controls the whole operation unit. (Displays information from the PCU PWB, and sends operation information to the PCU PWB.)	
3	Operation PWB R	Outputs the key operation signals.	
4	LCD back light inverter PWB	Drives the LCD back light.	
5	ICU-Main PWB	Controls the ICU SCN PWB, ICU IMG PWB, and CCD PWB. Converts digital image data into video signals and sends them to the scanner (writing) unit.	
6	ICU-SCN PWB	Performs correction of images outputted from the CCD.	
7	ICU-IMG PWB	Performs image processes such as area separation, color correction, black generation, gamma correction, and filter process.	
8	CPT PWB	Recognizes the bank note patterns.	
9	Original size sensor PWB (Light reception)	Detects the original size.	
10	Original size sensor (Light emitting)	Outputs light to detect the original size.	
11	CCD power PWB	Outputs the CCD PWB paper power.	
12	Scanner motor PWB	Scanner motor control PWB.	Controls the scanner motor.
13	PCU sub PWB	Controls the image process section.	
14	High voltage power PWB (MC/DV)	Generates the high voltage for main charger and the developing bias voltage.	
15	Main charger interface PWB	Interfaces the main charger power.	
16	OPC drum motor control/Signal interface PWB	Controls (drives) the OPC drum motor. Signals are interfaced.	
17	Scanner lamp control PWB	Controls the scanner lamp	
18	Humidity sensor PWB	Detects humidity in the machine.	Each correction of image process section is made by this sensor data.
19	PCU MAIN PWB	Controls the engine section.	
22	Discharge lamp PWB unit	Discharges electric charges on the OPC drum.	
23	IFD PWB	Equipped with No. 1/2 paper tray paper exit detectors and the right upper door open/close detector.	
24	PFD PWB unit	Equipped with No. 3/4 paper tray paper exit detectors and the right lower door open/close detector.	
25	Process control PWB	Interfaces signals between the developing unit, OPC drum unit, the high voltage PWB, and the PCU PWB.	
26	Fusing control PWB (AC sub PWB)	Interfaces the heater lamp drive control, sensor, detector signals.	
27	High voltage power PWB (TC)	Generates the transfer voltage.	
28	DC power PWB	Supplies power for the engine.	
29	Power control PWB	Controls powers of 24V, 5V and 3.3V in the sleep mode, the preheat mode, and the normal mode.	
30	AC power PWB	Controls the primary side power (AC power).	
31	CCD PWB	Converts original images (light) into electrical signals.	

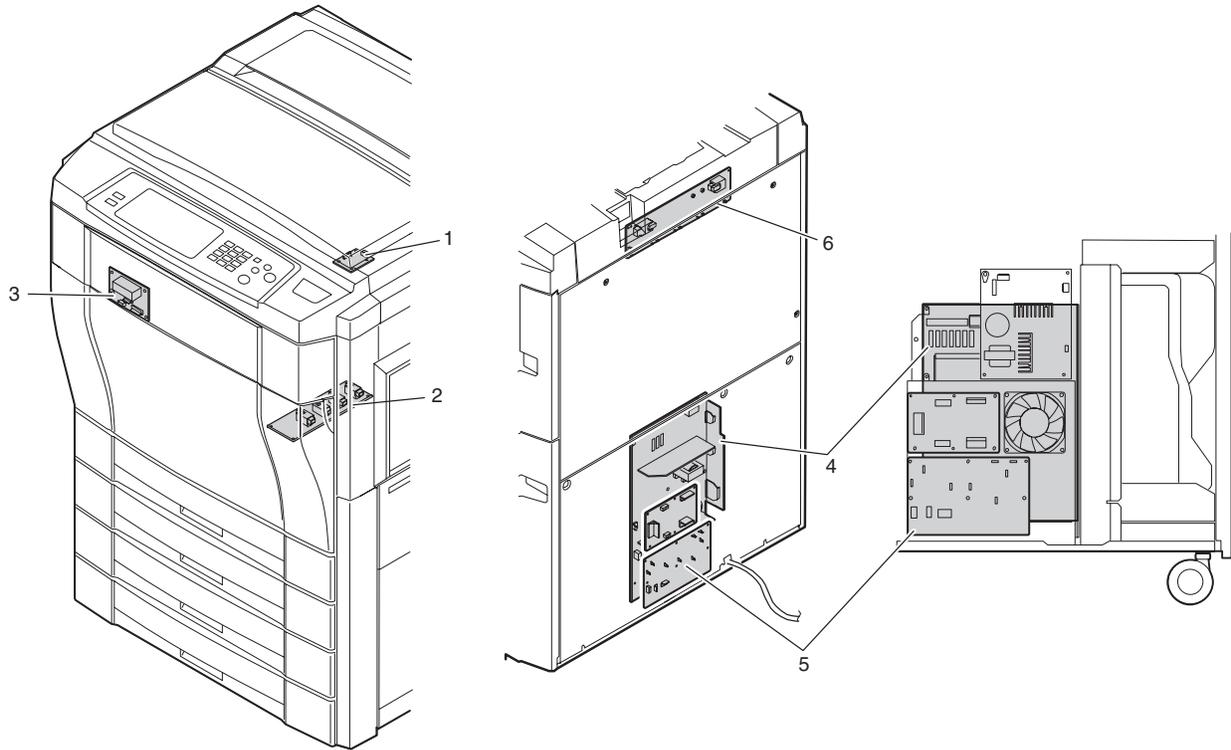
## (9) Fuses, thermostat



No.	Parts					Note
	Code	Name	Type	Spec	Function/Operation	
1	F1	Scanner motor power fuse	Normal fuse		Protects the scanner motor and its control circuit from an overcurrent.	Scanner motor control PWB
2	HLTSU	Upper heat roller thermostat	Thermostat		Cuts conduction to the heater lamp when the temperature rises abnormally.	Fusing unit
3	HLTSD	Lower heat roller thermostat	Thermostat		Cuts conduction to the heater lamp when the temperature rises abnormally.	Fusing unit
5	F701	Scanner lamp power fuse	Normal fuse	250V 4A	Protects the scanner lamp from an overcurrent.	Scanner lamp control PWB
6/7	F102/F101	AC main power primary side fuse	Normal fuse	250V 15A	Protect the AC main power primary side from an overcurrent.	100V series
		AC main power primary side fuse	Normal fuse	240V 10A	Protect the AC main power primary side from an overcurrent.	200V series
8	F706	DC power primary side fuse	Normal fuse	250V 6.3A	Protect the DC power primary side from an overcurrent.	200V series
9	F2	DC main power +24V	Normal fuse	125V 6.3A	Overcurrent protection of the LSU, the OPC drum motor, the RADF, the finisher, the PCU MAIN PWB, the paper feed/transport section motors	100V series
	F701	DC main power +24V	Normal fuse	250V 6.3A		200V series
10	F3	DC main power +24V	Normal fuse	125V 4.0A	Overcurrent protection of the PCU SUB PWB, the transfer belt section motor, the fusing motor, the developing motor (color), the CD power PWB, and the high voltage (TC) PWB	100V series
	F702	DC main power +24V	Normal fuse	250V 6.3A		200V series

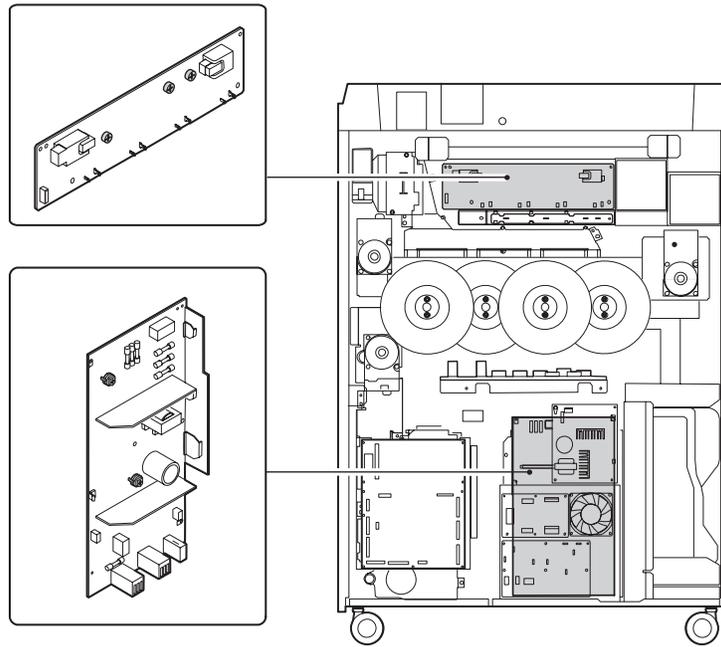
No.	Parts					Note
	Code	Name	Type	Spec	Function/Operation	
11	F4	DC main power +24V	Normal fuse	125V 4.0A	Overcurrent protection of the developing motor (black), the high voltage (MC, DV) PWB, the LCC, the scanner motor, the operation PWB, the ADU, and the printer controller	100V series
	F703	DC main power +24V	Normal fuse	250V 4A		200V series
12		Scanner lamp temperature fuse	Temperature fuse	104°C 250V 10A	Cuts conduction to the scanner lamp when the temperature rises abnormally.	

### (10) Power source



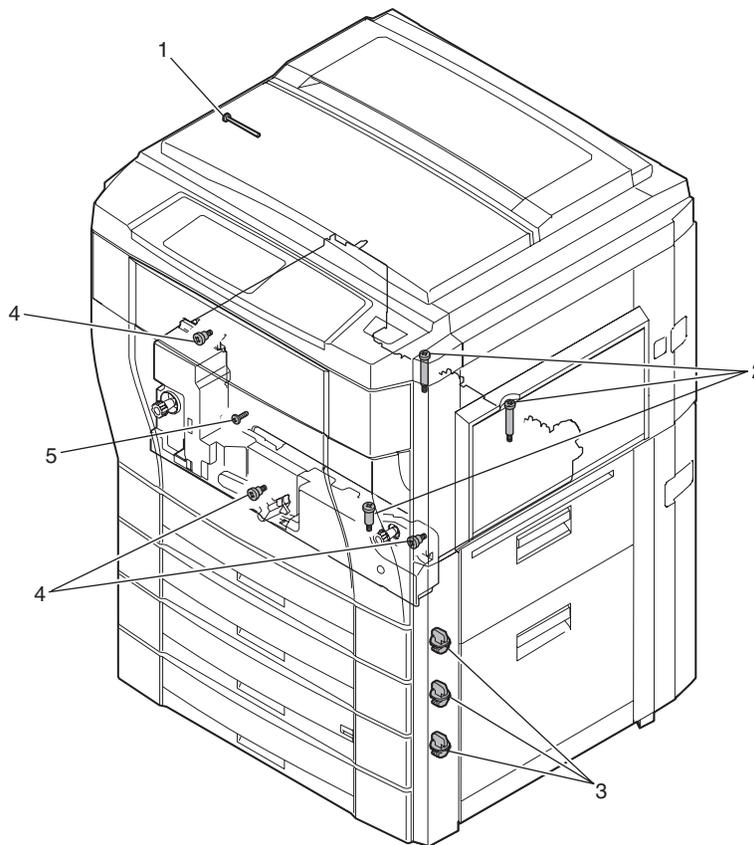
No.	Parts			Note
	Name	Function/Operation	Spec	
1	CCD power PWB	Outputs the CCD PWB power.		
2	High voltage power PWB (TC)	Generates the transfer voltage.		
3	Fusing control PWB (AC sub PWB)	Interfaces the heater lamp drive control, the sensor, and the detector signals.		
4	DC main power PWB	Generates a voltage used by the other unit than the operation unit.		
5	AC main power PWB	Controls the power (AC power) on the primary side.		
6	High voltage power PB (MC/DV)	Generates the high voltage for the main charger and the developing bias voltage.		

**(11) Adjustment volumes**



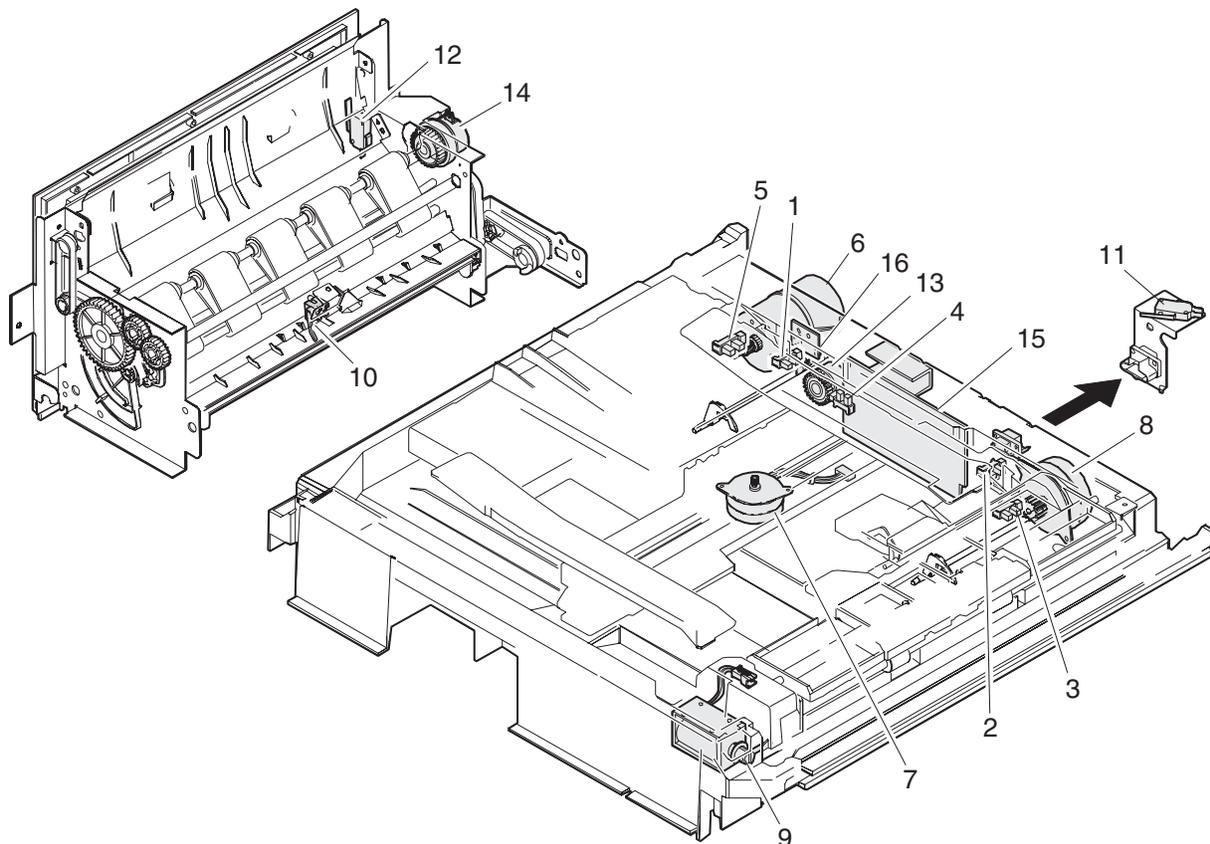
No.	Parts			Note
	Code	Name	Function/Operation	
1	RV2 (100V series)	+3.4V power voltage adjustment volume	Adjusts the +3.4V power voltage.	DC power PWB
2	VR702 (200V series)	+5V power voltage adjustment volume	Adjusts the +5V power voltage. (200V series)	DC power PWB
3	VR701 (200V series)	+3.4V power voltage adjustment volume	Adjusts the +3.4V power voltage.	DC power PWB

**(12) Lock positions**



No.	Parts		Note
	Name	Function/Operation	
1	Scanner lock screw	Locks the scanner. (Prevents the scanner from moving in transit.)	Be sure to lock in transit.
2	Transfer unit lock screw	Locks the transfer unit. (Prevents the transfer unit from moving in transit.)	
3	Paper tray lock block	Locks the paper lift plate.	
4	Fusing, transfer unit lock screw	Locks the fusing, transfer unit. (Prevents the transfer unit from projecting in transit.)	
5	Paper guide lock screw	Locks the paper guide.	

### (13) ADU section



No.	Code	Name	Type	Function and operation
1	DPPD1	Transport sensor 1	Photosensor	ADU paper-in sensor
2	DPPD2	Transport sensor 2	Photosensor	ADU transport sensor
3	DPPD3	Transport sensor 3	Photosensor	ADU reverse sensor
4	DPHPS	Alignment home position sensor	Photosensor	Alignment plate home position detection
5	DMRE	Transport motor encoder	Photosensor	Transport motor speed control sensor
6	DDM	Transport motor	DC motor	ADU transport roller, decurler unit transport roller driver from the coupler pulley
7	PAM	Alignment motor	Stepping motor	Alignment guide drive
8	DRM	Reverse motor	Stepping motor	Reverse roller drive for paper feed and paper exit for reverse section
9	DPRS	Reverse roller solenoid	Solenoid	Reverse roller pressure release for paper exiting to the copier or for alignment
10	DTD	Decurler sensor	Photosensor	Transport sensor for decurler unit
11	ADUSW	ADU switch	Microswitch	Turn ON/OFF the +24V supplied to the ADU main PCB for removal and installation of the ADU
12	DDSW	Decurler switch	Microswitch	Turn ON/OFF the +24V supplied to the ADU main PCB for opening and closing of the decurler doors
13	DPFC	Transport clutch	Electromagnetic clutch	Turn ON/OFF the power for the transport roller
14	DTC1	Decurler clutch	Electromagnetic clutch	Switch between normal and double speed for the decurler unit transporting
15		BEAR ADU PCB	PC board	Control of ADU unit
16		Motor relay board	PC board	Relay board

## [6] MACHINE OPERATIONS

### 1. Operation mode

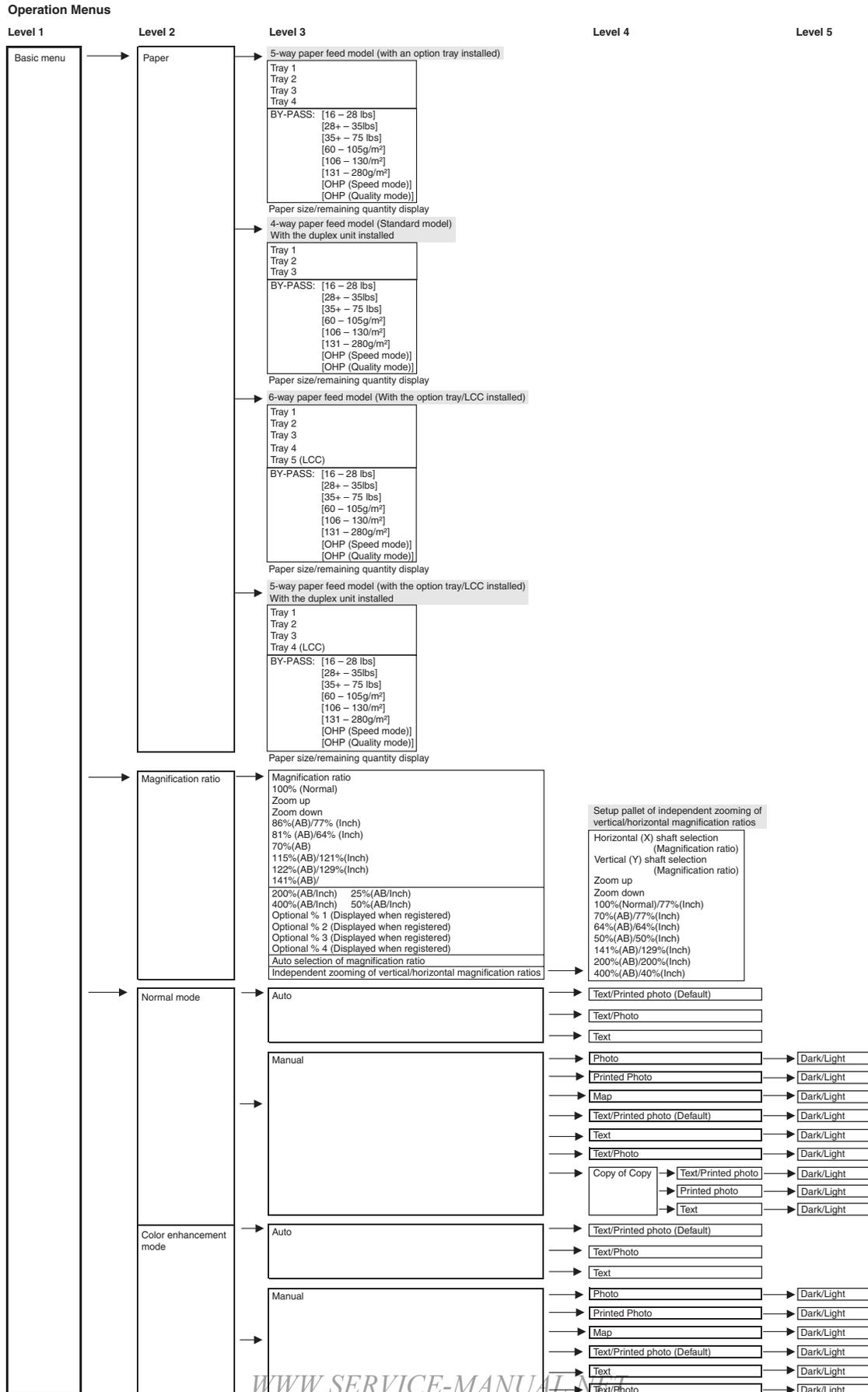
This machine has the following operation modes.

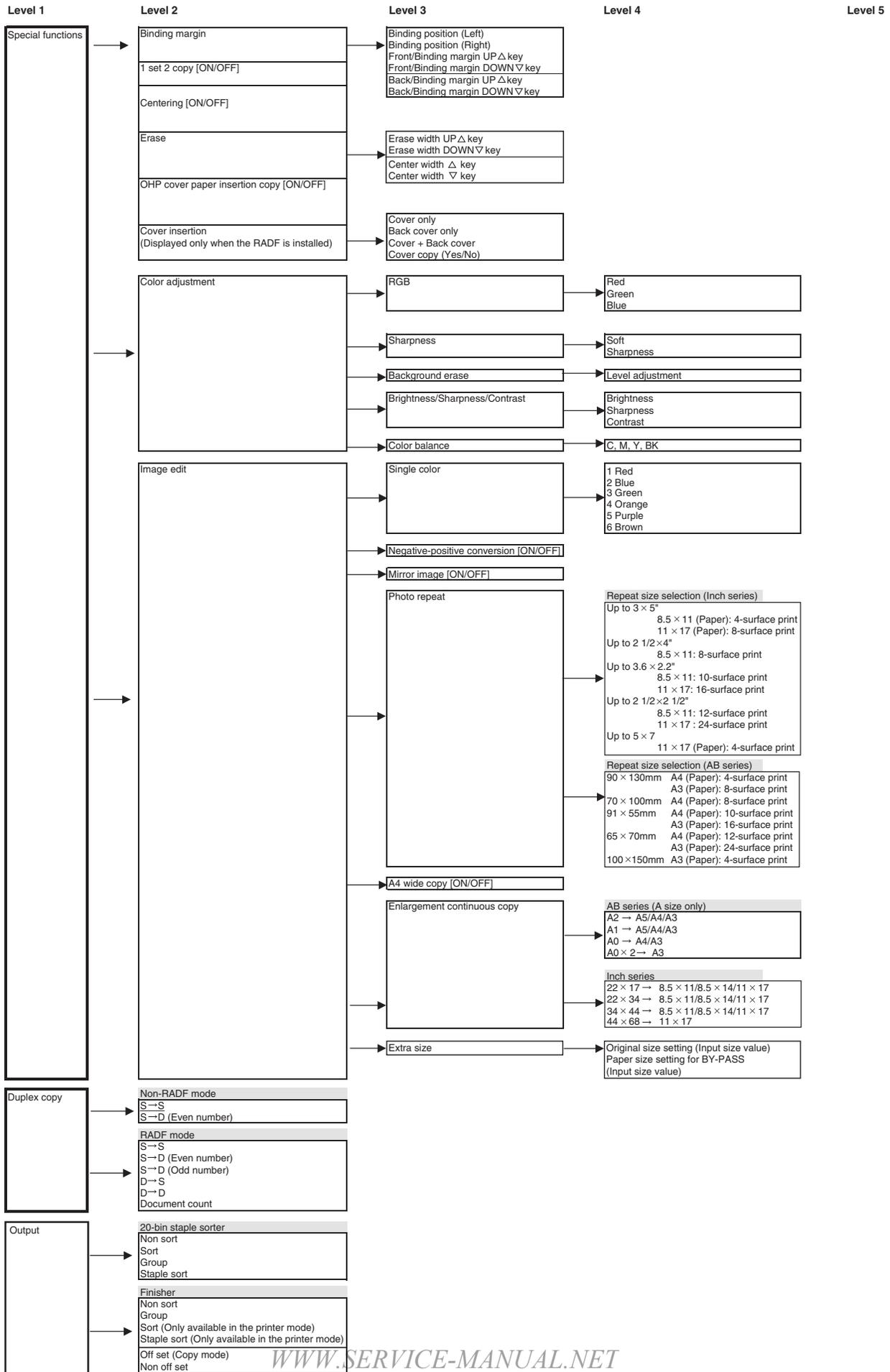
Mode		Contents
Copy mode	Basic operation mode	Used to select paper and set the copy magnification ratio and copy density, etc.
	Special function mode	Used to edit images and adjust color.
	Duplex copy mode	Used to make various setups of duplex copy mode.
	Finishing mode	Used to make various setups related to the sorter.
	Job program mode	Used to preset the copy operation conditions.
	User setup mode	Used to make setup of the specifications according to the user's needs.
	Operation guidance mode	Help menu (Displays the operational descriptions on copying.)
Printer mode		Uses the print server (option) to perform as a printer.
Power save mode	Pre-heat mode	Used to lower the fusing temperature, saving the power consumption.
	Sleep mode	Used to stop the sections except for the control PWB section.
Simulation mode		Used in servicing to set, adjust, and check operations.

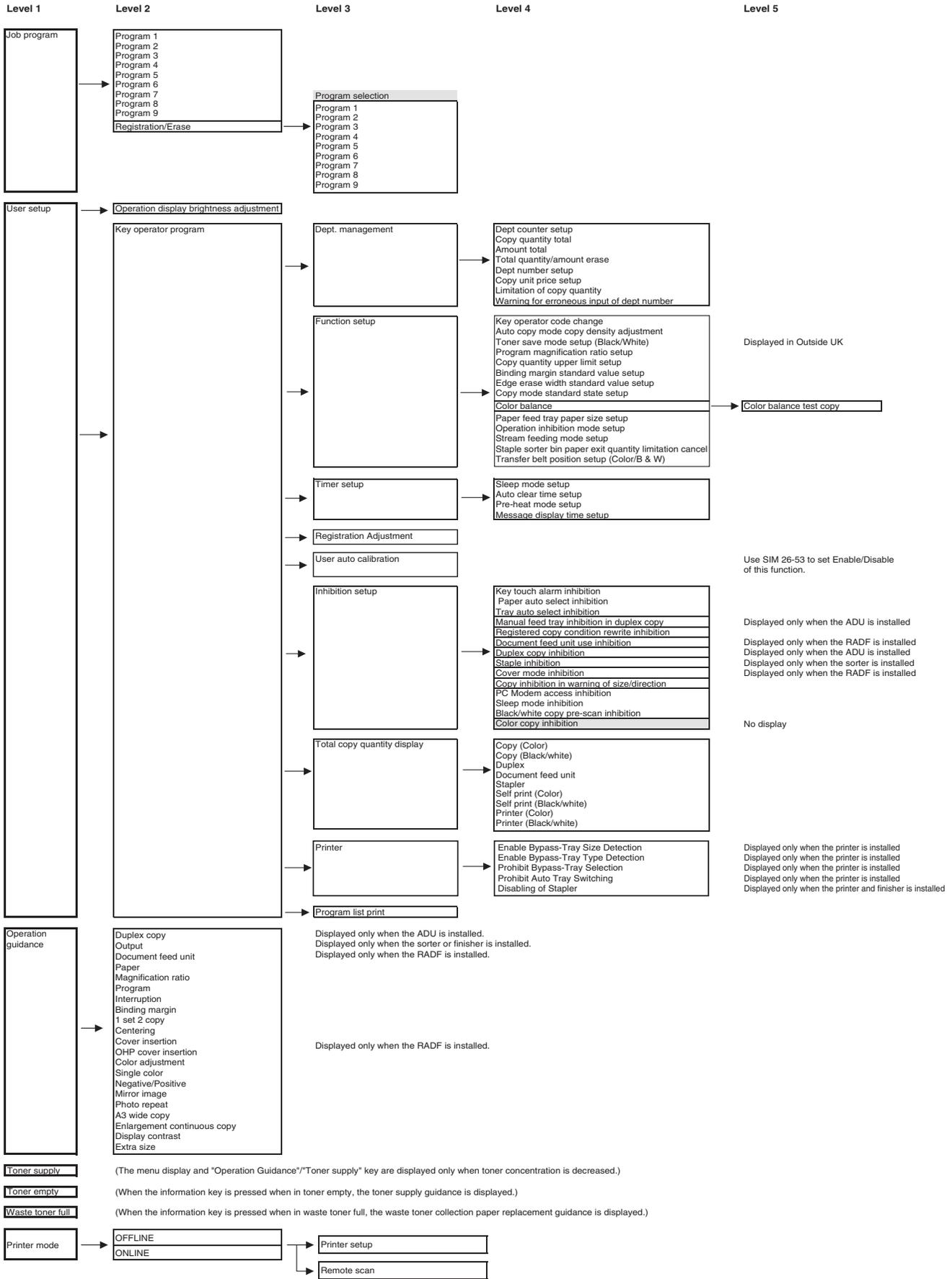
## 2. Operation menu

This machine has the following operation menus.

These operation menus differ depending on installation of options and the configurations.







### 3. Pre-heat mode and sleep mode operations

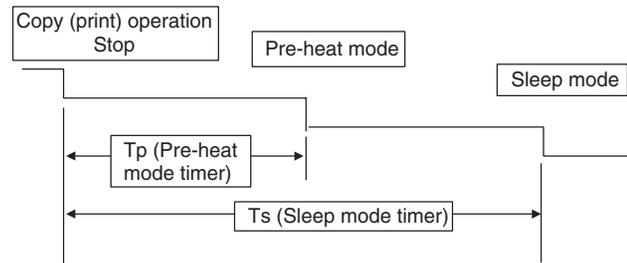
#### A. Operation timing

This machine has a pre-heat mode and a sleep mode to save the power consumption when copying (printing) is not performed.

The shift timing to the pre-heat mode and the sleep mode can be set with the user program with the non-operating state as the start point.

The timing of the two modes can be separately set. It is possible to shift from the normal mode directly to the sleep mode without passing through the pre-heat mode.

#### Operation timing in the pre-heat mode and the sleep mode



Tp and Ts are set by the user program.

Timer	Set time
TP	10 - 240min
Ts	10 - 240min

#### (Pre-heat mode cancel conditions)

In the following cases, the pre-heat mode is canceled.

Control section	Phenomenon	NOTE
Operation section	Key input (Including Key ON)	
Original size sensor section	Original size change (Including Original Empty → Presence, Presence → Empty)	
RADF section	RADF original size change (Including Original Empty → Presence, Presence → Empty)	
Paper tray section		
Finishing		
Copy	Copying	
Self print		
Printer control	Printer operation	
Scanner (reading)	Scanner operation	

#### (Sleep mode cancel condition)

In the following cases, the sleep mode is canceled.

Copy	Copying	NOTE
Self print		
Printer control	Printer operation	
Scanner (reading)	Scanner operation	
When the mode key is ON		

#### (Sleep mode shift timing extending condition)

When the non-operation of copying and printing continues and the following case occurs within 10 min of entering the sleep mode, set the sleep mode timer to 10 min again, and extend the shift timing to the sleep mode.

Control section	Phenomenon	NOTE
Operation section	Key input other than 10-key (Including Key ON)	
Original size detection (Original size sensor section)	Original size change (Including Original Empty → Presence, Presence → Empty)	
RADF section	RADF original size change (Including Original Empty → Presence, Presence → Empty)	
Paper tray section	Paper tray attachment/detachment detection, Paper tray lift operation	
Finishing (sorter)	Staple execution, (Front take-up execution)	
Copy	Copying	
Self print	Self printing	
Printer control	Printer operation	
Scanner (reading)	Scanner operation	

#### B. Pre-heat mode and sleep mode operations

##### (1) Control unit operations in the pre-heat mode and the sleep mode

###### a. Operation (operation panel) section

Mode	Operation	NOTE
Sleep	LCD display	Does not display.
	LED lights up.	Printer/Copy: Light up. Start, interruption, data, online: Does not light up.
	Key	Printer/Copy key: Valid Other keys: Invalid
	Original detection	Original size sensor: Does not operate. Original cover open/close detection: Does not operate
Pre-heat mode	All load operations possible	
Normal		

###### b. PCU PWB

Mode	Operates.	NOTE
Sleep	Does not operate.	
Preheat	Refer to "d. Signals controlled by the PCU PWB in the pre-heat mode".	
Normal	Operates.	

###### c. ICU PWB

Mode	Operates.	NOTE
Sleep	Does not operate.	
Low power		
Normal	Operates.	

**(Signals controlled by the PCU PWB in the pre-heat mode)**

Section	Signal name	Content	Operation in the pre-heat mode
Manual paper feed	MPWS	Manual feed width detection	Does not operate.
	MPLD1	Manual feed length detection	
	MPLD2	Manual feed length detection	
	MTOP1	Manual feed tray pull-out detection	
	MTOP2	Manual feed tray pull-out detection	
	MPED	Manual feed paper empty detection	
Paper feed tray	C*SS1	Paper size detection	Does not operate.
	C*SS2	Paper size detection	
	C*SS3	Paper size detection	
	C*SS4	Paper size detection	
	PED*	Paper empty detection	
	LUD*	Paper upper limit detection	
	C*PD1	Paper remaining quantity detection 1	
	LUM_ENB*	Paper tray lift-up motor	
Paper transport	PFD*	Cassette paper feed detection	Does not operate.
	PPD1	Paper detection in front of RR roller	
	POD	Machine paper exit detection	
	PODF	Finisher paper exit detection	
	PFM	Paper feed motor	
	TRC	Transport clutch	
	MPFS	Manual paper feed solenoid	
	MPFC	Manual paper feed clutch	
	CPFS*	Cassette paper feed solenoid	
	CPFC*	Cassette paper feed clutch	
	RRM_START	RR motor	
Developing	PRD_AN?	Toner concentration detection	Does not operate.
Fusing	HLPR	HL power relay	ON
Waste toner	TBBOX	Waste toner bottle installation detection	Does not operate.
	TFD	Waste toner full detection	

Section	Signal name	Content	Operation in the pre-heat mode	
Image process	DMENB	All OPC drum drive motor	Does not operate.	
	DVKM	Developing motor (Black)		
	DVCM	Developing motor (Color)		
	HPCH	Toner hopper installation detection		
	PRD_ANRTH	Image process temperature detection		
Scanner (reading)	MHPS	Mirror home position detection	Does not operate.	
	SMENB	Scanner (writing) motor		
Copy lamp	CL	Scanner lamp	Does not operate.	
Fan	CFM	Scanner (reading) cooling fan	Does not operate.	
	VFPWM	Fusing exhaust/cooling fan	Operates. (Only the fusing exhaust fan is operable.)	
	LSUPWM	LSU cooling fan (LSUFM)	Does not operate.	
	OZFM	Ozone exhaust fan		
	DCFM	DC power cooling		
	DVCFM	Developing color motor cooling		
	Others	DSWF	Front door open detection	Does not operate.
		DDSW	Paper exit door open detection	
RDSWU		Paper fed upper door open detection		
RDSWD		Paper feed lower door open detection		
PSPR		Main power relay	OFF	
MCLKA		Paper tray lift motor/Toner motor	Does not operate.	
MCLKB				
DHPR		Dehumidifier heater power relay	Operates.	

#### d. Communication in the pre-heat mode

Section	Signal name	Content	Operation in the pre-heat mode
PCU SUB PWB	TXD_SUB	PCU SUB data send	Operates.
	RXD_SUB	PCU SUB data receive	
	BELTCH	Transfer belt pull-out detection	
ADU	TXD_ADU	ADU data send	Does not operate.
	RXD_ADU	ADU data receive	
	RES_ADU	ADU reset	
	ADU_CH	ADU pull-out detection	
RADF	TXD_RADF	RADF data send	Operates.
	RXD_RADF	RADF data receive	
	RES_RADF	RADF reset	
Sorter	RES_SOT	SOT reset	Operates.

Section	Signal name	Content	Operation in the pre-heat mode
LCC	TXD_LCC	LCC data send	Does not operate.
	RXD_LCC	LCC data receive	
	RES_LCC	LCC reset	
RIC I/F	TXD_RIC	RIC data send	Does not operate.
	RXD_RIC	RIC data receive	
	DTR_RIC	Machine power ON signal	
	DSR_RIC	RIC power ON signal	
ICU PWB	ICU_RXD	ICU data receive	Does not operate.
	ICU_TXD	ICU data send	
	ICU_RES	ICU reset signal	
Operation unit	OPE_TXD	Data send to OPE	Operates.
	OPE_RXD	Data receive from OPE	
	OPE_RES	OPE reset signal	

#### (2) Fusing section operation in the pre-heat mode and the sleep mode

Mode			Control temperature						NOTE
			U.S.A	Canada	Inch	Europe	U.K	AB_A	
Ready condition	Ready condition control temperature (HL1)	Upper heat roller	182	182	182	177	177	177	
	Ready condition control temperature (HL2)	Lower heat roller	152	152	152	147	147	147	
Copy/Print mode	Normal mode control temperature (HL1)	Upper heat roller	170	170	170	170	170	170	
	Normal mode control temperature (HL2)	Lower heat roller	125	125	125	125	125	125	
	Thick paper mode 1 control temperature (HL1)	Upper heat roller	185	185	185	185	185	185	
	Thick paper mode 1 control temperature (HL2)	Lower heat roller	155	155	155	155	155	155	
	Thick paper mode 2 control temperature (HL1)	Upper heat roller	200	200	200	200	200	200	
	Thick paper mode 2 control temperature (HL2)	Lower heat roller	155	155	155	155	155	155	
	OHP mode control temperature (HL1)	Upper heat roller	185	185	185	185	185	185	Quality mode
	OHP mode control temperature (HL2)	Lower heat roller	175	175	175	175	175	175	Quality mode
	OHP mode control temperature (HL1)	Upper heat roller	185	185	185	185	185	185	Speed mode
	OHP mode control temperature (HL2)	Lower heat roller	175	175	175	175	175	175	Speed mode
Pre-heat mode	Energy saving mode control temperature (HL1)	Upper heat roller	146	146	146	146	146	146	
	Control temperature when resetting from pre-heat to B/W (HL1)	Upper heat roller	158	158	158	158	158	158	
Sleep mode	HL1	Upper heat roller	OFF	OFF	OFF	OFF	OFF	OFF	
	HL2	Lower heat roller	OFF	OFF	OFF	OFF	OFF	OFF	

## 4. Consumable parts life and machine operation

The relationship between the consumable parts life and the machine operation is as shown in the table below.

Consumable parts		Condition	Operation	Message
Toner	K	Low toner	About 30-sheet copy (print) allowed	Copy allowed/ Supply toner
	Y,M,C	Low toner	About 30-sheet copy (print) allowed	Copy allowed/ Supply toner
	K	Toner empty	Copying (printing) is stopped after completion of the half-way copy (print). All copy (print) including color copy inhibited.	Toner empty
	Y,M,C	Toner empty	Copying (printing) is stopped after completion of the half-way copy (print). (Monochrome copy is allowed.)	Toner empty
Developer	K,Y,M,C	Life	Copy (print) allowed	Maintenance required
OPC drum	K,Y,M,C	Life	Copy (print) allowed	Maintenance required
Waste toner bottle	OPC drum section	Life	Copying (printing) is stopped after completion of the half-way copy (print).	Replace toner collection bottle
	Transfer section	Life	Copying (printing) is stopped after completion of the half-way copy (print).	Transfer unit toner collection bottle full
Fusing oil		Oil empty	Copy (print) is immediately stopped.	H6 trouble (Fusing oil empty)

# [7] SETTING AND ADJUSTMENTS

## 1. Adjustment/setup items list

Each adjustment item in the adjustment item list is indicated with its JOB number. Perform the adjustment procedures in the sequence of Job numbers from the smallest to the greatest.

However, there is no need to perform all the adjustment items. Perform only the necessary adjustments according to the need. Unnecessary adjustments can be omitted. Even in this case, however, the sequence from the smallest to the greatest JOB number must be observed. If the above precaution should be neglected, the adjustment would not complete normally or a trouble may occur.

JOB No	ADJUSTMENT ITEM		SIMULATION
ADJ M1	DV doctor gap adjustment		
ADJ M2	DV roller main pole position adjustment		
ADJ M3	Toner concentration control reference level setting		25-2/44-27
ADJ M4	High voltage adjustment	ADJ 1 Main charger grid voltage adjustment	8-2
		ADJ 2 DV bias voltage adjustment	8-1
		ADJ 3 Transfer voltage adjustment	44-30
ADJ M5	Paper skew adjustment		44-2
ADJ M6	Image density sensor adjustment	ADJ 1 Image density sensor calibration	44-13
		ADJ 2 Image density sensor sensing position adjustment	44-23
ADJ M7	Image skew adjustment (Scanner (Writing) unit)		64-1
			61-4
ADJ M8	Photoconductor phase adjustment		44-31
ADJ M9A * 1	Image registration adjustment (Auto adjustment)	Main scanning direction copy magnification ratio adjustment (Scanner (Writing) unit) Main scanning direction image registration adjustment (Scanner (Writing) unit) Sub scanning direction color image resist adjustment (Scanner (Writing) unit)	50-22
ADJ M9 * 2	Main scanning direction copy magnification ratio adjustment (Manual adjustment) (Scanner (Writing) unit) Main scanning direction image registration adjustment (Manual adjustment) (Scanner (Writing) unit)	ADJ 1 Main scanning direction copy magnification ratio adjustment (Scanner (Writing) unit) (Black)	50-10
		ADJ 2 Main scanning direction color image resist adjustment (Scanner (Writing) unit) (Color) Main scanning direction copy magnification ratio adjustment (Scanner (Writing) unit) (Color)	50-20
ADJ M10 * 3	Sub scanning direction color image resist adjustment (Manual adjustment) (Scanner (Writing) unit) (Color)		50-21
ADJ M11	Image distortion adjustment	ADJ 1 Scanner (Reading) unit parallelism adjustment	
		ADJ 2 Image distortion adjustment (Sub scanning direction)	
		ADJ 3 Image distortion adjustment (Main scanning direction)	
ADJ M12	Image focus (Main scanning direction copy magnification ratio) adjustment (CCD position adjustment)		48-1
ADJ M13	Sub scanning direction copy magnification ratio adjustment		48-1
ADJ M14	Image position adjustment (Main scanning direction) (Print engine)		50-10
ADJ M15	Image position adjustment (Main scanning direction) (Scanner (Writing))		50-12
ADJ M16	Image position, image loss, void area adjustment		50-1/50-2
ADJ M17	Copy quality adjustment	ADJ 1 CCD gamma adjustment (CCD calibration) (Normal document mode)	63-3 (63-5)
		ADJ 2 Copy color balance adjustment (Auto)	46-22/24
		ADJ 3 Copy color balance adjustment (Manual)	46-21
		ADJ 4 Low-density area density adjustment (Not normally adjusted)	46-1/2
		ADJ 5 Copy color balance adjustment (Copy mode) (Not normally adjusted)	46-10 to 19
		ADJ 1A CCD gamma adjustment (CCD calibration) (Copy document mode) (Not normally adjusted)	63-9
		ADJ 6 Black toner component image gamma adjustment (Black character and black line reproduction adjustment) (Normally unnecessary to adjust.)	46-27
		ADJ 7 Single color copy mode color balance and density adjustment (Normally unnecessary to adjust.)	46-25
		ADJ 8 Setup of the gamma characteristic in the color copy mode	26-55
ADJ 9 User auto color calibration (Copy color balance, auto density adjustment) enable setup	26-53		

JOB No	ADJUSTMENT ITEM			SIMULATION
ADJ M18	Document size sensor adjustment	ADJ 1	Original size sensor detection point adjustment	41-2
		ADJ 2	Original size sensor sensitivity adjustment	41-2
ADJ M19	Waste toner full detection level adjustment			
ADJ M20	Touch panel coordinates setting			65-1
ADJ M21	Transfer belt level adjustment (Transfer belt traveling adjustment)			
ADJ M22	Fusing pressure adjustment			
ADJ M23	Power voltage adjustment	ADJ 1	3.4 V power voltage adjustment	
		ADJ 2	5.0 V power voltage adjustment	
		ADJ 3	24 V power voltage adjustment	
ADJ M24	Manual feed paper size sensor adjustment			40-2
ADJ M25	OHP sensor adjustment			40-5

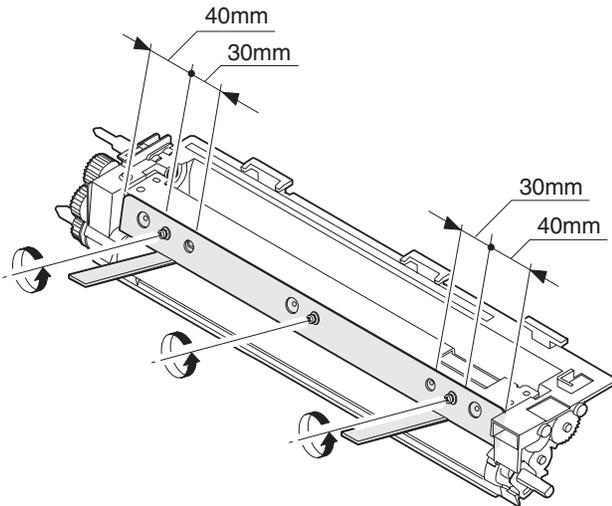
\* 1/\* 2/\* 3: ADJ M9A automatically performs the adjustment contents of ADJ M9/ADJ M10. If satisfactory results are obtained by ADJ M9A, there is no need to execute manual adjustments of ADJ M9/ADJ M10.

\* 4/\* 5: ADJ M17/ADJ 2 automatically perform the adjustment contents of ADJ M17/ADJ 3. If satisfactory results are obtained by ADJ M17/ADJ 2, there is no need to execute manual adjustments of ADJ M17/ADJ 3.

## ADJ M1 DV doctor gap adjustment

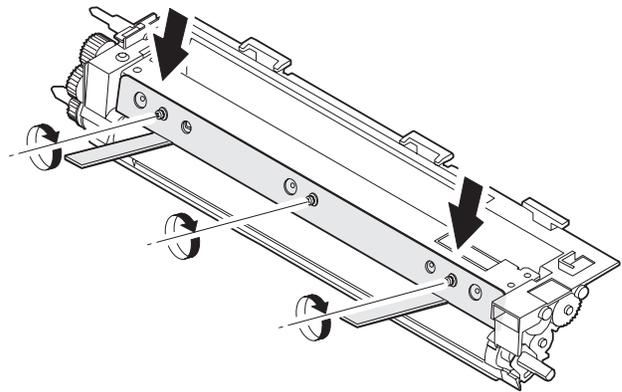
This adjustment must be performed in the following cases:

- When the developing unit is disassembled.
  - When the print density is low.
  - When there is a lot of toner dispersion abnormally.
- 1) Remove the developing unit from the copier, and remove the developing unit cover and the blade cover.
  - 2) Loosen the DV doctor fixing screw A.
  - 3) Insert a 0.525 thickness gauge at the point of 40mm – 70mm from the DV doctor edge.



- 4) Push the DV doctor in the arrow direction and tighten the DV doctor fixing screw.  
(Perform the same procedure for the front and the rear frame simultaneously.)
- 5) Check that the clearance is  $0.525 \pm 0.03\text{mm}$  at two positions which are 40mm – 70mm from the both sides of the DV doctor.

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

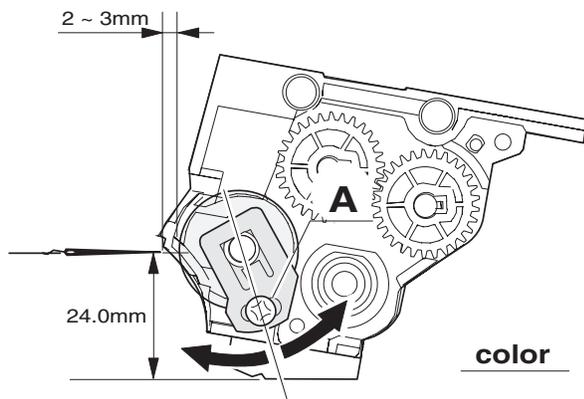
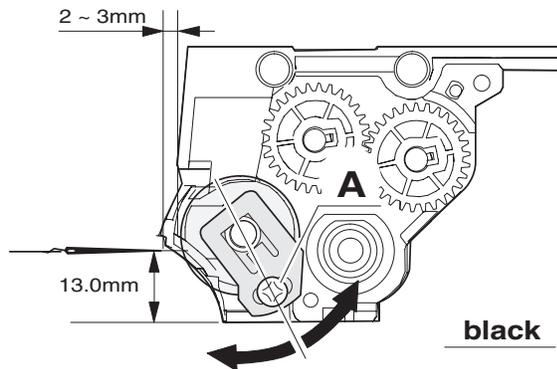
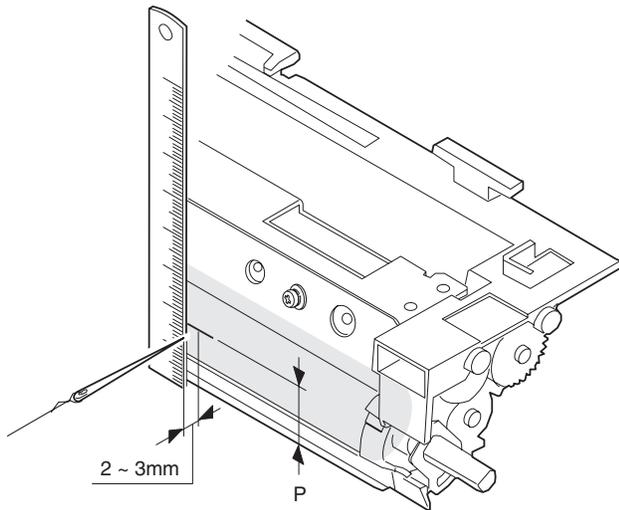


## ADJ M2 DV roller main pole position adjustment

This adjustment must be performed in the following cases:

- When the developing unit is disassembled.
  - When the print density is low.
  - When there is a lot of toner dispersion abnormally.
- 1) Remove the developing unit cover and the blade cover, and place the developing unit on a flat surface.
  - 2) Tie a string to a needle or a pin.
  - 3) Hold the string and put the needle horizontally and move it toward the MG roller. (Do not use a clip which is too big to have a correct position.)
  - 4) With the needle tip at 2 – 3mm from the MG roller surface, mark the point on the surface which is on the extended line of the needle tip. (Do not make contact between the needle tip and the MG roller.)
  - 5) Measure the distance between the marking position and surface P of the developing unit, and check that the black unit is 13mm, color unit 24mm.

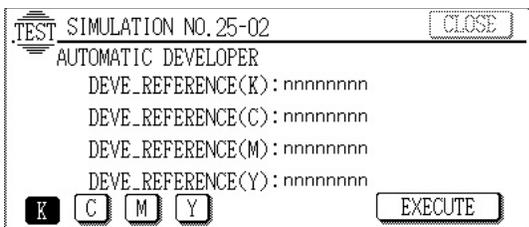
If the distance is not as specified above, loosen the fixing screw A of the main pole adjustment plate, and move the adjustment plate in the arrow direction to adjust.



### ADJ M3 Toner concentration control reference level setting

This adjustment must be performed in the following case:

- When the developer is replaced.
- 1) With the front cabinet open, enter the SIM 25-2 mode.



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

- 4) When the [EXECUTE] key is pressed, it is highlighted. The OPC drum drive motor rotates and the toner concentration sensor detects toner concentration and the output value is displayed.

After stirring for 3 min, the average value of toner concentration sensor detection level is set (stored) as the reference toner concentration control value.

NOTE: When the operation is stopped in 3 min, the adjustment result is not registered.

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

If "EE-EU" or "EE-EL" is displayed, it means that the reference toner concentration control value is not set normally.

- EE-EL: Less than 79 (1.59V)
- EE-EU: More than 177 (3.41V)

- 5) Execute SIM 24-5 to clear the developer counter.
- 6) Execute SIM 44-27 to reset the half tone correction data (correction conditions) to the default.

NOTE: 1) When replacing the color developer, replace the yellow, Magenta, and Cyan developers at the same time. If only one developer is replaced, the color balance may be abnormal.

The black developer can be replaced alone.

- 2) After replacement of developers and the photoconductor, be sure to execute SIM 44-27 to reset the half tone correction data (correction conditions) to the default level.

If the above procedure is ignored, half tone correction may not be performed properly.

### ADJ M4 High voltage adjustment

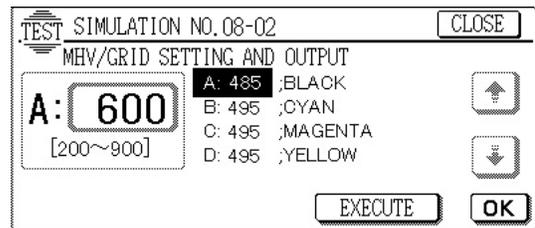
(Note) For adjustment of the output voltage, use internal impedance of 1000Mohm or more and whose effective value can be measured (Recommend: FLUKE87 FLUKE80K-40). Use a high voltage probe.

### ADJ 1 Main charger grid voltage adjustment

This adjustment must be performed in the following cases:

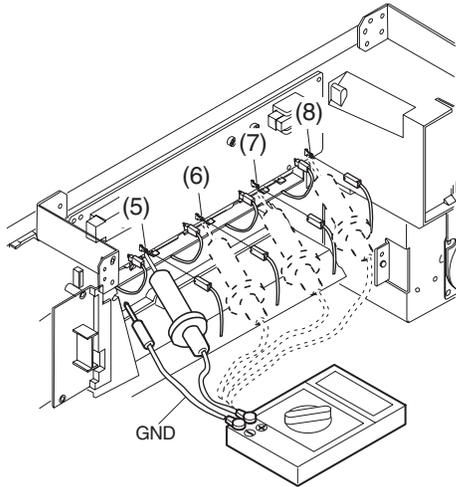
- When the high voltage power (MC/DV) PWB is replaced.
- When a U2 trouble occurs.
- When the PCU main PWB is replaced.
- When the EEPROM of the PCU main PWB is replaced.

- 1) Enter SIM 8-2 mode.
- 2) Select the color mode to be adjusted with the scroll key and press the [EXECUTE] key.
- 3) Check the output voltage with the high voltage probe, and adjust the value of each color so that the specification in the table below is satisfied.



Color	Normal mode adjustment spec	Check pin
K	-485 ± 5V	(5)
C	-495 ± 5V	(6)
M	-495 ± 5V	(7)
Y	-495 ± 5V	(8)

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



\* With all the OPC drums removed from the machine, bring the high voltage probe into contact with the high voltage PWB GB pin to check the adjustment value.

If an effective value meter and a high voltage probe are not available, refer to the table below to enter the adjustment value.

This allows to make a simple adjustment.

#### Main charger grid voltage adjustment value

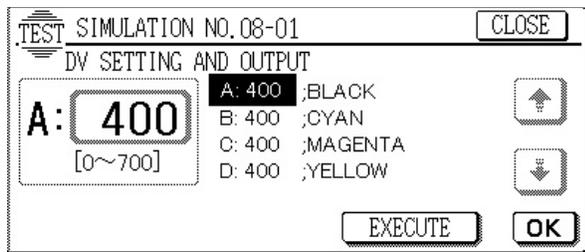
Color	SIM 8-2 adjustment value	
K	A	485
C	B	495
M	C	495
Y	D	495

### ADJ 2 DV bias voltage adjustment

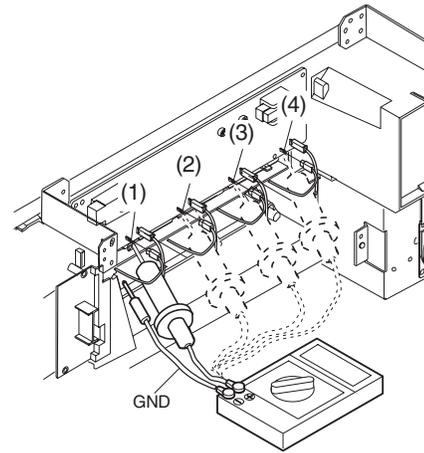
This adjustment must be performed in the following cases:

- When the high voltage power (MC/DV) PWB is replaced.
- When a U2 trouble occurs.
- When the PCU main PWB is replaced.
- When the EEPROM of the PCU main PWB is replaced.

- 1) Enter the SIM 8-1 mode.
- 2) Select the color mode to be adjusted with the scroll key and press the [EXECUTE] key.
- 3) Check the output voltage with the high voltage probe, and adjust the value of each color so that the specification in the table below is satisfied.  
Enter the adjustment value with the 10-key and press the [OK] key.



Color	Normal mode adjustment spec	Check pin
K	-325 ± 5V	(1)
C	-325 ± 5V	(2)
M	-325 ± 5V	(3)
Y	-325 ± 5V	(4)



\* Set the developing unit (K, C, M, Y), bring the high voltage probe into contact with the high voltage PWB GB pin to check the adjustment value.

If an effective value meter and a high voltage probe are not available, refer to the table below to enter the adjustment value.

This allows to make a simple adjustment.

#### Developing bias voltage adjustment value

Color	SIM 8-1 adjustment value	
K	A	325
C	B	325
M	C	325
Y	D	325

### ADJ 3 Transfer voltage adjustment

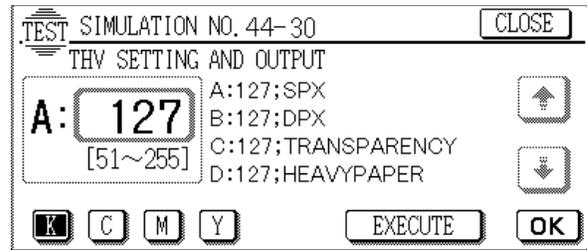
This adjustment must be performed in the following cases:

- When the high voltage power (TC) PWB is replaced.
- When a U2 trouble occurs.
- When the PCU main PWB is replaced.
- When the EEPROM of the PCU main PWB is replaced.

- 1) Enter the SIM 44-30 mode, enter the following value for each mode and each color, and enter the [OK] key.

#### Transfer voltage input values

	Display	BK	C	M	Y
Normal paper mode	A: SPX	191	175	131	131
ADU mode	B: DPX	191	175	131	131
OHP mode	C: TRANSPARENCY	204	209	167	182
Thick paper mode	D: HEAVY PAPER	204	187	138	138



## ADJ M5 Paper skew adjustment

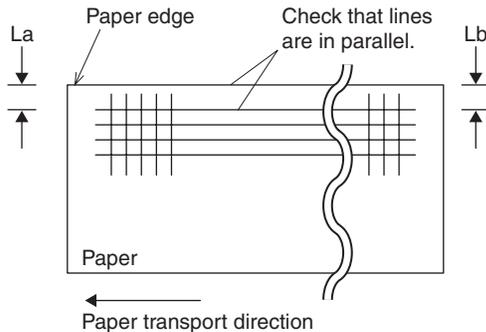
This adjustment must be performed in the following cases:

- When the resist roller section is disassembled.

- 1) Enter the SIM 64-1 mode.  
Select the black print mode.
- 2) Set the items as shown below:  
A: 5  
B: 255  
C: 1  
D: 9  
E: Select A3 (11 x 17) paper size.

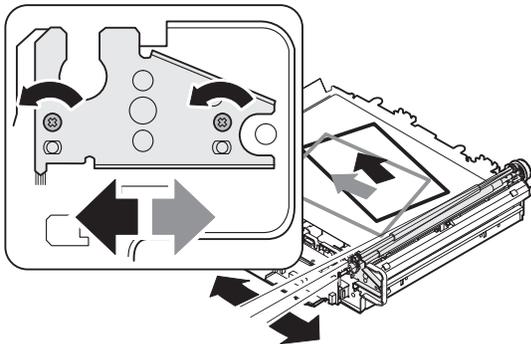
- 3) Press the [EXECUTE] key.

The grid pattern is printed. Check that the print line in the paper transport direction is in parallel with both edges.



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

- 4) Loosen the resist roller fixing screw, and change the resist roller angle.



The standard position is at the center.

Repeat procedures 3) – 4) until the condition of procedure 3) is satisfied.

## ADJ M6 Image density sensor adjustment

### ADJ 1 Image density sensor calibration

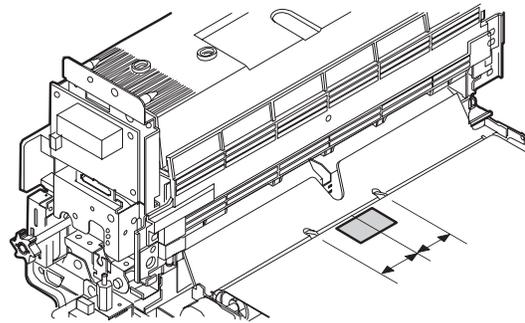
This adjustment must be performed in the following cases:

- When the image density sensor is replaced.
- When the transfer belt is replaced.
- When a U2 trouble occurs.
- When the PCU main PWB is replaced.
- When the EEPROM of the PCU main PWB is replaced.

The process control sensor gain adjustment means:

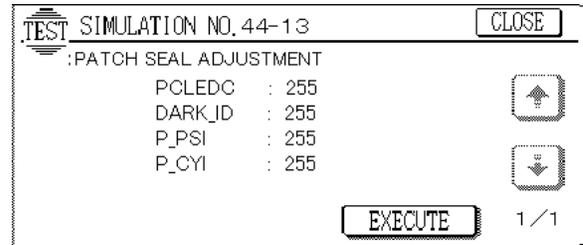
The detection level differs between machines due to variations in density detection sensors and parts. To prevent against this, attach a seal of a certain density on the belt to calibrate the sensor.

- 1) With the power OFF, open the right cover of the machine.
- 2) Pull out the transfer unit, and attach the adjustment sheet (UKOG-0281FCZZ) to the belt.  
(The attachment position is between the two separation pawls of the fusing unit.)



- 3) Return the transfer unit. With the front cover open, turn on the power.
- 4) Enter the SIM 44-13 mode.
- 5) Close the front cover.
- 6) Press the [EXECUTE] key.

The adjustment is automatically performed. When the adjustment is completed, the [EXECUTE] key returns to the normal display.



- 7) Check that the SIM 44-13 values are within the specifications.

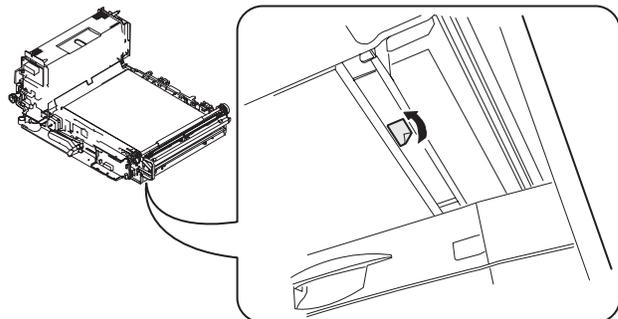
Check content	Spec
PCLEDC (Sensor current in color calibration)	128 or below
DARK_ID (Color image density sensor dark voltage)	30 or below
P_PSI (Read value of calibration sheet)	102 ± 5
P_CYI (Read value of calibration plate)	115 ± 30

\* When an error message is displayed, clean the sensor and the calibration plate, and adjust again.

\* If the above procedure cannot cancel the error, replace the sensor and the calibration plate.

- 8) Turn off the power.

- 9) Pull out the transfer unit, and remove the adjustment sheet.  
(The adjustment sheet is positioned in front of the cleaning blade at the back of the unit as the transfer belt rotates.)



10) Return the transfer unit.

NOTE: If the motor drive power is turned on immediately after attaching the adjustment sheet to the transfer belt, the adjustment sheet does not stop at the specified position and the transfer belt keeps rotating.

As a result, the adjustment sheet may be damaged by the transfer cleaning blade or the transfer cleaning blade may be damaged by the adjustment sheet.

To prevent against this, be sure to observe the following.

- 1) Before entering the SIM 44-13 mode, open the right cover of the machine to open the motor drive power line.
- 2) After completion of the adjustment, remove the adjustment sheet from the transfer belt.

## ADJ 2 Image density sensor sensing position adjustment

This adjustment must be performed in the following cases:

- When the image density sensor is replaced.
- When the image density sensor section is replaced.
- When a U2 trouble occurs.
- When the PCU main PWB is replaced.
- When the EEPROM of the PCU main PWB is replaced.

- 1) Enter the SIM 44-23 mode.
  - 2) Press the [EXECUTE] key. The adjustment is automatically performed, and the average data is displayed.
- When the operation is completed, the [EXECUTE] key is highlighted.

In case of an abnormal end, "ERROR" is displayed.

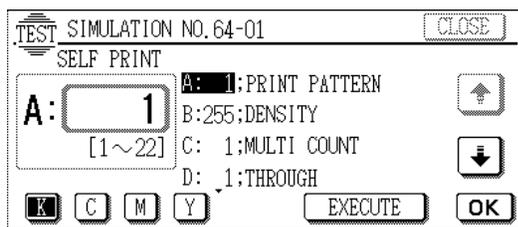
- When the ICU main PWB is replaced.
- When the EEPROM of the ICU main PWB is replaced.

## ADJ M7 Image skew adjustment (Scanner (Writing) unit)

This adjustment must be performed in the following cases:

- When the scanner (writing) unit is replaced.
- When the scanner (writing) unit is removed from the machine.
- When a color image mis-resist occurs.
- When the installing location is changed.

- 1) Enter the SIM 64-1 mode.  
Select the color mode of Black.



- 2) Set the values of A – D of the set item as shown in the table below, and make an A3 (11" x 17") copy. (The grid pattern is printed.)

\* Use the paper tray at the bottom.

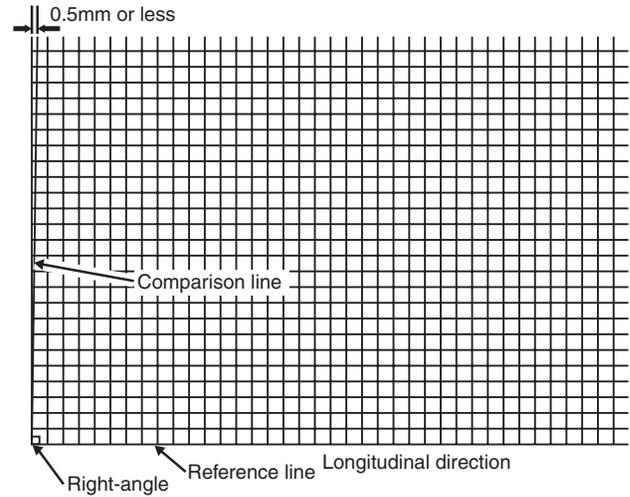
### SIM 64-1 set items

	Parameter	Set value
A	PRINT PATTERN	5
B	PRINT START GRADATION LEVEL	1
C	SELF PRINT Q'TY SETTING	1
D	DENSITY MODE	9

Enter the input value with the 10-key and press the [OK] key. When the [EXECUTE] key is pressed, printing is performed. Paper is selected by the set item E.

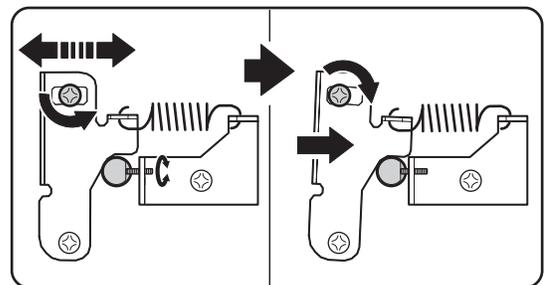
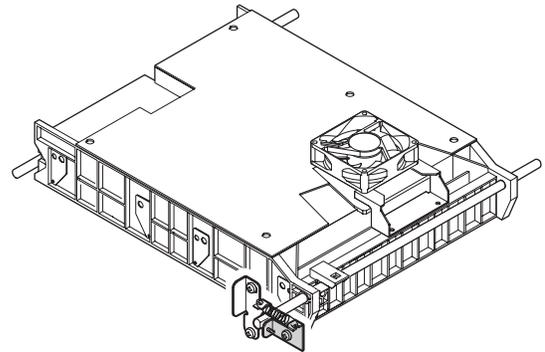
- 3) Check the distortion of the printed image.

If the right-angle level of the traverse print line is 0.5mm or less for the longitudinal print line of paper, there is no need to adjust.

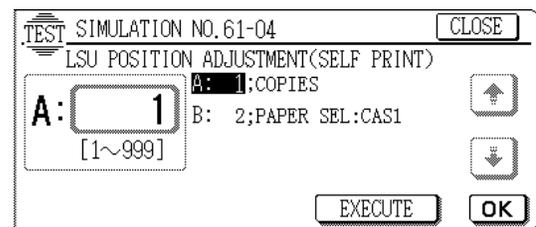


- 4) When there is any distortion on the image, loosen the red screw of the holder on the right edge of the chassis F side, and shift the LSU adjustment plate by means of the set screw to adjust the inclination of black.

After completion of the adjustment, fix the holder with the red screw.



- 5) Enter the SIM 61-4 mode.



- 6) Select A3 (11 x 17) paper and press the [EXECUTE] key. Paper is selected by the set item B.

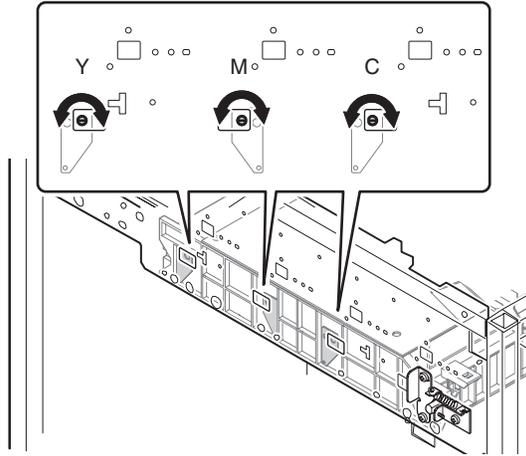
The check pattern is printed.

\* Use the paper tray at the bottom.

7) Check that the center shift between the Y/M/C print color patterns is within  $0 \pm 1$  step.

(Check the shift between the print patterns of the same color. Even though there is some shift between different colors, there is no problem.)

If it is not in the above range, turn the adjustment gear in the LSU adjustment hole with a screwdriver (-) to adjust each of CMY with Black as a reference. (There is no adjustment gear for Black.)



Compare the positions (front-rear) of the same color



Compare the positions (front-rear) of the same color print patterns.

Procedures 1) – 4) : Adjustment procedures of the black LSU

Procedures 5) – 7) : Adjustment procedures of the color LSU

## ADJ M8 Photoconductor phase adjustment

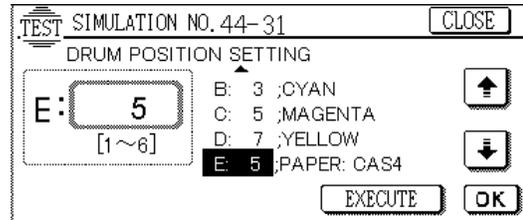
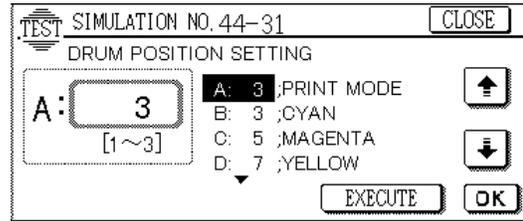
- \* The adjustment pattern is printed in A4R or 8.5" x 11"R size.
- \* The adjustment pattern photoconductor phase adjustment pitch (interval) differs. (12 division → 8 division)

This adjustment is required in the following cases:

- When the photoconductor drum is replaced.
- When the photoconductor drum is removed from the machine.
- When the photoconductor drum drive section is disassembled.
- When the photoconductor drum drive unit is replaced.
- When U2 trouble occurs.
- When PCU MAI PWB is replaced.
- When EEPROM on the PCU MAIN PWB is replaced.

### Photoconductor phase adjustment (SIM 44-31)

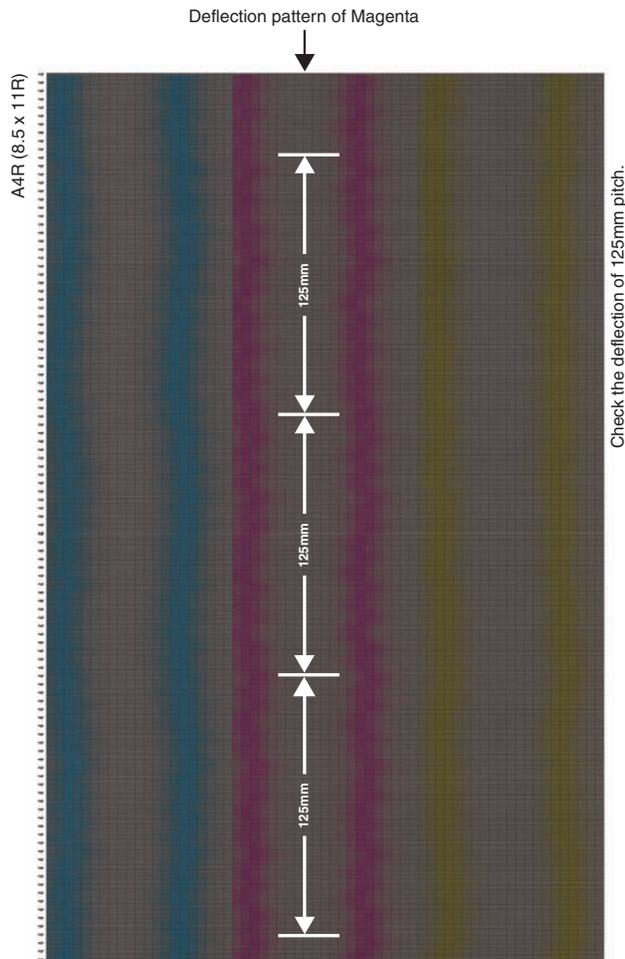
1) Enter the SIM 44-31 mode.



- 2) Enter "2" in the setup item A (PRINT MODE) with the 10-key, and press the [OK] key. (The default is "3.")
- 3) Select the paper tray with A4R (8.5 x 11R) paper in the setup item E (PAPER SELECT) and press the [OK] key.

NOTE: Use the lowest paper tray.

- 4) Press the [EXECUTE] key, and the drum deflection adjustment patterns (4 pages) are printed.



\* Pattern numbers 1, 3, 5, and 7 are printed on the output pattern.

- 5) Check the deflection of 125.6mm pitch for each of C, M, and Y in the four output patterns, and select the output pattern number with the smallest deflection as the set value of each color, and set the number to each of setup items B, C, and D. (After entering the adjustment value, press the [OK] key.)
- 6) After entering the adjustment value, enter "3" in the setup item A with the 10-key and press the [EXECUTE] key to print an adjustment pattern for checking again.

If the above procedure is not satisfactory, select the PRINT MODE 1 to print 12 print patterns.

This allows to make more detailed check and adjustment. The adjustment procedure is the same as procedure 5).

This procedure takes about 4 minutes.

NOTE: If there is an extra deflection other than the drum frequency (125.6mm pitch), check the set values of the RS motor and the fusing motor speed.

## ADJ M9A Image resist adjustment (Auto adjustment)

The following items are automatically adjusted.

- ADJ M9/ADJ1 main scanning direction copy magnification ratio adjustment (Scanner (writing) unit) (Black)
- ADJ M9/ADJ 2 main scanning direction image magnification ratio adjustment, image resist adjustment (Scanner (writing) unit) (Color)
- ADJ M10 sub scanning direction image resist adjustment (Scanner (writing) unit)

If this automatic adjustment of ADJ M9A is not satisfactory, perform the manual adjustment of ADJ M9 and ADJ M10.

This adjustment is required in the following cases:

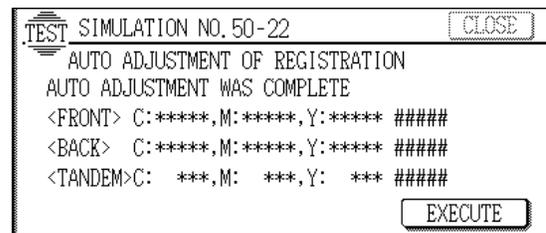
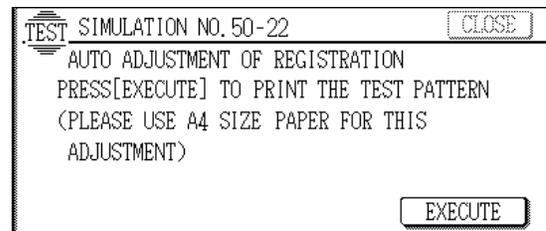
- When the scanner (writing) unit is replaced.
- When the scanner (writing) unit is removed from the machine.
- When the main scanning direction image magnification ratio adjustment (scanner (writing) unit) (Black) is performed.
- When color image mis-resist is generated in the main scanning direction.
- When color image mis-resist is generated in the sub scanning direction.
- When installation or the installing place is changed.
- When U2 trouble occurs.
- When ICU MAIN PWB is replaced.
- When EEPROM on ICU MAIN PWB is replaced.

### Note before adjustment

Before execution of this adjustment, check that the following adjustment have been properly completed.

- \* Photoconductor phase adjustment (ADJ M8)
- \* Image skew adjustment (scanner (writing) unit) (ADJ M7)

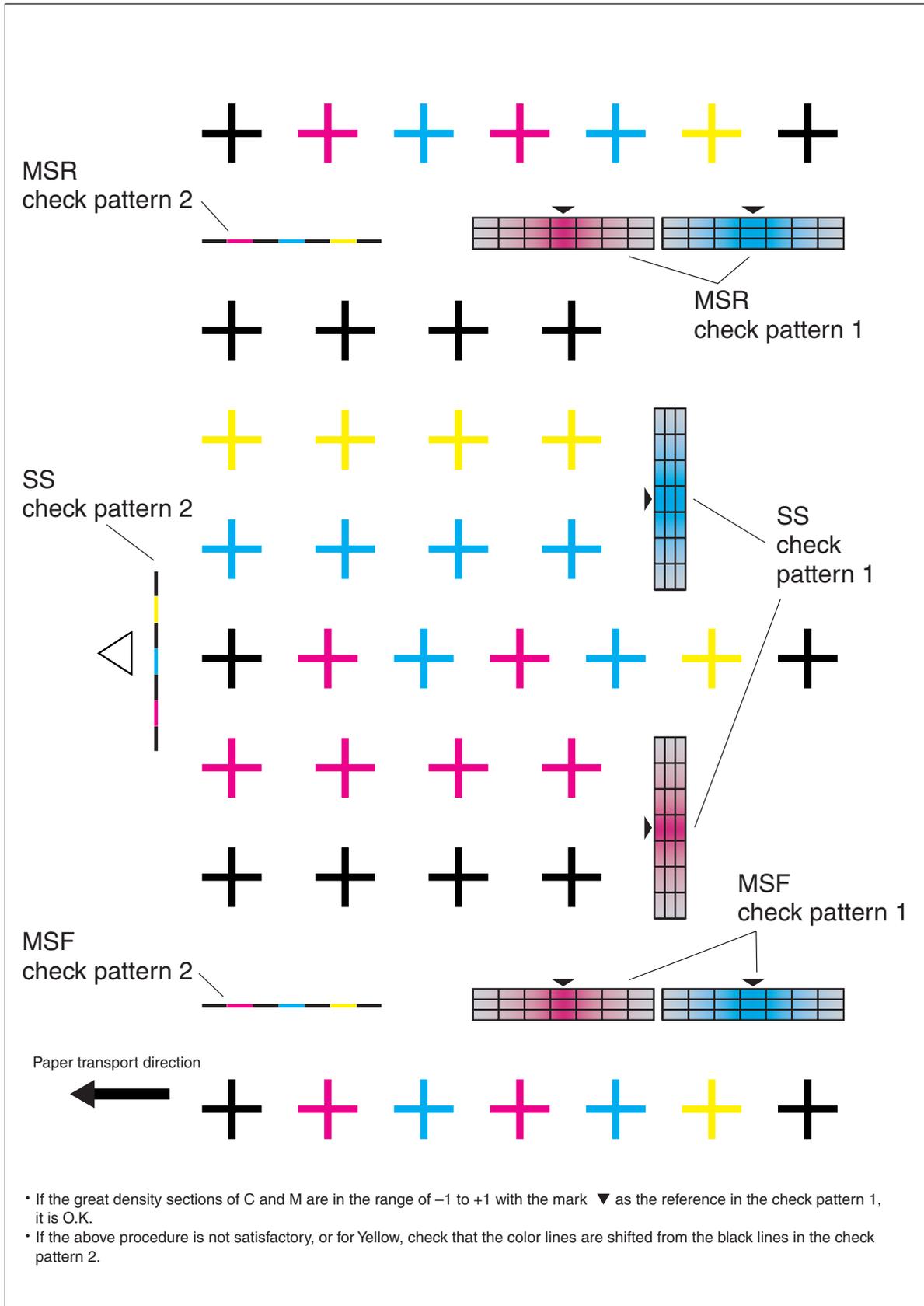
- 1) Enter the SIM 50-22 mode.



- 2) Press the [EXECUTE] key.  
 A4 or 8.5 x 11 paper is automatically selected and a check pattern is printed.

**[Main/sub scanning resist automatic adjustment check pattern]**

A4 or 8.5 x 11



3) Check the following items with the check pattern.

- \* Check that the section of the greatest density of C and M in MSR check pattern, MSF check pattern 1, and SS check pattern is in the range of  $\pm 1$  with the black triangle mark as the center reference.

If this check is difficult, perform the following procedure.

Check that the print lines of M and C in SS check pattern 2, MSF check pattern 2, and MSR check pattern 2 coincide with the print lines of K.

- \* Check that the print line of Y in the check (adjustment) pattern of MSR check pattern 2, MSF check pattern 2, and SS check pattern 2 coincides with the print line of K.

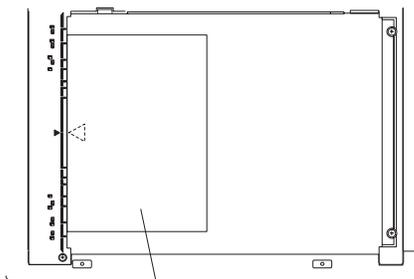
If the above conditions are satisfied, cancel the simulation and terminate the adjustment.

If the above conditions are not satisfied, perform the following procedures.

4) Set the printed check (adjustment) pattern on the document table.

At that time, adjust so that the white triangle mark comes to the center of the left side of the document table, and place 10 sheets of white paper on it.

Check that the check (adjustment) pattern is in close contact with the document table.



Check (adjust) pattern

5) Press the [EXECUTE] key.

The check (adjustment) pattern is scanned (read) and the image resist adjustment is automatically performed. (It takes about 30 sec for scanning (reading) and calculation.)

The calculated adjustment value is displayed together with the adjustment result (EXACT, ROUGH, ERROR).

EXACT: The adjustment has been normally completed.

ROUGH: The accuracy of the adjustment is lower than EXACT due to dirt, dusts, and improper placing of the check (adjustment) pattern, etc.

ERROR: Adjustment error due to erroneous scanning

When "ERROR" is displayed, check the following items and repeat procedures from procedure 1 or perform the manual adjustment of image resist (ADJ M9/ADJ 1/ADJ 2).

- \* The paper is not placed properly.
- \* Dirt and dust on the glass and mirrors.
- \* The check (adjustment) pattern is dirty, folded, or not in close contact with the document glass.

When the check (adjustment) pattern is normally scanned (read), the image resist adjustment is automatically performed and EXACT or ROUGH is displayed, go to procedure 6).

6) Press the [EXECUTE] key.

A4 or 8.5 x 11 paper is automatically selected and a check (adjustment) pattern is printed.

7) Perform the same procedure as procedure 3). If the image resist is within the specified range, adjustment is completed.

If the adjustment is repeated twice and the image resist is not within the specified range, perform the manual adjustment of image resist (ADJ M9/ADJ 1/ADJ 2).

If the image resist adjustment (auto) has been satisfactorily completed with SIM 50-22, there is no need to perform the following procedures.

- 1) ADJ M9 (Main scanning direction image resist adjustment/ Main scanning direction image magnification ratio adjustment) SIM 50-20
- 2) ADJ M10 (Sub scanning direction image resist adjustment) SIM 50-21

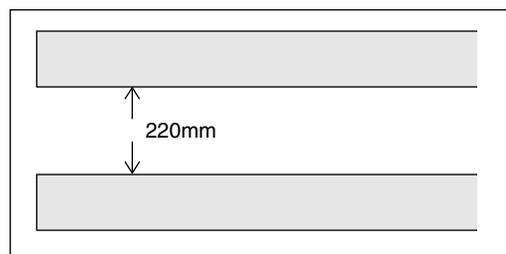
### **ADJ M9** Main scanning direction copy magnification ratio adjustment (Manual adjustment) (Scanner (Writing) unit) Main scanning direction image registration adjustment (Manual adjustment) (Scanner (Writing) unit)

### **ADJ 1** Main scanning direction copy magnification ratio adjustment (Scanner (Writing) unit) (Black)

This adjustment must be performed in the following cases:

- When the black scanner (writing) unit is replaced.
- When a U2 trouble occurs.
- When the ICU main PWB is replaced.
- When the EEPROM of the ICU main PWB is replaced.

- 1) Enter the SIM 50-10 mode.
- 2) Select H: BLACK LD MAG.
- 3) Press the [EXECUTE] key.
- 4) Check that the dimension inside the printed half tone pattern is 220mm.



Use one of the following paper sizes (A4/A3/11" x 8.5"/11" x 17")

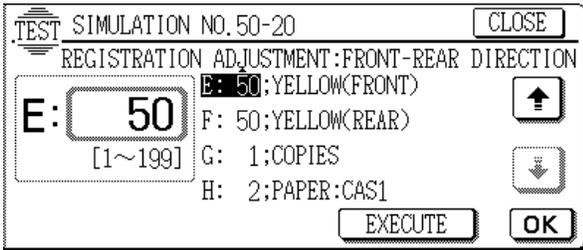
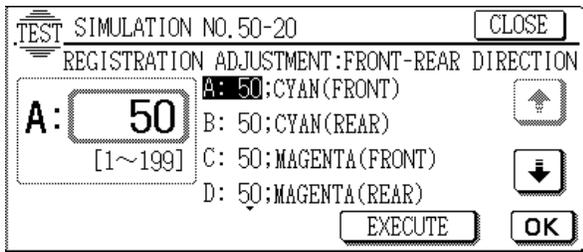
- 5) If the dimension is not as specified above, change the set value and perform an adjustment again.

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

**ADJ 2 Main scanning direction color image registration adjustment (Scanner (Writing) unit) (Color)**  
**Main scanning direction copy magnification ratio adjustment (Scanner (Writing) unit) (Color)**

This adjustment must be performed in the following cases:

- When the scanner (writing) unit is replaced.
  - When the scanner (writing) unit is removed from the machine.
  - When the main scanning direction image magnification ratio (scanner (writing) unit (Black)) is performed.
  - When a color image mis-resist occurs in the main scanning direction.
  - When the installing position is changed.
  - When a U2 trouble occurs.
  - When the ICU main PWB is replaced.
  - When the EEPROM of the ICU main PWB is replaced.
- 1) Enter the SIM 50-20 mode.



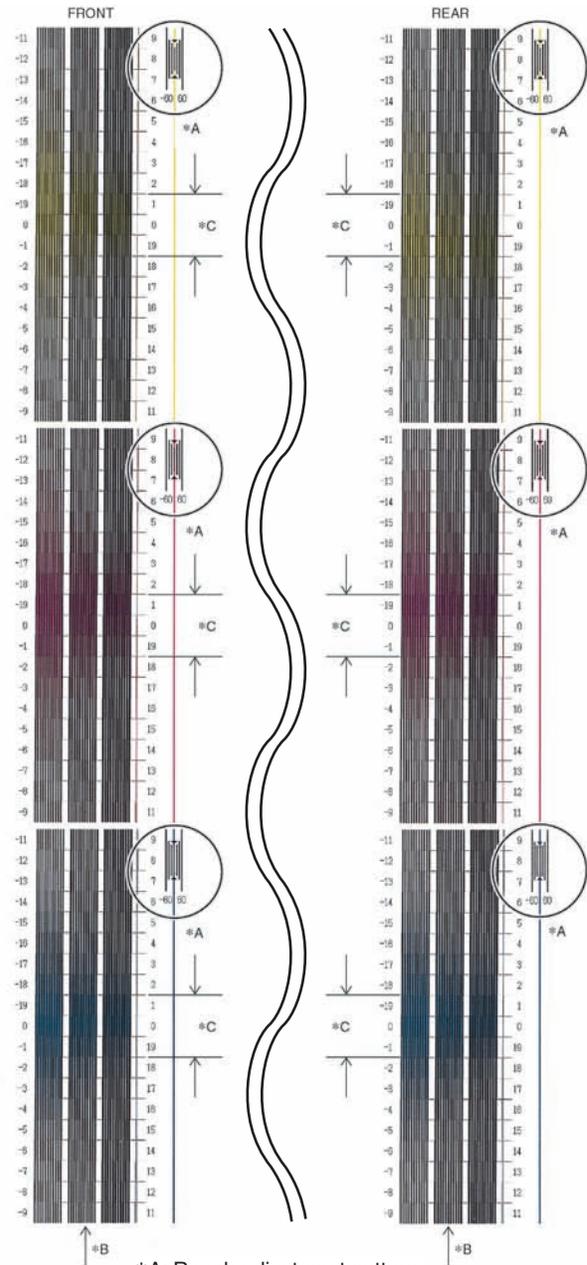
- 2) Select the paper feed cassette of A3 (11" x 17") paper in the setup item H (PAPER SEL).  
 \* Use the paper tray at the bottom.
- 3) Press the [EXECUTE] key. The adjustment pattern is printed.

- 4) Check the print patterns of the rough adjustment and the fine adjustment for equal color on the front and the rear side.

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

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

(If the fine adjustment print pattern is in the range of  $0 \pm 1$  for the scale of the fine adjustment reference pattern, there is no need to adjust.)

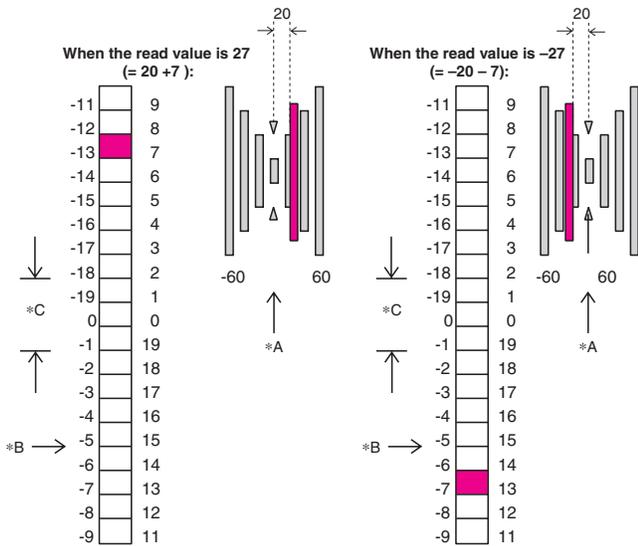


- \*A: Rough adjustment pattern
- \*B: Fine adjustment pattern
- \*C: Adjustment range ( $0 \pm 1$ )

### [How to read the pattern]

When deflection is made to the positive (+) side in the rough adjustment, increase the value on the positive (+) side.

When the deflection is made to the negative (-) side in the rough adjustment, increase the value on the negative (-) side.

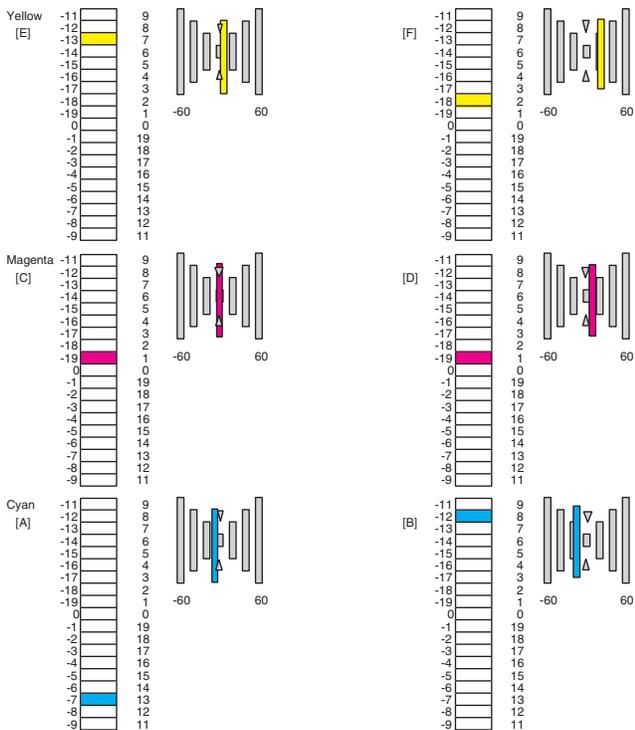


(Example) When the simulation is set to 105, newly set to 132 (= 105 + 27).

(Example) When the simulation is set to 105, newly set to 78 (= 105 - 27).

- \*A: Rough adjustment pattern
- \*B: Fine adjustment pattern
- \*C: Adjustment range

### [Main scan registration adjustment pattern]



(Example) Set the simulation values as shown below.

- |        |   |                    |
|--------|---|--------------------|
| A: 100 | → | A: 93 (=100 - 7)   |
| B: 112 |   | B: 100 (=112 - 12) |
| C: 95  |   | C: 96 (=95 + 1)    |
| D: 98  |   | D: 109 (=98 + 11)  |
| E: 102 |   | E: 109 (=102 + 7)  |
| F: 96  |   | F: 118 (=96 + 22)  |

Reset value

If the rough adjustment pattern or the fine adjustment pattern is not in the above range, perform the following procedures.

- 5) Calculate the shift from the adjustment reference position for each adjustment mode.

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

Shift (Correction value) = Rough adjustment shift + Fine adjustment shift

The interval between scales of the rough adjustment reference corresponds to 20. Be careful of polarities of the shift (positive or negative) when calculating.

- 6) Select the mode to be adjusted with the scroll key.
- 7) Add or reduce to or from the current adjustment value, enter the obtained value, and press the [OK] key.

- When the shift (correction value) is positive:  
Adjustment value = Current adjustment value + Shift (Correction value)
- When the shift (correction value) is negative:  
Adjustment value = Current adjustment value - Shift (Correction value)

- 8) Press the [EXECUTE] key.

The adjustment pattern is printed.

Check that the conditions of procedure 4) are satisfied.

Repeat procedures 4) - 8) until the conditions of procedure 4) are satisfied.

NOTE: When either of the adjustment values of the front and the rear adjustment mode is changed, the other adjustment print pattern may be varied. Be careful of that.

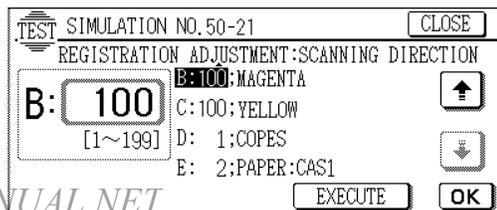
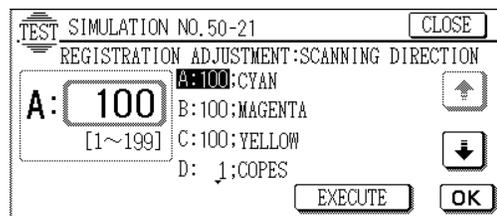
When the adjustment can be completed with a fine adjustment, perform the front adjustment mode first, and then perform the rear adjustment mode after completion of the front adjustment.

Before performing this adjustment, be sure to adjust the K magnification ratio (SIM 50-10, H) properly.

## ADJ M10 Sub scanning direction color image resist adjustment (Manual adjustment) (Scanner (Writing) unit) (Color)

This adjustment must be performed in the following cases:

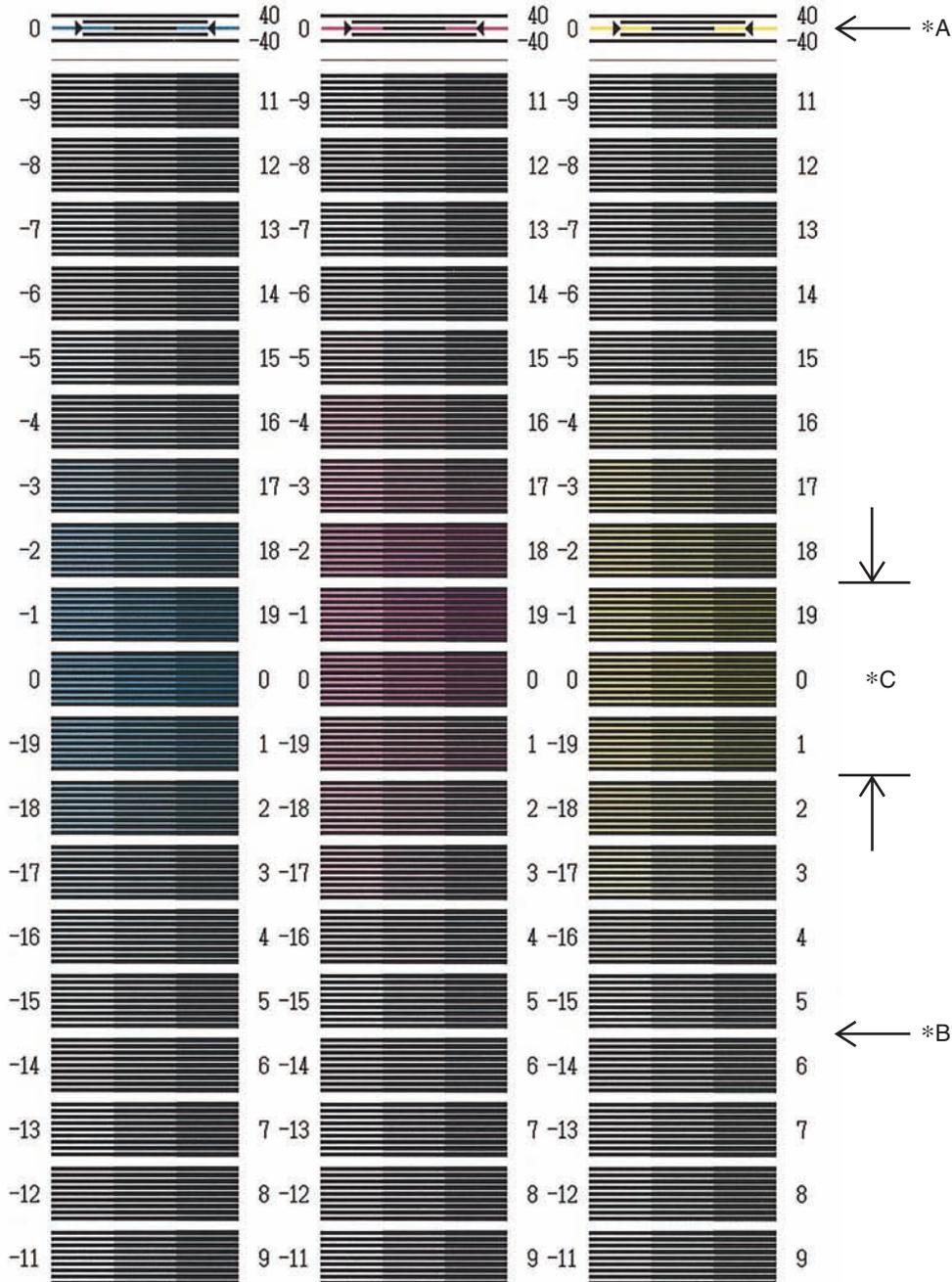
- When the scanner (writing) unit is replaced.
- When the scanner (writing) unit is removed from the machine.
- When a color image mis-resist occurs in the sub scanning direction.
- When the installing position is changed.
- When a U2 trouble occurs.
- When the ICU main PWB is replaced.
- When the EEPROM of the ICU main PWB is replaced.



- 1) Enter the SIM 50-21 mode.
- 2) Select the paper feed cassette of A4 (8 1/2" x 11") paper in the setup item E (PAPER SEL).
  - \* Use the paper tray at the bottom.
- 3) Press the [EXECUTE] key. The adjustment pattern is printed.

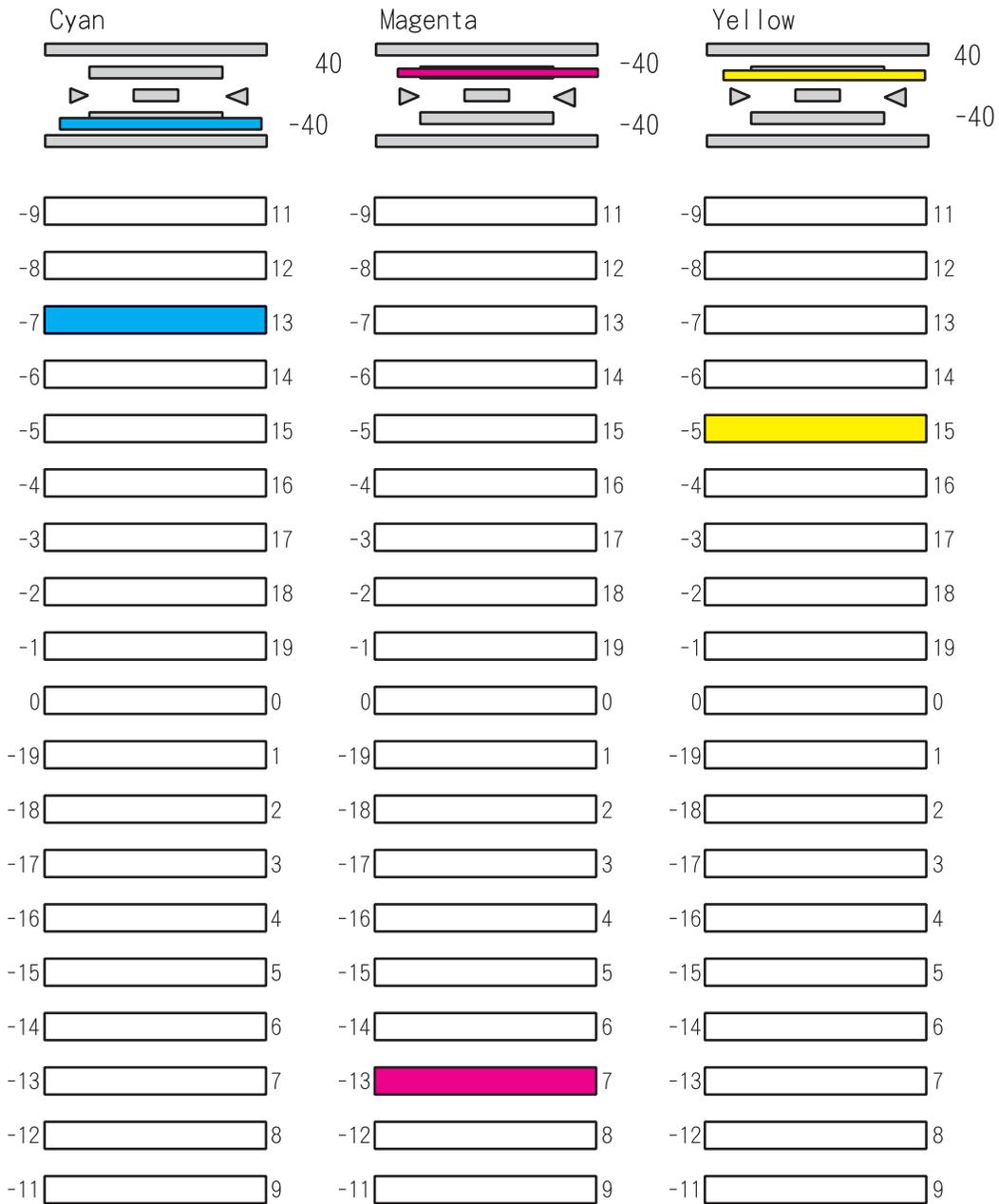
- 4) Check the rough adjustment print pattern position and the fine adjustment print pattern position for each color.
  - Rough adjustment print pattern check  
Check that the rough adjustment print pattern is at the center of the rough adjustment reference pattern.
  - Fine adjustment print pattern check  
Check that the fine adjustment print pattern is at the center of the fine adjustment reference pattern.

(If the fine adjustment print pattern is in the range of  $0 \pm 1$  for the scale of the fine adjustment reference pattern, there is no need to adjust.)



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

[Sub scan registration adjustment pattern]



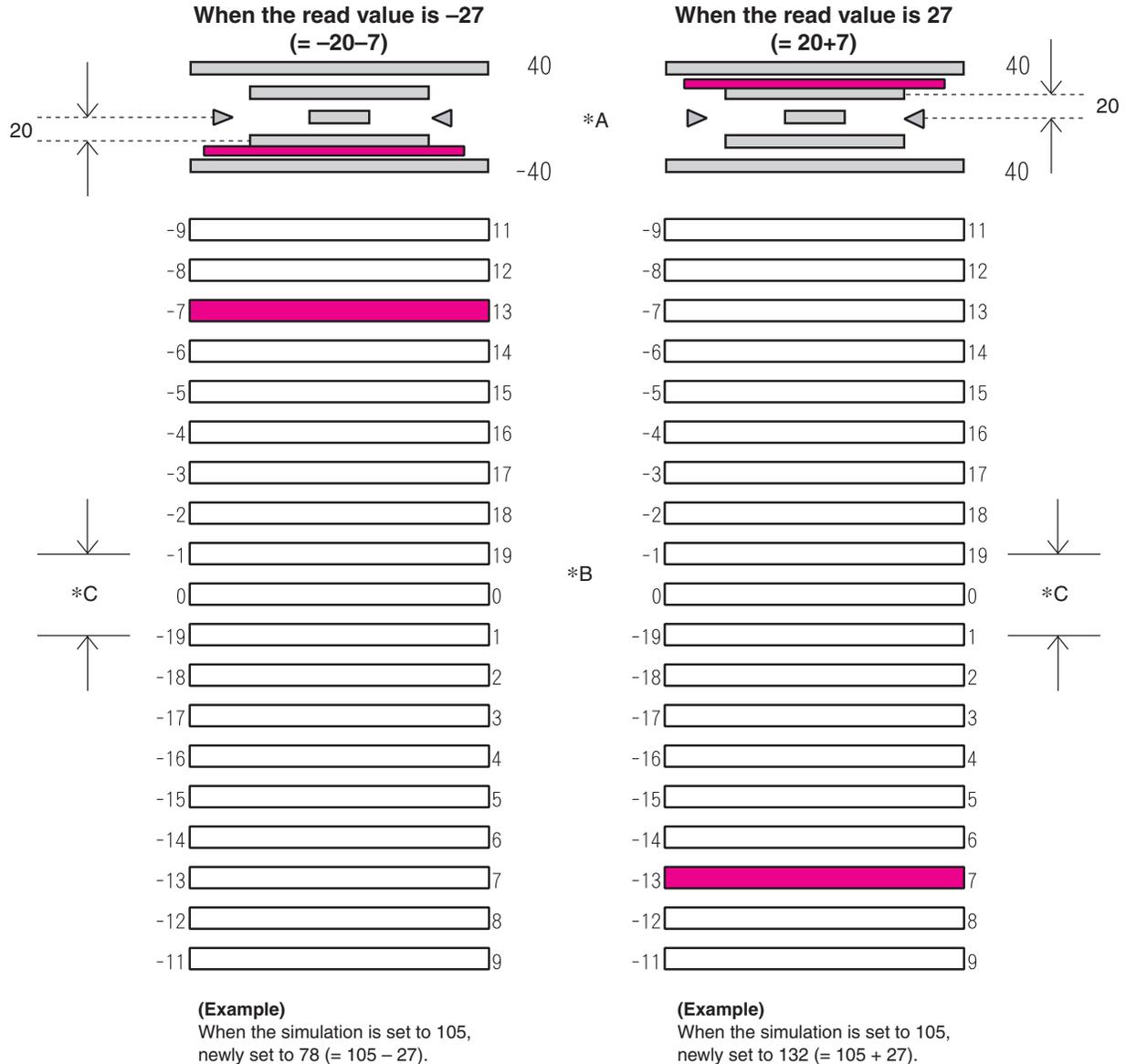
(Example) Set the simulation set values as shown below.

A: 100	→	A: 73 (=100 -27)
B: 112	Set value	B: 129 (=112 + 17)
C: 95		C: 110 (=95+15)

**[How to read the pattern]**

When deflection is made to the positive (+) side in the rough adjustment, increase the value on the positive (+) side.

When the deflection is made to the negative (-) side in the rough adjustment, increase the value on the negative (-) side.



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

If the rough adjustment pattern or the fine adjustment pattern is not in the above range, perform the following procedures

5) Calculate the shift from the adjustment reference position for each adjustment mode.

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

Shift (Correction value) = Rough adjustment shift + Fine adjustment shift

The interval between scales of the rough adjustment reference corresponds to 20. Be careful of polarities of the shift (positive or negative) when calculating.

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

7) Add or reduce to or from the current adjustment value, enter the obtained value, and press the [OK] key.

- When the shift (correction value) is positive:  
Adjustment value = Current adjustment value + Shift (Correction value)

- When the shift (correction value) is negative:  
Adjustment value = Current adjustment value - Shift (Correction value)

8) Press the [EXECUTE] key.

The adjustment pattern is printed.

Check that the conditions of procedure 4) are satisfied.

Repeat procedures 4) - 8) until the conditions of procedure 4) are satisfied.

NOTE: Before performing this adjustment, SIM 44-31 (drum phase adjustment) must have been adjusted properly.

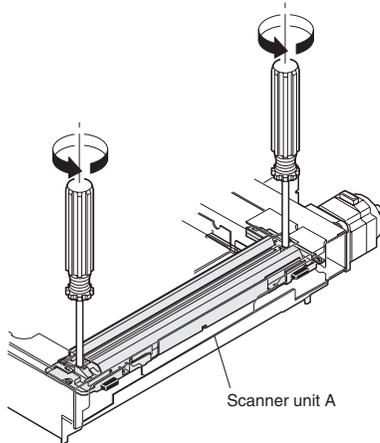
## ADJ M11 Image distortion adjustment

This adjustment must be performed in the following cases:

- When the scanner (reading) section is disassembled.
- When a copy image distortion occurs.

### ADJ 1 Scanner (Reading) unit parallelism adjustment

- 1) Loosen the screw which is fixing the scanner unit A and the drive wire, and remove the scanner unit A from the drive wire.

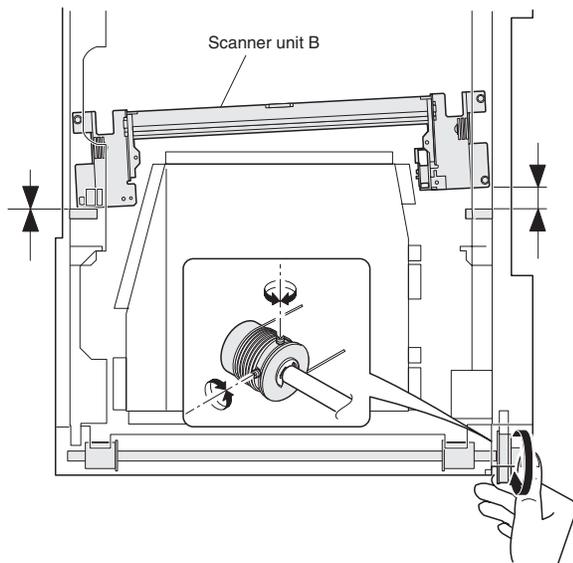


- 2) Manually turn the scanner drive gear to bring the scanner unit B into contact with the stopper.

At that time, if the scanner unit B makes contact with the two stoppers on the front and the rear frame simultaneously, the parallelism of the scanner unit B is proper.

If not, perform the following procedures.

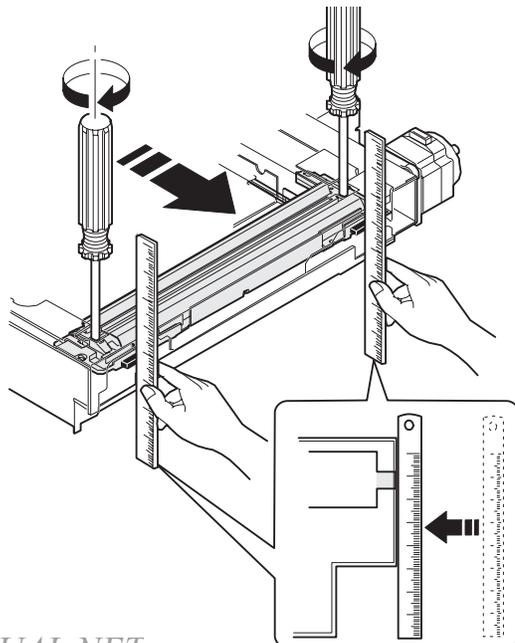
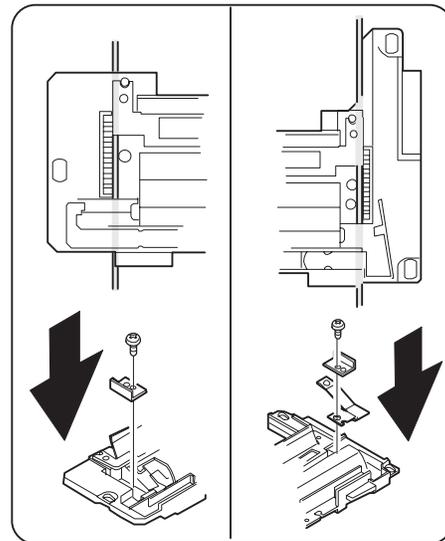
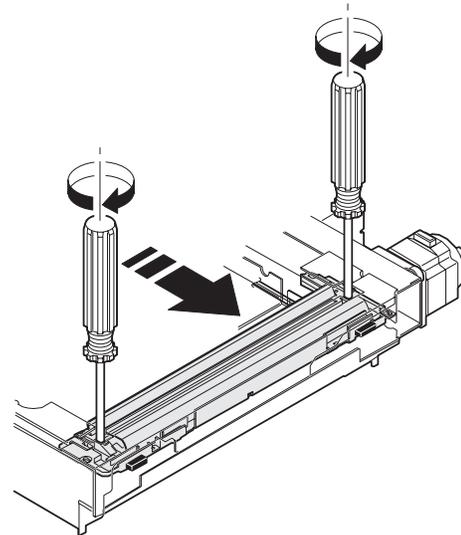
- 3) Loosen the fixing screw of the scanner unit drive pulley on the side where the scanner unit B is not in contact with the stopper.



- 4) While keeping the scanner unit drive shaft stationary, turn the scanner unit drive pulley manually so that the scanner unit B makes contacts with two stoppers on the front and the rear frame side simultaneously. (Change the relative positions of the scanner unit drive pulley and the drive shaft.)
- 5) Fix the scanner unit drive pulley fixing screw which was loosened in procedure 3).
- 6) Perform procedure 2).

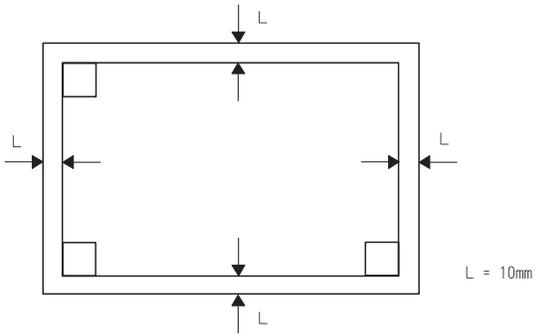
Repeat procedures 3) – 6) until the parallelism of the scanner unit B becomes proper.

- 7) With the scanner unit B in contact with two stoppers on the front and the rear frame side simultaneously, slide the scanner unit A until it comes to the right end of the frame, and fix it to the drive wire with the fixing screw.

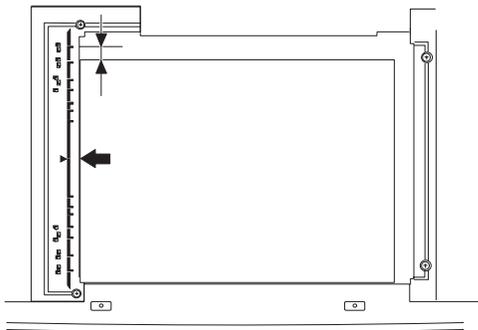


## ADJ 2 Image sub scanning direction distortion adjustment

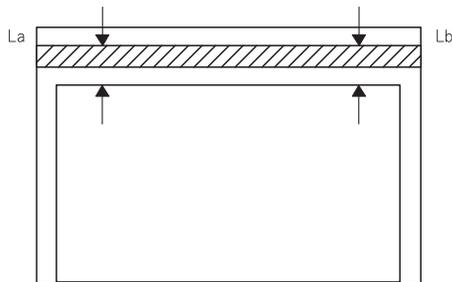
- 1) Make a test chart on A3 (11 x 17") paper as shown below. (Draw a rectangular with four right angles.)



- 2) Set the test chart made in procedure 1) on the document table. (Leave a space of about 30mm between the reference position and the test chart. With the document cover open, make a copy on A3 (11 x 17").

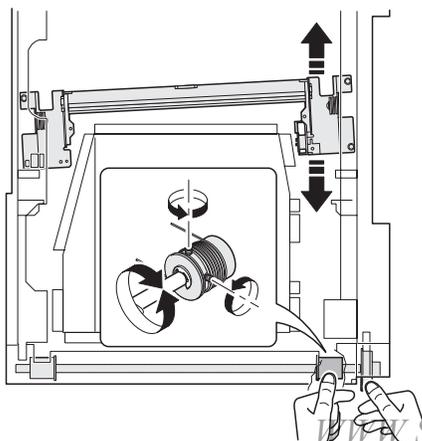


- 3) Check for distortion in the sub scanning direction. If  $L_a = L_b$ , there is no distortion.



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

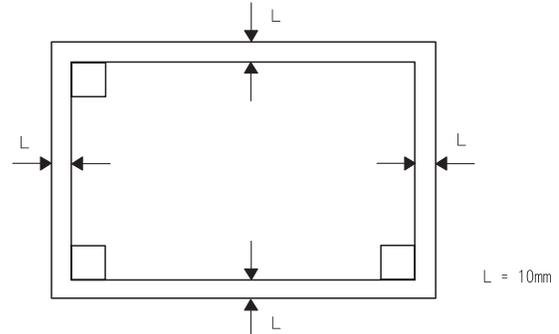
- 4) Loosen either of two fixing screws of the scanner unit drive pulley. (Either one on the front or the rear side will do.)



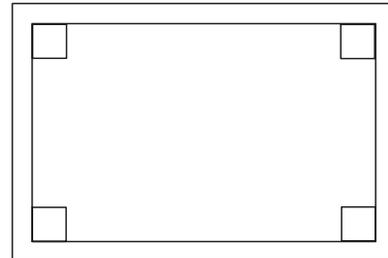
- 5) With the scanner unit drive shaft kept stationary, turn the scanner unit drive pulley manually to change the parallelism of scanner units A and B. (Change the relative positions of the scanner unit drive pulley and the drive shaft.)
- 6) Tighten the scanner unit drive pulley fixing screw. Repeat procedures 2) – 6) until the condition of procedure 3) is satisfied.

## ADJ 3 Image scanning direction distortion adjustment

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

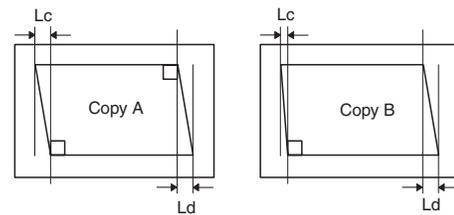


- 2) Set the test chart made in procedure 1) on the document table. With the document cover open, make a copy on A3 (11 x 17").
- 3) Check for distortion in the main scanning direction. If the four angles of the rectangle on the copy are right angles, there is no distortion. (Completion of the adjustment)



If there is some distortion in the main scanning direction, perform the following procedures

- 4) Check for a difference between the right distortion and the left distortion (balance).



Left distortion is equal to right distortion.  
 $L_c = L_d$

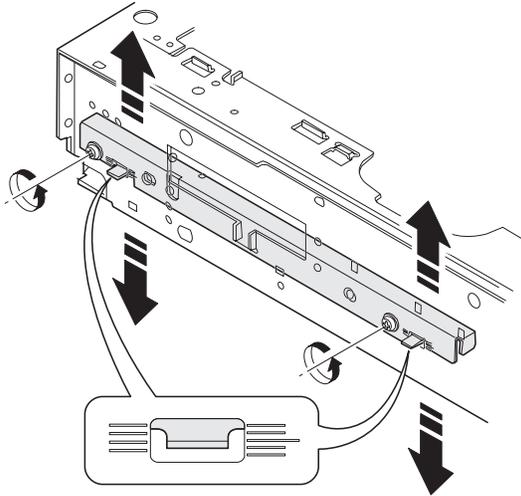
Left distortion is not equal to right distortion  
 $L_c \neq L_d$

If  $L_c = L_d$ , there is no difference between the left distortion and the right distortion.

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

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

- 5) Change the height balance of the front frame side scanner rail. Perform procedures 2) – 5) until there is no difference between the left distortion and the right distortion.

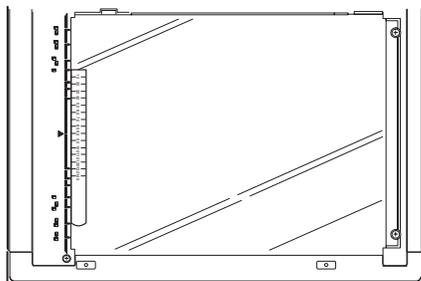


- 6) When there is no difference between the left distortion and the right distortion, change the height of the scanner rail on the front frame side.
- 7) Set the test chart made in procedure 1) on the document table, and make a copy on A3 (11 x 17") paper. Check that the main scanning distortion is within the specified range. Repeat procedures 6) – 7) until the main scanning direction distortion is within the specified range.

### ADJ M12 Image focus (main scanning direction copy magnification ratio) adjustment (CCD position adjustment)

This adjustment must be performed in the following cases:

- When the CCD unit is removed from the machine.
  - When the CCD unit is replaced.
  - When the copy image focus is improper.
  - When the copy magnification ratio in the main scanning direction is improper.
- 1) Enter the SIM 48-1 mode.
  - 2) Set the set item B to 50 (initial value).
  - 3) As shown in the figure below, place a scale on the original table.



- 4) Make a normal copy on A4 paper.
- 5) Compare the scale image length and the actual scale length.
- 6) Obtain the main scanning direction copy magnification ratio according to the following formula.

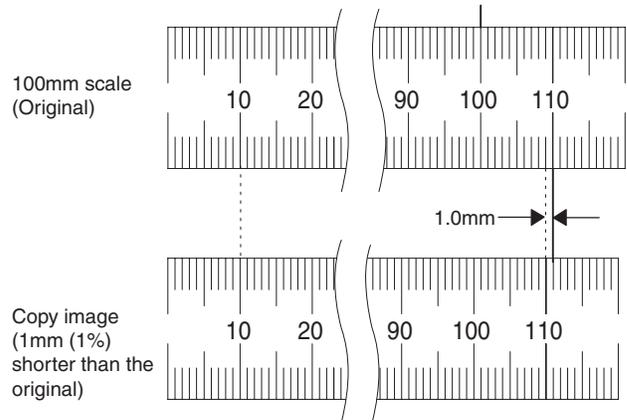
Main scanning direction copy magnification ratio

$$= \frac{(\text{Original length} - \text{Copy length})}{\text{Original length}} \times 100 [\%]$$

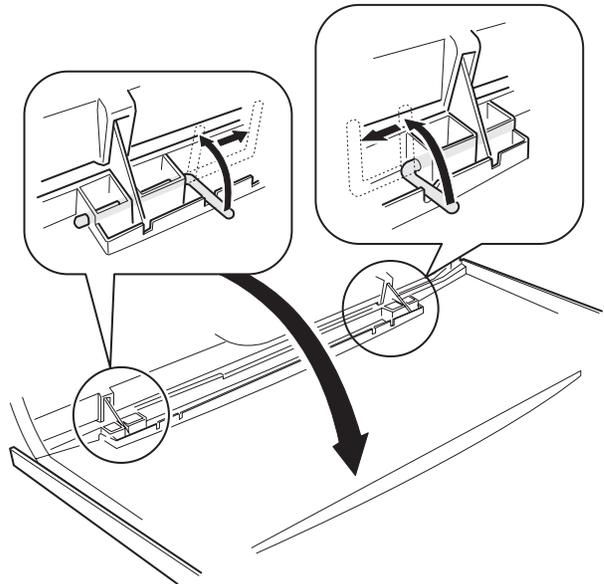
(Example) Fit 10mm of the scale with 10mm of the copied scale and compare them.

Main scanning direction copy magnification ratio

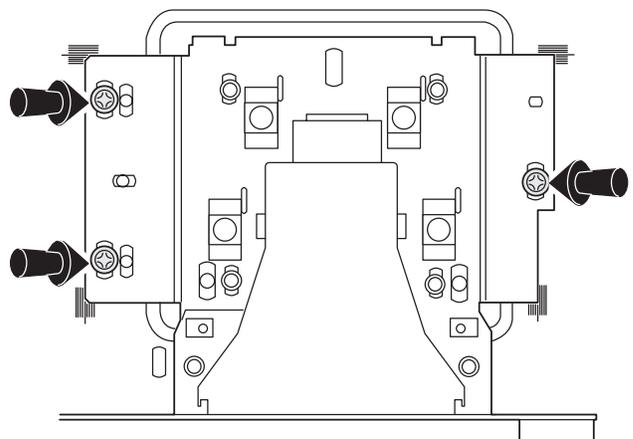
$$= \frac{100 - 99}{100} \times 100 = 1$$



- 7) Remove the original guide L and R, and remove the table glass.
- 8) Remove the dark box cover.
- 9) Remove the slide pin of the front cover unit.

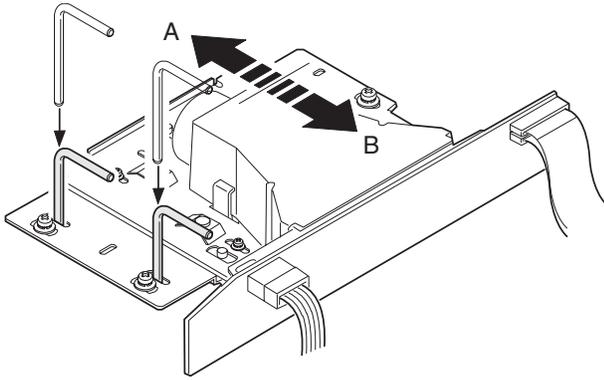


- 10) Loosen the CCD unit fixing screws.



\* Never loosen the screws which are not indicated in the figure above. If loosened, the CCD unit must be replaced.

11) Insert the slide pin as shown below, and make positioning in the sub scanning direction. (Initial positioning is completed.)



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

If the copy magnification ratio is not in the range of  $100 \pm 1\%$ , perform the following procedure.

Repeat procedures 12) and 13) until the copy magnification ratio is within the range of  $100 \pm 1\%$ .

When the copy image is longer than the original, move in the direction of B.  
 When the copy image is shorter than the original, move in the direction of A.  
 One scale of scribe line corresponds to 0.2%.

13) Change the installing position in the CCD sub scanning direction to adjust the magnification ratio.

NOTE: Due to the structure of the optical system, when the CCD unit fixing position is changed with SIM 48-1 set to 50, the copy magnification ratio is adjusted to the specified level ( $100 \pm 1.0\%$ ) and the specified resolution is provided.

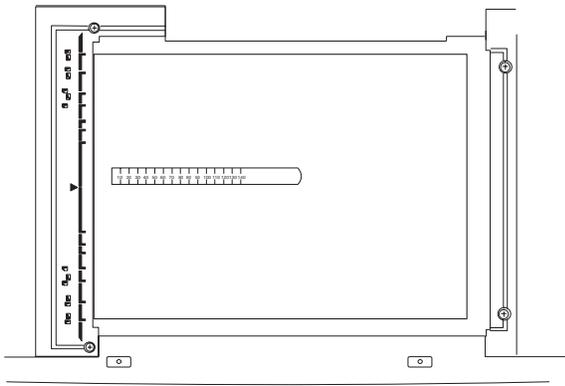
### ADJ M13 Sub scanning direction copy magnification ratio adjustment

This adjustment must be performed in the following cases:

- When the copy magnification ratio in the copy image sub scanning direction is improper.
- When the scanner motor is replaced.
- When the scanner motor control PWB is replaced.
- When a U2 trouble occurs.
- When the PCU main PWB is replaced.
- When the EEPROM of the PCU main PWB is replaced.

Before this adjustment, perform the focus adjustment (CCD unit installing position adjustment).

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



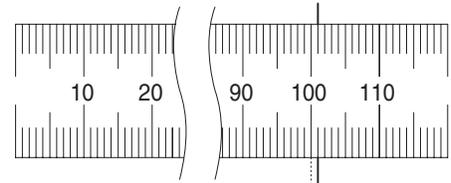
2) Enter the SIM 48-1 mode.

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

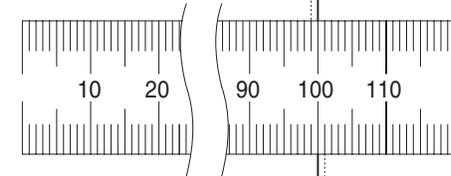
Copy magnification ratio

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

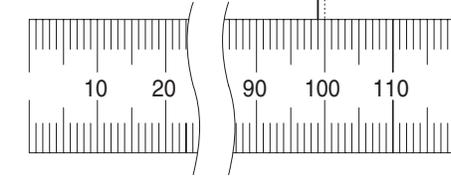
(Example 1)  
Copy A shorter than the original



Scale  
(Original)



(Example 2)  
Copy B longer than the original



4) Check that the copy magnification ratio is within the specified range ( $100 \pm 1\%$ ).

If the copy magnification ratio is within the specified range ( $100 \pm 1\%$ ), the adjustment is completed.

If not, perform the following procedure.

5) Change the scan mode adjustment value of SIM 48-1.

When the adjustment value is increased, the sub scanning direction copy magnification ratio is increased.

A change in the adjustment value by 1 corresponds to a change in the copy magnification ratio by about 0.1%.

Repeat procedures 3) – 5) until the copy magnification ratio is within the specified range ( $100 \pm 0.28\%$ ).

NOTE: Fix the adjustment value of SIM 48-1 adjustment mode (F – R) to 50.

### ADJ M14 Image position adjustment (Main scanning direction) (Print engine)

This adjustment must be performed in the following cases:

- When the paper tray is replaced.
- When the paper tray section is disassembled.
- When the manual paper feed tray is replaced.
- When the manual paper feed tray is disassembled.
- When the duplex section is disassembled.
- When the duplex section is installed or replaced.
- When the large capacity paper feed tray is installed or replaced.
- When the large capacity paper feed tray is disassembled.
- When a U2 trouble occurs.
- When the PCU main PWB is replaced.
- When the EEPROM of the PCU main PWB is replaced.

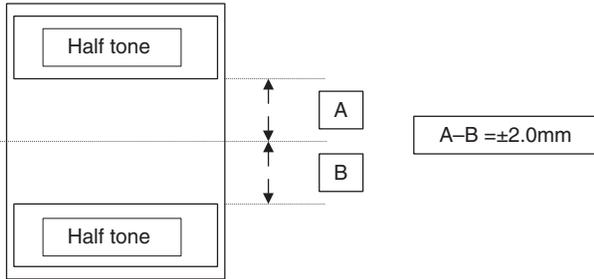
1) Enter the SIM 50-10 mode.

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

3) Press the [EXECUTE] key.

The adjustment pattern is printed.

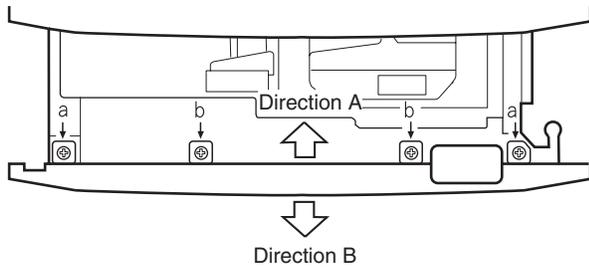
- 4) Check the adjustment pattern image position.  
 Measure the dimensions from the paper center to the front and the rear edge of the adjustment pattern to check that they are the same.  
 If  $A - B = \pm 2.0\text{mm}$ , there is no need to adjust.  
 If the above condition is not satisfied, perform the following procedure.



- 5) Change the adjustment value.  
 (Enter the adjustment value and press the [OK] key.)  
 When the adjustment value is increased, the image is shifted backward.  
 When the adjustment value is decreased, the image is shifted forward.  
 A change in the set value by 1 corresponds to a change in the shift by about 0.1mm.  
 Repeat procedures 3) – 5) until the condition of procedure 4) is satisfied.

If the above condition cannot be satisfied with the above procedures, perform the following procedures.

- 6) Loosen the paper feed tray cover fixing screw, and shift the installing position in the arrow direction.  
 Perform procedures from 2) again.



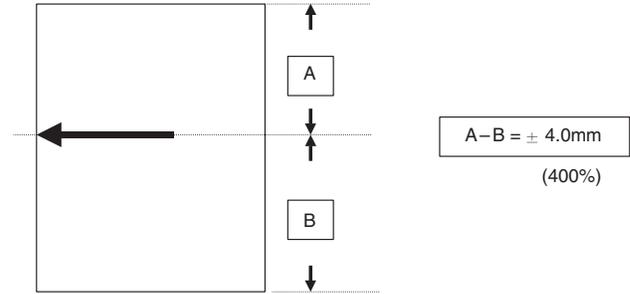
Perform the above procedures for all paper feed units.

### ADJ M15 Image position adjustment (Main scanning direction) (Scanner (Writing))

This adjustment must be performed in the following cases:

- When the scanner (reading) section is disassembled.
  - When the scanner (reading) unit is replaced.
  - When the RADF section is disassembled.
  - When the RADF unit is installed.
  - When the RADF unit is replaced.
  - When a U2 trouble occurs.
  - When the ICU main PWB is replaced.
  - When the EEPROM of the ICU main PWB is replaced.
- 1) Set the adjustment chart on the document table.
  - 2) Enter the SIM 50-12 mode.  
 The copy magnification ratio is automatically set to 400%.
  - 3) Select the OC mode with the scroll key.
  - 4) Press the COPY key. A copy is made.

- 5) Check the copy image center position.  
 If  $A - B = \pm 4.0\text{mm}$ , there is no need to adjust. (400%)  
 If the above condition is not satisfied, perform the following procedures.



- 6) Change the adjustment value.  
 (Enter the adjustment value and press the OK key.)  
 When the adjustment value is increased, the image is shifted backward. When the adjustment value is decreased, the image is shifted forward.  
 A change in the set value by 1 corresponds to a change in the shift by about 0.4mm. (400%)  
 Repeat procedures 4) – 6) until the condition of procedure 5) is satisfied.

### ADJ M16 Image position, image loss, void area adjustment

This adjustment must be performed in the following cases:

- When the scanner (reading) section is disassembled.
- When the scanner (reading) unit is replaced.
- When the resist roller section is disassembled.
- When a U2 trouble occurs.
- When the PCU main PWB is replaced.
- When the EEPROM of the PCU main PWB is replaced.

This adjustment uses SIM 50-2 and SIM 50-1.

The above two simulations are used in the following manner.

SIM 50-2: Rough adjustment

SIM 50-1: Fine adjustment

If the desired value is obtained by SIM 50-2, there is no need to perform SIM 50-1.

(Adjustment item)

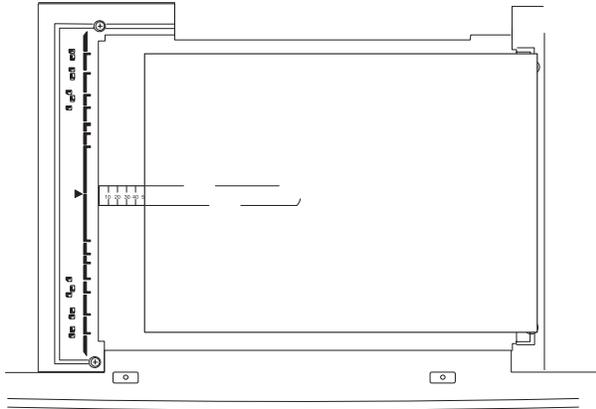
No.	Adjustment item	SIM 50-2 set item	SIM 50-1 set item	Adjustment value
1	Lead edge image loss	IMAGE LOSS	IMAGE LOSS	$4.0 \pm 1.0\text{mm}$
2	Lead edge void area	DEN-A	DEN-A	$4.0 \pm 1.0\text{mm}$
3	Rear edge void area	DEN-B	DEN-B	$6.0 \pm 1.0\text{mm}$
4	Image reference position		RRC-A	
5	Paper timing		RRC-B	
6	Distance between image lead edge position and scale of 10mm x 10	L1		
7	Distance between paper lead edge and image lead edge x 10	L2		

Adjustment items 1 – 3 can be adjusted either with SIM 50-1 or with SIM 50-2.

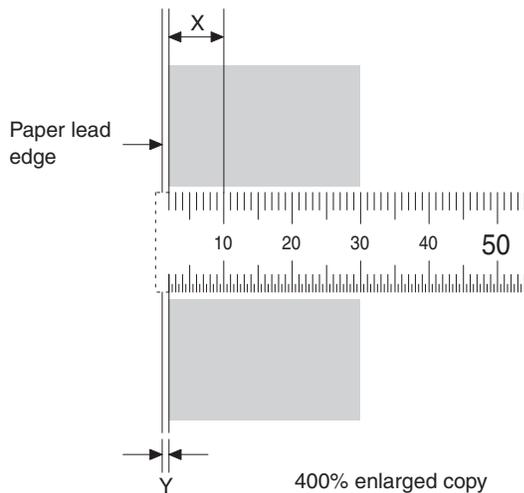
The adjustment values 6 and 7 will affect the adjustment items 4 and 5 automatically.

Therefore, adjusting the items 6 and 7 will lead to the same result as adjusting the items 4 and 5 directly.

- Place a scale on the original table as shown below.  
Note that the scale must be placed in parallel with the scanning direction and that the scale lead edge must be in close contact with the original guide plate.



- Enter SIM 50-2.
  - Set IMAGE LOSS and DEN-A to "20".
  - Set all the set items of L1 and L2 to "0".
  - Make a copy at 400%. (Original table mode)
  - Measure the copied image dimensions X and Y.
- X: Distance between the copy image lead edge and the scale of 10mm  
Y: Distance between the paper lead edge and the copy image lead edge.



- Multiply X, Y, and Z by 10 to obtain L1, L2, and L3 respectively. Enter the values of L1, L2, and L3.  
 $L1 = X \times 10$   
 $L2 = Y \times 10$
- Cancel the simulation, make a copy, and check that the lead edge image loss and void area are within the specified range shown below.  
Lead edge image loss:  $4.0 \pm 1.0\text{mm}$   
Lead edge void area:  $4.0 \pm 1.0\text{mm}$

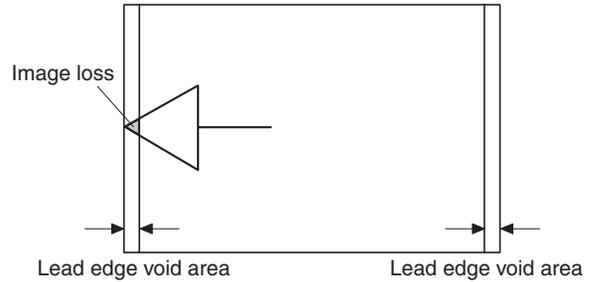
If the above specifications are not satisfied, perform the following procedures.

- Enter SIM 50-1.
- Set a scale in the same manner as procedure 3), and make a copy at 50% and at 400% in the original table mode.
- Measure the distance between the paper lead edge and the copy image lead edge of 50% copy and of 400% copy.
- Check that there is no difference between the above distance of 50% copy and that of 400% copy.

If there is a difference of 1.5mm or above, change the adjustment value of RRC-A.

Repeat procedures 10) to 12) until the above specification is satisfied.

- If the lead edge void area is not within the specified range, change the DEN-A value.
- If the lead edge void area is not within the specified range, change the IMAGE LOSS value.
- If the rear edge void area is not within the specified range, change the DEN-B value.



	Adjustment item	Adjustment value	Note
IMAGE LOSS	Lead edge image loss	$4.0 \pm 1.0\text{mm}$	The greater the set value is, the greater the image loss is.
DEN-A	Lead edge void area	$4.0 \pm 1.0\text{mm}$	The greater the set value is, the greater the void area is.
DEN-B	Rear edge void area	$6.0 \pm 1.0\text{mm}$	The greater the set value is, the greater the void area is.

## ADJ M17 Copy quality adjustment

### (1) Note before execution of copy quality adjustment

#### (Necessary conditions for execution of copy quality adjustment)

Before performing color quality adjustment, the following adjustments must have been completed normally, which will affect copy quality. The importance level is as shown below.

**(The following adjustment items directly affect copy quality and should be performed in advance to the copy quality adjustment.)**

1) Adjustment items: ADJ M7, ADJ M8, ADJ M9, ADJ M10

ADJUSTMENT ITEM				SIMULATION
ADJ M7	Image skew adjustment (Scanner (Writing) unit)			64-1 61-4
ADJ M8	Photoconductor phase adjustment			44-31
ADJ M9	Main scanning direction copy magnification ratio adjustment (Manual adjustment) (Scanner (Writing) unit) Main scanning direction image registration adjustment (Manual adjustment) (Scanner (Writing) unit)	ADJ 1	Main scanning direction copy magnification ratio adjustment (Scanner (Writing) unit) (Black)	50-10
		ADJ 2	Main scanning direction color image resist adjustment (Scanner (Writing) unit) (Color) Main scanning direction copy magnification ratio adjustment (Scanner (Writing) unit) (Color)	50-20
ADJ M10	Sub scanning direction color image resist adjustment (Manual adjustment) (Scanner (Writing) unit) (Color)			50-21

The user color balance adjustment must be set to the default (center).

WORK ITEM	PURPOSE	NOTE
Default setting for User Color balance adjustment (Special mode)	Set the color balance to the standard state.	Check that it is set to the center.

SIM 26-55 must be set to DISABLE.

SIM No	ITEM	Normal setting (Default)	Phenomenon when set to ENABLE	NOTE
26-55	MODE SETUP	DISABLE	Higher image contrast with higher clearness / Lower gradation	Set to DISABLE when adjusting the copy quality.

The set value of SIM 46-27 must be set to the default.

SIM No	ITEM	SPEC	Phenomenon when the set value is changed	Phenomenon when the value is outside the normal value range	NOTE
		Default			
46-27	A (Color copy mode)	70	When the set value is increased, the black toner quantity on black lines and in black character outline section is decreased. On the other hand, when the set value is decreased, the black toner quantity on black lines and in black character outline section is increased.	In Text - Printed Photo/ Text/ Text - Photo copy mode, sharpness or clearness of black lines and black characters is degraded.	Set to 70 when adjusting the copy quality.
	B (Black-and-white copy mode)	50			In Text - Printed Photo/ Text/ Text - Photo copy mode, the black toner quantity on black lines and in black character outline section. (Sharpness of black lines and black characters is changed.)

The set value of the following simulation must be set to the default.

SIM No	ITEM	Normal setting (Default)	Phenomenon when the set value is changed	NOTE
46-1	A	50	The density and color balance in the low density section of color copy are changed.	Set to the default when adjusting the copy quality. Do not adjust the density in the low density section by using this simulation.
	B	50		
	C	50		
	D	50		
	E	50		
	F	50		
	G	46		
	H	46		
	I	46		
46-2	A - O	50	The density in the low density section of monochrome copy is changed.	Set to the default when adjusting the copy quality.
46-10-19	A - O	500	The color copy density and color balance are changed. (each copy mode)	
46-20	A - O	500	The color copy density and color balance of all copy modes are changed.	

All the functions of SIM 44-1 must be set to ENABLE.

SIM No	ITEM	NORMAL SETTING CONDITION	Phenomenon when set to DISABLE		NOTE
44-1	DEVE	ENABLE	Toner concentration correction for developer use frequency is not performed.	Improper copy, toner dispersion, image high density section abnormality, developer dispersion, insufficient image density	All functions must be set to ENABLE.
	HUMID	ENABLE	Process section corrections for change in humidity (toner concentration, transfer voltage, resist roller rotation speed correction) are not performed.	Improper color balance, abnormality, improper copy, toner dispersion, developer dispersion, improper image density, image shift, image flow, image dirt	
	DM POSI	ENABLE	OPC drum phase correction is not performed.	Image color shift, banding	
	HT	ENABLE	Half-tone image density correction is not performed.	Improper half-tone image density, improper copy, improper color balance, tone jump	
	TC	ENABLE	Transfer voltage correction for a change in humidity or paper kind is not performed.	Half-tone image section abnormality, improper image density, low density inside image outline	
	MD	ENABLE	Correction (laser power) for use frequency of OPC drum (change in sensitivity) is not performed.	Insufficient image density	
	AR EXE	ENABLE	Automatic resist adjustment		
	AR ERR	ENABLE	Automatic resist adjustment error check		

**(The following adjustment items affect copy quality, but there is no need to adjust them frequently. In case of a trouble, however, they should be checked and adjusted.)**

1) Adjustment item: ADJ M1, ADJ M2, ADJ M4, ADJ M6

ADJUSTMENT ITEM				SIMULATION
ADJ M1	DV doctor gap adjustment			
ADJ M2	DV roller main pole position adjustment			
ADJ M4	High voltage adjustment	ADJ 1	Main charger grid voltage adjustment	8-2
		ADJ 2	DV bias voltage adjustment	8-1
		ADJ 3	Transfer voltage adjustment	44-30
ADJ M6	Image density sensor adjustment	ADJ 1	Image density sensor calibration	44-13
		ADJ 2	Image density sensor sensing position adjustment	44-23

**(The following adjustment items do not affect copy quality directly.)**

1) Adjustment items: ADJ M5, ADJ M11, ADJ M12, ADJ M14, ADJ M15, ADJ M16, ADJ M18, ADJ M19, ADJ M20, ADJ M23, ADJ M24, ADJ M25

**(Relationship between servicing contents and copy quality adjustment)**

Note that the procedures before and after the copy quality adjustment differ depending on the conditions of the machine and the servicing contents.

Follow the copy quality adjustment procedure flow to perform procedures according to the conditions.

There are following 5 major cases.

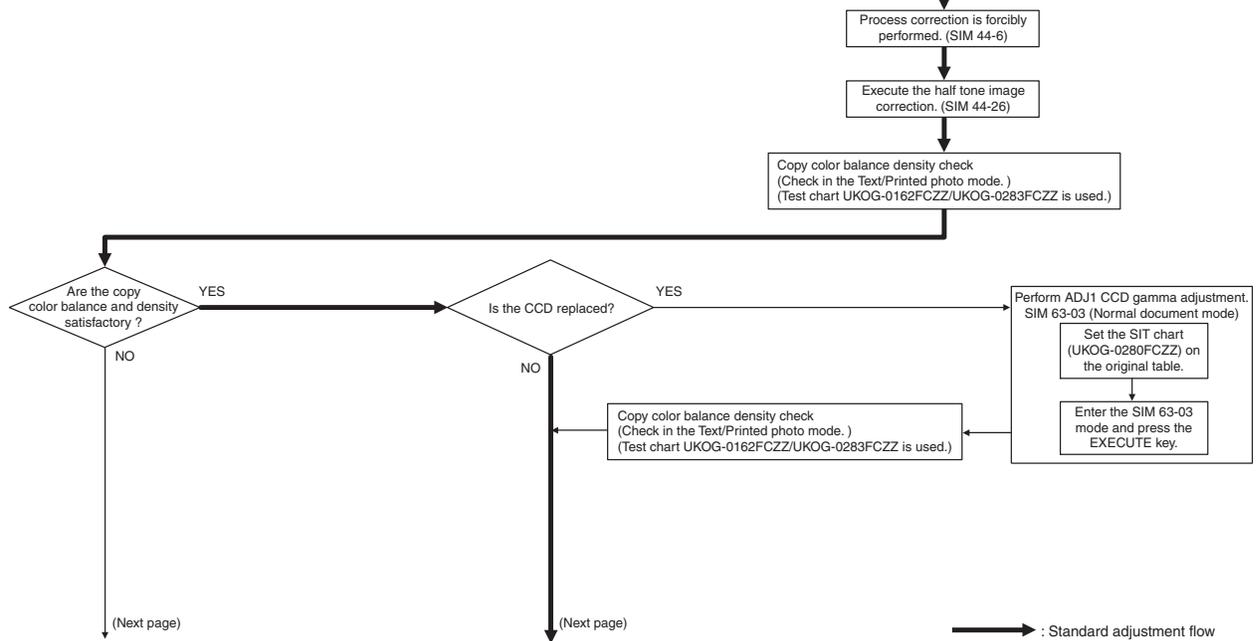
- 1) When installing
- 2) When performing the periodic maintenance
- 3) When replacing consumable parts in repair work
- 4) When not replacing consumable parts in repair/check work
- 5) When perform in repair/check work

## (2) Copy quality adjustment procedure flow

Perform the copy quality adjustment referring to the following work flow.

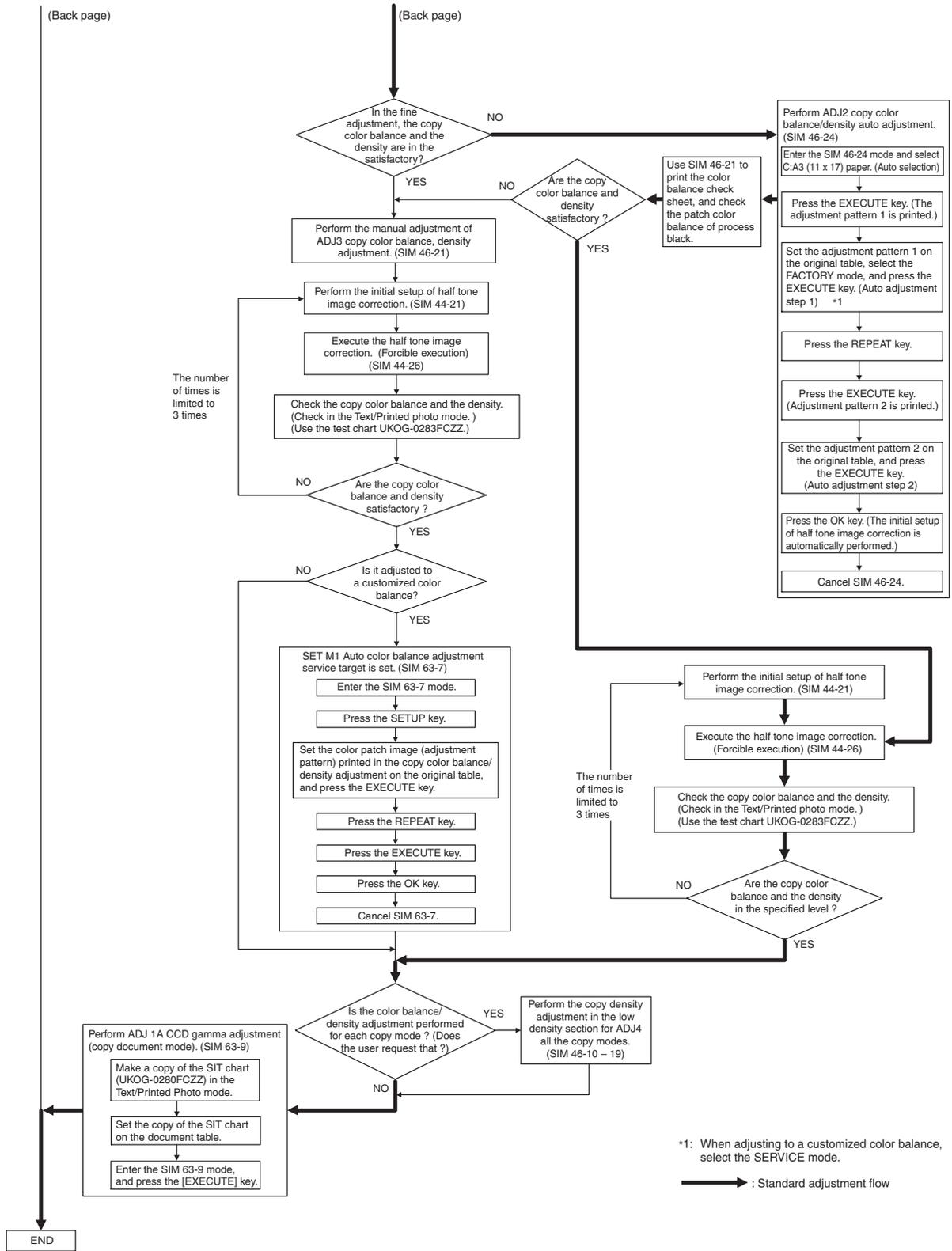
No	JOB No	Work item	Simulation	When installing	Repair (When a consumable part is replaced)/maintenance						When in repair/check (without replacing consumable parts)	
					After replacing OPC drum	After replacing developer	After replacing transfer belt	After disposing transfer section waste toner	After cleaning scanner (reading) section	When in periodic maintenance		
1	ADJ M3	Toner concentration reference control level setup	25	2	*		*					
2		Developer counter clear	24	5		*						
3		OPC drum counter clear	24	7		*						
4	ADJ M5	Image density sensor adjustment	44	13				*			*	
5	ADJ M6	Image density sensor position adjustment	44	23				*			*	
6	ADJ M7	Image skew adjustment	64	1							*	
7	ADJ M8	OPC drum phase adjustment	44	31	*	*						
8		Transfer section waste toner counter clear	24	8				*				
9		Half-tone correction level is set to zero.	44	27		*	*					
10	ADJ M9A (ADJ M9)	Main scan direction image resist adjustment	50	22 (Auto)/20 (Manual)							*	
11	ADJ M9A (ADJ M10)	Sub scan direction image resist adjustment	50	22 (Auto)/21 (Manual)							*	

The necessary work items for each condition are marked with " \*,"  
When replacing a consumable part, /when repairing or checking (without replacement of a consumable part) / when installing the machine, follow the work flow below.



(Back page)

(Back page)



\*1: When adjusting to a customized color balance, select the SERVICE mode.

→ : Standard adjustment flow

## Copy color balance and density check

Check the color balance and the density by making copies of Sharp gray chart and the serviceman chart.

### a. Note for the copy color balance check

To check the copy color balance and the density, use Sharp gray chart and the serviceman chart and set the copy density in the Text/Printed Photo mode to Manual 3 and make a copy in the color mode and in the black and-white mode.

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

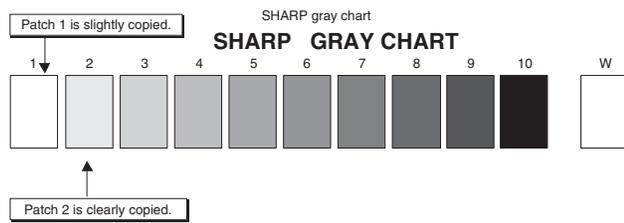
Be sure to use the specified paper for color.

### [Sharp gray chart]

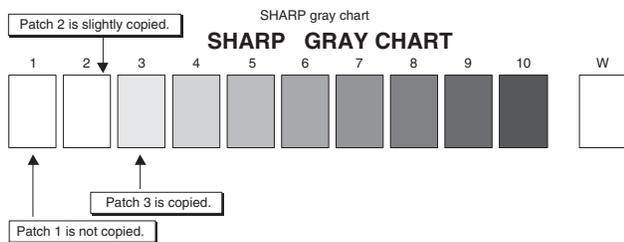
The copy image density of Sharp gray chart must be as follows:

NOTE: Use the color test chart (UKOG-0283FCZZ) to check the color balance.

(Color copy)



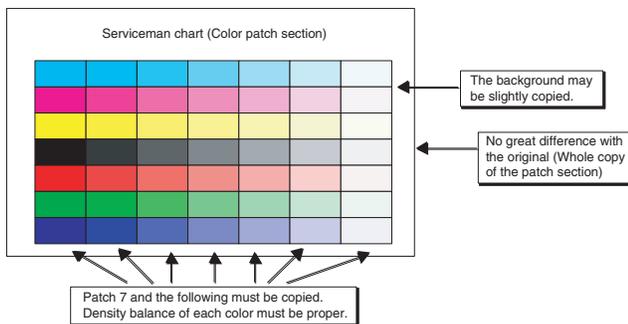
(Black-and-white copy)



### [Serviceman chart (UKOG-0283FCZZ)]

Check the color balance of Serviceman chart copy is as shown below.

(Color copy)



## ADJ 1 CCD gamma adjustment (CCD calibration) (Normal document mode)

This adjustment must be performed in the following cases:

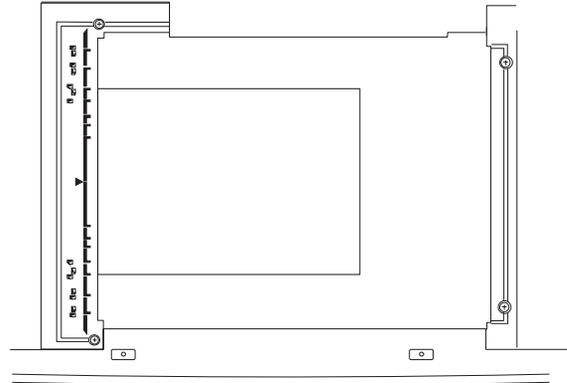
- When the CCD unit is replaced.
- When a U2 trouble occurs.
- When the PCU main PWB is replaced.
- When the EEPROM of the PCU main PWB is replaced.
- When replacing a part in the scanner (reading) section.
- When the CCD unit is replaced, be sure to perform this adjustment.

## (1) Precautions for adjustment

- 1) Check that the table glass and No. 1, 2, 3 mirrors and lenses are free from dust and dirt. (If there is dust and dirt, clean with alcohol.)
- 2) Check that there is no dirt or scratch on BK1 and BK2 patches of SIT chart (UKOG-0280FCZZ).  
If there is dirt, clean with alcohol.  
If there is scratch, replace the chart with new one.

## (2) Adjustment procedures

- 1) Set the SIT chart (UKOG-0280FCZZ) to the left edge of the original table, and fit the center of SIT chart with the center of the glass holder.



When SIT chart is not available, execute SIM 63-5 to set the CCD gamma to the default. This method, however, provides a lower adjustment accuracy than the method by using SIT chart.

NOTE: Check that the SIT chart (UKOG-0280FCZZ) is closely placed on the original table.

- 2) With the SIT chart fixed, close the original cover.
- 3) Enter the SIM 63-03 mode, and press the [EXECUTE] key.

The automatic adjustment is started. During the automatic adjustment, the [EXECUTE] key is highlighted. When the adjustment is completed, the key returns to the normal display.

NOTE: The SIT chart (UKOG-0280FCZZ) is affected by light (especially by ultraviolet rays) and temperature and humidity. Put it in a bag (clear file, etc.) and store in a dark place.

## ADJ 2 Copy color balance adjustment (Auto)

This adjustment must be performed in the following cases:

When a consumable part (developer, OPC drum, the transfer belt) is replaced.

- When the CCD unit is replaced.
- When a U2 trouble occurs.
- When the ICU main PWB is replaced.
- When the EEPROM of the ICU main PWB is replaced.

### a. Outline

The color balance adjustment (auto adjustment) is the automatic adjustment of cyan, magenta, yellow, and black copy density with SIM 46-24.

(There are following two modes of auto color balance adjustment.)

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

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

If the copy color balance is shifted by some reason, the user performs the color balance adjustment to correct it.

If, however, there is a basic problem in the machine, or if the machine environment is changed largely, this function does not serve as an effective means.

While the automatic color balance adjustment by the serviceman allows adjustment even when the machine environment is changed largely, providing normal color balance. If there is a basic problem in the machine, repair it and adjust to provide normal color balance.

The above points must be fully understood for proper operation.

When this adjustment is performed, the color balance adjustment of all the copy modes are changed.

(However, the color balance adjustment level of the user program is not changed.)

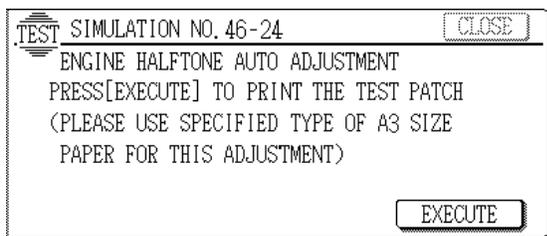
**b. Note for performing the color balance adjustment (Auto adjustment)**

- 1) The print engine section must be properly adjusted. (ADJ M1 – M16)
- 2) CCD gamma adjustment must be properly adjusted. (ADJ M17/ADJ 1)
- 3) When setting the color patch image (adjustment pattern) paper on the original table, place 5 sheets of white paper on the color patch image paper.
- 4) Be sure to use the specified color paper.  
Before execution of the copy quality check and the copy quality adjustment, be sure to execute the following corrections forcibly to set the image forming section to the optimum state.

- Execute the process correction forcibly. (SIM 44-6)
- Execute the half-tone image correction forcibly. (SIM 44-26)

**c. Adjustment procedure (Auto color balance adjustment by the serviceman)**

- 1) Enter the SIM 46-24 mode.



- 2) Select A3 or 11 x 17 paper (auto select) and press the EXECUTE key.

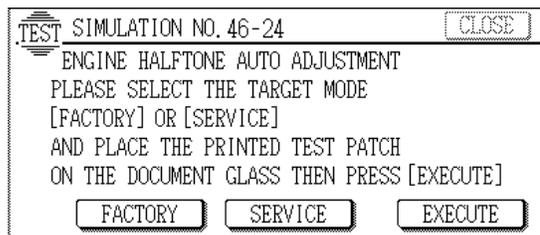
The color patch image (adjustment pattern) is printed.

- 3) Set the color patch image (adjustment pattern) printed in procedure 2) on the original table so that the dark density side of the color patch image comes to the left side. Place 5 sheets of white paper on the color patch image (adjustment pattern) paper.

- 4) Press the FACTORY key on the operation panel and press the EXECUTE key.

The copy color balance adjustment (step 1) is automatically performed, and the color balance check patch image is printed. Wait for a while until the operation menu of procedure 5) is displayed.

When the color balance is customized by the manual color balance (SIM 46-21) according to the user's request and then the color balance is registered as the service target by SIM 63-7, select the service target in order to adjust to that color balance.



NOTE: (Descriptions on the factory and the service key button in the color balance automatic adjustment menu)

There are two kinds of gamma targets for the color balance automatic adjustment: factory and service. The factory key button and the service key button are used to select between them.

Factory target gamma: Standard color balance (Fixed)

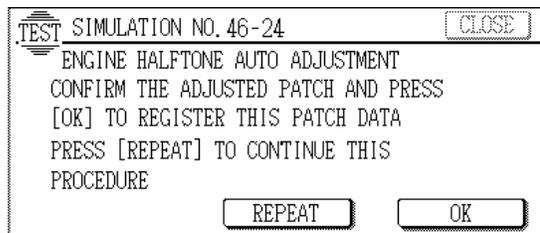
Service target gamma: Color balance can be customized according to the user request. (Variable)

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

Both are set to the standard color balance gamma.

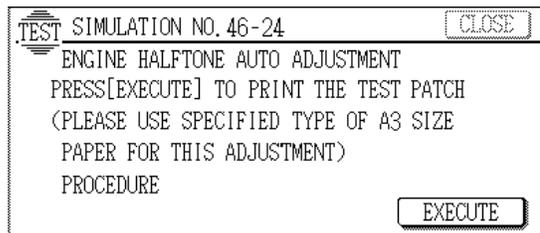
In the service target, a customized color balance can be registered with SIM 63-7. In the factory target, it cannot be changed.

- 5) Press the REPEAT key on the operation panel.



- 6) Press the EXECUTE key.

The color patch image (adjustment pattern) is printed.

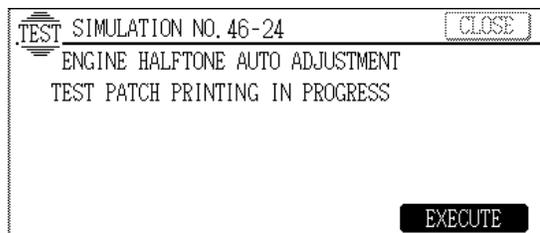


- 7) Set the color patch image (adjustment pattern) printed in procedure 6) on the original table so that the darker density side comes to the left side. Place 5 sheets of white paper on the color patch image (adjustment pattern) paper.

- 8) Press the EXECUTE key.

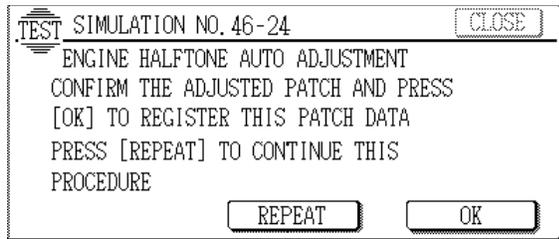
The copy color balance adjustment (step 2) is automatically performed, and the color balance check patch image is printed.

Wait for a while until the operation menu of procedure 9) is displayed.



9) Press the OK key on the operation panel.

The initial setup of half tone image correction is performed according to this adjustment data.

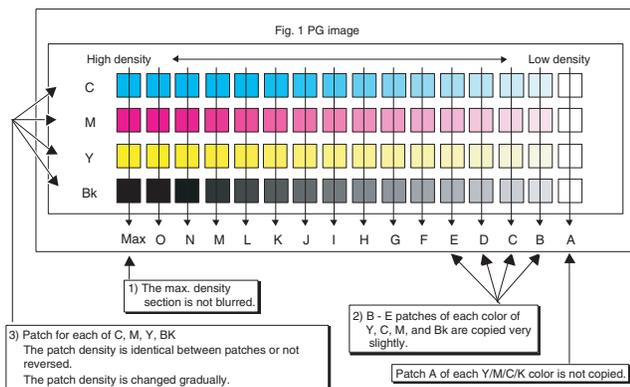


NOTE: When OK key is pressed, initial setup of half-tone image correction is started. During this operation, "Copy Quality is being adjusted" is displayed. It takes several minutes to complete this operation.

After completion of this operation, "Please quit this mode" is displayed.

Do not cancel the simulation until "Please quit this mode" is displayed.

10) Check that the color balance check patch image printed at last is within the specified range shown below.



The print density should vary gradually from the lower density to the higher density without reversion of changing direction.

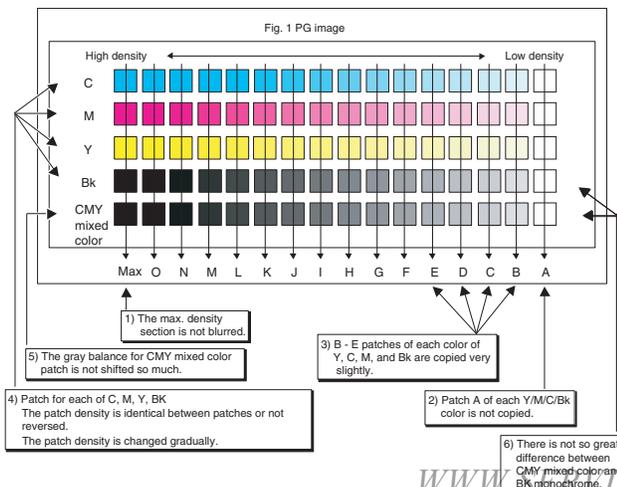
The density level of each color should be almost the same.

It is acceptable for patch B not to be copied.

Patch A is not copied.

Use SIM 46-21 to print the color balance adjustment sheet and compare each process (CMY) black patch color balance and the black patch. This allows a correct check on the color balance adjustment result.

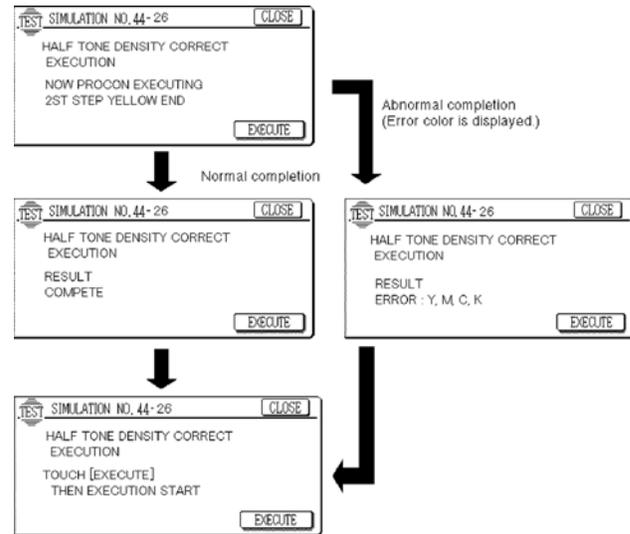
If the color balance of each process (CMY) black patch in A – O is near the black patch referring to the patch patch, it is judged that the color balance has been correctly adjusted.



If, however, the user requests to customize the color balance instead of using the standard color balance and the color balance is in a satisfactory level, go to Step 11).

If the color balance is not satisfactory, perform the manual color balance adjustment (ADJ M17/ADJ 3).

11) Execute the half tone image correction. (Forcible execution) (SIM 44-26)



When EXECUTE key is pressed, it is highlighted and the operation is started. It takes several minutes to complete the operation. When the operation is completed, the screen returns to the original state.

After completion of the operation, cancel the simulation.

12) Use the test chart UKOG-0283FCZZ and check the copy color balance and the density in Text/Photo mode. (Refer to the section of the copy color balance and the density.)

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

13) Perform initial setup of half tone image correction. (SIM 44-21)

14) Perform half tone image correction. (Forcible execution) (SIM 44-26)

15) Use the test chart UKOG-0283FCZZ and check the copy color balance and the density in Text/Printed photo mode. (Refer to the section of the copy color balance and the density.)

Repeat procedures 13) – 15) until they are at the satisfactory level. However, repetition is limited to three times.

If repetition of the above procedures does not set the copy color balance and the density to the specified level, there may be some other reason.

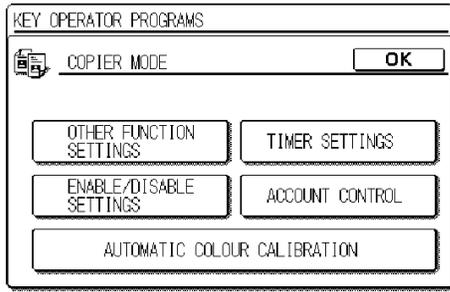
Investigate the reason and repair or fix the problem, then perform all the procedures of print quality adjustment from the beginning.

If the above conditions are not satisfied, perform the manual adjustment (SIM 46-21) (ADJ M17/ADJ 3).

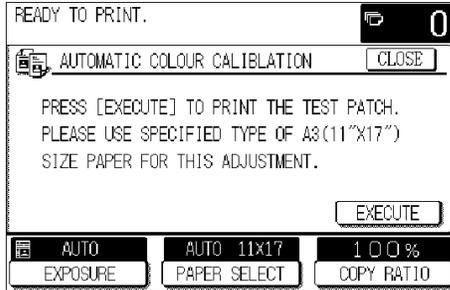
**(Auto color calibration by the user (Auto color balance adjustment))**

NOTE: This adjustment is based on the service target color balance set with SIM 63-7 or 63-8. If, therefore, the above simulation is not completed normally, this adjustment will not be completed normally.

- 1) Enter the user program mode.
- 2) Enter the copy mode.
- 3) Press the auto color calibration key.



4) Press the EXECUTE key.

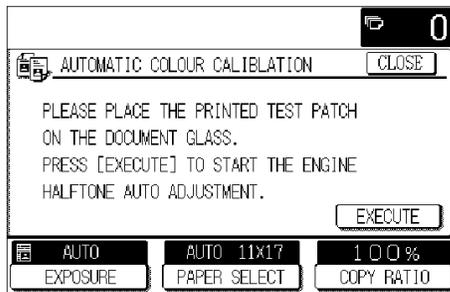


The color patch image (adjustment pattern) is printed.

5) Set the color patch image (adjustment pattern) printed in procedure 4) on the original table so that the darker density side comes to the left side. Place 5 sheets of white paper on the color patch image (adjustment pattern) paper.

6) Press the EXECUTE key.

The copy color balance adjustment (step 2) is automatically performed. After completion of the adjustment, the display returns to the original menu.



### ADJ 3 Copy color balance adjustment (Manual)

This adjustment must be performed in the following cases:

- When a consumable part (developer, OPC drum, the transfer belt) is replaced.
- When the CCD unit is replaced.
- When the scanner (reading) section is cleaned.
- When a U2 trouble occurs.
- When the ICU main PWB is replaced.
- When the EEPROM of the ICU main PWB is replaced.

The color balance adjustment (Manual) is used to manually adjust each color copy density (C, Y, M, K) (15 points for each color) when the result of the previous automatic adjustment is unsatisfactory or when a fine adjustment is required, or when the user requests to change (customize) the color balance.

#### a. Note for the adjustment

This adjustment is performed only for the color patch whose result of the previous automatic adjustment is unsatisfactory.

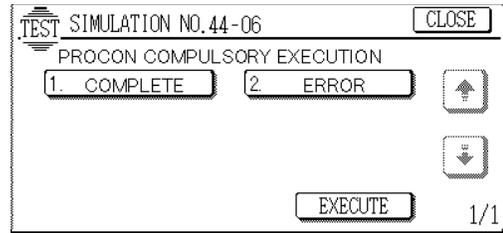
If the color balance is out of the normal conditions, execute SIM 46-24 to make the color balance adjustment (Manual) and then execute this adjustment. This sequence leads to a better work efficiency.

Before execution of the copy quality check and the copy quality adjustment, be sure to execute the following corrections forcibly to set the image forming section to the optimum state.

- Execute the process correction forcibly. (SIM 44-6)
- Execute the half-tone image correction forcibly. (SIM 44-26)

#### b. Adjustment procedures

\* Before executing the copy color balance adjustment (Manual), perform SIM 44-6 to make a compulsory process correction, updating the developing bias voltage and the main charger voltage to the latest levels.

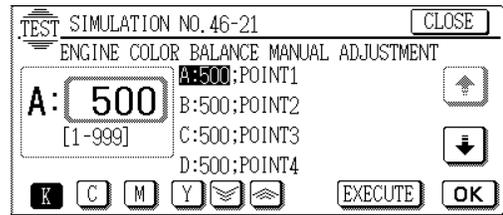


When EXECUTE key is pressed, the operation is started.

It takes several minutes to complete the operation. When the operation is completed, "COMPLETE" is highlighted.

After completion of the operation, cancel the simulation.

1) Enter the SIM 46-21 mode.



2) Select PAPER SEL with the scroll key and select A3 (11 x 17) paper.

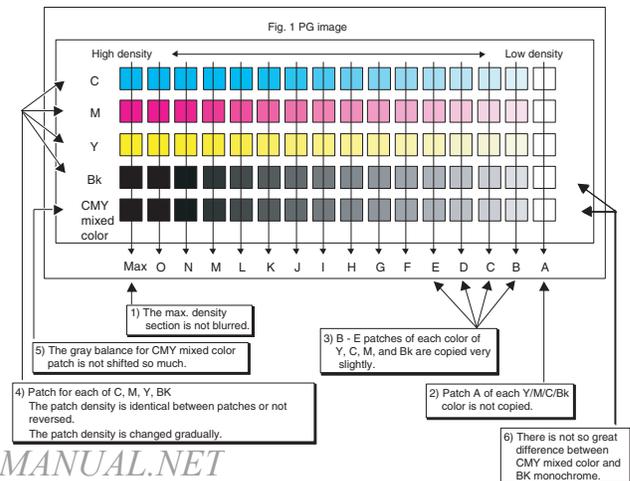
Enter the set value corresponding to the paper feed section with A3 (11 x 17) paper in it, and press the OK key.

3) Press the [EXECUTE] key.

The color balance adjustment pattern is printed.

4) Check that the printed pattern is in the following specification or in the desired color balance.

If not, perform the following procedures.



The print density should vary gradually from the lower density to the higher density without reversion of changing direction.

The density level of each color should be almost the same.

It is acceptable for patch B not to be copied.

Patch A is not copied.

When, however, the color balance is adjusted according to the user's request, there is no need to adjust to the standard color balance as stated above.

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

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

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

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

Repeat procedures 3) – 6) until the condition of procedure 4) is satisfied.

When the overall density is low or patch A is copied with a high density, use the arrow keys to change all the adjustment values of A – O simultaneously and uniformly.

Then perform the patch density adjustment. This allows to make an efficient adjustment.

By using the black patch as the reference, adjust so that the color balance of the black patch of each process (CMY) in A – O becomes virtually same as the black patch.

In this simulation mode, press CLEAR key to return to the normal copy mode and make actual copies of the service chart and user documents. Check the adjustment result.

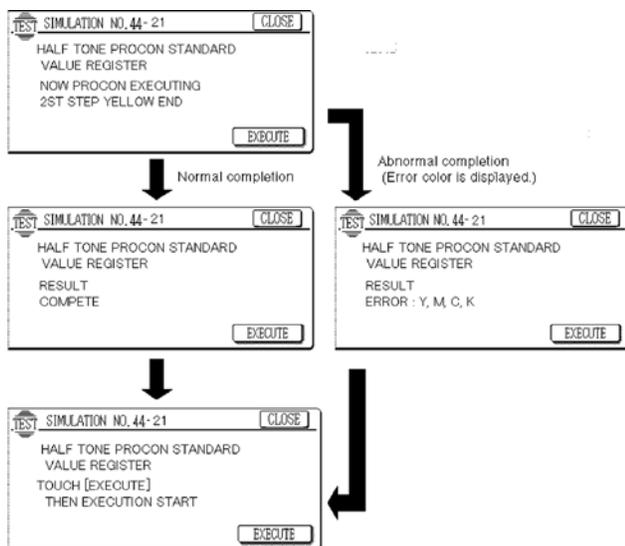
7) Execute SIM 44-21.

The initial setup of half tone image correction is performed.

This procedure is to store the copy color balance adjustment data as the reference data for half-tone correction.

This procedure should be always executed immediately after completion of ADJ M17/ADJ 3 (Color balance adjustment (Manual)) with SIM 46-21.

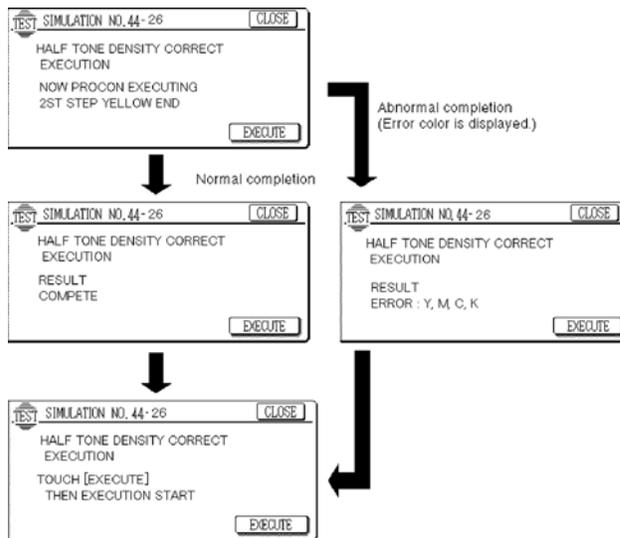
When ADJ M17/ADJ2 (Color balance adjustment (Auto)) is performed with SIM 46-24, this procedure is automatically performed.



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

It takes several minutes to complete the operation. When the operation is completed, the screen returns to the original state. After completion of the operation, cancel the simulation.

8) Execute the half tone image correction. (Forcible execution) (SIM 44-26)



When EXECUTE key is pressed, it is highlighted and the operation is started. It takes several minutes to complete the operation. When the operation is completed, the screen returns to the original state.

After completion of the operation, cancel the simulation.

9) Use the test chart UKOG-0283FCZZ and check the copy color balance and the density in the Text/Printed photo mode. (Refer to the section of the copy color balance and the density check.)

If the copy color balance and the density are not in the specified level, repeat procedures 7) through 9) until they are in the specified level.

However, repetition is limited to three times. If repetition of the above procedures does not set the copy color balance and the density to the specified level, there may be some other reason. Investigate the reason and repair or fix the problem, then perform all the procedures of print quality adjustment from the beginning.

10) When the color balance is customized, register the color balance as the service target by SIM 63-7.

When the color balance is not customized, there is no need to perform this work.

If the customized color balance is registered as the service target, when the color balance is adjusted in the next time, the automatic color balance adjustment mode can be used. In the next color balance adjustment, select the service target color balance in the automatic color balance adjustment mode, and the color balance will be adjusted to the same color balance as registered this time.

### Troubleshooting on copy color balance and density

If the copy quality adjustment cannot provide a normal copy quality, check the following items.

Check that the following simulation values are in the specified range. If any value is improper, check the machine conditions and replace consumable parts or take necessary measures.

SIM No	ITEM	SPEC				NOTE
		GR	BS	DV	BS	
		Standard value	Fixed	Standard value	Fixed	
44-9	BLACK	333 to 900	545	150 – 700	325	A greater difference between GR-BS(XXX) and DV-BS(XXX) means a greater correction quantity of the DV bias voltage and of the main charger grid voltage. It may be judged that the image process section conditions are degraded. (The deterioration degree of developer, the OPC drum, the transfer belt, the transfer roller, and the main charger, etc. may be presumed.)
(NORMAL MODE) (2/6)	CYAN	305 to 900	555	125 to 700		
	MAGENTA					
	YELLOW					

Perform the following procedures.

JOB No	WORK ITEM		SIM No	Trouble caused by improper adjustment		NOTE
ADJ M4	High voltage adjustment	ADJ 1	Main charger grid voltage adjustment	8-2	Improper image density (especially in the high density section), improper copy, image density section copy abnormality, chip on the edge of half-tone images	If the digital multi-meter and the high voltage probe specified on the Service Manual are not available, set the adjustment value to the default.
		ADJ 2	DV bias voltage adjustment	8-1	Improper image density, improper copy, image density section copy abnormality, chip on the edge of half-tone images	
		ADJ 3	Transfer voltage adjustment	44-30	Improper image density, half-tone image section improper copy, high density image section density unevenness and improper copy, low density inside image outline	
ADJ M6	Image density sensor adjustment	ADJ 1	Image density sensor calibration	44-13	Because of improper operation of the process correction (high density section image density correction), parameters of the voltage, the current, and the laser power of the process section become improper to cause improper image density, improper copy, abnormal copy, chip on the edge of half-tone image, tone gap, improper color balance, etc. / Error F2-44 – 45, 80 – 90	Adjust when the copy/print quality (density, color balance) adjustment does not provide a satisfactory result or when an error F2-44 – 45, 80 – 90 occurs.
		ADJ 2	Image density sensor position adjustment	44-23		

Check that the following simulation values are in the specified range. If not, troubleshoot the cause and repair.

SIM No	ITEM	Display value at 25°C, 70% (Reference value)	Phenomenon when the sensor operation is abnormal		NOTE
44-14	TEMPERATURE	100 to 120	The process section correction for change in temperature/humidity is not performed. (Toner density, transfer voltage, resist roller RPM corrections)	(Improper color balance, abnormal copy, improper copy, toner dispersion, improper image density, image deflection, image dirt, decreased density inside image outline)	Check the relationship between the actual environment and the sensor output level, and check that the sensor is operating properly.
	HUMIDITY	35 to 45			

Check that the following simulation values are normal. If not, troubleshoot the cause and repair.

SIM No	ITEM	LAST(BUP)	LEVEL	Phenomenon caused by improper set value	NOTE
44-16	BLACK			Improper image density, improper copy, improper color balance, toner dispersion, developer dispersion	If the difference between LAST (BUP) and LEVEL is extremely great, the toner density control may not function properly.
(TONER DENSITY)	CYAN				
(1/3)	MAGENTA				
	YELLOW				

SIM No	ITEM	LV-ORG	DV	HUD	LV	Phenomenon caused by improper set value	NOTE
44-16	BLACK					Toner density correction is nor performed properly.	The toner density correction levels for the use frequency of developer and the humidity are displayed. Check that those levels are proper.
(ATC SENSITIVITY REVISE)	CYAN						
(3/3)	MAGENTA						
	YELLOW						

Check that the following simulation values are in the specified range. If not, troubleshoot the cause and readjust.

SIM No	ITEM	SPEC		Phenomenon caused when the adjustment value is not in the normal value range.	NOTE
		Default	Standard value		
44-2	DMGNDY	-	185 ± 10 / 0 to 255	Improper adjustment of OPC drum phase	Image color shift, banding, F2-50 – 57
	DMGNDM	-			
	DMGNDC	-			
	DMGNDK	-			
	MKY/GND	-	30 to 70		
	MKM/GND	-			
	MKC/GND	-			
	MKK/GND	-			
PCLEDC	-	0 to 255	Because of improper image sensor sensitivity adjustment, the process correction (high density section image density correction) is not performed properly, resulting in improper parameters of the voltage, the current, and the laser power of the process section. / Because of improper half-tone process correction, the laser ON duty becomes improper.	Improper image density, improper copy, abnormal copy, chip on the edge of half-tone image, tone gap, improper color balance / Errors F2-44 – 45, 80 – 90	
PCLEDK	-				
P_BK_B	-	SIM44-4 (PCS_B_TARGET_ID) ± 2 / 0 to 255		Check the sections related to the transfer belt and the image density sensor.	
P_CY		SIM44-13 (P_CYI) ± 2 / 0 to 255			

Check the following simulation values are in the specified range. If not, set the values to the specified range.

SIM No	ITEM	SPEC		Phenomenon cause when the set value is changed	Phenomenon caused when the set value is not in the normal value range	NOTE
		Default	Standard value			
44-4	PCS_C_TARGET_ID	102	-	Change in the color image sensor sensitivity (When the set value is increased, the image density is decreased. When the set value is decreased, the image density is increased.)	Because of improper image sensor sensitivity adjustment, the process correction (high density section image density correction) is not performed properly, resulting in improper parameters of the voltage, the current, and the laser power of the process section. / Because of improper half-tone process correction, the laser ON duty becomes improper. Improper image density, improper copy, abnormal copy, chip on the edge of half-tone image, tone gap, improper color balance / Errors F2-44 – 45, 80 – 90	
	PCS_B_TARGET_ID	133	-	Change in the black image sensor sensitivity (When the set value is increased, the image density is increased. When the set value is decreased, the image density is decreased.)		

SIM No	ITEM	SPEC		Phenomenon cause when the set value is changed	Phenomenon caused when the set value is not in the normal value range	NOTE
		Default	Standard value			
44-4	Y_PAT_TARGET_ID	90	–	Change in the process correction (Yellow image high density section image density correction) level (When the set value is increased, the image density in the high density section is increased and abnormal copy is decreased. When the set value is decreased, the image density in the high density section is decreased and abnormal copy is increased.)	Color image high density section abnormal copy, improper image density, improper copy, improper color balance, toner dispersion, developer dispersion	
	M_PAT_TARGET_ID	100	–	Change in the process correction (Magenta image high density section image density correction) level (When the set value is increased, the image density in the high density section is increased and abnormal copy is decreased. When the set value is decreased, the image density in the high density section is decreased and abnormal copy is increased.)		
	C_PAT_TARGET_ID	83	–	Change in the process correction (Cyan image high density section image density correction) level (When the set value is increased, the image density in the high density section is increased and abnormal copy is decreased. When the set value is decreased, the image density in the high density section is decreased and abnormal copy is increased.)		
	K_PAT_TARGET_ID	22	–	Change in the process correction (Black image high density section image density correction) level (When the set value is increased, the image density in the high density section is decreased and abnormal copy is increased. When the set value is decreased, the image density in the high density section is increased and abnormal copy is decreased.)	Black image high density section abnormal copy, improper image density, improper copy, improper color balance, toner dispersion, developer dispersion	

Check that the following simulation values are in the specified range. If not, set it to the proper value.

SIM No	ITEM	SPEC		Change in copy quality due to change in setting	Phenomenon caused by improper setting	NOTE	
		Standard value					
43-1	HL1 PLAIN PAPER	Default value (Depending on the destination. Refer to Service Manual.)		Fusing capability and image gloss are changed.	Improper fusing, image deflection, image flow, image dirt	Check that the setting is made according to the destination. (Refer to Service Manual.) Check that the set values are in the specified range.	
	HL2 PLAIN PAPER						–5 / +10
	HL1 READY						–0 / +0
	HL2 READY						–0 / +0
	HL1 E_STAR						–0 / +0
	HL1 PRE-BK						–0 / +0
	HL1 HEAVYPAPER1						–5 / +10
	HL2 HEAVYPAPER1						–5 / +10
	HL1 HEAVYPAPER2						–5 / +0
	HL2 HEAVYPAPER2						–5 / +0
	HL1 TRANSPARENCY						–5 / +10
	HL2 TRANSPARENCY						–5 / +10

If the copy quality adjustment cannot provide a normal copy quality, check that the following simulation values are in the specified range. If not, set the values as specified.

SIM No	ITEM	SPEC			Phenomenon caused when the set value is changed	Phenomenon caused when the set value is outside the specified range	NOTE
		BLUE RANK	RED RANK	NO-DISPLAY RANK			
43-7	A	12	12	12	When the set value is decreased, the oil supply is decreased. When the set value is increased, the oil supply is increased.	Shortened life due to damage on the heat roller surface, degraded image gloss, abnormal image, image dirt, improper fusing, paper jam, oil leakage, oil dirt	
	B	80	180	130	When the set value is increased, the oil supply is decreased. When the set value is decreased, the oil supply is increased.		

If the copy quality adjustment cannot provide a normal copy quality, check the following parts for any abnormality.

PART NAME	Phenomenon caused by abnormal parts	NOTE
Fusing oil application roller	Shortened life due to damage on the heat roller surface, degraded image gloss, abnormal image, image dirt, improper fusing, paper jam, oil leakage, oil dirt	In case of an abnormality, replace the part.
Fusing roller cleaning roller		
Fusing application felt		
Fusing application blade		
Fusing roller		
Fusing gear	Greater banding, improper image (color shift, flow, deflection), toner dispersion	

Check the following items are properly adjusted. If any adjustment is improper, adjust it properly.

JOB No	WORK ITEM	Trouble caused by improper adjustment	NOTE
ADJ M22	Fusing pressure adjustment	Improper fusing, improper image gloss, paper jam, paper wrinkles	Perform the adjustment in case of improper fusing, improper image gloss, paper jam, or paper wrinkles.

Check the following items.

WORK ITEM	SPEC	Phenomenon caused by oil filter problem	NOTE
Check the oil pump filter condition.	Check that the oil pump filter is not clogged.	Shortened life due to damage on the heat roller surface, lower image gloss, image abnormality, image dirt, improper fusing, paper jam, oil leakage, oil dirt	Check and clean the oil filter at every servicing.

Check that the following simulation values are properly set. If not, set it to the proper value.

SIM No	ITEM	SPEC/Default value	Phenomenon caused when the value is outside the specified range	NOTE	
48-1	B	50	Degraded accuracy of area separation (degraded accuracy of filter process, black character and black-line edge process)	Degraded sharpness of black characters and black lines, increased waviness	Check that the set item B is set to 50. If it is not set to 50, the best quality cannot be obtained.

Check that the following simulation values are in the specified range. If not, set the values as specified.

SIM No	ITEM	SPEC		Phenomenon caused when the set value is changed	Phenomenon caused when the set value is outside the specified range	NOTE
		Default	Standard value			
48-6	RRM	55	± 0	Change in the resist motor RPM	Improper image at the rear end in the paper transport direction (color shift, flow, dirt, deflection)	
	BELTM	51	± 0	Change in the transfer belt rotation speed	Greater banding, improper image (color shift, flow, deflection, flow), toner dispersion	
	FSM(L)	55	Default + 20	Change in the fusing roller rotation speed	Improper image at the rear end in the paper transport direction (color shift, flow, dirt, deflection)	
	FSM(S)	45	Default + 20			
	DM(BK)	42	± 0	Change in the black OPC drum rotation speed	Greater banding, improper image (color shift, flow, deflection, flow), toner dispersion	
	DM(CL)	40	± 0	Change in the color OPC drum rotation speed	Greater banding, improper image (color shift, flow, deflection, flow), toner dispersion	

Check that the following simulation values are in the specified range. If not, set the values as specified.

SIM No	ITEM	SPEC	Phenomenon caused when the value is not as specified	NOTE		
46-6	B	A(OFFSET ODD)	150	Improper image scan level (density, color balance)	Improper image density, improper color balance	Be sure to set as specified.
		B(OFFSET EVEN)	150			
		C(GAIN ODD)	150			
		D(GAIN EVEN)	150			
	G	A(OFFSET ODD)	150			
		B(OFFSET EVEN)	150			
		C(GAIN ODD)	130			
		D(GAIN EVEN)	130			
	R	A(OFFSET ODD)	150			
		B(OFFSET EVEN)	150			
		C(GAIN ODD)	160			
		D(GAIN EVEN)	160			

Check that the following items are properly set. If any adjustment is improper, adjust it properly.

JOB No	WORK ITEM	NOTE
ADJ M1	DV Doctor gap adjustment	Improper image density, improper copy, improper color balance, toner dispersion, developer dispersion
ADJ M2	DV roller main pole position adjustment	

### (Auto color balance adjustment service target gamma setup)

#### a. Outline

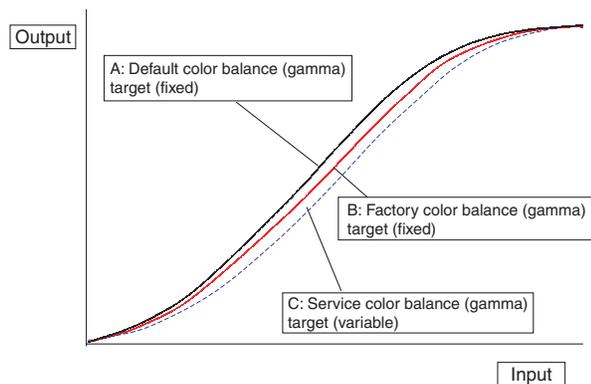
Auto color balance adjustment is performed with a certain color balance (gamma) as a target. There are following two kinds of targets:

Only the service target among them allows optional setup of a color balance (gamma) target.

This setup must be performed in the following cases.

- When the user requests to customize the color balance.
- When the service target gamma is found to be incorrect.
- When the copy color balance and the density adjustment is manually performed. (SIM 46-21)
- When a U2 trouble occurs.
- When the ICU main PWB is replaced.
- When the EEPROM on the ICU main PWB is replaced.

## Kinds of color balance (gamma) target



NOTE: The above figure is for a brief description, and does not show the actual state.

Kinds		Descriptions
A	Default color balance (gamma) target (fixed)	This is the average, standard color balance (gamma) target determined by the machine design. This color balance (gamma) target is identical in all the machines, without consideration for individuality of machines. When SIM 63-8 is executed, the service color balance (gamma) target becomes the same as this target. In SIM 46-24 (46-22) menu, this target is not displayed.
B	Factory color balance (gamma) target (fixed)	This is the standard color balance (gamma) target which was registered (set) in the factory, and cannot be changed in the market. This color balance (gamma) target is set depending on individuality of each machine to obtain the standard color balance. It, therefore, differs slightly in different machines. When the service target falls into an abnormal state by some reasons, this target can be used instead of it. When shipping, this target is the same as the service color balance (gamma) target.
C	Service color balance (gamma) target (variable)	This is obtained by registering (setting) with SIM 63-7 the adjustment pattern of the color balance (gamma) which was adjusted with SIM 46-21. This color balance (gamma) target is set depending on individuality of each machine to obtain the standard color balance. It, therefore, differs slightly in different machines. However, an optional color balance (gamma) target can be set according to a user's request. When shipping, this target is the same as the factory color balance (gamma) target. When SIM 63-8 is executed, the service color balance (gamma) target becomes the same as the default color balance (gamma) target.

NOTE: Do not execute SIM 63-8 unless there is any special reason.

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

This work must be executed only when the color balance is customized by SIM 46-21.

If the color balance is not customized, there is no need to perform this work.

Execute SIM 46-21 to adjust the color balance (Manual) according to the user request (customized color balance). Then use the adjustment pattern printed in this mode to register the service target gamma data with SIM 63-7.

This will revise the service target gamma data.

It is recommendable to record the adjustment pattern printed in the above procedure. By using the adjustment pattern, the same color balance target can be registered in another machine. It is also useful to register the service target gamma data again.

Be careful, however, not to fold the pattern or avoid discoloration and dirt.

Basically the service target gamma data must be registered immediately after completion of the color balance adjustment (Manual) with SIM 46-21.

If a considerable time has passed after completion of the color balance adjustment (Manual) with SIM 46-21, the color balance of the adjustment pattern after a considerable time differs from that before a considerable time. Do not use such an adjustment pattern.

Whether the service target gamma data are correct or not can be determined by the following.

When the adjustment result of SIM 46-24 color balance adjustment (Auto) by selecting the service target is abnormal or unsatisfactory:

In this case, the service target gamma data may be incorrect.

The possible cause is incorrectness or abnormality of the color balance adjustment pattern used when registering the service target gamma data of the color balance adjustment (Auto) with SIM 63-7.

The color balance adjustment pattern is printed after the color balance adjustment (Manual) with SIM 46-21. The possible cause lies in this procedure.

### b. Setup procedure

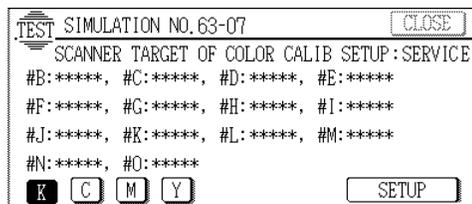
#### (Procedure to set the an optional color balance (gamma) as the service target)

- Two sheets of color patch image (adjustment pattern) are outputted in the copy color balance adjustment (manual adjustment) (SIM 46-21). (ADJ M17/ADJ 3)

At that time, when the color balance is shifted from the standard, an adjustment is required. If not, there is no need to adjust.

If an optional color balance is required according to the user's request, an adjustment is required.

- Enter the SIM 63-7 mode.



- Press the SETUP key.
- Set the color patch image (adjustment pattern) paper properly adjusted and printed in the copy color balance adjustment (manual adjustment) (SIM 46-21) (ADJ M17/ADJ 3) on the original table.

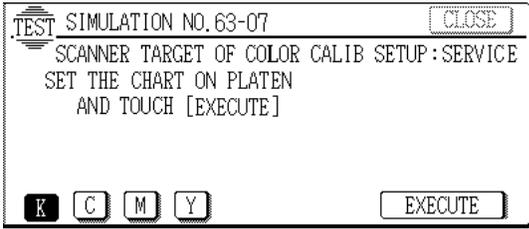
The color patch image (adjustment pattern) printed by SIM 64-2 may be used. In this case, check that the printed image is proper. (The other color patch images (adjustment patterns) printed by another machine may be used.)

Set the paper on the original table so that the darker density side comes on the left side. Then place 5 sheets of white paper on the color patch image (adjustment pattern).

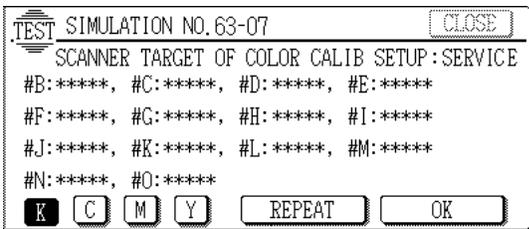
If it is difficult to adjust the color balance adjustment (Manual) with SIM 46-21 satisfactorily, do not register the service target gamma data with SIM 63-7.

- 5) Press the EXECUTE key.

The color patch image (adjustment pattern) is read.



- 6) Press the REPEAT key and set the second color patch image (adjustment pattern) on the original table.



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

The setup level values must be in the ascending sequence of B - O. If there is no change or the sequence is reversed, it is judged as an abnormality.

In case of an abnormality, resolve the problem and check again.

- 7) Press the OK key.

The color balance (gamma) corresponding to the color patch image (adjustment pattern) printed in the copy color balance adjustment (manual adjustment) (ADJ M17/ADJ 3) is set as the service target.

**(Procedure to set the default (standard) color balance (gamma) as the service target)**

Do not execute this procedure unless there is any special reason.

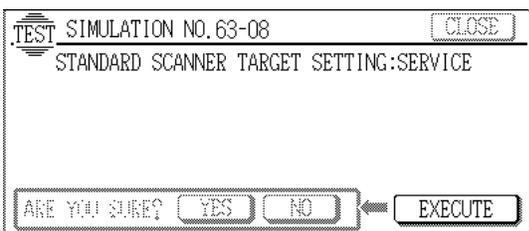
\* Only when the factory target is judged as abnormal in the automatic color balance adjustment by SIM 46-24, this procedure is required in the following case:

When the ICU EEPROM data are destroyed by U2 trouble.

When SIM 63-8 is executed, the service target gamma data are changed to the default target gamma data determined by the machine design.

When the color balance adjustment (Auto) is executed with the service target gamma data set to the default target gamma, a virtually satisfactory result will be obtained.

- 1) Enter the SIM 63-8 mode.



- 2) Press the EXECUTE key.

- 3) Press the YES key.

The service target becomes the same as the default (standard) target.

**ADJ 4 Low-density area density adjustment (Not normally adjusted)**

NOTE for SIM 46-1 and 46-2:

The major purpose of these simulations is to delete background copy simply.

SIM 46-1 and 46-2 are used to adjust the copy density in the low-density area, and they do not affect the density in the high-density area.

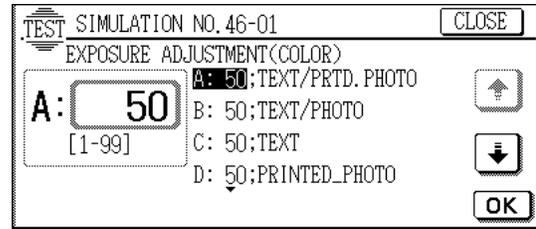
Note that the tone and the color phase may be changed greatly if the set value is changed greatly.

When an extreme background copy is produced, use ADJ M17/ADJ 3 Color balance adjustment (Manual) (SIM 46-21) instead of this procedure.

The adjustment result of SIM 46-1 is reflected evenly to all the color copy modes.

The adjustment result of SIM 46-2 is reflected evenly to all the monochrome copy modes.

- 1) Enter the SIM 46-1 or 46-2 mode.



- 2) Select the copy mode to be adjusted with the scroll key.
- 3) Enter the adjustment value with the 10-key, and press the [OK] key.

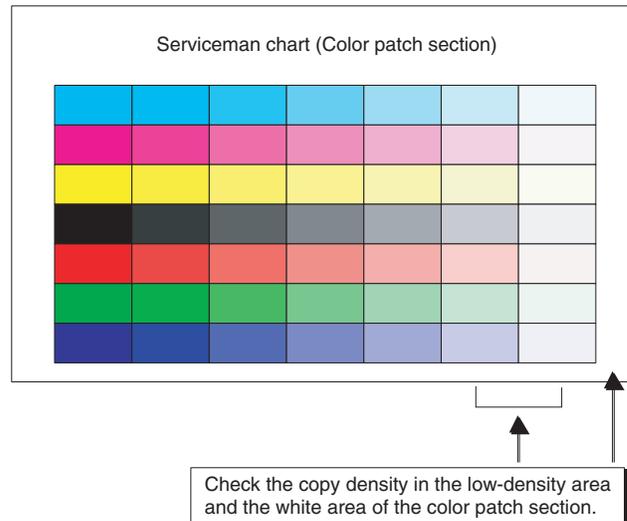
To increase the density in the low-density area, set a greater adjustment value. To reduce the density, set a lower adjustment value. The adjustment in the low-density area can be adjusted individually for each copy mode.

The greater the set value is, the greater the density in the low-density area is, and vice versa. (The density in the high-density area is not changed.)

- 4) Cancel the simulation mode, and make a copy in the normal mode to check the copy density in the white area and the low-density area by using the test chart (UKOG-0283FCZZ).

In this simulation mode, press CLOSE key to jump to the normal copy mode and make actual copies of the service chart and user documents. In this manner, the adjustment result can be checked.

The adjustment can be performed also by switching between the simulation mode and the normal copy mode alternately and checking the adjustment result with actual copies.



## ADJ 5 Copy color balance adjustment (Copy mode) (Not normally adjusted)

This adjustment must be performed in the following cases:

- When a U2 trouble occurs.
- When the ICU main PWB is replaced.
- When the EEPROM of the ICU main PWB is replaced.

Used to adjust the gamma and the density in each copy mode individually. The adjustment in each copy mode is not required normally, but is performed when the user requests it.

1) Enter either of SIM 46-10, 46-19 modes. (Select the simulation according to the copy mode to be adjusted.)

Copy mode				Adjustment (Simulation)					
				Color balance adjustment in each copy mode		Overall color balance adjustment of all copy modes		Low density level	
				Main	Sub	Main	Sub	Main	Sub
Color	Copy document mode	Text Printed Photo mode	Manual	46	10	46	21/20	46	1
		Printed Photo mode	Manual						
		Text mode	Manual						
	Normal mode	Text mode	Manual		11				
			Auto						
		Text Printed Photo mode	Manual		12				
			Auto						
		Printed Photo mode	Manual						
		Photo mode	Manual						
		Text Photo mode	Manual		13				
	Auto								
	Map mode	Manual	14						
	Color enhancement mode	Text mode	Manual		11				
			Auto						
		Text Printed Photo mode	Manual		12				
			Auto						
		Printed Photo mode	Manual						
		Photo mode	Manual						
Text Photo mode	Manual	13							
Auto									
Map mode	Manual	14							
Monochrome	Copy document mode	Text Printed Photo mode	Manual	46	15	46	21/20	46	2
		Printed Photo mode	Manual						
		Text mode	Manual						
	Normal mode	Text mode	Manual		16				
			Auto						
		Text Printed Photo mode	Manual		17				
			Auto						
		Printed Photo mode	Manual						
		Photo mode	Manual						
		Text Photo mode	Manual		18				
	Auto								
	Map mode	Manual	19						

\* The copy color balance and the density in the color enhancement mode are automatically determined by the adjustment result of the color normal mode. The adjustment unique to this mode cannot be made.

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

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

The adjustment value can be selected in the range of 1 – 999. When the automatic color balance and the density are adjusted with SIM 46-24, all the set values of this simulation are set to 500.

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

## ADJ 1A CCD gamma adjustment (CCD calibration) (Copy document mode) (Not normally adjusted)

This adjustment is the CCD gamma adjustment (CCD calibration) for the copy document copy mode, and is different from the CCD gamma adjustment (CCD calibration) in the normal document copy mode (ADJ M17/ADJ 1). There are above two kinds of the CCD gamma adjustment (CCD calibration), and both adjustments are required.

This adjustment is required in the following cases:

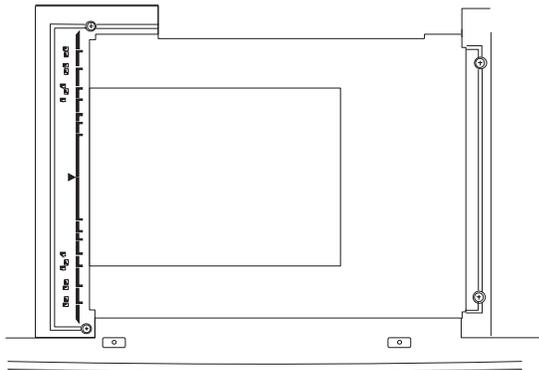
- After completion of the CCD gamma adjustment (CCD calibration) (Normal original copy mode) (ADJ M17/ADJ 1)

### (1) Note before adjustment

- \* Check that the table glass, No. 1/2/3 mirrors, and the lens surface are free from dirt and dust.  
(If dirt or dust is found, clean with alcohol.)
- \* Check that the patches of BK1 and BK2 of the SIT chart (UKOG-0280 FCZZ) are free from dirt or dust.  
If dirt or dust is found, clean with alcohol.  
If any damage is found, replace with a new one.
- \* Since this adjustment is based on the normal document copy mode CCD gamma adjustment (CCD calibration) (ADJ M17/ADJ 1), the said adjustment must have been completed before execution of this adjustment.  
The copy color balance must also have been adjusted properly.

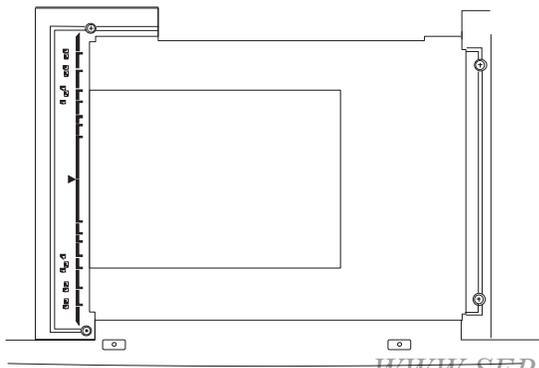
### (2) Adjustment procedure

- 1) Place the SIT chart (UKOG-0280FCZZ) on the left edge of the document table, and fit the center of the SIT chart with the center of the glass holder.



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

- 2) Close the document cover without shifting the SIT chart (UKOG-0280FCZZ).
- 3) Make a copy in the Text/Printed Photo mode. (Be sure to use the specified copy paper.)
- 4) Set the copy made in procedure 3) on the document table so that the center of the copy paper comes to the center of the left edge of the document table.



- 5) Enter the SIM 63-09 mode and press the [EXECUTE] key.  
The automatic adjustment is performed. During the adjustment, the [EXECUTE] key is highlighted. When the adjustment is completed, the [EXECUTE] key returns to the normal display.
- 6) Cancel the simulation mode.

NOTE: The SIT chart (UKOG-0280FCZZ) is affected by lights (especially ultra-violet rays) and temperature and humidity. Store it in a clear file (nylon file) in a dark place.

## ADJ 6 Black toner component image gamma adjustment (Black character and black line reproduction adjustment) (Normally unnecessary to adjust.)

The gamma of black toner component images is changed to adjust the reproduction of the profile of the black character and line optionally. Especially the thickness of fine black character and line is changed.

Since the black toner component image quantity differs depending on the copy mode, be careful of the copy mode selection to check the adjustment result. Check in the Text/Printed Photo mode.

This adjustment is valid only in the following copy modes:

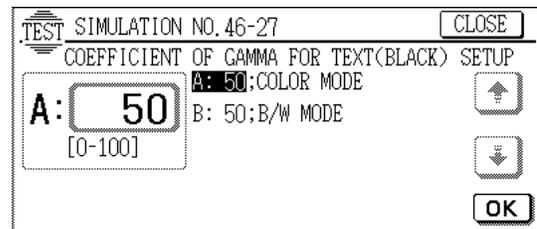
- Text copy mode
- Text Printed Photo copy mode
- Text Photo copy mode

The black toner component ratio is greatest in the Text copy mode, and smallest in the Text Photo copy mode.

This adjustment is required in the following cases when the default was changed:

- When U2 trouble occurs.
- When the ICU MAIN PWB is replaced.
- When the EEPROM of the ICU MAIN PWB is replaced.

- 1) Enter the SIM 46-27 mode.



- 2) Enter the adjustment value with the 10-key.  
The greater the adjustment value is, the greater the density is, and vice versa.  
Normally set to the default (50).
- 3) Press the [OK] key.
- 4) Cancel the simulation, and make a copy in the Text/Printed Photo mode to check the reproduction of fine black character and line.  
Use a document with black characters and lines on it for checking.

## ADJ 7 Single color copy mode color balance and density adjustment (Normally unnecessary to adjust.)

This adjustment is used to adjust color balance and the density according to the user's demand.

The adjustment is made by setting the max. density level of Y, M and C in each color.

This adjustment is required in the following cases when the default was changed:

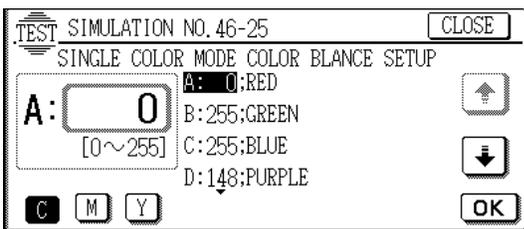
- When a consumable part (developer, photoconductor drum, transfer belt) is replaced.
- When the CCD unit is replaced.
- When the scanner (reading) section is cleaned.
- When U2 trouble occurs.
- When the ICU MAIN PWB is replaced.
- When the EEPROM of the ICU MAIN PWB is replaced.

### a. Note for the adjustment

- This adjustment is not required in the normal state, but executed only when the user requests for.

### b. Adjustment procedure

- 1) Enter the SIM 46-25 mode.



- 2) Select the color to be adjusted with the scroll key.
- 3) Select the color with the color key.
- 4) Enter the adjustment value of each toner color with the 10-key. (Default)

	Default		
	C	M	Y
RED	0	255	255
GREEN	255	0	255
BLUE	255	255	0
PURPLE	148	238	105
ORANGE	38	140	255
BROWN	131	255	229

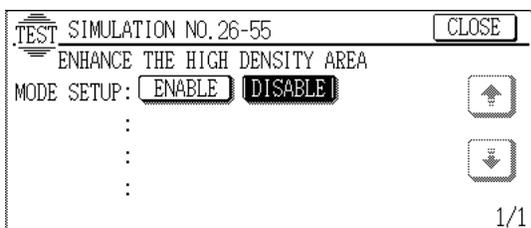
- 5) Cancel the simulation mode and make a copy in the single color copy mode to check.

## ADJ 8 Setup of the gamma characteristic in the color copy mode

### A. Outline

This setup is used to set the priority order between brightness and gradation in the color copy mode. The setup affects the gamma characteristic in the high-density area.

- 1) Enter the SIM 26-55 mode.



- 2) Press ENABLE or DISABLE key.

ENABLE: The contrast in the high-density area is increasing, and the gradation is slightly decreased. (Priority is given to brightness.)

DISABLE: Normal picture quality (Priority is given to gradation.)

## ADJ 9 User auto color calibration (Copy color balance, auto density adjustment) enable setup

### A. Outline

The user can perform the copy color balance and auto density adjustment in the user program mode.

SIM 26-53 is used to Enable or Disable this operation.

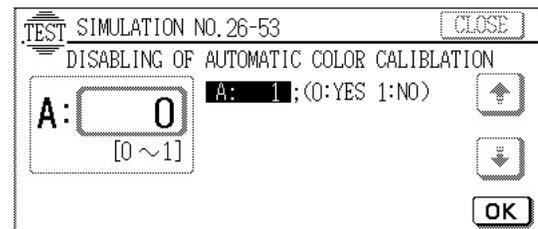
NOTE: This setup is performed only when the user understands the copy color balance and the auto density adjustment and is capable of performing the operation.

Full explanations on the operating procedure, notes, and operations must be given to the user.

- When a U2 trouble occurs.
- When the PCU main PWB is replaced.
- When the EEPROM on the PCU main PWB is replaced.

### B. Setup procedure

- 1) Enter the SIM 26-53 mode.



- 2) Select Enable/Disable with the 10-key.

Disabling = 0: YES

Enabling = 1: NO

- 3) Press the OK key.

When "0: YES" (Disabling) is selected, the user auto color calibration (copy color balance, auto density adjustment) menu is not displayed in the user program mode.

## ADJ M18 Document size sensor adjustment

This adjustment must be performed in the following cases:

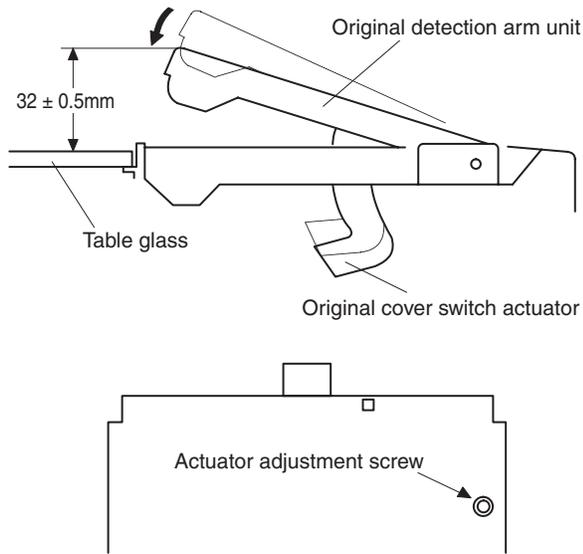
- When the original size sensor section is disassembled.
- When the original size sensor section is replaced.
- When a U2 trouble occurs.
- When the PCU main PWB is replaced.
- When the EEPROM of the PCU main PWB is replaced.

## ADJ 1 Original size sensor detection point adjustment

- 1) Enter the SIM 41-1 mode.

Gradually tilt the original detection arm unit. Loosen the original cover switch actuator adjustment screw so that the high-light display of OCSW is turned to the normal display when the height of the arm unit top from the table glass is  $32 \pm 0.5\text{mm}$ .

Slide the actuator to adjust. (If the ON timing of the original cover switch is shifted, the original detection function may malfunction.)



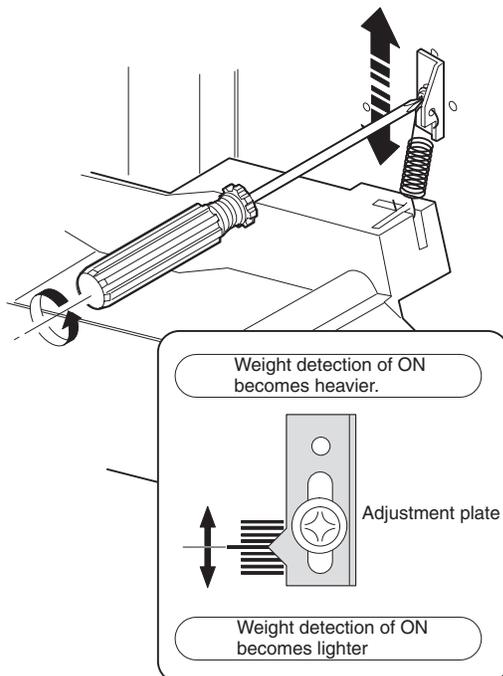
### ADJ 2 Original size sensor sensitivity adjustment

- 1) Enter the SIM 41-2 mode.
- 2) Make the sensor adjustment without an original.
 

With the original cover open and without an original on the original table, press the [EXECUTE] key.
- 3) Place A3 (11 x 17) document on the document table and press the [EXECUTE] key.

### ADJ M19 Waste toner full detection level adjustment

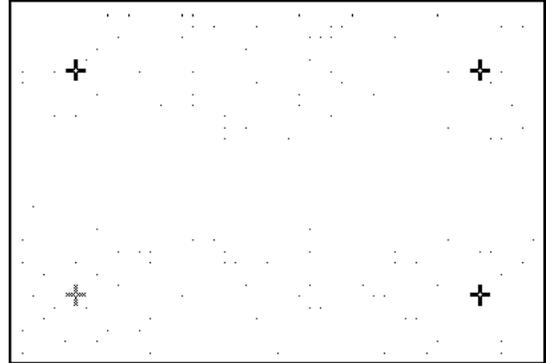
Install the adjustment plate so that the projection of the plate comes to the center of the scribe line.



### ADJ M20 Touch panel coordinates setting

This adjustment must be performed in the following cases:

- When the operation panel is replaced.
  - When a U2 trouble occurs.
  - When the PCU main PWB is replaced.
  - When the EEPROM of the PCU main PWB is replaced.
- 1) Enter the SIM 65-1 mode.



- 2) Touch the four cross marks on the display.
 

When the crosses are touched correctly, they turn gray. When all the four crosses are touched, the touch panel adjustment is completed and the display shows the simulation sub code entering screen.

If there is any abnormality, the first display is shown again.

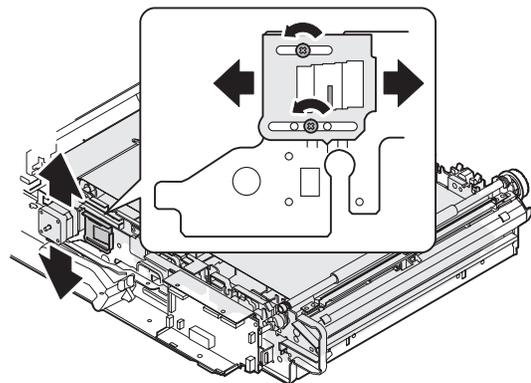
\* When touching the crosses, never use a needle or a pin with a sharp point.

### ADJ M21 Transfer belt level adjustment (Transfer belt traveling adjustment)

This adjustment must be performed in the following cases:

When the transfer belt section is disassembled.

- 1) Make a copy of gray half tone on the whole surface, and check for a color balance difference between the front and the rear sides. Check that there is no difference in the color balance of the front side and the rear side.
- 2) If there is a color balance difference between the front and the rear sides, change the height of the level adjustment angle to adjust.

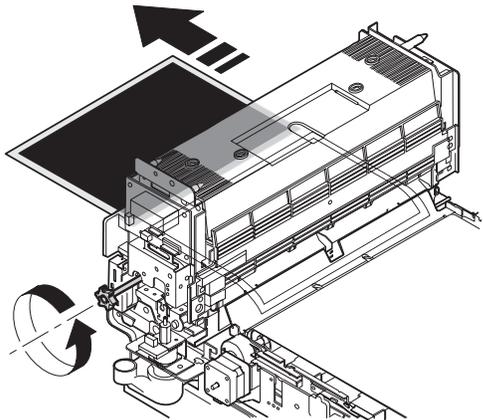
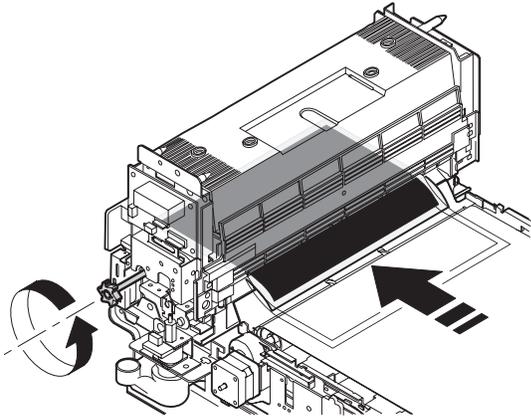


It is fixed at the center normally.

## ADJ M22 Fusing pressure adjustment

This adjustment must be performed in the following cases:

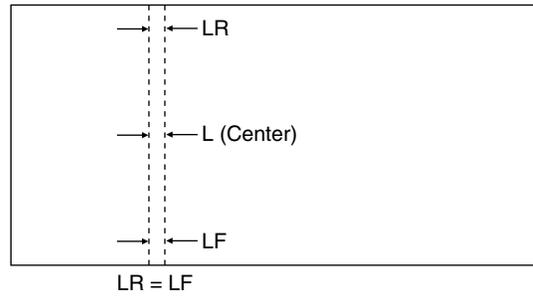
- When the fusing section is disassembled.
  - When a fusing trouble occurs.
  - When wrinkles are generated on paper in the fusing section.
- 1) Select A4 (8.5 x 11) paper.
  - 2) With the document cover open, press the start key of mono-chrome copy.
  - 3) A copy of black background is made.
  - 4) Pull out the transfer section.
  - 5) Insert paper into the pre-transfer paper guide, and turn the fusing roller knob.



- 6) With the paper squeezed in the pre-transfer paper guide, wait for about 10sec.
- 7) Turn the fusing roller knob to remove the paper from the fusing section.
- 8) Measure the dimension (L) of the center section of the glittering line made by the fusing roller. Check that the dimension is in the specified range.

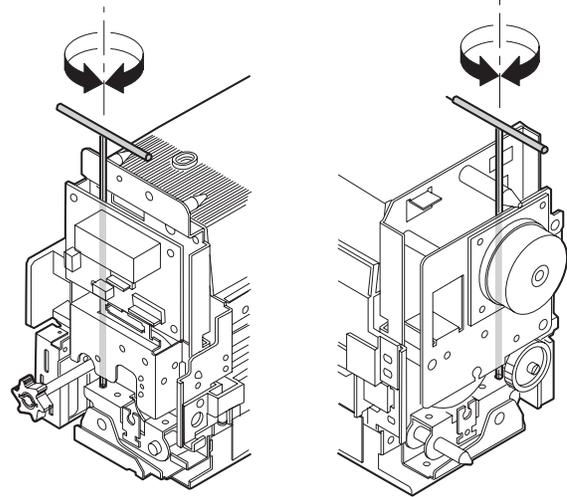
Check that the pressure balance between the front and the rear frame sides is proper.

Value L 6.5 – 7.5 mm



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

- 9) Turn the pressure adjustment screw on the front and the rear frame sides of the fusing unit to adjust the fusing pressure.



Repeat procedures 2) – 9) until the condition of procedure 8) is satisfied.

## ADJ M23 Power voltage adjustment

This adjustment must be performed in the following cases:

- When a part in the DC power unit is replaced.

### ADJ 1 3.4V power voltage adjustment

- 1) Put the multi-meter on the 3.4V line of the DC main PWB and GND.
- 2) Turn VR704 on the DC main PWB to adjust so that the voltage is 3.4V.

### ADJ 2 5.0V power voltage adjustment

- 1) Put the multi-meter on the 5.0V line of the DC main PWB and GND.
- 2) Turn VR703 on the DC main PWB to adjust so that the voltage is 5.0V.

### ADJ 3 24V power voltage adjustment

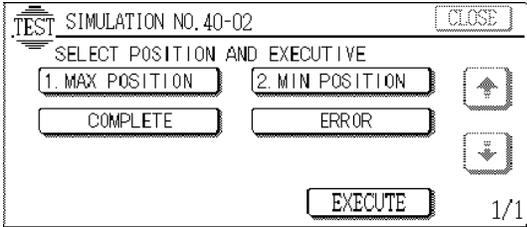
- 1) Put the multi-meter on the 24V line of the DC main PWB and GND.
- 2) Turn VR702 on the DC main PWB to adjust so that the voltage is 24.0V.

## ADJ M24 Manual paper feed size detection level adjustment

This adjustment must be performed in the following cases:

- When the manual paper feed tray section is disassembled.
- When the manual paper feed tray is replaced.
- When a U2 trouble occurs.
- When the PCU main PWB is replaced.
- When the EEPROM of the PCU main PWB is replaced.

1) Execute SIM 40-2.



- 2) Extend the manual paper feed guide fully.
- 3) Press [MAX POSITION] on the LCD of the operation panel to highlight it.
- 4) Press [EXECUTE] on the LCD of the operation panel to highlight it. If normal, the highlight is shifted from [MAX POSITION] to [MIN POSITION].
- 5) Narrow the manual paper feed tray guide fully.
- 6) Press [EXECUTE] on the LCD of the operation panel to highlight it.

Check that [COMPLETE] is highlighted.

## ADJ M25 OHP sensor adjustment

This adjustment must be performed in the following cases:

- When the OHP sensor is replaced.
- When the OHP sensor is disassembled.
- When a U2 trouble occurs.
- When the PCU main PWB is replaced.
- When the EEPROM of the PCU main PWB is replaced.

1) Enter the SIM 40-5 mode.

2) Set A4 (11 x 8.5) paper to the manual paper feed tray.

3) Press the EXECUTE key.

Paper in the manual paper feed tray is fed and stopped at the OHP sensor section.

The sensor LED current level is automatically adjusted so that the specified (target) output of the OHP sensor is supplied.

After adjustment, paper is discharged and the result data is displayed.

When the adjustment is completed normally, ADJUSTMENT COMPLETE is displayed. When an error occurs, ADJUSTMENT ERROR is displayed.

## [8] SIMULATION

### (Diagnostics, setting, adjustment value input, data display)

#### 1. Outline and purpose

There are the following simulation functions to check the machine operations, troubleshoot, find causes, make various settings, improves adjustment work speeds and serviceability.

- 1) Various adjustments
- 2) Specification and function setting
- 3) Trouble cancel
- 4) Operation check
- 5) Counters check, setting, clear
- 6) Machine operation conditions (operation history) data check, clear
- 7) Transmission of various data (adjustment, setting, operations, counter, etc.)

The operating procedures and displays slightly differ from the form of the machine operation panel.

The typical forms are as follows:

- 1) Code system: Values input and mode selection are made with the 10-key pad and various function keys.
- 2) Switch system: Simulation mode selection is made by combination of switch setting.
- 3) Values and mode selection is made with various function keys. As a special one, a jumper wire is used to connect the check points on the PWB to select the desired mode.

#### 2. Code system simulation

##### A. Operating procedures and operations

\* Entering the simulation mode

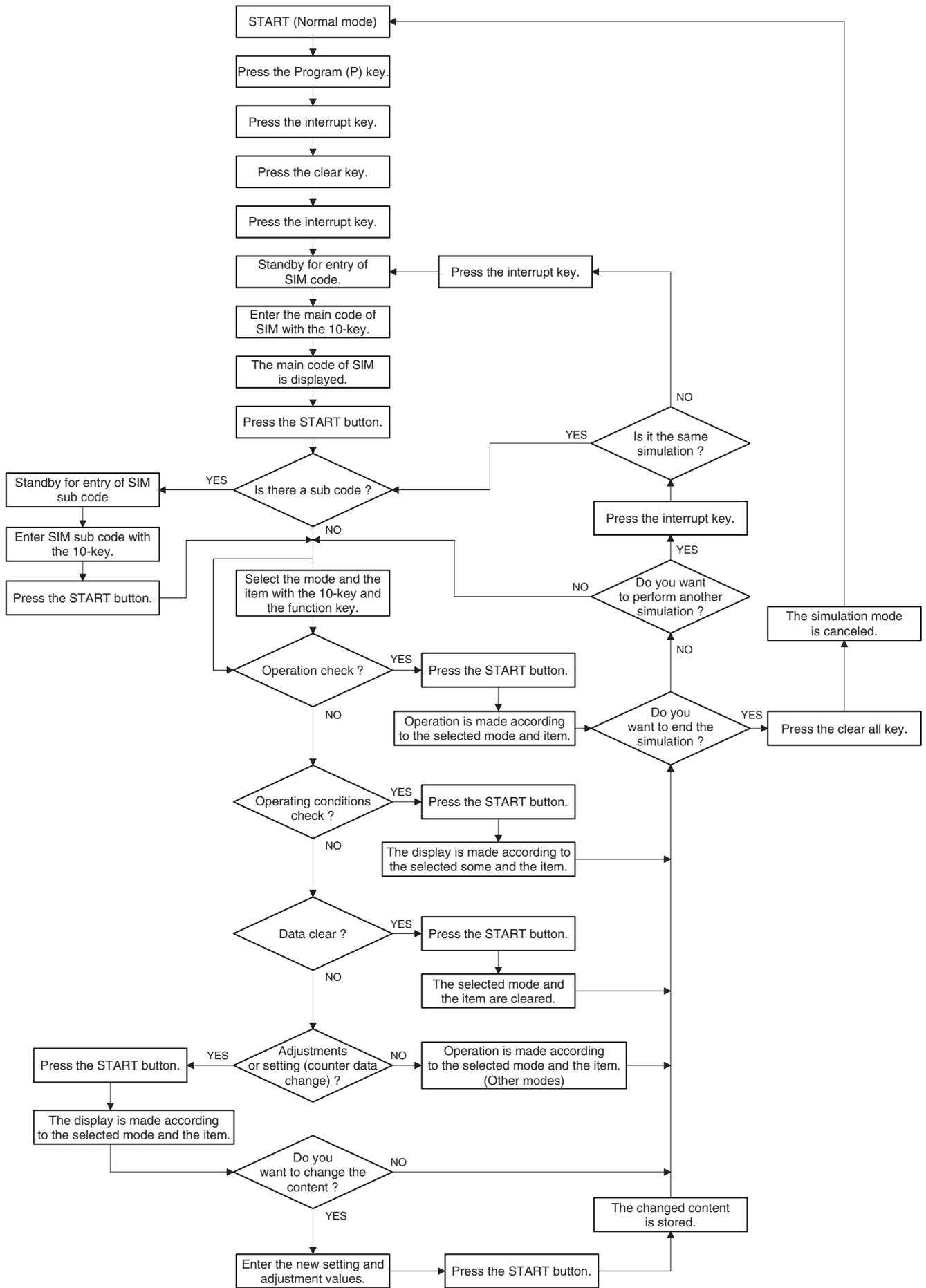
- 1) Program (P) key → Interrupt key → Clear key → Interrupt key  
(The machine enters the standby mode for the simulation main code.)
- 2) Enter the main code with 10-key pad. → Press START key.
- 3) Enter the sub code of with 10-keypad. → Press START key.
- 4) Select the mode and the item with the 10-key pad and the function key.
- 5) The machine enters the selected mode.

To start the simulation, press the START key or the function key.

To cancel the current simulation mode and to change the main code and the sub code, press the interrupt key.

- 1) Press the all clear key.

\* The simulation mode is canceled and the machine returns to the normal operation mode.



## B. Simulation list

### (1) Main/Sub

Code		Function (Purpose)	Purpose	Section		Item	
Main	Sub						
1	1	Used to check the operations of the scanner unit and its control circuit.	Operation test/check	Optical (Image scanning)		Operation	
	2	Used to check the sensors and detectors in the scanner section and the related circuits.	Operation test/check	Optical (Image scanning)		Operation	
2	1	Used to check the operations of the RADF unit and the control circuit. (The document feed operation is repeatedly performed.)	Operation test/check	RADF		Operation	
	2	Used to check the operations of the sensors and detectors in the RADF unit and the related circuits.	Operation test/check	RADF		Operation	
	3	Used to check the operations of the loads in the RADF unit and the related circuits.	Operation test/check	RADF		Operation	
3	2	Used to check the operations of the loads in the sorter/finisher and the related circuits.	Operation test/check	Sorter/Finisher		Operation	
	3	Used to check the operations of the loads in the sorter/finisher and the related circuits.	Operation test/check	Sorter/Finisher		Operation	
4	2	Used to check the operations of the sensors and detectors in the large capacity tray and the related circuit.	Operation test/check	Paper transport		Operation	
	3	Used to check the operations of the loads in the large capacity tray and the control circuit.	Operation test/check	Paper transport		Operation	
5	1	Used to check the operations of the operation panel display lamps and LCD and the control circuit.	Operation test/check	Operation (Display/ Operation key)		Operation	
	2	Used to check the operations of the heater lamp and the control circuit.	Operation test/check	Fixing (Fusing)		Operation	
	3	Used to check the operations of the scanner lamp and the control circuit.	Operation test/check	Optical (Image scanning)		Operation	
	4	Used to check the operations of the discharge lamp and the control circuit.	Operation test/check	Image process (Photoconductor/ Developing/Transfer/ Cleaning)	Others	Operation	
6	1	Used to check the operations of the loads (clutches and solenoids) in the paper transport system and the control circuits.	Operation test/check	Paper transport (Discharge/Switchback/ Transport)		Operation	
	2	Used to check the operation of each fan motor and its control circuit.	Operation test/check	Others		Operation	
7	1	Used to set the aging conditions.	Setting/Operation test/ check			Operation	
	6	Used to set the intermittent aging cycle.	Setting/Operation test/ check			Operation	
	8	Used to set Yes/No of warm-up time display.	Setting/Operation test/ check			Operation	
	9	Used to check the operation of each color image quality.	Operation test/check	Others		Picture quality	
8	1	Used to check and adjust the operation of each print mode developing bias voltage and the control circuit.	Adjustment/Operation test/check	Image process (Photoconductor/ Developing/Transfer/ Cleaning)			
	2	Used to check and adjust the operation of each print mode main charger grid voltage and the control circuit.	Adjustment/Operation test/check	Image process (Photoconductor/ Developing/Transfer/ Cleaning)			
9	1	Used to check the operation of the loads (clutches and solenoids) in the duplex section and the control circuit.	Operation test/check	Duplex		Operation	
	2	Used to check the operation of the sensors and detectors in the duplex section and the control circuit.	Operation test/check	Duplex		Operation	
	4	Used to check the operation of the duplex unit alignment plate and the control circuit.	Operation test/check	Duplex		Operation	

Code		Function (Purpose)	Purpose	Section		Item	
Main	Sub						
10	0	Used to check the operation of the toner motor and the control circuit. (Note) Never execute this simulation with toner in the toner hopper. Otherwise excessive toner will enter the developing section. Be sure to remove the toner from the toner hopper.	Operation test/check	Image process (Photoconductor/Developing/Transfer/Cleaning)	Developer/Toner Hopper	Operation	
14	0	Used to cancel self diag troubles H3, H4, and H5. Inhibition of the color copy mode operation is canceled.	Clear/Cancel (Trouble etc.)			Trouble	Error
15	0	Used to cancel self diag trouble U6 (Large capacity tray).	Clear/Cancel (Trouble etc.)	Paper transport		Trouble	
16	0	Used to cancel self diag trouble U2.	Clear/Cancel (Trouble etc.)			Trouble	Error
17	0	Used to cancel self diag troubles PF (copy inhibition command from the host computer).	Clear/Cancel (Trouble etc.)	Communication unit (TEL/LIU/MODEM etc.)		Trouble	Error
21	1	Used to set the maintenance cycle.	Setting			Specifications	Counter
22	1	Used to check the print count value in each section and each operation mode. (Used to check the maintenance timing.)	Operation data output/Check (Display/Print)			Counter	
	2	Used to check the total misfeed count and the total trouble count. (If the misfeed count is considerably great, it may be judged as necessary to repair. By dividing this count by the total count, the misfeed rate can be obtained.)	Operation data output/Check (Display/Print)			Trouble	
	3	Used to check misfeed positions and the misfeed count of each position. (If the misfeed count is considerably great, it may be judged as necessary to repair.) (Other sections than RADF section)	Operation data output/Check (Display/Print)			Trouble	Misfeed
	4	Used to check the total trouble (self diag) history.	Operation data output/Check (Display/Print)			Trouble	
	5	Used to check the ROM version of each unit (section).	Others			Software	
	6	Used to print the setting and adjustment data list.	Operation data output/Check (Display/Print)			Operation	
	7	Used to display the key operator code. (Used when the customer forgets the key operator code.)	User data output/Check (Display/Print)			Data	User data
	8	Used to check the number of uses of the staple, and the RADF.	Operation data output/Check (Display/Print)			Counter	
	9	Used to check the number of uses (print quantity) of each paper feed section.	Operation data output/Check (Display/Print)	Paper transport		Counter	
	10	Used to check the system configuration (option, internal hardware).	Operation data output/Check (Display/Print)			Specifications	Options
	12	Used to check the misfeed positions and the number (history) of misfeed at each position. (If the misfeed count is considerably great, it may be judged as necessary to repair.)	Operation data output/Check (Display/Print)	RADF		Trouble	Misfeed
24	1	Used to clear the misfeed counter, the misfeed history, the trouble counter, and the trouble history. (After completion of maintenance, the counters are cleared.)	Data clear	Memory		Counter	
	2	Used to clear the data of the number of uses (print quantity) of each paper feed section.	Data clear	Paper transport		Counter	Paper feed
	3	Used to clear the data of the number of uses of the stapler, the RADF, and the scanner., Data clear				Counter	
	4	Used to reset the maintenance counter.	Data clear			Counter	Maintenance
	5	Used to reset the developer counter. (The developer counter of the installed DV unit is reset.)	Data clear	Image process (Photoconductor/Developing/Transfer/Cleaning)	Developer/Toner Hopper	Counter	Developer
	6	Used to clear the copy counters.	Data clear			Counter	
	7	Used to clear the OPC drum (membrane decrease) correction counter. (Performed when the OPC drum is replaced.)	Data clear	Image process (Photoconductor/Developing/Transfer/Cleaning)	Photoconductor	Counter	Photo conductor

Code		Function (Purpose)	Purpose	Section		Item	
Main	Sub						
24	8	Used to clear the waste toner counter in the transfer section.	Data clear	Image process (Photoconductor/Developing/Transfer/Cleaning)	Copy	Counter	
	9	Printer/Other counter clear	Data clear	Printer		Counter	
25	1	Used to check the operation of the main drive (excluding the scanner section) and the toner density sensor. (The toner density sensor output can be monitored.)	Operation test/check	Image process (Photoconductor/Developing/Transfer/Cleaning)	Developer/Toner Hopper	Operation	
	2	Used to make the initial setup (automatic adjustment) of toner density when replacing developer.	Setting	Image process (Photoconductor/Developing/Transfer/Cleaning)	Developer/Toner Hopper		
26	1	Used to make option setup. (When installing an option, this simulation is used to setup for that option (software).)	Setting			Specifications	Options
	2	1) Used to set the paper size of the large capacity tray. (When the paper size is changed, the software setup must be changed accordingly with this simulation.) 2) Used to detect 8.5 x 13 (INCH Series) paper or documents and to set the display mode. (All paper feed modes) 3) Used to set the display form of the paper kind in the manual paper feed mode.	Setting	Paper transport		Specifications	
	3	Used to set the auditor specification mode. Setting must be made according to the use conditions of the auditor.	Setting	Auditor		Specifications	
	5	Used to set the count mode of the total counter, the developer counter, and the maintenance counter.	Setting			Specifications	Counter
	6	1) Used to set the specifications (paper, fixed copy magnification ratio, machine operations in case of an image (process) correction error) according to the destination.	Setting			Specifications	Destination
	18	Used to set YES/NO of toner save operation. (This simulation is valid only for Japan and UK versions. It depends on Sim 26-6 (Destination) setting. For the other destinations, the same setting can be made by the user program P22. (Effective only in the monochrome copy mode)	Setting			Specifications	Operation mode (Common)
	22	Used to set the specification (language) for the destination.	Setting			Specifications	Language
	28	Used to set the AC power voltage. (For control of the fusing section heater lamp)	Setting	Power supply (DC/AC/High)		Operation	
	30	Used to set the CE mark complying operation mode. (Conforms to the soft start when driving the fusing heater lamp.)	Setting	Fixing (Fusing)		Specifications	Operation mode (Common)
	32	Used to set the fan rotating speed. (low speed)	Setting			Operation	
	35	Used to set whether the trouble history display by SIM 22-4 is displayed as one trouble or as the accumulated number of continuous troubles when two or more troubles of same kind occur continuously.	Setting			Specifications	
	52	Used to set YES/NO of count up of non-copy paper (cover or insertion paper).	Setting			Specification	Operation mode
	53	Used by the user to set Enable/Disable auto color calibration (auto adjustment of color balance and density)	Setting			Specifications	Operation mode
55	Used to select the gamma characteristics in the color copy mode.	Setting	ICU		Operation		
56	Used to set Disable/Enable of paper type setting of key operation P67 and P68.	Setting					

Code		Function (Purpose)	Purpose	Section		Item	
Main	Sub						
27	1	Used to set the specifications for operations in case of communication trouble between the host computer and MODEM (machine side). (When communication trouble occurs between the host computer MODEM and the machine, the self diag display (U7-00) is printed and setting for inhibition of print or not is made.)	Setting	Communication unit (TEL/LIU/MODEM etc.)		Specifications	Operation mode (Common)
	2	Used to set or change the host computer/MODEM number. (This setting is required when a communication is made between the copier and the computer through MODEM.)	Setting	Communication unit (TEL/LIU/MODEM etc.)		Data	User data
	3	Used to set and change the ID numbers of the copier, the host computer/MODEM. (This setting is required when a communication is made between the copier and the computer through MODEM.)	Setting	Communication unit (TEL/LIU/MODEM etc.)		Data	Communication
	4	Used to enter the service start time and service end time for management of servicing. (The data can be checked with the host computer.)	Setting	Communication unit (TEL/LIU/MODEM etc.)		Data	Communication
	5	Used to enter the machine TAG No. (This function allows to check the TAG No. of the machine with the host computer.)	Setting	Communication unit (TEL/LIU/MODEM etc.)		Data	User data
	6	Used to set ON/OFF of service call sending to the service center by use of RIC when trouble occurred in the machine. (The service call is not sent automatically, but sent manually.)	Setting	Communication unit (TEL/LIU/MODEM etc.)		Specifications	Others
29	4	Used to set the print count system in the printer mode.	Setting	Memory		Counter	
30	1	Used to check the operation of sensors and detectors in the paper feed, paper transport, paper exit sections and the related circuits.	Operation test/check			Operation	
	2	Used to check the operation of sensors and detectors in the paper feed section and the related circuits. (The operation of the paper feed sensors and detectors can be monitored with the LCD display.)	Operation test/check	Paper transport		Operation	
33	1	Used to check the operation of the card reader and the sensors and the related circuits. (The card reader sensor operation can be monitored with the LCD display.)	Operation test/check	Others		Operation	
40	1	Used to check the operation of the manual feed tray paper size detector and the related circuit. (The operation of the manual feed tray paper size detector can be monitored with the LCD display.)	Operation test/check	Paper transport		Operation	
	2	Used to adjust the manual feed tray paper width detector detection level.	Adjustment	Paper transport		Operation	
	4	Used to check the OHP sensor and its control circuit.	Operation test/check	Paper transport		Operation	
	5	Used to adjust the detection level of the OHP sensor.	Adjustment	Paper feed		Operation	
	6	Used to set the OHP sensor adjustment parameter.	Setting	Paper feed		Operation	
41	1	Used to check the operation of the document size sensor and the related circuit. (The operation of the document size sensor can be monitored with the LCD display.)	Operation test/check/ Operation data Output/ Check (Display/Print)	Others		Operation	
	2	Used to adjust the document size sensor detection level.	Adjustment	Others		Operation	
	3	Used to check the operation of the document size sensor and the related circuit. (The document size sensor output level can be monitored with the LCD display.)	Operation test/check	Others		Operation	

Code		Function (Purpose)	Purpose	Section		Item	
Main	Sub						
43	1	Used to set the fusing temperature in each operation mode.	Setting	Fixing (Fusing)		Operation	
	7	Used to adjust the fusing oil supply amount. (Adjustment of oil motor ON time and oil motor ON interval)	Adjustment	Fixing (Fusing)		Operation	
44	1	Used to set enable/disable of correction operations in the image forming (process) section.	Setting	Image process (Photoconductor/Developing/Transfer/Cleaning)		Operation	
	2	Used to check the operation of the temperature sensor and the humidity sensor for correction of the image process section. (The sensor detection level can be monitored.)	Operation test/check			Operation	
	4	Used to set the target image (reference) density level in correction (process correction) operations in the image forming section.	Setting	Image process (Photoconductor/Developing/Transfer/Cleaning)		Picture quality	Density
	5	Used to set the correction start developing bias voltage in correction (process correction) operations in the image forming section.	Setting	Image process (Photoconductor/Developing/Transfer/Cleaning)	Developer/Toner Hopper	Operation	
	6	Used to forcibly execute the image forming section correction (process correction).	Operation test/check	Image process (Photoconductor/Developing/Transfer/Cleaning)		Operation	
	9	Used to check the data on the image forming section correction (process correction) (corrected main charger grid voltage, the developing bias voltage, the laser power, etc, in each print mode). (This simulation allows to check if the correction operation is performed normally.)	Operation data output/Check (Display/Print)	Image process (Photoconductor/Developing/Transfer/Cleaning)		Data	Operation data (Machine condition)
	12	Used to check the toner image patch density data in the image forming section correction (process correction). This simulation allows to check if the correction operation is performed normally.)	Operation data output/Check (Display/Print)	Image process (Photoconductor/Developing/Transfer/Cleaning)		Data	Operation data (Machine condition)
	13	Used to adjust the image density sensor (for color) sensitivity (gain).	Adjustment	Image process (Photoconductor/Developing/Transfer/Cleaning)	Copy		
	14	Used to monitor the output level of the fusing temperature sensor, the machine temperature sensor, and the humidity sensor.	Operation data output/Check (Display/Print)	Others			
	16	Used to check the toner concentration correction result. (This simulation allows to check if correction is executed properly or not.)	Operation data output/Check (Display/Print)	Image process (Photoconductor/Developing/Transfer/Cleaning)	Developer/Toner Hopper	Data	Operation data (Machine condition)
	21	Used to store color balance adjustment data. (Half tone image correction initial setting) (After execution of color balance adjustment with SIM 46-21, this simulation must be executed.)	Setting			Picture quality	
	22	Used to check each color toner patch image density UITU in half tone image forming section correction (process correction). (This simulation allows to check if correction operation is performed normally.)	Operation data output/Check (Display/Print)	Image process (Photoconductor/Developing/Transfer/Cleaning)		Data	Operation data (Machine condition)
23	Used to adjust the image density sensor position (main scan direction). (The position is adjusted when toner patch is formed.)	Adjustment	Image process (Photoconductor/Developing/Transfer/Cleaning)	Copy			
24	Used to check the half tone correction result. (This simulation allows to check if correction is executed properly or not.)	Operation data output/Check (Display/Print)	Image process (Photoconductor/Developing/Transfer/Cleaning)		Data	Operation data (Machine condition)	

Code		Function (Purpose)	Purpose	Section		Item	
Main	Sub						
44	25	Used to check the half tone correction result. (This simulation allows to check if correction is executed properly or not.)	Operation data output/ Check (Display/Print)	Image process (Photoconductor/ Developing/Transfer/ Cleaning)		Data	Operation data (Machine condition)
	26	Used to execute half tone correction compulsorily.	Adjustment	Image process (Photoconductor/ Developing/Transfer/ Cleaning)		Picture quality	
	27	Used to set the half tone correction data to the default level.	Data clear	Image process (Photoconductor/ Developing/Transfer/ Cleaning)		Data	
	30	Used to check and adjust the operation of the transfer charger current and the control circuit. (New)	Adjustment/Operation test/check	Image process (Photoconductor/ Developing/Transfer/ Cleaning)	Copy		
	31	Used to adjust the phase of OPC drum deflection. (Used to adjust deflection phases of four OPC drums.)	Adjustment	Image process (Photoconductor/ Developing/Transfer/ Cleaning)	Photo conductor	Operation	
	43	Developer unit installation status AD value monitor	Check (Display)				
46	1	Used to adjust the copy density of each mode in the low density area in the color copy mode. The copy densities all colors in the low density area are changed.	Adjustment	ICU		Picture quality	Density
	2	Used to adjust the copy density in the low density area in the monochrome copy mode. The copy density in the low density area is changed.	Adjustment	ICU		Picture quality	Density
	6	1) Used to set CCD black level offset. 2) Used to set CCD white level gain.	Adjustment	Optical (Image scanning)		Picture quality	
	10	Used to adjust the copy color balance (gamma for each color). (Color/Copy document mode)	Adjustment	ICU		Picture quality	Color balance
	11	Used to set the copy color balance (gamma for each color). (Color/Text mode)	Adjustment	ICU		Picture quality	Color balance
	12	Used to adjust the copy color balance (gamma for each color). (Color/Text Printed Photo/Printed Photo mode)	Adjustment	ICU		Picture quality	Color balance
	13	Used to adjust the copy color balance (gamma for each color). (Color/Text Photo/Photograph mode)	Adjustment	ICU		Picture quality	Color balance
	14	Used to set the copy color balance (gamma for each color). (Color/Map mode)	Adjustment	ICU		Picture quality	Color balance
	15	Used to adjust the copy density (gamma). (Monochrome/Copy document mode)	Adjustment	ICU		Picture quality	Density
	16	Used to adjust the copy density (gamma). (Monochrome/Test mode)	Adjustment	ICU		Picture quality	Density
	17	Used to adjust the copy density (gamma). (Monochrome/Text Printed Photo/Printed Photo mode)	Adjustment	ICU		Picture quality	Density
	18	Used to adjust the copy density (gamma). (Monochrome/Text Photo/ Photo mode)	Adjustment	ICU		Picture quality	Density
	19	Used to adjust the copy density (gamma). (Monochrome/Map mode)	Adjustment	ICU		Picture quality	Density
	20	Used to adjust the copy density (gamma). (Color/ All modes) (The copy color balances (gamma) in all copy modes are changed.) The operations are the same as SIM 46-21, but printing is not performed.	Adjustment	ICU		Picture quality	Color balance
	21	Used to adjust the copy color balance (gamma). (Color/All modes) (The color balance (gamma) in all the copy modes is changed. Printing is performed while adjustment.	Adjustment	ICU		Picture quality	Color balance
	23	Used to the half tone high density correction operation.	Setting	ICU		Picture quality	Density
24	Used to adjust the print (printer engine) color balance (gamma). (Auto adjustment)	Adjustment	ICU		Picture quality	Color balance	

Code		Function (Purpose)	Purpose	Section		Item	
Main	Sub						
46	25	Used to adjust the copy color balance. (Single color copy mode)	Adjustment	ICU		Picture quality	Color balance
	26	Used to set the copy color balance adjustment value to the default. (Single color copy mode)	Setting	ICU		Picture quality	Color balance
	27	Used to adjust the black toner component image gamma. (Adjustment of the reproduction capability of black characters and lines)	Adjustment	ICU		Picture quality	Density
48	1	Used to adjust the copy magnification ratio (main scan, sub scan direction).	Adjustment			Picture quality	Image size/ Magnification
	6	Used to adjust each motor rotating speed.	Adjustment			Operation	
49	1	Used to revise the version of the body firmware.	Other	ICU		Software	
	2	Used to set the data communication speed in version up of the body firmware.	Setting	ICU		Operation	
50	1	Used to adjust the copy image position and the void area (image loss) on print paper in the copy mode. (The similar adjustment can be made also by SIM 50-2 (Simple method).)	Adjustment			Picture quality	Image position
	2	Used to adjust the copy image position and the void area (image loss) on print paper in the copy mode.(Simple method) (The same content of SIM 50-1. However this simulation is easier to perform.)	Adjustment			Picture quality	Image position
	10	Used to adjust the print image center position. (Adjusted separately for each paper feed section.)	Adjustment	ICU		Picture quality	Image position
	12	Used to adjust the print image center position. (Adjusted separately for each document mode.)	Adjustment	ICU		Picture quality	Image position
	20	Used to adjust color registration in the main scan direction. (Manual adjustment)	Adjustment	ICU		Picture quality	Image position
	21	Used to adjust the sub scan direction color registration. (Manual adjustment)	Adjustment	ICU		Picture quality	Image position
	22	Used to adjust the color registration (in the main/sub scanning direction). The color registration adjustment (automatic adjustment) can be performed both in the main and the sub scanning directions at the same time.	Adjustment	ICU		Picture quality	Image position
	24	Auto registration adjustment data display	Adjustment				
	25	Used to check the operation of color registration adjustment (no print)	Operation test/check				
51	1	Used to adjust the transfer operation and ON timing of the transfer section separation pawl.	Adjustment	Image process (Photoconductor/ Developing/Transfer/ Cleaning)	Copy	Operation	
	2	Used to adjust the contact pressure of paper on the resist roller of each section (each paper feed and duplex feed of the copier). (This adjustment is required when the print image position variations are considerably great or when paper jams occur frequently.)	Adjustment	Paper transport (Discharge/Switchback/ Transport)		Operation	
52	1	Used to adjust the duplex print mode stacking capacity (Used to adjust the stop position of the duplex unit paper tray width alignment plate. The home position of the width alignment plate is changed by software.)	Adjustment	Duplex		Operation	
53	1	Used to adjust the document stop position in each operation mode of RADF.	Adjustment	RADF		Operation	
	2	Used to adjust the optical sensor sensitivity in RADF.	Adjustment	RADF		Operation	
60	1	Used to check the operation (read/write) of the ICU main PWB (image DRAM).	Operation test/check	ICU		Operation	

Code		Function (Purpose)	Purpose	Section		Item	
Main	Sub						
61	1	Used to check the operation of the scanner (exposure) unit.	Operation test/check	Laser (Exposure)		Operation	
	4	Used to adjust skew of the scanner (writing) unit laser beam.	Adjustment	Laser (Exposure)		Operation	
63	1	Used to check the result of shading correction. (The shading correction data is displayed.)	Operation data output/ Check (Display/Print)	Laser (Exposure)		Operation	
	3	Used to adjust CCD color balance (gamma).	Adjustment	Optical (Image scanning)		Picture quality	Color balance
	5	Used to set CCD color balance (gamma) default.	Setting	Optical (Image scanning)		Picture quality	Color balance
	6	Used to check the color balance (gamma) adjustment . (Check patch)	Adjustment/Operation data output/Check (Display/Print)	ICU		Picture quality	Color balance
	7	Used to set the target color balance (gamma) for auto color balance adjustment. The standard color balance (gamma) or an optional color balance (gamma) is set as the service target.	Setting	ICU		Picture quality	Color balance
	8	Used to set the target color balance (gamma) for auto color balance adjustment (SIM 46-24). The service target is set to the default (standard) color balance (gamma).	setting	ICU		Picture quality	Color balance
	9	Used to adjust the CCD color balance (gamma). (Copy document mode)	Setting	Optical (Image scanning)		Picture quality	Color balance
	10	Used to set the default of the CCD color balance (gamma). (Copy to copy mode)	Setting	Optical (Image scanning)		Picture quality	Color balance
	64	1	Used to check the operation (self print) of the printer section. (The print pattern, the paper feed mode, the print mode, the print quantity, and the density can be set optionally.)	Operation test/check	Printer		Operation
2		Used to print the color patch image (adjustment pattern). The above color patch image (adjustment pattern) is outputted according to the currently adjusted color balance (gamma). Use SIM 63-7 to read the color patch image (adjustment pattern), which can be used as the service target of the automatic color balance (gamma) adjustment.	Adjustment/setup/ operation data output, adjustment (display, print)			Picture quality	Color balance
3		Used to check the operation (self print) of the printer section. (The print pattern, the paper feed mode, the print mode, the print quantity, and the density can be set optionally.) (monochrome)	Operation test/check	Printer		Operation	
65	1	Used to adjust the touch panel (LCD display section) detection position.	Adjustment	Operation (Display/ Operation key)			
	2	Used to check the result of the touch panel (LCD display) detection position adjustment. (The coordinates are displayed.)	Operation data output/ Check (Display/Print)	Operation (Display/ Operation key)			

## C. Details of simulation

**1**

<b>1</b> - 1	
Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the scanner unit and its control circuit.
Section	Optical (Image scanning)
Item	Operation
Operation/Procedure	1. Select the copy (scanning) magnification ratio with the zoom key.

The magnification ratio can be increased or decreased with the [ZOOM] key by the increment of 1%.

The selected magnification ratio is displayed on the magnification ratio display.

2. Press the [EXECUTE] key.

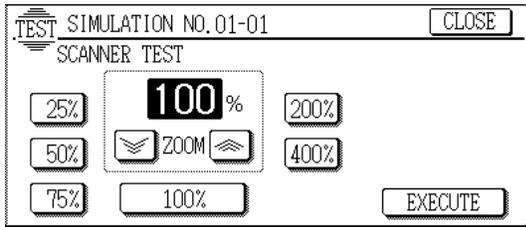
Scanning is performed at the magnification ratio set in procedure 1 is executed. During scanning, the [EXECUTE] key is highlighted.

If the [EXECUTE] key is pressed under this state, the operation is interrupted. After completion of scanning, the [EXECUTE] key returns to the normal display.

To resume scanning, start with procedure 2.

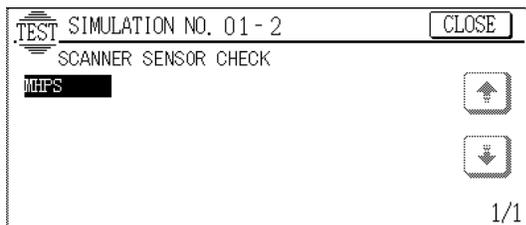
To change the magnification ratio, start with procedure 1.

Scanning is performed at the max. scanning length (432 mm). If, however, the magnification ratio is set to greater than 100% in procedure 1, the scanning length is changed accordingly.



**1** - 2

Purpose	Operation test/check
Function (Purpose)	Used to check the sensors and detectors in the scanner section and the related circuits.
Section	Optical (Image scanning)
Item	Operation
Operation/Procedure	The operations of sensors and detectors in the scanner section are displayed. The active sensors and detectors are highlighted.



**2**

**2** - 1

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the RADF unit and the control circuit. (The document feed operation is repeatedly performed.)
Section	RADF
Item	Operation
Operation/Procedure	1. Select the aging mode with the key. When selection is made, the selected item is highlighted.

[1:SIDE]: Single copy aging mode

[2:SIDE]: Duplex copy aging mode

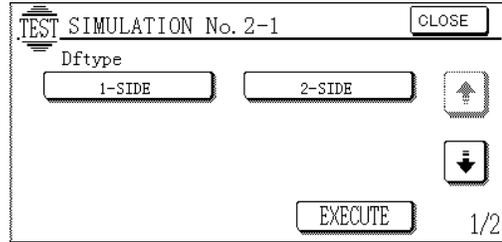
2. Press the [EXECUTE] key.

Aging of the document feeder is executed under the conditions specified with procedures 1.

During aging, the [EXECUTE] key is highlighted. If the [EXECUTE] key is pressed while it is highlighted, the operation is interrupted.

To resume aging, execute with procedure 1.

To change the conditions for aging, execute with procedure 1.



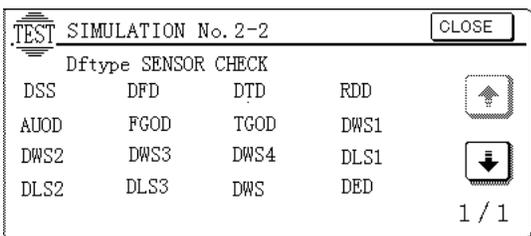
**2** - 2

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the sensors and detectors in the RADF unit and the related circuits.
Section	RADF
Item	Operation
Operation/Procedure	The operations of the sensors and detectors in the RADF are displayed. The active sensors and detectors are highlighted.

### [When the RADF is installed]

<b>DSS</b>	Empty sensor	Normal display:	Document empty
		Highlighted:	Document exist
<b>DFD</b>	Resist sensor	Normal display:	Document empty
		Highlighted:	Document exist
<b>DTD</b>	Timing sensor	Normal display:	Document empty
		Highlighted:	Document exist
<b>RDD</b>	Repulsion sensor	Normal display:	Document empty
		Highlighted:	Document exist
<b>AUOD</b>	DF open/close sensor	Normal display:	Close
		Highlighted:	Open
<b>TGOD</b>	Reverse section cover sensor	Normal display:	Close
		Highlighted:	Open
<b>DWS1</b>	Tray width sensor (182mm)	Normal display:	OFF
		Highlighted:	ON
<b>DWS2</b>	Tray width sensor (210mm/215.9mm)	Normal display:	OFF
		Highlighted:	ON
<b>DWS3</b>	Tray width sensor (257mm)	Normal display:	OFF
		Highlighted:	ON
<b>DWS4</b>	Tray width sensor (279.4mm)	Normal display:	Document empty
		Highlighted:	Document exist
<b>DSL1</b>	Tray length sensor (240mm)	Normal display:	Document empty
		Highlighted:	Document exist

<b>DSL2</b>	Tray length sensor (300mm)	Normal display: Document empty Highlighted: Document exist
<b>DSL3</b>	Tray length sensor (only for 13")	Normal display: Document empty Highlighted: Document exist
<b>DWS</b>	Document width sensor	Normal display: Document empty Highlighted: Document exist
<b>DED</b>	3rd document sensor	Normal display: Document empty Highlighted: Document exist



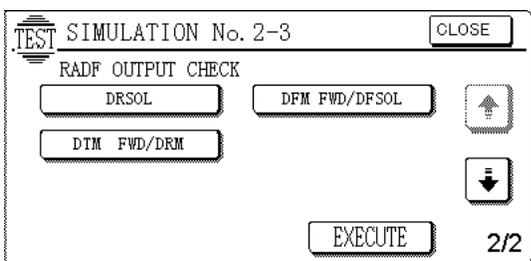
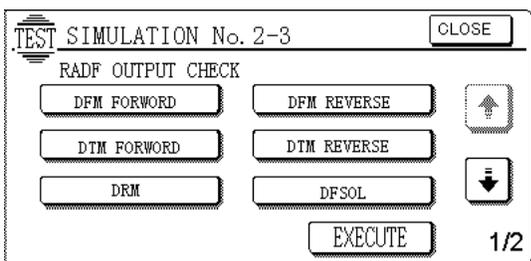
<b>2 - 3</b>	
Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the loads in the RADF unit and the related circuits.
Section	RADF
Item	Operation
Operation/Procedure	1. The names of the loads which can be operated are displayed. Select the load to be checked with the key, and the selected load is highlighted.

2. Press the [EXECUTE] key.

The load selected in procedure 1 starts the operation. During the operation of the load, the [EXECUTE] key is highlighted. If the [EXECUTE] key is pressed while it is highlighted, the operation is stopped.

**[When RADF is installed]**

<b>DFM FORWARD</b>	Paper feed motor forward rotation
<b>DFM REVERSE</b>	Paper feed motor reverse rotation
<b>DTM FORWARD</b>	Transport motor forward rotation
<b>DTM REVERSE</b>	Transport motor reverse rotation
<b>DRM</b>	Paper expulsion motor
<b>DFSOL</b>	Paper feed solenoid
<b>DRSOL</b>	Paper reverse solenoid
<b>DFM FORWARD/DFSOL</b>	Paper feed, motor forward rotation/ Paper feed solenoid



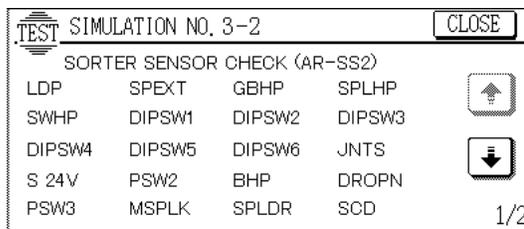
**3**

**3 - 2**

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the loads in the sorter/finisher and the related circuits.
Section	Sorter/Finisher
Item	Operation
Operation/Procedure	The display differs depending on the unit (sorter/finisher) which is installed. The operating status of the sensors and detectors of the sorter/finisher is displayed. The active sensor/detector display is highlighted.

(AR-SS2)

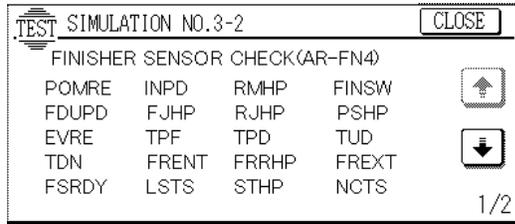
<b>LDP</b>	Lead cam sensor
<b>SPEXT</b>	Paper exit sensor
<b>GBHP</b>	Alignment rod home position sensor
<b>SPLHP</b>	Stapler home position sensor
<b>SWHP</b>	Stapler oscillation home position
<b>DIPSW1</b>	DIP switch 1
<b>DIPSW2</b>	DIP switch 2
<b>DIPSW3</b>	DIP switch 3
<b>DIPSW4</b>	DIP switch 4
<b>DIPSW5</b>	DIP switch 5
<b>DIPSW6</b>	DIP switch 6
<b>JNTS</b>	Joint switch
<b>S_24V</b>	24V detection sensor
<b>PSW2</b>	Push switch 2
<b>BHP</b>	Bin unit home position sensor
<b>DROPN</b>	Staple door switch
<b>PSW3</b>	Push switch 3
<b>MSPLK</b>	Manual staple key
<b>SPLDR</b>	Staple door sensor
<b>SCD</b>	Staple cartridge sensor
<b>SFBD</b>	Stapler head positioning sensor
<b>STMD</b>	Staple head positioning sensor
<b>SED</b>	Staple sensor
<b>BPED</b>	Bin paper sensor



(AR-FN4)

<b>POMRE</b>	Paper exit motor clock detection
<b>INPD</b>	Paper entry sensor
<b>RMHP</b>	Return roller home position sensor
<b>FINSW</b>	Finisher joint detection switch sensor
<b>FDUPD</b>	Intermediate process tray paper sensor
<b>FJHP</b>	Front alignment plate home position sensor
<b>RJHP</b>	Rear alignment plate home position sensor
<b>PSHP</b>	Paper push lever home position sensor
<b>EVRE</b>	Stack tray lift motor clock sensor
<b>TPF</b>	Stack tray paper full sensor
<b>TPD</b>	Stack tray paper sensor
<b>TUD</b>	Stack tray lower limit sensor
<b>TDN</b>	Stack tray upper limit sensor
<b>FRENT</b>	Reverse entry sensor
<b>FRRHP</b>	Reverse roller home position sensor
<b>FREXT</b>	Reverse paper exit sensor

<b>FSRDY</b>	Staple self priming sensor
<b>LSTS</b>	Staple stapler sensor
<b>STHP</b>	Staple home sensor
<b>NCTS</b>	Staple cartridge sensor



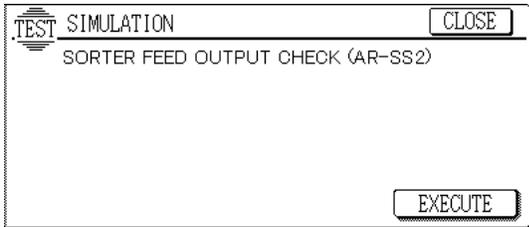
### 3 -3

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the loads in the sorter/finisher and the related circuits.
<b>Section</b>	Sorter/Finisher
<b>Item</b>	Operation
<b>Operation/ Procedure</b>	The display differs depending on the unit (sorter/finisher) which is installed.

- The names of the loads which can be checked are displayed. Select a load to be checked with the key. (In case of the AR-FN4)
- Press the [EXECUTE] key.  
(In the case of the AR-SS2) Sorting is performed.  
(In the case of the AR-FN4) The selected load operates.

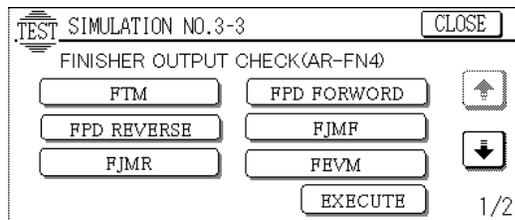
During the load operation, the [EXECUTE] key and the load key are highlighted. Under this state, pressing the [EXECUTE] key interrupts the load operation.

(AR-SS2)



(AR-FN4)

Load port name	Name
<b>FTM</b>	Paper exit motor
<b>FPD FORWARD</b>	Bundle process motor (Forward rotation)
<b>FPD REVERSE</b>	Bundle process motor (Reverse rotation)
<b>FJMF</b>	Front alignment motor
<b>FJMR</b>	Rear alignment motor
<b>FEVM</b>	Tray lift motor
<b>FRTM</b>	Reverse transport motor
<b>FRM</b>	Reverse motor
<b>FRFS</b>	Reverse flapper solenoid

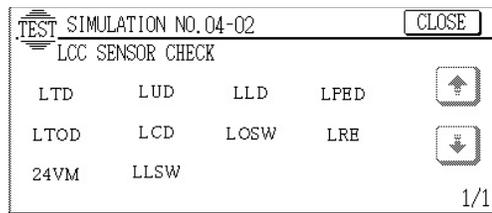


## 4

### 4 -2

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the sensors and detectors in the large capacity tray and the related circuit.
<b>Section</b>	Paper transport
<b>Item</b>	Operation
<b>Operation/ Procedure</b>	The operating conditions of the sensors and detectors in the paper feed section are displayed. The active sensors and detectors are highlighted.

<b>LTD</b>	Transport sensor
<b>LUD</b>	Upper limit sensor
<b>LLD</b>	Lower limit sensor
<b>LPED</b>	Paper empty sensor
<b>LTOD</b>	Machine connection sensor
<b>LCD</b>	Tray insertion detection
<b>LOSW</b>	Upper open/close detection SW
<b>LRE</b>	Lift motor encoder sensor
<b>24VM</b>	24V power monitor
<b>LLSW</b>	Upper limit SW



### 4 -3

<b>Purpose</b>	Operation test/check
<b>Function (Purpose)</b>	Used to check the operations of the loads in the large capacity tray and the control circuit.
<b>Section</b>	Paper transport
<b>Item</b>	Operation
<b>Operation/ Procedure</b>	1. The names of the loads which can be checked are displayed. Select a load to be checked with the key, and the selected load is highlighted.

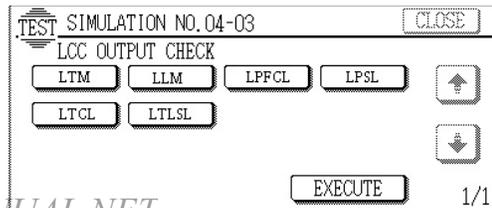
- Press the [EXECUTE] key.

The load selected in procedure 1 starts the operation.

During the operation of the load, the [EXECUTE] key is highlighted. If the [EXECUTE] key is pressed while it is highlighted, the operation is stopped.

<b>LTM</b>	Transport motor
<b>LLM</b>	Lift motor
<b>LPFCL</b>	Paper feed clutch
<b>LPSL</b>	Paper feed solenoid
<b>LTCL</b>	Transport clutch
<b>LTLSL</b>	Tray lock solenoid

When the lift motor is selected, it operates up and down continuously.



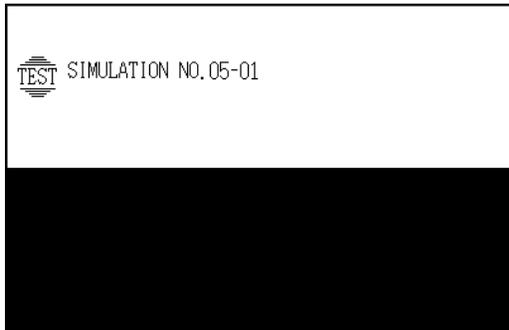
# 5

## 5 -1

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the operation panel display lamps and LCD and the control circuit.
Section	Operation (Display/Operation key)
Item	Operation
Operation/ Procedure	The LCD shows the following message. (The contrast changes in the sequence of Current level → MAX → MIN → Current level → MAX → MIN in every 2sec.) During that period, each LED is lighted for 12sec.



↓ 6.0sec.



## 5 -2

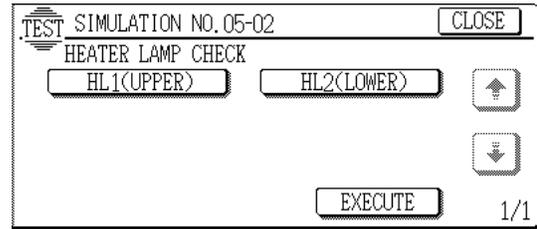
Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the heater lamp and the control circuit.
Section	Fixing (Fusing)
Item	Operation
Operation/ Procedure	1. Select the lamp to be checked with the key. 2. Press the [EXECUTE] key.

The selected heater lamp repeats ON/OFF in the frequency of 500msec for 10sec.

Then the [EXECUTE] key returns to the normal display.

When the [EXECUTE] key is pressed during ON/OFF operation of the heater lamp, the heater lamp is turned OFF and the [EXECUTE] key returns to the normal display.

HL1	Upper heater lamp
HL2	Lower heater lamp



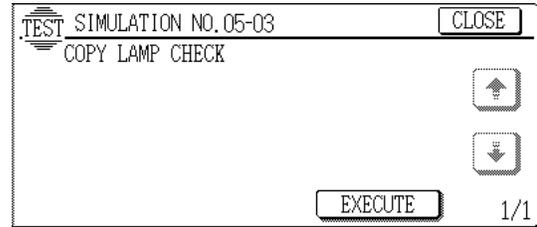
## 5 -3

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the scanner lamp and the control circuit.
Section	Optical (Image scanning)
Item	Operation
Operation/ Procedure	When the [EXECUTE] key is pressed, the scanner lamp is lighted for 10 sec.

While the scanner lamp is lighted, the [EXECUTE] key is high-lighted. If the [EXECUTE] key is pressed under this state, the lamp is turned OFF.

After 10 sec, the scanner lamp is turned OFF.

At that time, the [EXECUTE] key returns to the normal display.



## 5 -4

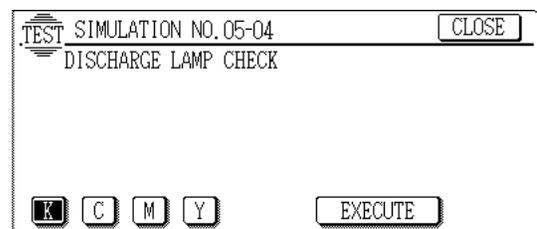
Purpose	Operation test/check	
Function (Purpose)	Used to check the operations of the discharge lamp and the control circuit.	
Section	Image process (Photoconductor/Developing/Transfer/Cleaning)	Others
Item	Operation	
Operation/ Procedure	1. Select the target discharge lamp with the [K], [C], [M], and [Y] keys.	

- K: Black
- C: Cyan
- M: Magenta
- Y: Yellow

2. When the [EXECUTE] key is pressed, the key is highlighted and the selected discharge lamp is lighted.

After 30 sec of lighting, the lamp is turned OFF and the [EXECUTE] key returns to the normal display.

If the [EXECUTE] key is pressed while the lamp is lighted, the lamp is turned OFF and the [EXECUTE] key returns to the normal display.



## 6

### 6 - 1

Purpose	Operation test/check
Function (Purpose)	Used to check the operations of the loads (clutches and solenoids) in the paper transport system and the control circuits.
Section	Paper transport (Discharge/Switchback/Transport)
Item	Operation
Operation/ Procedure	1. The names of the loads which can be checked are displayed. Select the load to be checked with the key, and the selected load is highlighted.

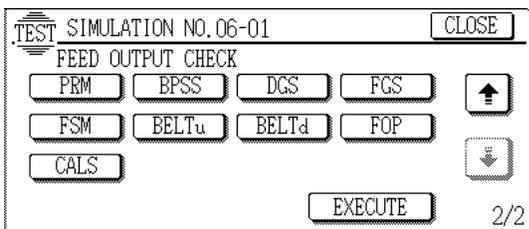
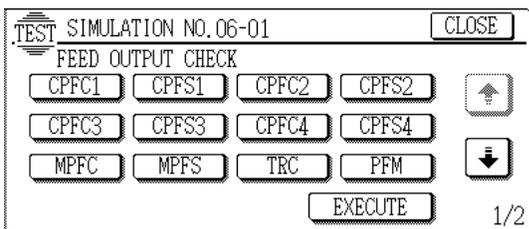
#### 2. Press the [EXECUTE] key.

The selected load starts the operation.

During the operation of the load, the [EXECUTE] key is highlighted.

If the [EXECUTE] key is pressed while it is highlighted, the operation is stopped.

CPFC1	Cassette 1 paper feed clutch
CPFS1	Cassette 1 paper feed solenoid
CPFC2	Cassette 2 paper feed clutch
CPFS2	Cassette 2 paper feed solenoid
CPFC3	Cassette 3 paper feed clutch
CPFS3	Cassette 3 paper feed solenoid
CPFC4	Cassette 4 paper feed clutch
CPFS4	Cassette 4 paper feed solenoid
MPFC	Manual paper feed clutch
MPFS	Manual paper feed solenoid
TRC	Transport clutch
PFM	Paper feed motor
RRM	Resist roller motor
BPSS	Separation pawl operation solenoid
DGS	ADU gate solenoid
FGS	FGS paper feed gate solenoid
FSM	Fusing motor
BELTu	Belt lift up motor up
BELTd	Belt lift up motor down When BELTu and BELTd are selected at the same time, up/down operations are repeated.
FOP	Oil pump solenoid
CALS	Proofreading plate open/close solenoid



## 6 - 2

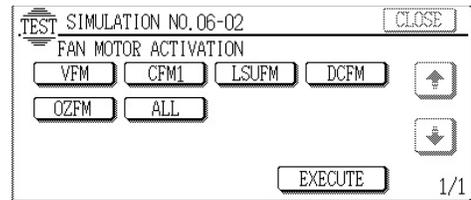
Purpose	Operation test/check
Function (Purpose)	Used to check the operation of each fan motor and its control circuit.
Section	Others
Item	Operation
Operation/ Procedure	1. The loads which can be checked are displayed. Select one you want to check.

#### 2. Press the [EXECUTE] key.

The selected load is operated. During operation, the [EXECUTE] key is highlighted. To interrupt the operation of the load, press the [EXECUTE] key.

Each fan motor rotating operation is checked.

VFM	Exhaust fan motor
CFM1	Optical cooling fan motor
LSUFM	LSU cooling fan motor
DCFM	DC power fan motor
OZFM	Ozone exhaust fan motor
ALL	All fan motors



## 7

### 7 - 1

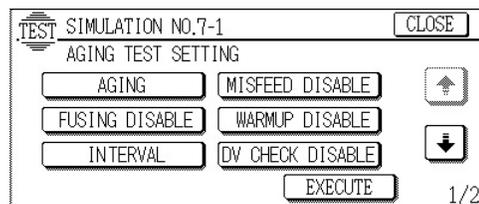
Purpose	Setting/Operation test/check
Function (Purpose)	Used to set the aging conditions.
Item	Operation
Operation/ Procedure	1. Press each corresponding key to set for the aging operation. (Set items of each key) The selected key is highlighted.

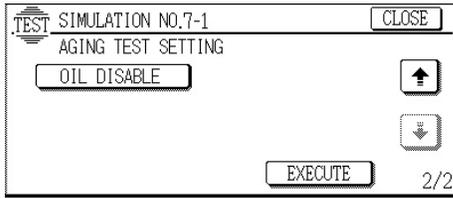
#### 2. Press the [EXECUTE] key.

Aging is set and the display returns to the simulation main code entry display.

\* When this simulation is executed, the machine resumes operation regardless of setting (changing) of aging.

[AGING]	Aging setting
[MISFEED DISABLE]	Jam detection enable/disable setting
[FUSING DISABLE]	Fusing operation enable/disable setting
[WARMUP DISABLE]	Warm-up save setting
[INTERVAL]	Intermittent setting (Valid only in [AGING] setting)
[DV CHECK DISABLE]	Developing unit detection enable/disable setting
[OIL DISABLE]	Oil detection operation YES/NO setting

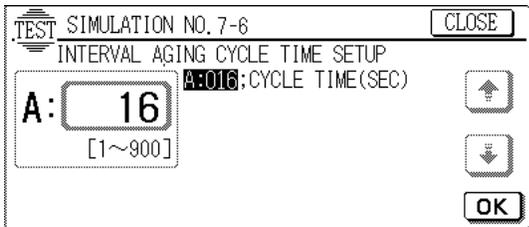




**7 -6**

Purpose	Setting/Operation test/check
Function (Purpose)	Used to set the intermittent aging cycle.
Item	Operation
Operation/ Procedure	1. Enter the interval aging cycle time (sec) with the 10-key pad.

2. Press [OK] key to set the entered cycle time.

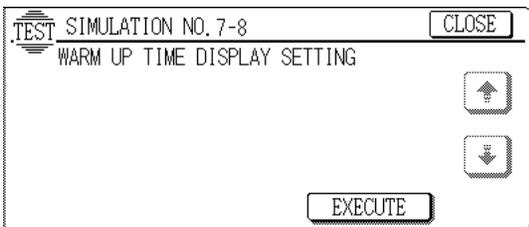


**7 -8**

Purpose	Setting/Operation test/check
Function (Purpose)	Used to set Yes/No of warm-up time display.
Item	Operation
Operation/ Procedure	Press the [EXECUTE] key to set the warmup time display.

When the [EXECUTE] key is pressed, the warmup time display setting is executed and the display returns to the simulation main code entry display.

\* When this simulation is canceled after completion of it, the machine resumes operation regardless of setting (changing) of warmup time display.



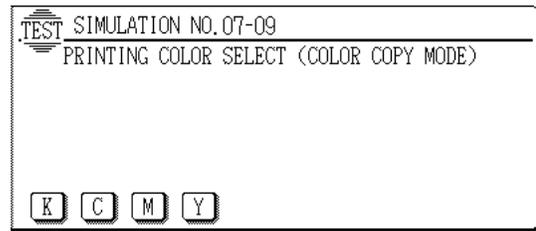
**7 -9**

Purpose	Operation test/check
Function (Purpose)	Used to check the operation of each color image quality.
Section	Others
Item	Picture quality
Operation/ Procedure	1. Select the color of image quantity and operation check with the key.

2. Press the START key.

Copying is performed with the color selected in procedure 1).

When no print color is selected, the operation is made with the all colors.



**8**

**8 -1**

Purpose	Adjustment/Operation test/check
Function (Purpose)	Used to check and adjust the operation of each print mode developing bias voltage and the control circuit.
Section	Image process (Photoconductor/Developing/ Transfer/Cleaning)
Operation/ Procedure	(The developing bias output voltage in each of the following print modes can be adjusted and checked.)

[Color]	Default value
K: Black	325
C: Cyan	325
M: Magenta	325
Y: Yellow	325

**[Adjustment range]**

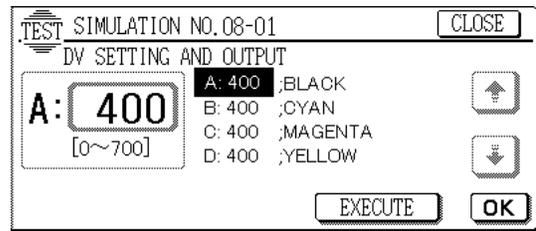
0 – 700 (Default: 325)  
The actual output variation range is all 0V – –700V. (Default: –325V)

1. Select the color mode with the [K], [C], [M], or [Y] key.
2. Select the copy mode with [↑] key and [↓] key.
3. Enter the adjustment value with the 10-key pad.
4. Press the [EXECUTE] key.

The [EXECUTE] key is highlighted, the adjustment value entered in procedure 2 is set, and the voltage corresponding to the set value is supplied.

After supplying the voltage for 30 sec, the [EXECUTE] key returns to the normal display.

If the [EXECUTE] key is pressed while the voltage is supplied, the voltage output is stopped and the [EXECUTE] key returns to the normal display.



If the [EXECUTE] key is pressed while the voltage is supplied, the voltage output is stopped and the [EXECUTE] key returns to the normal display.

## 8 -2

Purpose	Adjustment/Operation test/check
Function (Purpose)	Used to check and adjust the operation of each print mode main charger grid voltage and the control circuit.
Section	Image process (Photoconductor/Developing/Transfer/Cleaning)
Operation/ Procedure	(The charging/grid output voltage in each print mode can be adjusted and checked.)

1. Select the color mode with the [K], [C], [M], and [Y] keys.
2. Select the print mode with [↑] key and [↓] key.
3. Enter the adjustment value with the 10-key pad.
4. Press the [EXECUTE] key.

The [EXECUTE] key is highlighted, the adjustment value entered in procedure 2 is set, and the voltage corresponding to the set value is supplied.

After supplying the voltage for 30 sec, the [EXECUTE] key returns to the normal display.

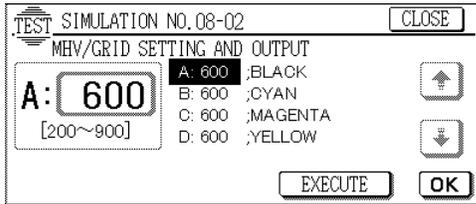
If the [EXECUTE] key is pressed while the voltage is supplied, the voltage output is stopped and the [EXECUTE] key returns to the normal display.

[Color]		Default value
K	Black	485
C	Cyan	495
M	Magenta	495
Y	Yellow	495

### [Adjustment range]

200 – 900

The actual output variation range is –200 – –900V.



## 9

### 9 -1

Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the loads (clutches and solenoids) in the duplex section and the control circuit.
Section	Duplex
Item	Operation
Operation/ Procedure	1. Select the load to be checked with the key. The selected key is highlighted.

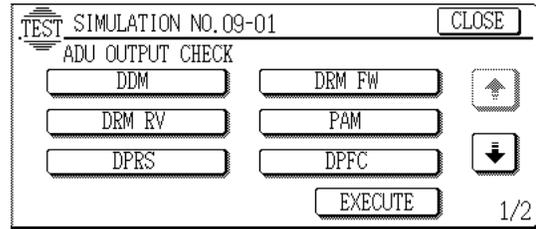
2. Press the [EXECUTE] key.

The load selected in procedure 1 is operated.

While the load is operated, the [EXECUTE] key is highlighted.

If the [EXECUTE] key is pressed under this state, the load operation is interrupted.

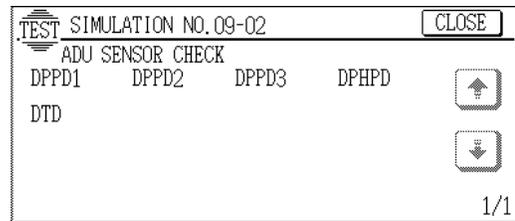
<b>DDM</b>	: Transport motor
<b>DRM FW</b>	: Reverse motor (Forward rotation)
<b>DRM RV</b>	: Reverse motor (Reverse rotation)
<b>PAM</b>	: Alignment motor
<b>DPRS</b>	: Pressure solenoid
<b>DTC</b>	: Transport clutch
<b>DCC</b>	: Decurler clutch



### 9 -2

Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the sensors and detectors in the duplex section and the control circuit.
Section	Duplex
Item	Operation
Operation/ Procedure	The operations of sensors and detectors in the duplex section are displayed. The active sensors and detectors are highlighted.

<b>DPPD1</b>	Duplex unit paper transport switch 1
<b>DPPD2</b>	Duplex unit paper transport switch 2
<b>DPPD3</b>	Duplex unit paper transport switch 3
<b>DPHPD</b>	Alignment home position sensor
<b>DTD</b>	Decolor sensor



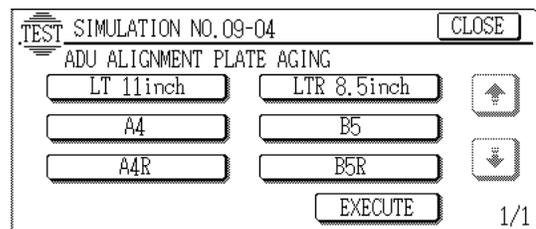
### 9 -4

Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the duplex unit alignment plate and the control circuit.
Section	Duplex
Item	Operation
Operation/ Procedure	1. Select the paper size. The selected paper size is highlighted.

2. Press the [EXECUTE] key.

Alignment operation is continuously operated.

During the operation, the [EXECUTE] key is highlighted. If the [EXECUTE] key is pressed under this state, the operation is interrupted.



**10****10 - 0**

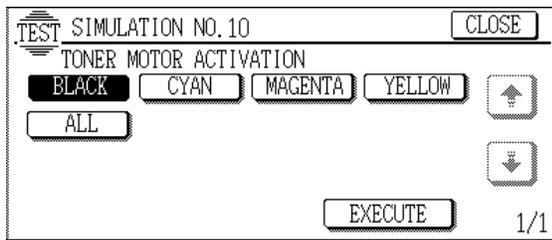
Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the toner motor and the control circuit. (Note) Never execute this simulation with toner in the toner hopper. Otherwise excessive toner will enter the developing section. Be sure to remove the toner from the toner hopper.
Section	Image process Developer/Toner (Photoconductor/Developing/ Hopper Transfer/Cleaning)
Item	Operation
Operation/ Procedure	1. Select the toner motor to be checked. 2. When the [EXECUTE] key is pressed, it is highlighted and the toner motor rotates for 10 sec.

After 10sec of rotation, the toner motor stops and the [EXECUTE] key returns to the normal display.

If the [EXECUTE] key is pressed during rotation, the toner motor is stopped and the [EXECUTE] key returns to the normal state.

The rotating operation of the toner motor of the developing unit is checked for 10 sec.

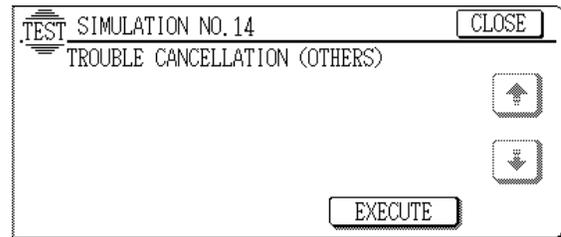
- BLACK** : Black toner motor  
**CYAN** : Cyan toner motor  
**Magenta** : Magenta toner motor  
**YELLOW** : Yellow toner motor  
**ALL** : All toner motors

**14****14 - 0**

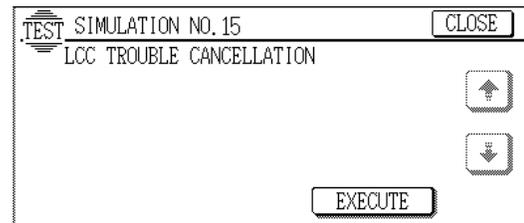
Purpose	Clear/Cancel (Trouble etc.)
Function (Purpose)	Used to cancel self diag troubles H3, H4, and H5. Inhibition of the color copy mode operation is canceled.
Item	Trouble Error
Operation/ Procedure	When the [EXECUTE] key is pressed, the following troubles are canceled and the display returns to the simulation main code entry screen. After this simulation is canceled, the machine resumes operation.

Target trouble code	Description
H3_00	Heat roller high temperature detection (HL1)
H3_01	Heat roller high temperature detection (HL2)
H4_00	Heat roller low temperature detection (HL1)
H4_01	Heat roller low temperature detection (HL2)
H5_01	3 times continuous POD1/PPID not-reaching JAM detection

Note: These trouble states are stored even when the power is turned off.

**15****15 - 0**

Purpose	Clear/Cancel (Trouble etc.)
Function (Purpose)	Used to cancel self diag trouble U6 (Large capacity tray).
Section	Paper transport
Item	Trouble
Operation/ Procedure	When the [EXECUTE] key is pressed, the U6 (LCC) trouble is canceled and the display returns to the simulation main code entry screen. After canceling this simulation, the machine resumes operation.

**16****16 - 0**

Purpose	Clear/Cancel (Trouble etc.)
Function (Purpose)	Used to cancel self diag trouble U2.
Item	Trouble Error
Operation/ Procedure	When the [EXECUTE] key is pressed, the U2 trouble is canceled and the display returns to the simulation main code entry screen. After this simulation is canceled, the machine resumes operation.

\* Troubles canceled by this simulation

Target trouble code	Description
U2_00	EEPROM read/write error (PCU)
U2_11	Counter check sum error (PCU)
U2_12	Adjustment value check sum error (PCU)
U2_20	EEPROM read/write error (ICU)
U2_21	Counter check sum error (ICU)
U2_22	Adjustment value check sum error (ICU)
U2_30	Serial number abnormality

Note: These trouble states are stored even when the power is turned off.



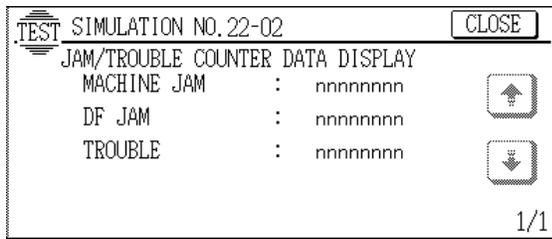
**22 - 2**

Purpose	Operation data output/Check (Display/Print)
Function (Purpose)	Used to check the total misfeed count and the total trouble count. (If the misfeed count is considerably great, it may be judged as necessary to repair. By dividing this count by the total count, the misfeed rate can be obtained.)
Item	Trouble
Operation/Procedure	MACHINE JAM : The number of paper jam troubles occurred in the sections other than the document feeders (SPF/ADF/RADF).

DF JAM : The number of paper jam troubles occurred in the document feeders (SPF/ADF/RADF).

TROUBLE : Total number of troubles

Display	Content
<b>MACHINE JAM</b>	Jam counter (Machine)
<b>DF JAM</b>	Jam counter (DF)
<b>TROUBLE</b>	Trouble counter



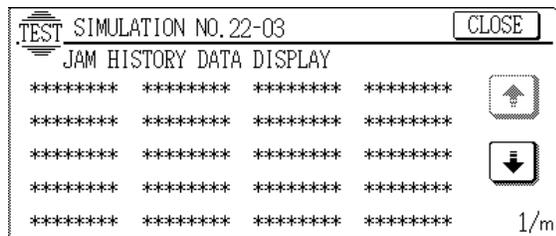
**22 - 3**

Purpose	Operation data output/Check (Display/Print)
Function (Purpose)	Used to check misfeed positions and the misfeed count of each position. (If the misfeed count is considerably great, it may be judged as necessary to repair.) (Other sections than RADF section)
Item	Trouble Misfeed
Operation/Procedure	The misfeed history sections indicated by the sensors and detectors are displayed sequentially from the latest one.

Max. 40 items of information can be stored, and the oldest one is deleted sequentially.  
The trouble position may be presumed with this data.

	Code	Meaning
Engine system	<b>CS4</b>	Paper feed jam (PFD4 not reached)
	<b>PFD4_SC4P</b>	PFD4 remaining jam (Cassette 4 feed paper)
	<b>CS3</b>	Paper feed jam (PFD3 not reached)
	<b>PFD3_NC4</b>	Not reached jam (Cassette 4 feed paper)
	<b>PFD3_SC3</b>	Remaining jam (Cassette 3 feed paper)
	<b>PFD3_SC4</b>	Remaining jam (Cassette 4 feed paper)
	<b>CS2</b>	Paper feed jam (PFD2 not reached)
	<b>PFD2_NC3</b>	Not reached jam (Cassette 3 feed paper)
	<b>PFD2_NC4</b>	Not reached jam (Cassette 4 feed paper)
	<b>PFD2_SC2</b>	Remaining jam (Cassette 2 feed paper)
	<b>PFD2_SC3</b>	Remaining jam (Cassette 3 feed paper)
	<b>PFD2_SC4</b>	Remaining jam (Cassette 4 feed paper)
	<b>CS1</b>	Cassette 1 paper feed jam (PFD1 not reached)
	<b>PFD1_NC2</b>	Not reached jam (Cassette 2 feed paper)
	<b>PFD1_NC3</b>	Not reached jam (Cassette 3 feed paper)
	<b>PFD1_NC4</b>	Not reached jam (Cassette 4 feed paper)
	<b>DUP</b>	Duplex re-feed jam (PFD1 not reached)
	<b>PFD1_SC1</b>	Remaining jam (Cassette 1 feed paper)
	<b>PFD1_SC2</b>	Remaining jam (Cassette 2 feed paper)
	<b>PFD1_SC3</b>	Remaining jam (Cassette 3 feed paper)
	<b>PFD1_SC4</b>	Remaining jam (Cassette 4 feed paper)
	<b>PFD1_SAD</b>	Remaining jam (ADU re-feed paper)
	<b>MFT</b>	Manual feed tray paper feed jam (PPD1 not reached)
	Engine system	<b>PPD1_NC1</b>
<b>PPD1_NC2</b>		Not reached jam (Cassette 2 feed paper)
<b>PPD1_NC3</b>		Not reached jam (Cassette 3 feed paper)
<b>PPD1_NC4</b>		Not reached jam (Cassette 4 feed paper)
<b>PPD1_NLC</b>		Not reached jam (LCC tray feed paper)
<b>PPD1_NAD</b>		Not reached jam (ADU re-feed paper)
<b>PPD1_SMF</b>		Remaining jam (Manual paper feed tray paper)
<b>PPD1_SC1</b>		Remaining jam (Cassette 1 feed paper)
<b>PPD1_SC2</b>		Remaining jam (Cassette 2 feed paper)
<b>PPD1_SC3</b>		Remaining jam (Cassette 3 feed paper)
<b>PPD1_SC4</b>		Remaining jam (Cassette 4 feed paper)
<b>PPD1_SLC</b>		Remaining jam (LCC tray feed paper)
<b>PPD1_SAD</b>		Remaining jam (ADU re-feed paper)
<b>PPD1_PRE</b>		Jam (The image ready signal is not supplied from ICU.)
<b>PPD1_PRI</b>		Jam (The print request command is not supplied from ICU.)
<b>BPD_N</b>		Not reached jam
<b>BPD_S</b>		Remaining jam
<b>DPID_N</b>		Not reached jam
<b>DPID_S</b>		Remaining jam
<b>POD_N</b>		Not reached jam
<b>POD_S</b>	Remaining jam	
<b>PODF_N</b>	Not reached jam	
<b>PODF_S</b>	Remaining jam	

	Code	Meaning
ADU inside	DPPD1_N	Not reached jam
	DPPD1_S	Remaining jam
	DPPD2_N	Not reached jam
	DPPD2_S	Remaining jam
	DPPD3_N	Not reached jam
	DPPD3_S	Remaining jam
	DTD_N	Not reached jam
	DTD_S	Remaining jam
LCC	LCC	Paper feed jam (LPFD not reached)
	LPFD_S	Unit LPFD remaining jam
Sorter	SPEXT_N	Sorter paper exit sensor not reached jam
	SPEXT_S	Sorter paper exit sensor remaining jam
	SDOP	Sorter door open jam
Finisher	FRENT	Reverse not reached jam
	FREXT	Reverse remaining jam
	FINPD	Transport remaining/bundle push/bundle return/power ON/early reaching jam
	FDOP	Door open jam
Scanner	OG_FD	RADF preliminary paper feed jam
	OG_ST	RADF paper feed jam
	EXT	RADF paper exit jam
	REV	RADF reverse jam



## 22 - 4

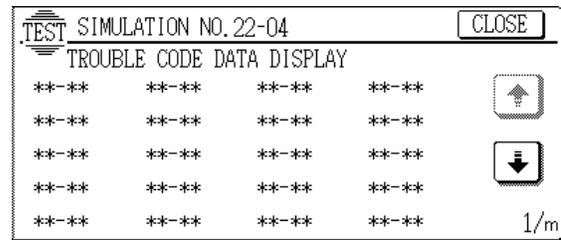
Purpose	Operation data output/Check (Display/Print)
Function (Purpose)	Used to check the total trouble (self diag) history.
Item	Trouble
Operation/Procedure	The trouble history error codes are displayed sequentially from the latest one. Max. 40 items of information can be stored, and the oldest one is deleted sequentially. The machine condition can be presumed according to this data.

Main code	Sub code	Content
C1	10	Charger trouble (Black)
	11	Charger trouble (Cyan)
	12	Charger trouble (Magenta)
	13	Charger trouble (Yellow)
EE	EL	Auto developer adjustment trouble (Over-toner)
	EU	Auto developer adjustment trouble (Under-toner)

Main code	Sub code	Content	
E7	10	Shading trouble (Black correction)	
	11	Shading trouble (White correction)	
	20	Laser trouble (Black)	
	21	Laser trouble (Cyan)	
	22	Laser trouble (Magenta)	
	23	Laser trouble (Yellow)	
	24	Laser BD detection trouble (Black)	
	25	Laser BD detection trouble (Cyan)	
	26	Laser BD detection trouble (Magenta)	
	27	Laser BD detection trouble (Yellow)	
	30	ICU PWB ROM trouble	
	90	ICU-PCU communication trouble (PCU detection)	
	E8	00	ICU PWB - PCU PWB communication trouble
		01	ICU PWB - PCU PWB communication trouble
F1	0	Communication trouble between PCU MAIN PWB - Finisher control PWB (Detected by PCU MAIN PWB)	
	2	Finisher paper exit trouble (Finisher side detection)	
	10	Finisher staple trouble (Finisher side detection)	
	11	Finisher bundle process trouble (Finisher side detection)	
	15	Finisher tray lift trouble (Finisher side detection)	
	19	Finisher alignment trouble (Front side) (Finisher side detection)	
	20	Finisher alignment trouble (Rear side) (Finisher side detection)	
	70	Sorter communication trouble (Machine detection)	
	80	Sorter power trouble (Sorter detection)	
	81	Sorter transport motor trouble (Sorter detection)	
	83	Sorter push bar motor trouble (Sorter detection)	
	87	Sorter staple unit oscillation motor trouble (Sorter detection)	
	89	Sorter bin shift motor trouble (Sorter detection)	
	91	Bin paper sensor auto adjustment trouble (Sorter detection)	
	F2	40	Toner control sensor open (Black)
		41	Toner control sensor open (Cyan)
		42	Toner control sensor open (Magenta)
		43	Toner control sensor open (Yellow)
		44	Black image density sensor trouble (Transfer belt surface reflection rate abnormality)
45		Color image density sensor trouble (Calibration plate surface reflection rate abnormality)	
50		Process control trouble (Drum marking read error: Black)	
51		Process control trouble (Drum marking read error: Cyan)	
52		Process control trouble (Drum marking read error: Magenta)	
53		Process control trouble (Drum marking read error: Yellow)	
54		Drum marking sensor gain adjustment error (Black)	
55		Drum marking sensor gain adjustment error (Cyan)	
56		Drum marking sensor gain adjustment error (Magenta)	
57		Drum marking sensor gain adjustment error (Yellow)	
58		Process humidity sensor trouble	
63		Process thermistor trouble (Yellow)	
78		Registration trouble	
80		Half tone process control 1st batch trouble (Black)	
81		Half tone process control 1st batch trouble (Cyan)	
82	Half tone process control 1st batch trouble (Magenta)		
83	Half tone process control 1st batch trouble (Yellow)		
84	Half tone process control 2nd batch trouble (Black)		
85	Half tone process control 2nd batch trouble (Cyan)		

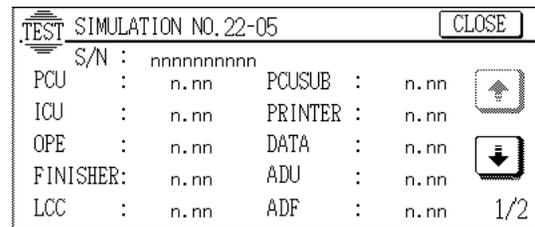
Main code	Sub code	Content
F2	86	Half tone process control 2nd batch trouble (Magenta)
	87	Half tone process control 2nd batch trouble (Yellow)
	90	Half tone process control error
F3	12	Cassette 1 lift up trouble
	22	Cassette 2 lift up trouble
	32	Cassette 3 lift up trouble
	42	Cassette 4 lift up trouble
F9	00	ICU-PRT communication trouble (ICU detection)
H2	00	Thermistor open/Fusing unit not installed (HL1)
	01	Thermistor open/Fusing unit not installed (HL2)
	02	Thermistor open/Fusing unit not installed (HL3)
	03	Thermistor open/Fusing unit not installed (HL4) The thermistor is open. (The input voltage of 4.6V or more is detected.) The fusing unit is not installed.
H3	00	Fusing section high temperature trouble (HL1)
	01	Fusing section high temperature trouble (HL2)
	02	Fusing section high temperature trouble (HL3)
	03	Fusing section high temperature trouble (HL4) The fusing temperature exceeds 220 C. (The input voltage of 0.85V or less is detected.) Thermitor trouble, control PWB trouble, fusing section connector trouble, AC power trouble
H4	00	Fusing section low temperature trouble (HL1)
	01	Fusing section low temperature trouble (HL2)
H5	01	3-time continuous detection of POD/DPID not-reaching jam
H6	00	Fusing oil remaining quantity abnormality detection
L1	00	Mirror feed trouble
L3	00	Mirror return trouble
L4	03	Fusing motor trouble
	04	Developing motor trouble (Black)
	05	Developing motor trouble (Color)
	06	Transfer belt lift motor trouble
	32	DC power cooling fan trouble
	L6	10
L6	11	Polygon motor lock detection (Cyan)
	12	Polygon motor lock detection (Magenta)
	13	Polygon motor lock detection (Yellow)
L8	01	No full wave signal
	02	Full wave signal abnormality
PF	00	RIC copy inhibition signal reception
U0	00	OPE-PCU sub communication trouble (OPE/PCU detection)
	80	PCU-PCU sub communication trouble (PCU detection)
U2	00	EEPROM read/write error (PCU detection)
	11	Counter check sum error(PCU)
	12	Adjustment value check sum error (PCU)
	20	EEPROM read/write error (ICU)
	21	Counter check sum error (ICU)
	22	Adjustment value check sum error (ICU)
	30	Manufacturing No. data discrepancy
U4	00	ADU communication trouble
	02	ADU alignment plate operation abnormality
	12	ADU transport motor trouble
U5	00	ADF communication trouble
	01	ADF resist sensor error
	02	ADF repulsion sensor error
	03	ADF timing sensor error
	11	Paper fed motor operation trouble

Main code	Sub code	Content
U6	09	LCC lift motor trouble
	20	LCC communication trouble
	21	LCC transport motor trouble
	22	LCC 24V power abnormality
	51	LCC non-conversion trouble
U7	00	RIC communication trouble
UC	00	CPT board communication trouble
	01	CPT board program hung up
	02	CPT board ASIC abnormality
	03	CPT board ROM abnormality
	04	CPT board RAM abnormality
	05	CPT board model code abnormality



## 22 - 5

Purpose	Others
Function (Purpose)	Used to check the ROM version of each unit (section).
Item	Software
Operation/Procedure	The ROM version of each section can be checked. If there is any problem in the software, check the ROM version of each section with this simulation and replace with a new version if necessary.

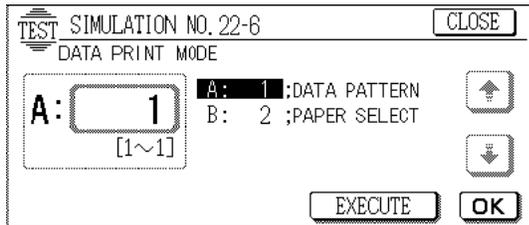


## 22 - 6

Purpose	Operation data output/Check (Display/Print)
Function (Purpose)	Used to print the setting and adjustment data list.
Item	Operation
Operation/Procedure	When installing or servicing, execute this simulation to print and store the adjustment values and setting data for use in the next servicing. (Memory trouble, PWB replacement, etc.) In this case, the print conditions can be set optionally.

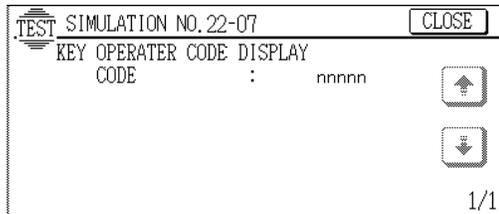
1. Select the setup item.  
(The selected item is highlighted.)
2. Set the item and conditions with the 10-key pad.
3. Press the [EXECUTE] key to print various data.

Item	Display item	Low	High	Default	Description
A	DATA PATTERN	1	1	1	
	= 1				
B	PAPER SELECT	1	6	2	Cassette selection
	= 1	MANUAL			Manual feed cassette
	= 2	CAS1			Cassette 1
	= 3	CAS2			Cassette 2
	= 4	CAS3			Cassette 3
	= 5	CAS4			Cassette 4
	= 6	LCC			LCC



### 22 - 7

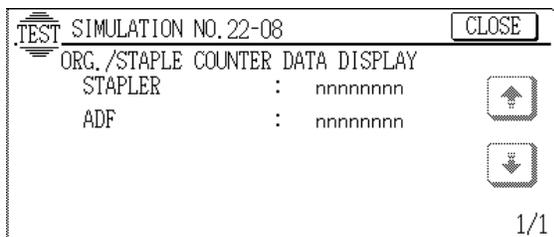
Purpose	User data output/Check (Display/Print)
Function (Purpose)	Used to display the key operator code. (Used when the customer forgets the key operator code.)
Item	Data User data
Operation/Procedure	



### 22 - 8

Purpose	Operation data output/Check (Display/Print)
Function (Purpose)	Used to check the number of uses of the staple, and the RADF.
Item	Counter
Operation/Procedure	This data is used to check the use frequency of each section. According to this data, maintenance is executed.

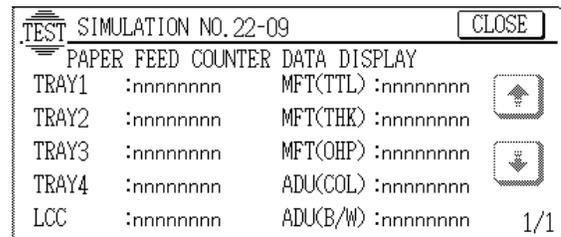
Display	Content
STAPLER	Staple counter
ADF	ADF counter



### 22 - 9

Purpose	Operation data output/Check (Display/Print)
Function (Purpose)	Used to check the number of uses (print quantity) of each paper feed section.
Section	Paper transport
Item	Counter
Operation/Procedure	This data is used to check the use frequency of each paper feed section. According to this data, maintenance is performed.

Display	Content
TRAY1	Tray 1 counter
TRAY2	Tray 2 counter
TRAY3	Tray 3 counter
TRAY4	Tray 4 counter
LCC	LCC counter
NFT (TTL)	Manual feed counter (Total of normal paper, heavy paper, and OHP)
NFT (THK)	Manual fed counter (Heavy paper)
NFT (OHP)	Manual feed counter (OHP)
ADU (COL)	ADU counter (Color)
ADU (B/W)	ADU counter (B/W)

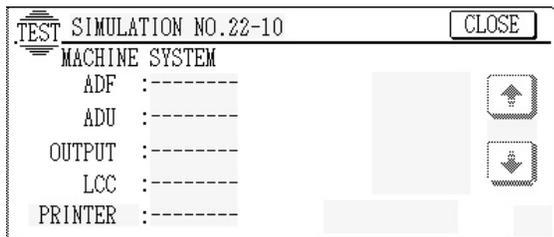


### 22 - 10

Purpose	Operation data output/Check (Display/Print)
Function (Purpose)	Used to check the system configuration (option, internal hardware).
Item	Specifications Options
Operation/Procedure	This simulation allows to check the system configuration.

The devices and the option units which are installed are displayed with the model names, etc.

	Display	Content
ADF	----	Document feed unit not installed
	AR-RF1	Document feed unit (RADF) installed
ADU	----	Duplex module not installed
	EXIST	Duplex module installed
OUTPUT	----	After-treatment unit not installed
	AR-SS2	20-bin staple sorter installed
	AR-FN4	Finisher installed
LCC	----	Large capacity paper feed tray not installed
	AR-LC9	Large capacity paper feed tray installed
PRINTER	----	Printer expansion kit not installed
	AR-PE3	Printer expansion kit installed



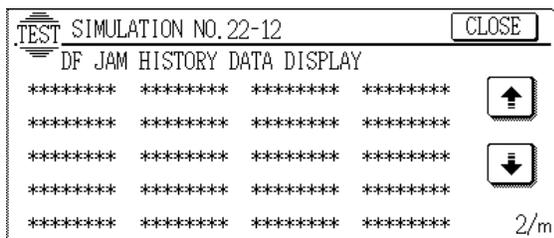
## 22 - 12

Purpose	Operation data output/Check (Display/Print)
Function (Purpose)	Used to check the misfeed positions and the number (history) of misfeed at each position. (If the misfeed count is considerably great, it may be judged as necessary to repair.)
Section	RADF
Item	Trouble Misfeed
Operation/ Procedure	The mis-feed history positions in RADF are displayed with the names of sensors and detectors from the latest one.

Max. 40 items of information can be stored, and the oldest one is deleted sequentially.

The machine condition can be presumed according to this data.

	Code	Meaning
Scanner system	OG_FD	RADF preliminary paper feed jam
	OG_ST	RADF paper feed jam
	EXT	RADF paper exit jam
	REV	RADF reverse jam

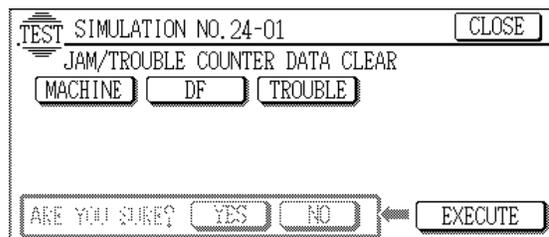


## 24

### 24 - 1

Purpose	Data clear
Function (Purpose)	Used to clear the misfeed counter, the misfeed history, the trouble counter, and the trouble history. (After completion of maintenance, the counters are cleared.)
Section	Memory
Item	Counter
Operation/ Procedure	1. Select the counter to be cleared. MACHINE: Machine JAM counter DF: RADF JAM counter TROUBLE: Trouble counter (When selected, it is highlighted.)

- Press the [EXECUTE] key.  
The display for reconfirmation to clear is shown.
- Select YES or NO to clear the counter.  
YES : Clear  
NO : Not clear



### 24 - 2

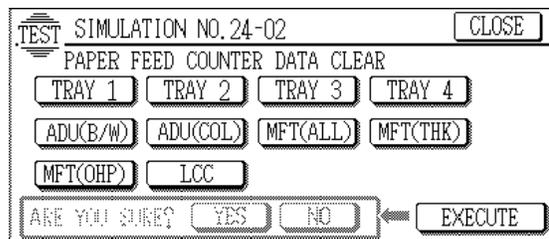
Purpose	Data clear
Function (Purpose)	Used to clear the data of the number of uses (print quantity) of each paper feed section.
Section	Paper transport
Item	Counter Paper feed
Operation/ Procedure	1. Select the counter to be cleared. (The selected key highlighted.)

- Press the [EXECUTE] key.  
The display for reconfirmation to clear is shown.
- Select YES or NO to clear the counter.  
YES : Clear  
NO : Not clear

After completion of maintenance, the following counters are cleared.

- [TRAY1] Tray 1 counter
- [TRAY2] Tray 2 counter
- [TRAY3] Tray 3 counter
- [TRAY4] Tray 4 counter
- [ADU(B/W)] Duplex unit counter (B/W)
- [ADU (COL)] Duplex unit counter (Color)
- [MFT(ALL)] Manual paper feed counter (Total)
- [MFT(THK)] Manual paper feed counter (Heavy paper)
- [MFT(OHP)] Manual paper feed counter (OHP)
- [LCC] Large capacity tray counter

For the AR-C100, only [TRAY1], [TRAY2], [TRAY3], and [TRAY4] available.



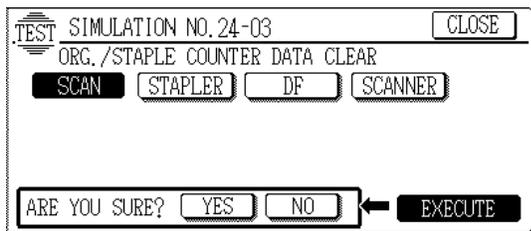
**24 - 3**

Purpose	Data clear
Function (Purpose)	Used to clear the data of the number of uses of the stapler, the RADF, and the scanner.
Item	Counter

- Operation/ Procedure
1. Select the counter to be cleared.  
 DF : RADF counter  
 SCAN : Scan counter  
 STAPLER : Stapler counter  
 (When selected, it is highlighted.)
  2. Press the [EXECUTE] key.  
 The display for reconfirmation to clear is shown.
  3. Select YES or NO to clear the counter.  
 YES : Clear  
 NO : Not clear

After completion of maintenance, the following counters are cleared.

- [DF] RDF counter
- [SCAN] Scan counter
- [STAPLER] Staple counter
- [SCANNER] Scanner counter  
 (When selected, it is highlighted.)



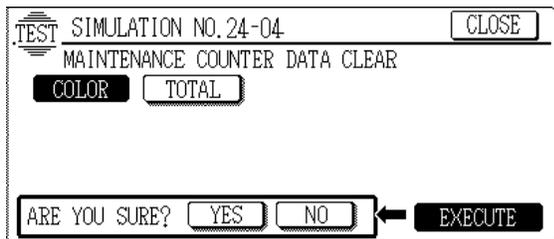
**24 - 4**

Purpose	Data clear
Function (Purpose)	Used to reset the maintenance counter.
Item	Counter Maintenance

- Operation/ Procedure
1. Press the [EXECUTE] key.  
 The display for reconfirmation to clear is shown.
  2. Select YES or NO to clear the counter  
 YES : Clear  
 NO : Not clear

After completion of maintenance, the following counters are cleared.

- [COLOR] Maintenance counter (Color)
  - [TOTAL] Maintenance counter (Total)  
 (When selected, it is highlighted.)
- (The toner image patch counter is also cleared.)



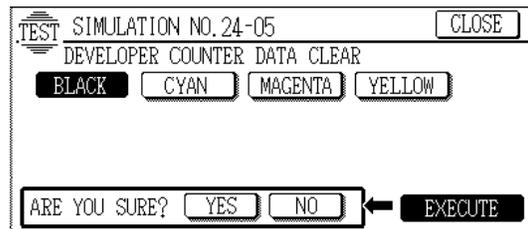
**24 - 5**

Purpose	Data clear
Function (Purpose)	Used to reset the developer counter. (The developer counter of the installed DV unit is reset.)
Section	Image process Developer/Toner (Photoconductor/Developing/ Hopper Transfer/Cleaning)

- Item Counter Developer
- Operation/ Procedure
1. Select the developer counter to be cleared.
  2. Press the [EXECUTE] key.  
 The display for reconfirmation to clear is shown.
  3. Select YES or NO to clear the counter.  
 YES : Clear  
 NO : Not clear

After replacement of the developer, the following counters are cleared.

- [BLACK] Developer counter (Black)
- [CYAN] Developer counter (Cyan)
- [MAGENTA] Developer counter (Magenta)
- [YELLOW] Developer counter (Yellow)  
 (When selected, it is highlighted.)

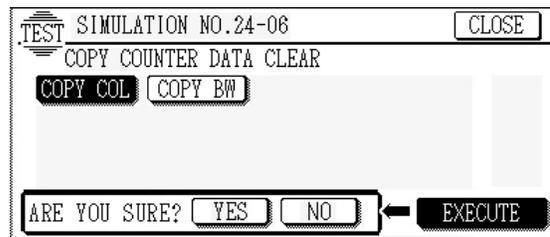


**24 - 6**

Purpose	Data clear
Function (Purpose)	Used to clear the copy counters.
Item	Counter

- Operation/ Procedure
1. Select the counter to be cleared.
  2. Press the [EXECUTE] key.  
 The display for reconfirmation to clear is shown.
  3. Select YES or NO.  
 YES : Clear  
 NO : Not clear

- [COPY COL] Copy counter (Color)
- [COPY B/W] Copy counter (B/W)  
 (When selected, it is highlighted.)



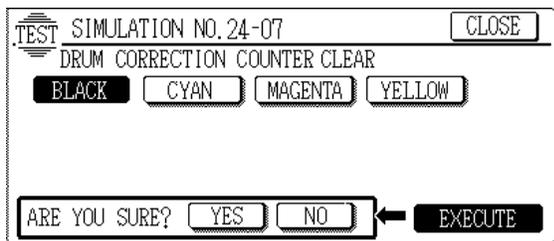
**24 - 7**

Purpose	Data clear
Function (Purpose)	Used to clear the OPC drum (membrane decrease) correction counter. (Performed when the OPC drum is replaced.)
Section	Image process (Photoconductor/ Developing/Transfer/ Cleaning)
Item	Counter
Operation/ Procedure	1. Select the counter to be cleared.

- [BLACK]** Drum membrane decrease correction counter (Black)
  - [CYAN]** Drum membrane decrease correction counter (Cyan)
  - [MAGENTA]** Drum membrane decrease correction counter (Magenta)
  - [YELLOW]** Drum membrane decrease correction counter (Yellow)
- (When selected, it is highlighted.)

2. Press the [EXECUTE] key.  
The display for reconfirmation to clear is shown.
3. Select YES or NO to clear the counter.  
YES : Clear  
NO : Not clear

The above counter is cleared after replacement of the OPC drum.

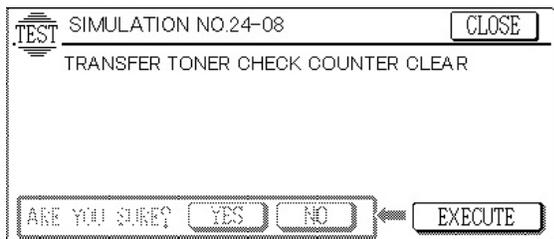


**24 - 8**

Purpose	Data clear
Function (Purpose)	Used to clear the waste toner counter in the transfer section.
Section	Image process (Photoconductor/Developing/ Transfer/Cleaning)
Item	Counter
Operation/ Procedure	1. Press the [EXECUTE] key. The display for reconfirmation to clear is shown.

2. Select YES (Clear) or NO (Not clear).  
YES : Clear  
NO : Not clear

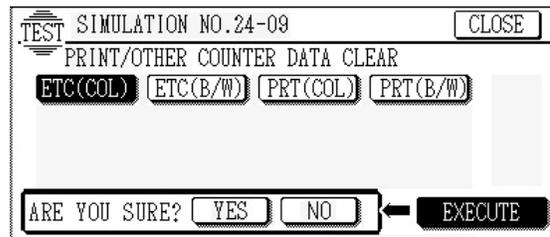
After disposing the transfer waste toner, this counter is cleared.



**24 - 9**

Purpose	Data clear
Function (Purpose)	Printer/Other counter clear
Item	Counter
Operation/ Procedure	1. Select the counter to be cleared. 2. Press the [EXECUTE] key. The display for reconfirmation to clear is shown.
	3. Select YES or NO. YES : Clear NO : Not clear
<b>[ETC(COL)]</b>	Other counter (Color)
<b>[ETC(B/W)]</b>	Other counter (B/W)
<b>[PRT(COL)]</b>	Printer counter (Color)
<b>[PRT(B/W)]</b>	Printer counter (B/W)

(When selected, it is highlighted.)



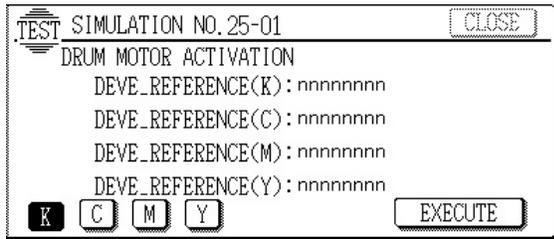
**25**

**25 - 1**

Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the main drive (excluding the scanner section) and the toner density sensor. (The toner density sensor output can be monitored.)
Section	Image process (Photoconductor/Developing/ Transfer/Cleaning)
Item	Operation
Operation/ Procedure	1. Select the drum motor (drive system) to be checked. 2. When the [EXECUTE] key is pressed, it is highlighted and the main motor rotates and the toner concentration sensor output value is displayed.

The displayed toner concentration sensor output value is of A/D value (255 = 5V).  
The drum drive motor rotates for 3 minutes, and the drive system can be checked.  
After 3 minutes, the main motor stops and the [EXECUTE] key returns to the normal display.  
If the [EXECUTE] key is pressed during rotation, the operation is stopped and the [EXECUTE] key returns to the normal display.  
(During this simulation, the belt motor operates simultaneously with the drum motor.)

- BLACK** Drum motor (Black)
- CYAN** Drum motor (Cyan)
- MAGENTA** Drum motor (Magenta)
- YELLOW** Drum motor (Yellow)



## 25 - 2

Purpose	Setting
Function (Purpose)	Used to make the initial setup (automatic adjustment) of toner density when replacing developer.
Section	Image process (Photoconductor/ Developing/Transfer/ Cleaning)
Operation/ Procedure	Developer/Toner Hopper
Operation/ Procedure	<ol style="list-style-type: none"> <li>1. Select the developing unit to be checked.</li> <li>2. When the [EXECUTE] key is pressed, it is highlighted and the main motor rotates, and the toner concentration sensor detects the toner concentration and the output value is displayed.</li> </ol>

After stirring for 3 minutes, the toner concentration detection level average value is set (stored) as the reference toner concentration control value.

(Note) If the operation is stopped within 3 minutes, the adjustment result is not stored.

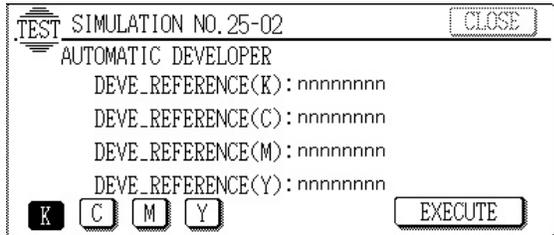
If the [EXECUTE] key is pressed during rotation, the operation stops and the [EXECUTE] key returns to the normal display.

If [EE-EU] or [EE-EL] is displayed, it means the reference toner concentration control value is not set normally.

EE-EL: Less than 79 (1.59V)

EE-EU: More than 177 (3.41V)

(Default value: 128)



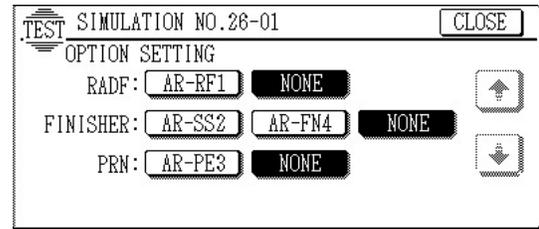
## 26

### 26 - 1

Purpose	Setting
Function (Purpose)	Used to make option setup. (When installing an option, this simulation is used to setup for that option (software).)
Item	Specifications Options
Operation/ Procedure	Enter the code number corresponding to the option installation with the 10-key pad and press the [OK] key. When an option is installed or removed, this setting must be changed accordingly. If this setting is improper, an error message is displayed.

Item	Set value	Connection option
ADF type	0	No connection
	1	AR-RF1
FIN type	0	No connection
	1	AR-SS2
	2	AR-FN4
PRN type	0	No connection
	1	AR-PE3

Default: 0 (No connection) NONE



### 26 - 2

Purpose	Setting
Function (Purpose)	<ol style="list-style-type: none"> <li>1) Used to set the paper size of the large capacity tray. (When the paper size is changed, the software setup must be changed accordingly with this simulation.)</li> <li>2) Used to detect 8.5 × 13 (INCH Series) paper or documents and to set the display mode. (All paper feed modes)</li> <li>3) Used to set the display form of the paper kind in the manual paper feed mode.</li> </ol>
Section	Paper transport
Item	Specifications
Operation/ Procedure	<ol style="list-style-type: none"> <li>1. Used to set the paper size of the large capacity tray.</li> <li>2. Used to set to allow 8.5" × 13" size paper to be treated as a selectable size.</li> <li>3. Used to set the paper kind display mode in the manual paper feed mode.</li> </ol>

\* Documents or paper of 8.5" × 13"# are treated as a selectable size.

	Employed unit	Destination	Set value	
			0 (Default) (Disable)	1 (Enable)
Original	AR-RF1	EX AB series (SUK/SEEG)	A4R	A4R *5
		EX AB series (SCA/Others)	A4R	8.5" × 13" *3
		Inch series (SEC/SECL)	8.5" × 14"	8.5" × 14" *5
		Inch series (Others)	8.5" × 14"	8.5" × 13" *1
		EX AB series	B4	8.5" × 13" *2
	Original table	Inch series	8.5" × 14"	8.5" × 13" *1
Paper	Machine	Manual feed tray	All destinations	8.5" × 14" *4
		Paper feed cassette	All destinations	— *6
	AR-LC9 (LCC)	All destinations	—	—

\*1: An original of 8.5" × 14" is detected as 8.5" × 13".

\*2: An original of B4 size is detected as 8.5" × 13".

\*3: An original of A4R size is detected as 8.5" × 13".

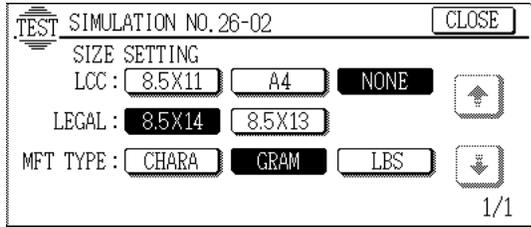
\*4: An original of 8.5" × 14" is detected as 8.5" × 13".

\*5: Applicable by replacing the AR-RF1 original tray.

\*6: Can be set with the key operator program.

Item	Set value	Content
LCC	0	No size specification (Default)
	1	8.5 × 11
	2	A4
LEGAL (INCH series) *7	0	8.5 × 14 (Default)
	1	8.5 × 13
LEGAL (AB series) *7	0	B4 (Default)
	1	8.5 × 13
MFT TYPE	0	Text display
	1	Gram display (Default)
	2	Pond display

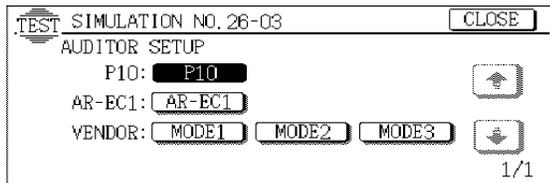
\* 7: Depends on the paper type of the destination.



**26 - 3**

Purpose	Setting
Function (Purpose)	Used to set the auditor specification mode. Setting must be made according to the use conditions of the auditor.
Section	Auditor
Item	Specifications
Operation/ Procedure	Enter the code number corresponding to the auditor specification mode with the 10-key pad and press the [OK] key.

Set value	Kind
P10	Built-in auditor (Default)
AR-EC1	Card auditor
VENDOR	Coin vendor (MODE 1 – 3)



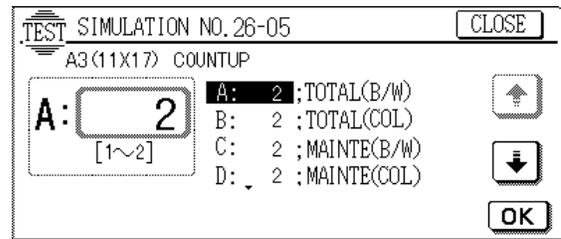
**26 - 5**

Purpose	Setting
Function (Purpose)	Used to set the count mode of the total counter, the developer counter, and the maintenance counter.
Item	Specifications Counter
Operation/ Procedure	Used to set the single count-up or double count-up for the total counter, the maintenance counter, and the developer counter when printing is performed with A3, 11 × 17" paper,

1. Select the kind of the counter with [↑] and [↓] key.
2. Enter "1" or "2" with the 10-key pad and press the [OK] key.
  - 1 : Single count
  - 2 : Double count

Item	Content	Upper limit	Lower limit	Default value
A	Total counter (B/W)	2	1	2
B	Total counter (Color)	2	1	2
C	Maintenance counter (B/W)	2	1	2
D	Maintenance counter (Color)	2	1	2
E	Developer counter (B/W)	2	1	2
F	Developer counter (Color)	2	1	2

Item	Set value	Content
A	1	Total counter (B/W) A3 up quantity 1
	2	Total counter (B/W) A3 up quantity 2
B	1	Total counter (Color) A3 up quantity 1
	2	Total counter (Color) A3 up quantity 2
C	1	Maintenance counter (B/W) A3 up quantity 1
	2	Maintenance counter (B/W) A3 up quantity 2
D	1	Maintenance counter (Color) A3 up quantity 1
	2	Maintenance counter (Color) A3 up quantity 2
E	1	Developer counter (B/W) A3 up quantity 1
	2	Developer counter (B/W) A3 up quantity 2
F	1	Developer counter (Color) A3 up quantity 1
	2	Developer counter (Color) A3 up quantity 2



**26 - 6**

Purpose	Setting
Function (Purpose)	1) Used to set the specifications (paper, fixed copy magnification ratio, machine operations in case of an image (process) correction error) according to the destination.

Item	Specifications	Destination
Operation/ Procedure		
U.S.A.	United States of America	
Canada	Canada	
Inch	Inch series, other destinations	
Europe	Europe	
U.K.	United Kingdom	
AB_A	AB series (A5 detection) other destinations	

\* When the destination is changed with SIM 26-6, the following data are also changed.

SIM No.	Content	Set value					
		U.S.A	Canada	Inch	Europe	U.K.	AB_A
SIM26-02	Manual feed paper kind display	2	2	2	1	1	1
SIM26-02	LEGAL set value	0	0	0	0	0	0
SIM26-28	AC power voltage	120	120	120	230	230	230
SIM26-30	CE mark Enable/Disable	0	0	0	1	1	1
SIM26-52	White paper exit count up	1	1	1	1	1	1
SIM26-55	Thick paper image process mode setup	DISABLE	DISABLE	DISABLE	DISABLE	DISABLE	DISABLE
SIM43-1C	Ready state control temperature (HL1)	182	182	182	177	177	177
SIM43-1D	eady state control temperature (HL2)	152	152	152	147	147	147
SIM48-6C	Fusing motor speed correction adjustment value (L)	55	55	55	55	55	55
SIM48-6D	Fusing motor speed correction adjustment value (S)	45	45	45	45	45	45

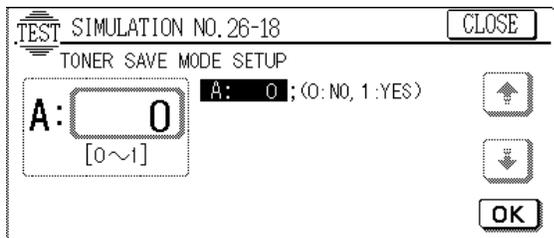


**26 - 18**

Purpose	Setting
Function (Purpose)	Used to set YES/NO of toner save operation. (This simulation is valid only for Japan and UK versions. It depends on Sim 26-6 (Destination) setting. For the other destinations, the same setting can be made by the user program P22. (Effective only in the mono-chrome copy mode)
Item	Specifications                      Operation mode (Common)
Operation/ Procedure	Enter the code number corresponding to the condition (the toner save YES/NO) with the 10-key and press the [OK] Key.

Item	Content	Upper limit	Lower limit	Default value
A	Toner save mode inhibited	1	0	0

Item	Set value	Content
A	0	Toner save mode allowed
	1	Toner save mode inhibited

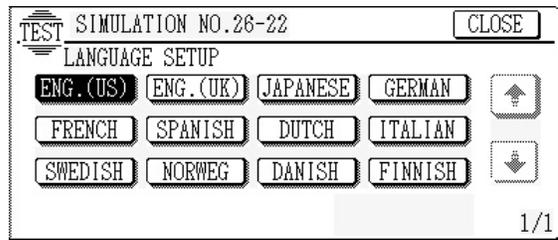


**26 - 22**

Purpose	Setting
Function (Purpose)	Used to set the specification (language) for the destination.
Item	Specifications                      Language
Operation/ Procedure	The currently selected language is highlighted. Press a desired language key, and it is saved in the EEPROM.

Display	Language
ENG.(US)	American English
ENG.(UK)	English
JAPANESE	Japanese
GERMAN	German
FRENCH	French
SPANISH	Spanish
DUTCH	Dutch
ITALIAN	Italian
SWEDISH	Swedish
NORWEG	Norwegian
DANISH	Danish
FINNISH	Finnish

\* The display changes depending on the built-in language.



**26 - 28**

Purpose	Setting
Function (Purpose)	Used to set the AC power voltage. (For control of the fusing section heater lamp)
Section	Power supply (DC/AC/High)
Item	Operation
Operation/ Procedure	Select the mode corresponding to the AC power voltage.

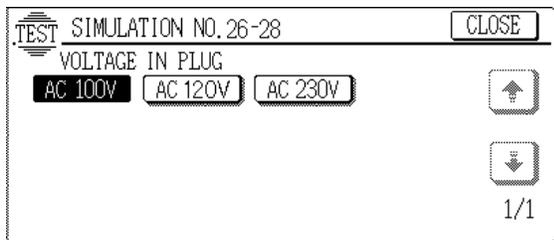
(This is to supply the proper fusing heater lamp power.)

[AC100V] 100V system

[AC120V] 120V system

[AC230V] 200V system

(Default value: AC100V)



**26 - 30**

Purpose	Setting
Function (Purpose)	Used to set the CE mark complying operation mode. (Conforms to the soft start when driving the fusing heater lamp.)
Section	Fixing (Fusing)
Item	Specifications                      Operation mode (Common)

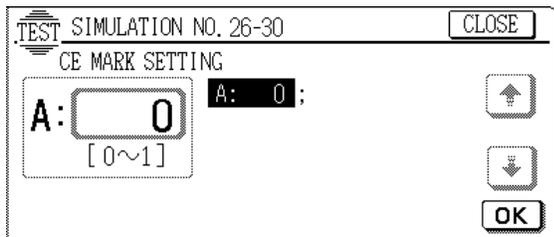
Operation/ Procedure Used to set the operation of the heater lamp slow up control as CE mark standard complying operation.

Enter the number corresponding to the operation mode with the 10-key and press the [OK] key.

0: Normal operation heater lamp slow up control is not performed.

1: CE mark standard complying operation (Heater lamp slow up control) (Europe)

(Default value: 0)



**26 - 32**

Purpose	Setting
Function (Purpose)	Used to set the fan rotating speed (low speed).
Item	Operation
Operation/ Procedure	1. Select the fan motor whose speed is to be adjusted with [↑] and [↓] keys and press the [OK] key.

2. Enter the adjustment value with the 10-key.

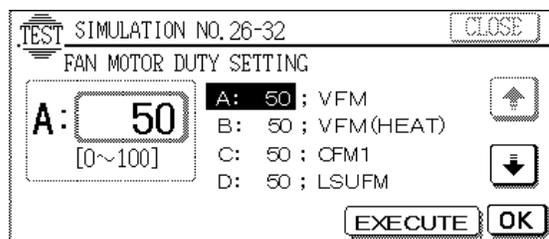
3. Press the [OK] key.

The adjustment value entered in procedure 2 is set.

In the fan motor low speed rotation mode (ready condition), the rotating speed is controlled with this adjustment value.

The adjustment value means PWM duty %.

		Default value
VFM	: Exhaust fan motor 1	15
VFM (HEAT)	: Exhaust fan motor 1 (Pre-heating)	15
CFM1	: Optical cooling fan motor 1	0
LSUFM	: LSU cooling fan motor	15
DCFM	: DC power cooling fan motor	0



**26 - 35**

Purpose	Setting
Function (Purpose)	Used to set whether the trouble history display by SIM 22-4 is displayed as one trouble or as the accumulated number of continuous troubles when two or more troubles of same kind occur continuously.
Item	Specifications
Operation/ Procedure	Used to set whether the trouble history display by SIM 22-4 is displayed as one trouble or as the accumulated number of continuous troubles when two or more troubles of same kind occur continuously.

Select the number corresponding to the display mode with the 10-key and press the [OK] key.

1: The trouble history display by SIM 22-4 is displayed as it is when two or more troubles occur continuously.

0: The trouble history display by SIM 22-4 is displayed as one trouble when two or more troubles occur continuously.

Default: 0

Item	Content	Upper limit	Lower limit	Default value
A	Trouble memory mode setup	1	0	0

Item	Set value	Content
A	0	Enabled to write two or more troubles
	1	Disabled to write two or more troubles



## 26 - 56

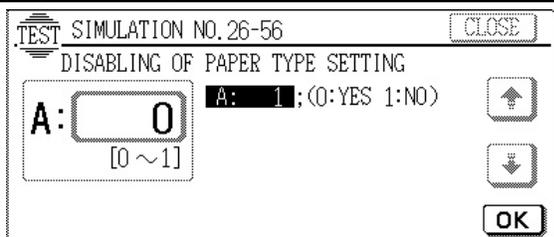
Purpose	Setting
Function (Purpose)	Used to set Disable/Enable of paper type setting of key operation P67 and P68.
Operation/ Procedure	When this simulation is executed, the currently set value is displayed.

At that time, the set value can be changed with 10-key.

When [OK] key is pressed, the currently set value is saved to the EEPROM.

Item	Content	Upper limit	Lower limit	Default
A	Disable/Enable of paper type	1	0	0

Item	Set value	Content
A	0	Disables key operation P67 and P68.
	1	Enables key operations P67 and P68.



## 27

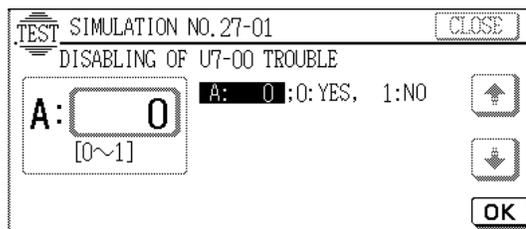
### 27 - 1

Purpose	Setting
Function (Purpose)	Used to set the specifications for operations in case of communication trouble between the host computer and MODEM (machine side). (When communication trouble occurs between the host computer MODEM and the machine, the self diag display (U7-00) is printed and setting for inhibition of print or not is made.)
Section	Communication unit (TEL/LIU/MODEM etc.)
Item	Specifications                      Operation mode (Common)
Operation/ Procedure	Enter the code number corresponding to the operation mode with the 10-key and press the [OK] key. Used to set Enable/Disable of U7-00 trouble detection.

Set value	Content	Default value
0	U7-00 trouble detection is disabled. (Default)	0
1	U7-00 trouble detection is enabled.	

0: Though communication trouble occurs between the host computer and the MODEM (machine side), the operation of the machine is not affected.

1: When communication trouble occurs between the host computer and the MODEM (copier side), the self diag display (U7-00) id shown and printing is inhibited.



### 27 - 2

Purpose	Setting
Function (Purpose)	Used to set or change the host computer/MODEM number. (This setting is required when a communication is made between the copier and the computer through MODEM.)
Section	Communication unit (TEL/LIU/MODEM etc.)
Item	Data                                      User data
Operation/ Procedure	1. Select the PC/MODEM(HOST#/TEL#) to be set or changed. (The selected key is highlighted.)

2. Press the [OK] key.

The key is highlighted and inquiring of the present set number of the selected PC/MODEM is made to the host computer.

(When the number is supplied from the host normally.)

The present set number is displayed in the column of PRESENT (or no display is made if not registered) and the [SET] key at the upper right returns from the gray display to the normal display.

(In case of a trouble)

"Failed (U7-00)" is displayed in the column of PRESENT and the [OK] key at the lower right returns from the highlight display to the normal display.

3. When changing the number, enter the new number (max. 24 digits) with the 10-key and the following keys.

- # : [P]((program) key
- \* : [AUDIT CLEAR] ((Dept. count end) key
- , : [i]((Information) key

The entered number is displayed in the column of NEW.

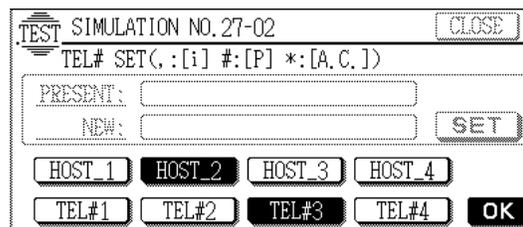
4. When the [SET] key at the upper right is pressed, the newly set number for the selected PC/MODEM is registered.

(When registered normally)

The number displayed in the column of NEW disappears and the newly set number appears in the column of PRESENT

(In case of a trouble)

"Failed (U7-00)" is displayed in the column of NEW.



**Note** To perform this setting, the host computer and the machine must be connected through MODEM.

**27 - 3**

Purpose	Setting
Function (Purpose)	Used to set and change the ID numbers of the copier, the host computer/MODEM. (This setting is required when a communication is made between the copier and the computer through MODEM.)
Section	Communication unit (TEL/LIU/MODEM etc.)
Item	Data Communication
Operation/ Procedure	1. Select between PPC(copier) and PC/MODEM(host). The key is highlighted.

- Press the [OK] key at the lower right. (The key is highlighted and an inquiry of the selected ID No, to the host.)

(When the number is supplied from the host normally)  
The present set number is displayed in the column of PRESENT (or no display is made if not registered) and the [SET] key at the upper right returns from the gray display to the normal display.

(In case of a trouble)  
"Failed (U7-00)" is displayed in the column of PRESENT and the [OK] key at the lower right returns from the highlight display to the normal display.

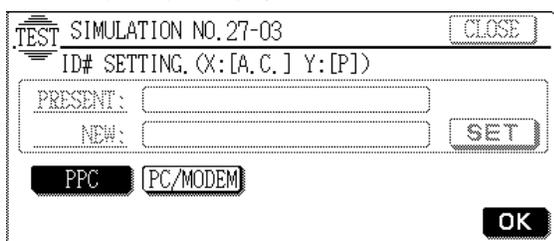
- When changing the number, enter the new number (max. 24 digits) with the 10-key and the following keys.

X: [P](program) key  
Y: [AUDIT CLEAR](dept. count end) key

- The entered number is displayed in the column of "NEW"
- When the [SET] key at the upper right is pressed, the newly set ID number of the selected PC/MODEM is registered on the host side.

(When registered normally)  
The number in the column of NEW disappears and the newly set and registered number appears in the column of PRESENT.

(In case of a trouble)  
"Failed (U7-00)" is displayed in the column of NEW



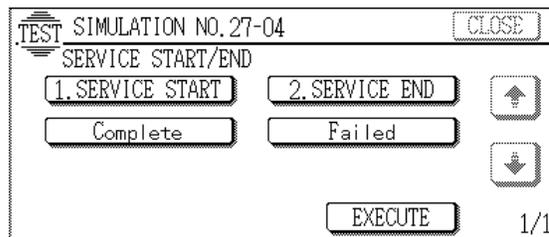
Note To perform this setting, the host computer and the machine must be connected through MODEM.

**27 - 4**

Purpose	Setting
Function (Purpose)	Used to enter the service start time and service end time for management of servicing. (The data can be checked with the host computer.)
Section	Communication unit (TEL/LIU/MODEM etc.)
Item	Data Communication
Operation/ Procedure	1. Press the [SERVICE START] key when starting servicing. The key is highlighted.

- Press the [EXECUTE] key. The key is highlighted and the data on service start time is sent to the host.
- Press the [SERVICE END] key after completion of servicing. The key is highlighted.

- Press the [EXECUTE] key. The key is highlighted and the data on service end time is sent to the host. When the host receives the data normally, "Complete" is highlighted. In case of a trouble, "Failed" is highlighted.

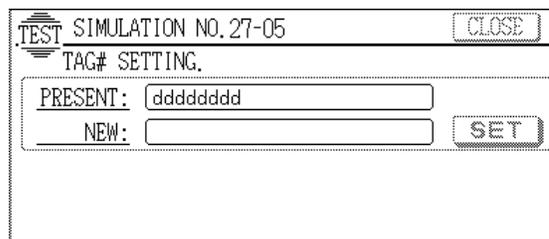


Note To perform this setting, the host computer and the machine must be connected through MODEM.

**27 - 5**

Purpose	Setting
Function (Purpose)	Used to enter the machine TAG No. (This function allows to check the TAG No. of the machine with the host computer.)
Section	Communication unit (TEL/LIU/MODEM etc.)
Item	Data User data
Operation/ Procedure	1. When entering the tag No. newly or changing the tag No. enter the value (max. 8 digits) with the 10-key. The entered number is displayed in the column of "NEW"

- Press the [SET] key. The new tag No. entered in procedure 1 is set. It is advisable to enter the machine's serial No. for machine management and servicing.



Note To perform this setting, the host computer and the machine must be connected through MODEM.

**27 - 6**

Purpose	Setting
Function (Purpose)	Used to set ON/OFF of service call sending to the service center by use of RIC when trouble occurred in the machine. (The service call is not sent automatically, but sent manually.)
Section	Communication unit (TEL/LIU/MODEM etc.)
Item	Specifications Others
Operation/ Procedure	Enter the value corresponding to the set content and press the [OK] key. Manual service call Enable/Disable setting can be made.

Set value	Set content	Default value
0	Manual service call enable (Default)	0
1	Manual service call disable	

TEST SIMULATION NO. 27-06 CLOSE

MANUAL SERVICE CALL SETUP

A:  A: 0; 0: YES, 1: NO ↑

[0~1] ↓

OK

## 29

### 29 - 4

Purpose	Setting
Function (Purpose)	Used to set the print count system in the printer mode.
Section	Memory
Item	Counter
Operation/ Procedure	Set whether to count all the pages as color print pages or to count color pages and monochrome pages separately in the printer mode when a print job of mixed documents of color pages and monochrome pages is performed.

Item	Set value	Content		Transfer belt position	
		Total counter	Maintenance counter		
A	0	All the pages are counted by the color counter.	All the pages are counted by the color counter.	Color mode	
	1	Color pages and black-and-white pages are counted separately.	All the pages are counted by the color counter.	Color mode	
	2	Color pages and black-and-white pages are counted separately.	Color pages and black-and-white pages are counted separately.	Every time when the print page is switched to the color page/black-and-white page, the transfer belt position is switched to the color/black-and-white mode position accordingly.	
	3	Single	Color pages and black-and-white pages are counted separately.	Color pages and black-and-white pages are counted separately.	Every time when the print page is switched to the color page/black-and-white page, the transfer belt position is switched to the color/black-and-white mode position accordingly.
		Duplex	All the pages are counted by the color counter.	All the pages are counted by the color counter.	Color mode
	4	Single	Color pages and black-and-white pages are counted separately.	Color pages and black-and-white pages are counted separately.	Every time when the print page is switched to the color page/black-and-white page, the transfer belt position is switched to the color/black-and-white mode position accordingly.
Duplex		Color pages and black-and-white pages are counted separately.	All the pages are counted by the color counter.	Color mode	

TEST SIMULATION NO. 29-04 CLOSE

COLOR ACCOUNT INFORMATION FOR PRINTER

A:  A: 0; COLOR ACCOUNT ↑

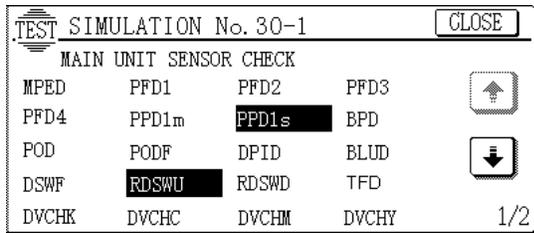
[0~4] ↓

OK

30 - 1

Purpose	Operation test/check
Function (Purpose)	Used to check the operation of sensors and detectors in the paper feed, paper transport, paper exit sections and the related circuits.
Item	Operation
Operation/Procedure	The active sensors and detectors are highlighted.

- Sensor ON: → Sensor name highlighted.
- Sensor OFF: → Sensor name normally displayed.
- MPED** Manual feed paper empty detection
- PFD1** Cassette 1 paper feed detection
- PFD2** Cassette 2 paper feed detection
- PFD3** Cassette 3 paper feed detection
- PFD4** Cassette 4 paper feed detection
- PPD1m** PRM front paper pass detection (Main side)
- PPD1s** PRM front paper pass detection (Sub side)
- BPD** Fusing pre-detection
- POD** Copier paper exit detection
- DPID** ADU paper feed detection
- BLUD** Belt U/D detection
- DSWF** Front door open/close detection
- RDSWU** Upper paper feed section door open detection
- RDSWD** Lower paper feed section door open detection
- TFD** Waste toner full detection
- DVCHK** Developing unit not-installed detection (K)
- DVCHC** Developing unit not-installed detection (C)
- DVCHM** Developing unit not-installed detection (M)
- DVCHY** Developing unit not-installed detection (Y)
- BELTCH** Belt pull out detection
- HM\_RE** Fusing motor rotary encoder
- DDSW** Paper exit door open detection
- ADUCH** ADU pull out detection
- OEMP** Oil remaining quantity detection

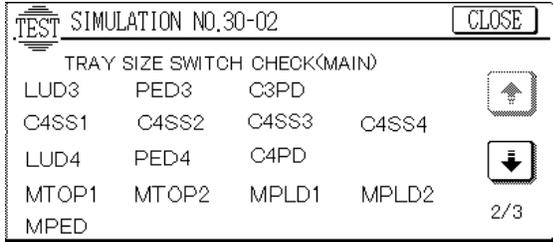
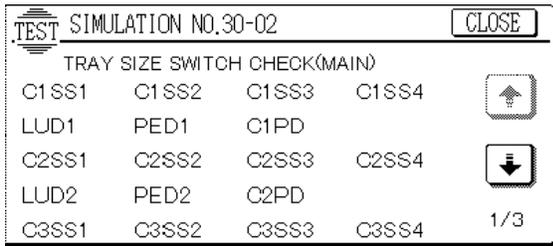


Purpose	Operation test/check
Function (Purpose)	Used to check the operation of sensors and detectors in the paper feed section and the related circuits. (The operation of the paper feed sensors and detectors can be monitored with the LCD display.)
Section	Paper transport
Item	Operation
Operation/Procedure	The active sensors and detectors are highlighted. Sensor ON → Sensor name highlighted. Sensor OFF → Sensor name normally displayed.

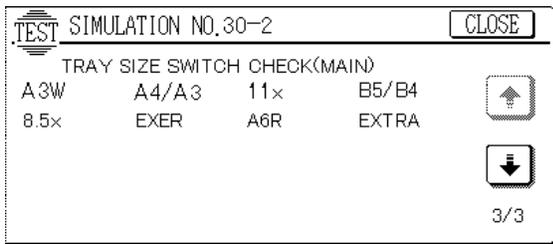
- C1SS1** Copier cassette 1 paper size detection 1
- C1SS2** Copier cassette 1 paper size detection 2
- C1SS3** Copier cassette 1 paper size detection 3
- C1SS4** Copier cassette 1 paper size detection 4
- LUD1** Cassette 1 upper limit detection
- PED1** Copier cassette 1 paper detection
- C1PD** Copier cassette 1 remaining quantity detection 1
- :
- :
- MPLD1** Manual feed paper length detection 1
- MPLD2** Manual feed paper length detection 2
- MTOP1** Manual feed tray length detection 1
- MTOP2** Manual feed tray length detection 2
- MPED** Manual feed tray paper length detection

The display differs depending on the destination.

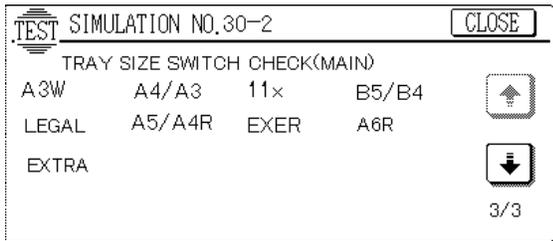
Inch series	Model	Description	Display Note
Inch series	A3W	Manual feed tray (width only) detection size	One of these is displayed.
	A4/A3	Manual feed tray (width only) detection size	
	11x	Manual feed tray (width only) detection size	
	B5/B4	Manual feed tray (width only) detection size	
	8.5x	Manual feed tray (width only) detection size	
	EXER	Manual feed tray (width only) detection size	
	A6R	Manual feed tray (width only) detection size	
	EXTRA	Manual feed tray (width only) detection size	
AB series	A3W	Manual feed tray (width only) detection size	One of these is displayed.
	A4/A3	Manual feed tray (width only) detection size	
	11x	Manual feed tray (width only) detection size	
	B5/B4	Manual feed tray (width only) detection size	
	LG	Manual feed tray (width only) detection size	
	A5/A4R	Manual feed tray (width only) detection size	
	EXER	Manual feed tray (width only) detection size	
	A6R	Manual feed tray (width only) detection size	
EXTRA	Manual feed tray (width only) detection size		



**Inch**



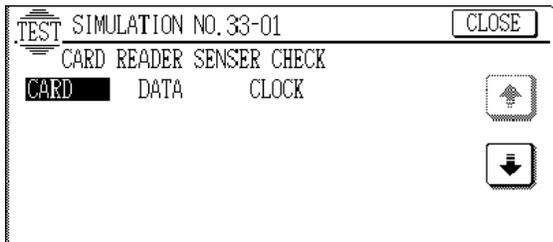
**AB series**



**33**

**33 - 1**

Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the card reader and the sensors and the related circuits. (The card reader sensor operation can be monitored with the LCD display.)
Section	Others
Item	Operation
Operation/Procedure	CARD : Card insertion detection DATA : Card number signal detection CLOCK Basic clock signal detection



**40**

**40 - 1**

Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the manual feed tray paper size detector and the related circuit. (The operation of the manual feed tray paper size detector can be monitored with the LCD display.)
Section	Paper transport
Item	Operation
Operation/Procedure	The active sensors and detectors are highlighted.

Sensor ON → Sensor name highlighted.

Sensor OFF → Sensor name normally displayed.

**MPLD1** Manual feed paper length detection 1

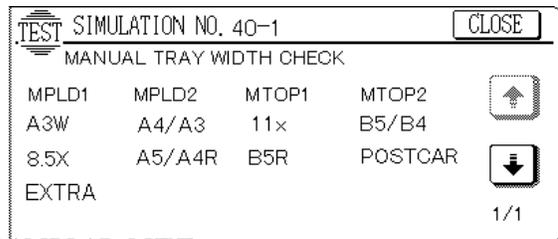
**MPLD2** Manual feed paper length detection 2

**MTOP1** Manual feed tray length detection 1

**MTOP2** Manual feed tray length detection 2

The display differs depending on the destination.

<b>Inch series</b>	<b>A3W</b>	Manual feed tray (width only) detection size	One of these is displayed.
	<b>A4/A3</b>	Manual feed tray (width only) detection size	
	<b>11x</b>	Manual feed tray (width only) detection size	
	<b>B5/B4</b>	Manual feed tray (width only) detection size	
	<b>8.5x</b>	Manual feed tray (width only) detection size	
	<b>EXER</b>	Manual feed tray (width only) detection size	
	<b>A6R</b>	Manual feed tray (width only) detection size	
<b>AB series</b>	<b>EXTRA</b>	Manual feed tray (width only) detection size	One of these is displayed.
	<b>A3W</b>	Manual feed tray (width only) detection size	
	<b>A4/A3</b>	Manual feed tray (width only) detection size	
	<b>11x</b>	Manual feed tray (width only) detection size	
	<b>B5/B4</b>	Manual feed tray (width only) detection size	
	<b>LG</b>	Manual feed tray (width only) detection size	
	<b>A5/A4R</b>	Manual feed tray (width only) detection size	
<b>EXER</b>	Manual feed tray (width only) detection size		
<b>A6R</b>	Manual feed tray (width only) detection size		
<b>EXTRA</b>	Manual feed tray (width only) detection size		

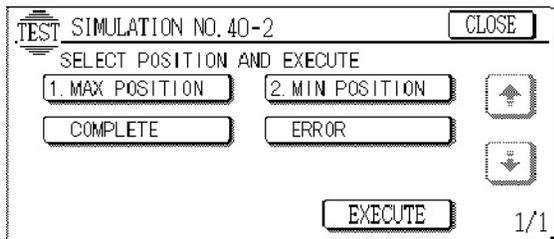


**40 - 2**

Purpose	Adjustment
Function (Purpose)	Used to adjust the manual feed tray paper width detector detection level.
Section	Paper transport
Item	Operation
Operation/Procedure	1. Open the manual paper feed guide at maximum. 2. Press the [MAX POSITION] key.

- Press the [EXECUTE] key.  
The [EXECUTE] key is highlighted then it returns to the normal display.  
The manual paper feed guide max. width position detection level is recognized.
- Open the manual paper feed guide at minimum.
- Press the [MIN POSITION] key.
- Press the [EXECUTE] key.  
The key is highlighted then it returns to the normal display.  
The manual paper feed guide min. position detection level is recognized.

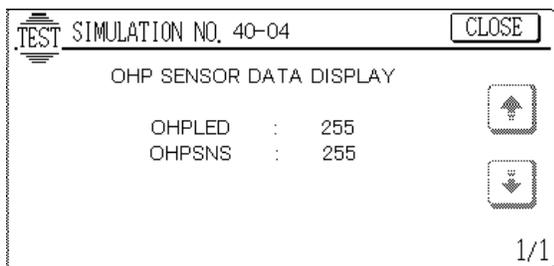
If the above operation is not performed properly, the ERROR display is highlighted.  
If performed properly, the above data is stored and the COMPLETE is highlighted.



**40 - 4**

Purpose	Operation test/check
Function (Purpose)	Used to check the OHP sensor and its control circuit.
Section	Paper transport
Item	Operation
Operation/Procedure	OHP sensor light emitting output/light reception output levels are displayed in real time.

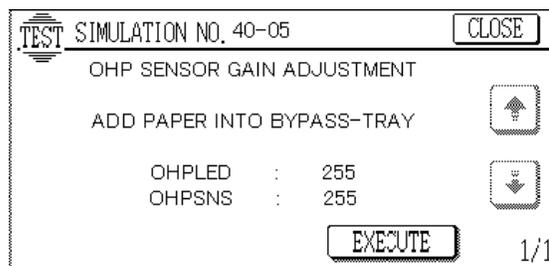
**OHPLED:** OHP sensor light emitting output  
**OHPSNS:** OHP sensor light reception output



**40 - 5**

Purpose	Adjustment
Function (Purpose)	Used to adjust the detection level of the OHP sensor.
Section	Paper feed
Item	Operation
Operation/Procedure	1. Set A4 (11 × 8.5") paper on the manual paper feed tray.

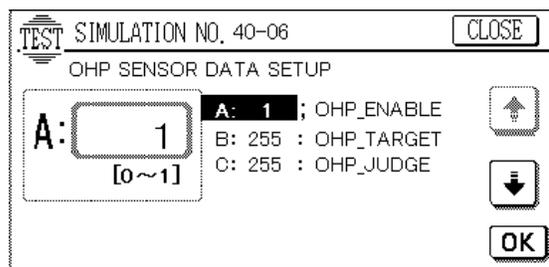
- Press the [EXECUTE] key.  
Paper on the manual paper feed tray is fed and stopped at the OHP sensor section.  
The sensor LED current level is automatically adjusted to provide the specified (target) output of the OHP sensor.  
After completion of the adjustment, paper is discharged and the result is displayed.  
When the adjustment is completed normally, "ADJUSTMENT COMPLETE" is displayed. In case of a trouble, "ADJUSTMENT ERROR" is displayed.



**40 - 6**

Purpose	Setting
Function (Purpose)	Used to set the OHP sensor adjustment parameter.
Section	Paper feed
Item	Operation
Operation/Procedure	1. Select the set item with the scroll key. 2. Enter the setup parameter with the 10-key.

- Press the [OK] key.
- OHP\_ENABLE** : OHP sheet use enable setup  
1: Enable 0: Disable  
**OHP\_TARGET** : OHP sensor adjustment target level  
**OHP\_JUDGE** : OHP paper judgement reference level  
In the OHP paper judgement, this level is judged as the threshold value.



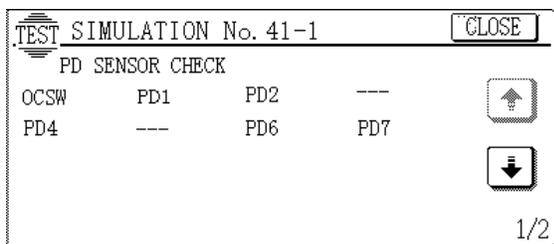
(Default value) A: 1  
B: 200  
C: 120

# 41

## 41 - 1

Purpose	Operation test/check/Operation data Output/Check (Display/Print)
Function (Purpose)	Used to check the operation of the document size sensor and the related circuit. (The operation of the document size sensor can be monitored with the LCD display.)
Section	Others
Item	Operation
Operation/Procedure	The active sensors and detectors are highlighted.

OCSW	Document cover state	Normal display: Close	Reverse display: Open
PD*	Document sensor	Normal display: Document empty	Reverse display: Document present
---	No sensor	Reverse display: No sensor	



The operation of this simulation differs depending on the setting of the destination (SIM 26-6).

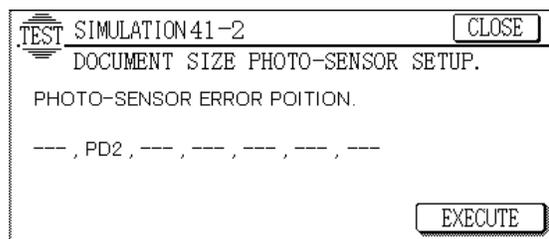
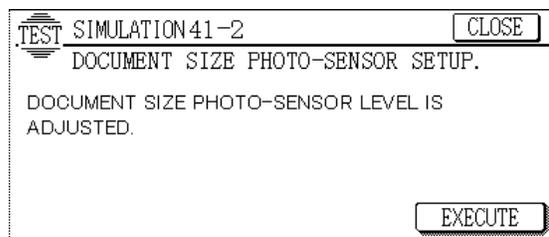
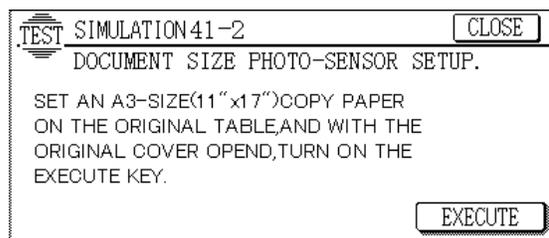
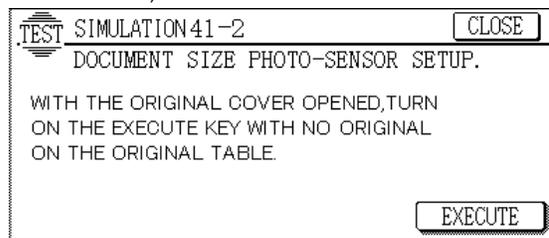
SIM26-6 setting

Destination (Country information)		INCH/AB series
U.S.A.	U.S.A.	INCH
Canada	Canada	INCH
Inch series, other destinations	Inch	INCH
Europe	Europe	AB
United Kingdom	U.K.	AB
AB series (A5 detection), other destinations	AB_A	AB

## 41 - 2

Purpose	Adjustment
Function (Purpose)	Used to adjust the document size sensor detection level.
Section	Others
Item	Operation

- Operation/Procedure
1. Open the original table, and press the [EXECUTE] key without original on the original table. The sensor level setting with no original on the table is performed.
  2. Set an A3 paper (11" × 17") and press the [EXECUTE] key. The sensor level setting with original is performed. (Default value: 128)



**41 - 3**

Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the document size sensor and the related circuit. (The document size sensor output level can be monitored with the LCD display.)
Section	Others
Item	Operation
Operation/ Procedure	The detection output level of each sensor is displayed in real time.

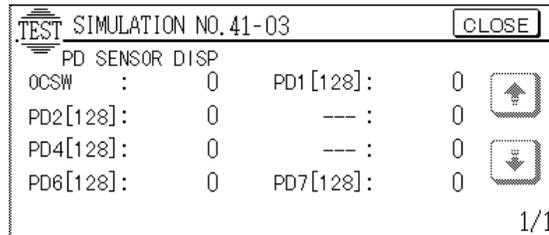
\* The value in [ ] shown at the right of each sensor name is the threshold value.

**OCSW** Document cover state

Data	Document cover state
0	Cover close
1	Cover open

**PD\*** Document sensor [0 – 255]

--- No sensor [0]



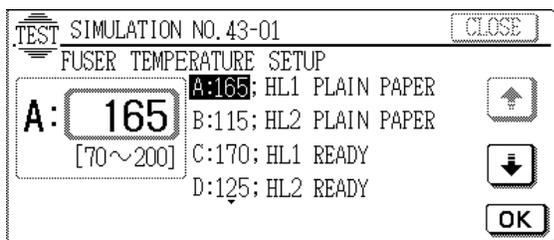
**43**

**43 - 1**

Purpose	Setting
Function (Purpose)	Used to set the fusing temperature in each operation mode.
Section	Fixing (Fusing)
Item	Operation
Operation/ Procedure	<ol style="list-style-type: none"> <li>Select the kind of lamps and the operation mode with [↑], [↓] keys.</li> <li>Enter the set value with the 10-key.</li> </ol>

3. Press the [OK] key to set the fusing temperature set in procedure 2.

Display	Content	Set range	Set value					
			U.S.A	Canada	Inch	Europe	U.K	AB_A
<b>A: HL1 PLAIN PAPER</b>	Normal mode control temperature (HL1)	70 to 200	170	170	170	170	170	170
<b>B: HL2 PLAIN PAPER</b>	Normal mode control temperature (HL2)		125	125	125	125	125	125
<b>C: HL1 READY</b>	Ready state control temperature (H1)		182	182	182	177	177	177
<b>D: HL2 READY</b>	Ready state control temperature (H2)		152	152	152	147	147	147
<b>E: HL1 E_STAR</b>	Energy save mode control temperature (HL1)		146	146	146	146	146	146
<b>F: HL1 PRE-BK</b>	Control temperature (HL1) when resetting to B/W from preheat		158	158	158	158	158	158
<b>G: HL1 HEAVYPAPER1</b>	Heavy paper 1 mode control temperature (HL1)	70 to 210	185	185	185	185	185	185
<b>H: HL2 HEAVYPAPER1</b>	Heavy paper 1 mode control temperature (HL2)	70 to 200	155	155	155	155	155	155
<b>I: HL1 HEAVYPAPER2</b>	Heavy paper 2 mode control temperature (HL1)	70 to 210	200	200	200	200	200	200
<b>J: HL2 HEAVYPAPER2</b>	Heavy paper 2 mode control temperature (HL2)	70 to 200	155	155	155	155	155	155
<b>K: HL1 TRANSPARENCY</b>	OHP mode control temperature (HL1)		185	185	185	185	185	185
<b>L: HL2 TRANSPARENCY</b>	OHP mode control temperature (HL2)		175	175	175	175	175	175
<b>M: HL1 TRANSPARENT2</b>	OHP 2 mode control temperature (HL1)		185	185	185	185	185	185
<b>N: HL2 TRANSPARENT2</b>	OHP 2 mode control temperature (HL2)		175	175	175	175	175	175



Note Never set to another value than the specified value (default). (Otherwise, a trouble may occur.)

**43 - 7**

Purpose	Adjustment
Function (Purpose)	Used to adjust the fusing oil supply amount. (Adjustment of oil motor ON time and oil motor ON interval)
Section	Fixing (Fusing)
Item	Operation
Operation/ Procedure	1. Select the adjustment item with [↑], [↓] keys. <b>A: ON-TIME</b> Fusing oil pump ON time [ms] <b>B: CTRL-CYCLE</b> Fusing oil pump control cycle [ms]

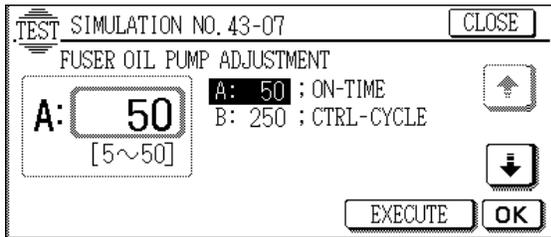
- Enter the set value with the 10-key.
- Press the [OK] key.  
 When the [EXECUTE] key is pressed, it is highlighted and the pump is operated with the set content.  
 When the [EXECUTE] key is pressed again, the display returns to the normal display and the pump is stopped.

	Range [ms]	Default value
ON-TIME	5 - 50	12
CTRL-CYCLE	17 - 250	130

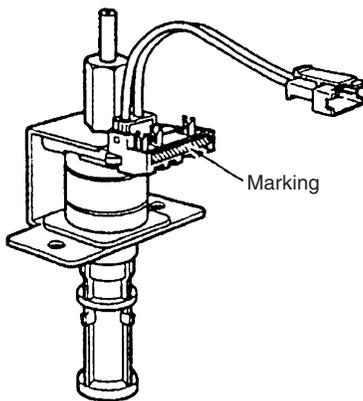
(Example) When ON-TIME is 12ms and CTRL-CYCLE is 250ms, 12ms of ON and (250+50) -12ms of OFF are repeated.

Default

**A: ON-TIME** 12 [ms]  
**B: CTRL-CYCLE** 130 [ms]



When installing (replacing) this pump, set the pump operation value of Sim 43-7 referring to the marking color shown in the illustration below.



Marking color	Setting of simulation 43-7	
	A	B
Blue	12	80
Red	12	180
None	12	130

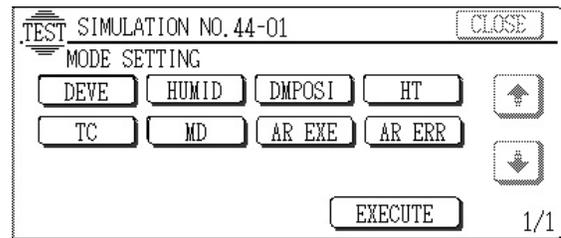
**44**

**44 - 1**

Purpose	Setting
Function (Purpose)	Used to set enable/disable of correction operations in the image forming (process) section.
Section	Image process (Photoconductor/Developing/Transfer/Cleaning)
Item	Operation

- Select the process item to enable the operation.
- Press the [EXECUTE] key.  
 (The operations of all process items must be enabled.)

- DEVE:** Developer life correction
- HUMID:** Humidity correction
- DM POSI:** Drum phase alignment
- MD:** OPC drum membrane decrease correction
- TC:** Transfer output correction
- HT:** Half tone correction
- AR EXE:** Automatic resist adjustment
- AR ERR:** Automatic resist adjustment error check



**44 - 2**

Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the temperature sensor and the humidity sensor for correction of the image process section. (The sensor detection level can be monitored.)
Item	Operation

- Press the [EXECUTE] key.  
 The main motor rotates and the DM/ID gain adjustment is started.  
 After completion of the adjustment, the [EXECUTE] key returns to the normal display and the main motor stops.  
 At that time, each display data is displayed.

- DMLEDY:** Y drum sensor adjustment value
- DMLEDM :** M drum sensor adjustment value
- DMLEDC:** C drum sensor adjustment value
- DMLEDK:** K drum sensor adjustment value
- PCLEDC:** Color sensor adjustment value
- PCLEDK:** Black sensor adjustment value
- P\_BK\_B:** Belt surface input/Black dark voltage input
- P\_CY:** Calibration plate input/Color dark voltage input
- DMGNDY:** Y drum surface input/Y drum sensor dark level
- DMGNDM:** M drum surface input/M drum sensor dark level
- DMGNDC:** C drum surface input/C drum sensor dark level
- DMGNDK:** K drum surface input/K drum sensor dark level

- MARKY:** Y drum mark input
- MARKM:** M drum mark input

**MARKC:** C drum mark input  
**MARKK:** K drum mark input

**MKY/GND:** Y drum mark reflection ratio  
 = (Y drum mark sense level \*100)/Y drum surface input

**MKM/GND:** M drum mark reflection ratio  
 = (M drum mark sense level \*100)/M drum surface input

**MKC/GND:** C drum mark reflection ratio  
 = (C drum mark sense level \*100)/C drum surface input

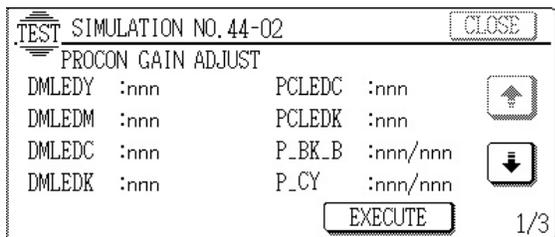
**MKK/GND:** K drum mark reflection ratio  
 = (K drum mark sense level \*100)/K drum surface input

**PCSKMAX:** Max. value of belt surface input

**PCSKMIN:** Min. value of belt surface input

**PCSKDIF:** Difference between max. and min. values of PCSKDIF belt surface input  
 = (Max. value of belt surface input – Min. value of belt surface input)

**REG O/I:** Resist sensor adjustment value/ light emitting quantity

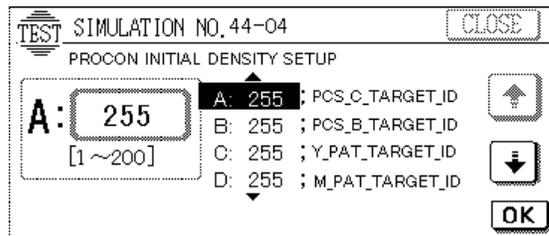


**44 - 4**

Purpose	Setting
Function (Purpose)	Used to set the target image (reference) density level in correction (process correction) operations in the image forming section.
Section	Image process (Photoconductor/Developing/Transfer/Cleaning)
Item	Picture quality                      Density
Operation/ Procedure	1. Select the adjustment item with [↑], [↓] keys. 2. Enter the set value with 10-key. (255 levels)

3. Press the [OK] key. (The value entered in procedure 2 is set.)

		Default value
Color sensor adjustment reference level	PCS_C_TARGET_ID	102
Black sensor adjustment reference level	PCS_B_TARGET_ID	133
Yellow reference density level	Y_PAT_TARGET_ID	90
Magenta reference density level	M_PAT_TARGET_ID	100
Cyan reference density level	C_PAT_TARGET_ID	83
Black reference density level	K_PAT_TARGET_ID	22

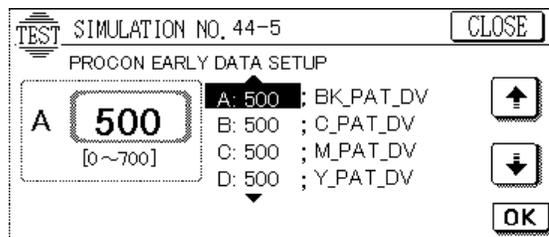


**44 - 5**

Purpose	Setting
Function (Purpose)	Used to set the correction start developing bias voltage in correction (process correction) operations in the image forming section.
Section	Image process (Photoconductor/Developing/Transfer/Cleaning)                      Developer/Toner Hopper
Item	Operation
Operation/ Procedure	1. Select the parameter mode with [↑], [↓] keys. 2. Enter the parameter with the 10-key.

3. Press the [OK] key. (The value entered in procedure 2 is set.)  
 Initial developing bias voltage level during the image section correction operation (Set to default.)

		Lower limit	Upper limit	Default value
<b>BK_PAT_DV</b>	Initial developing bias voltage level (Black)	0	700	325
<b>C_PAT_DV</b>	Initial developing bias voltage level (Cyan)	0	700	325
<b>M_PAT_DV</b>	Initial developing bias voltage level (Magenta)	0	700	325
<b>Y_PAT_DV</b>	Initial developing bias voltage level (Yellow)	0	700	325

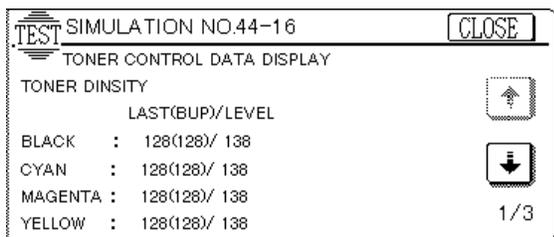






**44 - 16**

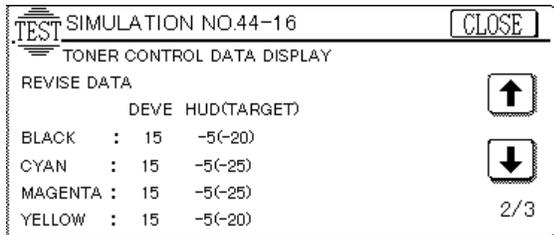
Purpose	Operation data output/Check (Display/Print)	
Function (Purpose)	Used to check the toner concentration correction result. (This simulation allows to check if correction is executed properly or not.)	
Section	Image process (Photoconductor/ Developing/Transfer/ Cleaning)	Developer/Toner Hopper
Item	Data	Operation data (Machine condition)
Operation/ Procedure	<p><b>[Content]</b>            Toner concentration</p> <p><b>LAST (BUP) LEVEL</b> Toner concentration level  <b>LEVEL</b> Current toner concentration reference control level</p>	



**[Content]**

Toner concentration level correction value

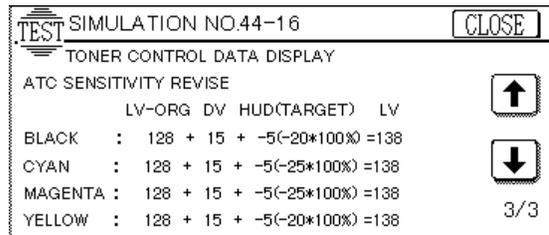
- DEVE** Toner concentration correction level for the developer counter (use frequency)
- HUD (TARGET)** Toner concentration correction level for the current humidity (Target correction level for humidity)



**[Content]**

- Black** Reference value (Toner concentration reference control level set with SIM 25-2) + Life correction + Humidity correction = Toner level
  - Cyan** Reference value (Toner concentration reference control level set with SIM 25-2) + Life correction + Humidity correction = Toner level
  - Magenta** Reference value (Toner concentration reference control level set with SIM 25-2) + Life correction + Humidity correction = Toner level
  - Yellow** Reference value (Toner concentration reference control level set with SIM 25-2) + Life correction + Humidity correction = Toner level
- LV-ORG: Toner concentration reference control level set with SIM 25-2
- DV: Toner concentration correction level for developer counter (use frequency)
- HUD (TARGET): Toner concentration correction level for the current humidity (Target correction level for humidity/Toner concentration sensor correction level)
- LV: Current toner concentration reference control level

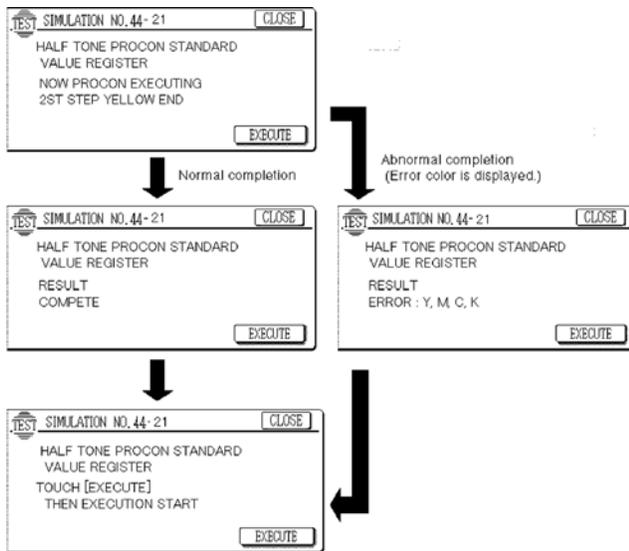
Note: When correction for the developer counter (life) or humidity correction is inhibited (OFF) with SIM 44-1, the correction level display is 0.



#### 44 - 21

Purpose	Setting
Function (Purpose)	Used to store color balance adjustment data. (Half tone image correction initial setting) (After execution of color balance adjustment with SIM 46-21, this simulation must be executed.)
Item	Picture quality
Operation/Procedure	Press the [EXECUTE] key, it is highlighted, the operation is started.

After completion of the execution, the [EXECUTE] key returns to the normal display and the main motor stops.  
In case of an error, ERROR is displayed.



#### 44 - 22

Purpose	Operation data output/Check (Display/Print)		
Function (Purpose)	Used to check each color toner patch image density UITU in half tone image forming section correction (process correction). (This simulation allows to check if correction operation is performed normally.)		
Section	Image process (Photoconductor/Developing/Transfer/Cleaning)		
Item	Data	Operation data (Machine condition)	
Operation/Procedure	Select the correction operation data with [↑], [↓] keys. The patch density data of 1ST STEP and 2ND STEP in image forming section half tone correction operation are displayed. 1st STEP: 6-color data 2nd STEP: 16-color data		

- P1 Black PT/Black element Cyan PT Magenta PT Yellow PT  
 P2 Black PT/Black element Cyan PT Magenta PT Yellow PT  
 P3 Black PT/Black element Cyan PT Magenta PT Yellow PT

TEST SIMULATION NO.44-22						CLOSE
HALF TONE CORRECT RESULT DATA						
1st STEP						
	PTK/GND	PTC	PTM	PTY		↑
ID1	: 000/000	000	000	000		
ID2	: 000/000	000	000	000		
ID3	: 000/000	000	000	000		
ID4	: 000/000	000	000	000		↓
						1/6

#### 44 - 23

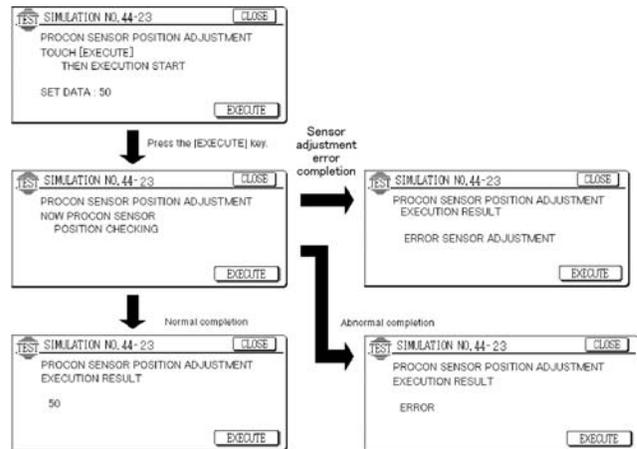
Purpose	Adjustment
Function (Purpose)	Used to adjust the image density sensor position (main scan direction). (The position is adjusted when toner patch is formed.)
Section	Image process Copy (Photoconductor/ Developing/Transfer/ Cleaning)
Operation/Procedure	Press the [EXECUTE] key, and the adjustment operation is started.

After completion of the adjustment, the [EXECUTE] key returns to the normal display.

In the case of normal completion, the average adjustment data is displayed.

In the case of abnormal completion, ERROR is displayed.

(Default value: 50)



#### 44 - 24

Purpose	Operation data output/Check (Display/Print)		
Function (Purpose)	Used to check the half tone correction result. (This simulation allows to check if correction is executed properly or not.)		
Section	Image process (Photoconductor/Developing/Transfer/Cleaning)		
Item	Data	Operation data (Machine condition)	
Operation/Procedure	The correction data of each color is displayed. Select the color mode you wish to display with the color selection key.		

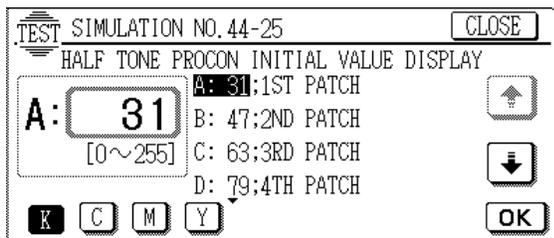
When image quality trouble occurs and it cannot be solved, inform us of these data as the reference information.

TEST SIMULATION NO.44-24						CLOSE
HALF TONE PROCON RESULT DISPLAY						
[RISE]	***	[SATURATE]	***	[STEP]	***	↑
[LOW]	A:***, B:***	[CONNECT]	A:***, B:***			
[MID]	A:***, B:***, C:***	[HIGH]	A:***, B:***			
[CONNECT POINT]	#1:***, #2:***, #3:***					
	K	C	M	Y		1/3

Purpose	Operation data output/Check (Display/Print)
Function (Purpose)	Used to check the half tone correction result. (This simulation allows to check if correction is executed properly or not.)
Section	Image process (Photoconductor/Developing/Transfer/Cleaning)
Item	Data Operation data (Machine condition)
Operation/ Procedure	To correction data of each color is displayed. Select the color mode you wish to display with the color selection key.

Disp PosNo.	DispChara	Default Value	Min Value	Max Value	Contents
A	1ST PATCH	31	0	255	Half tone process control 1st step No. 1 patch print gradation: Black
B	2ND PATCH	47	0	255	Half tone process control 1st step No. 2 patch print gradation: Black
C	3RD PATCH	63	0	255	Half tone process control 1st step No. 3 patch print gradation: Black
D	4TH PATCH	79	0	255	Half tone process control 1st step No. 4 patch print gradation: Black
E	5TH PATCH	255	0	255	Half tone process control 1st step No. 5 patch print gradation: Black
A	1ST PATCH	31	0	255	Half tone process control 1st step No. 1 patch print gradation: Cyan
B	2ND PATCH	47	0	255	Half tone process control 1st step No. 2 patch print gradation: Cyan
C	3RD PATCH	63	0	255	Half tone process control 1st step No. 3 patch print gradation: Cyan
D	4TH PATCH	79	0	255	Half tone process control 1st step No. 4 patch print gradation: Cyan
E	5TH PATCH	255	0	255	Half tone process control 1st step No. 5 patch print gradation: Cyan

Disp PosNo.	DispChara	Default Value	Min Value	Max Value	Contents
A	1ST PATCH	31	0	255	Half tone process control 1st step No. 1 patch print gradation: Magenta
B	2ND PATCH	47	0	255	Half tone process control 1st step No. 2 patch print gradation: Magenta
C	3RD PATCH	63	0	255	Half tone process control 1st step No. 3 patch print gradation: Magenta
D	4TH PATCH	79	0	255	Half tone process control 1st step No. 4 patch print gradation: Magenta
E	5TH PATCH	255	0	255	Half tone process control 1st step No. 5 patch print gradation: Magenta
A	1ST PATCH	31	0	255	Half tone process control 1st step No. 1 patch print gradation: Yellow
B	2ND PATCH	47	0	255	Half tone process control 1st step No. 2 patch print gradation: Yellow
C	3RD PATCH	63	0	255	Half tone process control 1st step No. 3 patch print gradation: Yellow
D	4TH PATCH	79	0	255	Half tone process control 1st step No. 4 patch print gradation: Yellow
E	5TH PATCH	255	0	255	Half tone process control 1st step No. 5 patch print gradation: Yellow



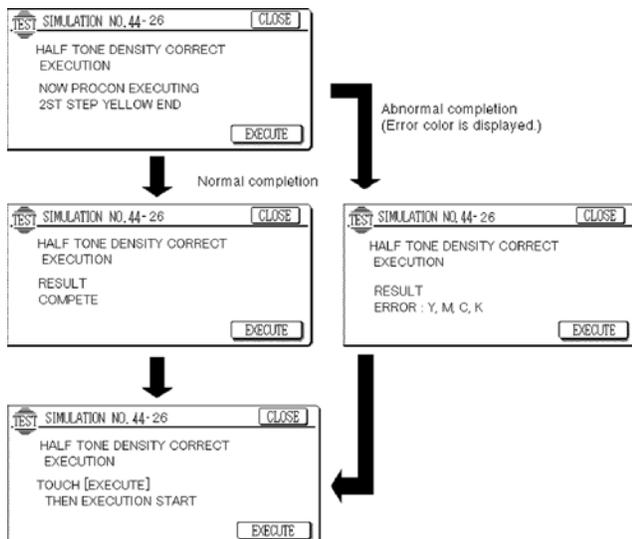
#### 44 - 26

Purpose	Adjustment
Function (Purpose)	Used to execute half tone correction compulsorily.
Section	Image process (Photoconductor/Developing/Transfer/Cleaning)
Item	Picture quality
Operation/Procedure	Press the [EXECUTE] key, and it is highlighted. The half tone correction (image forming section correction (process correction)) is started.

When the compulsory execution is completed, the [EXECUTE] key returns to the normal display.

In the case of abnormal completion, ERROR is displayed.

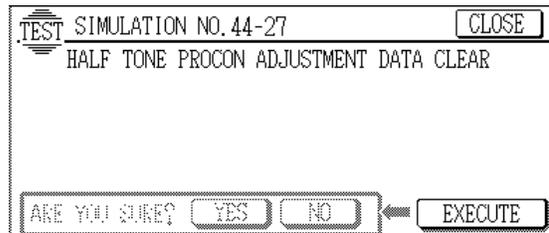
(Default value: 500)



#### 44 - 27

Purpose	Data clear
Function (Purpose)	Used to set the half tone correction data to the default level.
Section	Image process (Photoconductor/Developing/Transfer/Cleaning)
Item	Data
Operation/Procedure	1. Press the [EXECUTE] key. The [YES] and [NO] keys become active.

2. Press the [YES] key.  
The half tone correction data is set to the default level.



Note After replacement of the OPC drum or developer be sure to execute this simulation.

#### 44 - 30

Purpose	Adjustment/Operation test/check
Function (Purpose)	Used to check and adjust the operation of the transfer charger current and the control circuit. (New)
Section	Image process Copy (Photoconductor/Developing/Transfer/Cleaning)
Operation/Procedure	(The transfer charger output voltage in printing the front and the back of paper can be adjusted and checked.)

1. Select the color mode with the [K], [C], [M], and [Y] keys.
2. Select the paper feed mode with [↑] key and [↓] key.
3. Enter the adjustment value with the 10-key pad.
4. Press the [EXECUTE] key.

The [EXECUTE] key is highlighted, the adjustment value entered in procedure 2 is set, and the voltage corresponding to the set value is supplied.

After supplying the voltage for 30 sec, the [EXECUTE] key returns to the normal display.

If the [EXECUTE] key is pressed while the voltage is supplied, the voltage output is stopped and the [EXECUTE] key returns to the normal display.

Since the transfer belt and the photoconductor drum are rotated simultaneously with outputting the transfer voltage in this simulation mode, the above parts will not be damaged.

#### [Color]

**K:** Black  
**C:** Cyan  
**M:** Magenta  
**Y:** Yellow

#### [Paper feed mode]

**SPX:** Cassette and manual paper feed  
**DPX:** Duplex paper feed  
**TRANSPARENCY:** OHP paper feed  
**HEAVYPAPER:** Heavy paper feed

#### [Adjustment range]

51 – 255 (Default: Varies depending on the color and the paper feed mode.) The actual output variable range varies depending on the color as follows:

**K:** 0V – 4000V (Default: SPX/DPX is about 2.5KV at 178. TRANSPARENCY/HEAVYPAPER is about 3KV at 204.)

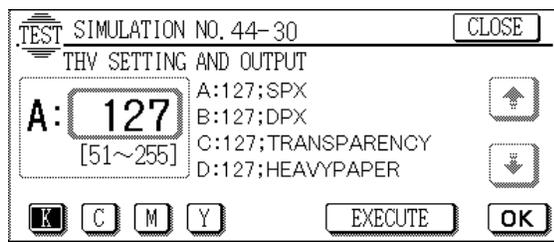
**C:** 0V – 4500V (Default: SPX/DPX is about 2.5KV at 164. TRANSPARENCY is about 3.5KV at 209. HEAVYPAPER is about 3KV at 187.)

- M:** 0V – 7000V (Default: SPX/DPX is about 2.5KV at 123. TRANSPARENCY is about 4KV at 167. HEAVYPAPER is about 3KV at 138.)
- Y:** 0V – 7000V (Default: SPX/DPX is about 2.5KV at 123. TRANSPARENCY is about 4.5KV at 182. HEAVYPAPER is about 3KV at 138.)

**[Adjustment unit]**

- K:** About 19.6 [V/Count]  
**C:** About 22.1 [V/count]  
**M:** About 34.3 [V/Count]  
**Y:** About 34.3 [V/Count]

	Display	Default value				Note
		BK	C	M	Y	
Normal paper mode	A: SPX	178	164	123	123	
ADU mode	B: DPX	178	164	123	123	
OHP mode	C: OHP	204	209	167	182	
Heavy paper mode	D: HEAVY PAPER	204	187	138	138	



**44 - 31**

Purpose	Adjustment
Function (Purpose)	Used to adjust the phase of OPC drum deflection. (Used to adjust deflection phases of four OPC drums.)
Section	Image process Photo conductor (Photoconductor/ Developing/Transfer/ Cleaning)
Item	Operation
Operation/ Procedure	1. Select the adjustment item with [↑], [↓] keys. 2. Select the print mode in the adjustment item A (PRINT MODE).

(This mode is basically used in the case of default setting 3.)

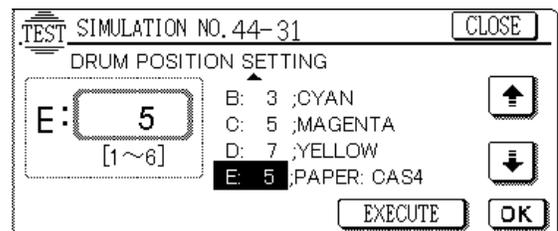
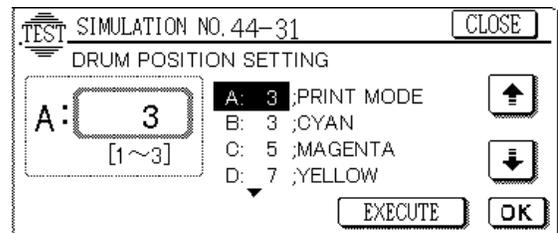
- Select the paper kind in the adjustment item E (PAPER SELECT).  
(Select A4R (or 11" × 8.5R") paper tray.)
- Press the [EXECUTE] key.  
The drum deflection adjustment pattern (one sheet) is printed.
- Check that output pattern. If the deflections of C, M, and Y are within the specified range (2 lines), terminate the simulation. If not, go to procedure 6.
- Select "2" in the adjustment item A (PRINT MODE).
- Press the [EXECUTE] key.  
Four sheet of drum deflection pattern is printed.  
\* In the output pattern, figures 1, 3, 5, and 7 are printed in this sequence.

- Four each print pattern of C, M, and Y, use the print value of the output pattern where the deflection is within 2 lines as each color adjustment value, and set it to the adjustment items B, C, and D.
- To check the deflection in the adjustment value, select "3" in the adjustment item A.
- Press the [EXECUTE] key.  
One sheet of drum deflection adjustment pattern is printed.  
C drum position (adjustment item B): 2 (45 degrees)  
M drum position (adjustment item C): 4 (135 degrees)  
Y drum position (adjustment item D): 5 (180 degrees)

**[Adjustment item]**

- A:** Print mode (Used to check that the set range is 1 – 3 and that the default is "3".)
- Deflection check pattern for each 45 degrees (8 sheets print)  
0° (1) → 45° (2) → 90° (3) → 135° (4) → 180° (5) → 225° (6) → 270° (7) → 315° (8)  
Numbers in ( ) are printed on each self print.
  - Deflection check pattern for each 90 degrees (4 sheets print)  
0° (1) → 90° (3) → 180° (5) → 270° (7)  
Numbers in ( ) are printed on each output pattern.
  - Deflection check print at the set value (One sheet print)
- B:** C drum stop position counter for BK drum  
(The set range is 0 – 315 (1 – 8))
- C:** M drum stop position counter for BK drum  
(The set range is 0 – 315 (1 – 8))
- D:** M drum stop position counter for BK drum  
(The set range is 0 – 315 (1 – 8))
- E:** Cassette selection  
(The set range is 1 – 6, and the default is 5.)
- Manual feed (The sub message display is "PAPER: MANUAL".)
  - Copier 1st step (The sub message display is "PAPER: CAS1".)
  - Copier 2nd step (The sub message display is "PAPER: CAS2".)
  - Copier 3rd step (The sub message display is "PAPER: CAS3".)
  - Copier 4th step (The sub message display is "PAPER: CAS4".)
  - LCC (The sub message display is "PAPER:LCC".)

[For cassette selection, tray 4 (5 in the selection item E) is set. (Default)]



**44 - 43**

Purpose	Check (Display)
Function (Purpose)	Developer unit installation status AD value monitor
Operation/ Procedure	When this simulation is executed, the developer unit installation status AD value is displayed.

This simulation indicates the display only, and there is no other procedure.

Developer unit installation status AD value monitor

DVCH KIND:

New/old developer unit installation status (0: Old, 1: New)

DVCH\_K (The value in the parentheses is the judgment value.):

K color developer unit installation AD value

DVCH\_C (The value in the parentheses is the judgment value.):

C color developer unit installation AD value

DVCH\_M (The value in the parentheses is the judgment value.):

M color developer unit installation AD value

DVCH\_Y (The value in the parentheses is the judgment value.):

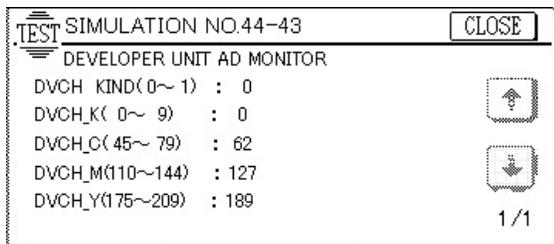
Y color developer unit installation AD value

**[Supplementary explanation]**

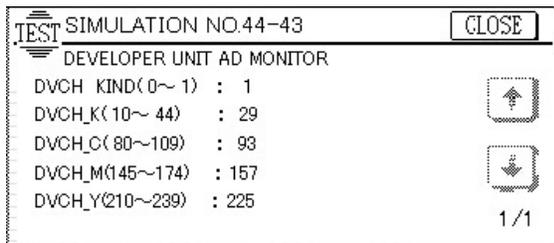
1) When CA key or Interrupt key is pressed, the simulation is terminated.

2) Data are revised every 5 sec.

(When an old developer unit is installed)



(When a new developer unit is installed)



**46**

**46 - 1**

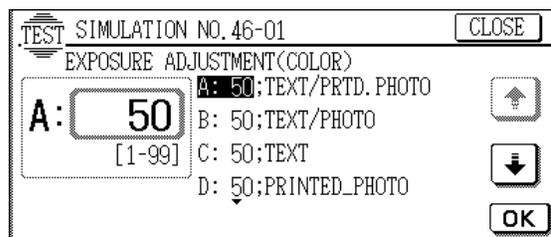
Purpose	Adjustment
Function (Purpose)	Used to adjust the copy density of each mode in the low density area in the color copy mode. The copy densities all colors in the low density area are changed.

Item	Picture quality	Density
Operation/ Procedure	1. Select the copy mode where the copy density adjustment is performed with [↑] and [↓] keys.	

2. Enter the adjustment value with the 10-key.

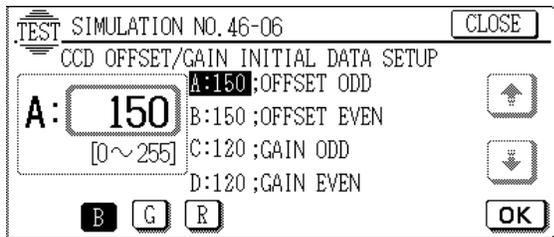
3. Press the [OK] key.

Disp PosNo.	DispChara	Default Value	Min Value	Max Value	Contents
A	TEXT/PRTD.PHOTO	50	1	99	Exposure adjustment set value (Color) Text/Printed Photo
B	TEXT/PHOTO	50	1	99	Exposure adjustment set value (Color) Text/Photo
C	TEXT	50	1	99	Exposure adjustment set value (Color) Text
D	PRINTED_PHOTO	50	1	99	Exposure adjustment set value (Color) Printed Photo
E	Photo	50	1	99	Exposure adjustment set value (Color) Photo
F	MAP	50	1	99	Exposure adjustment set value (Color) Map
G	TEXT/PRTD.P_CTC	46	1	99	Exposure adjustment set value (Color) Text/Printed Photo (Copy document mode)
H	TEXT_CTC	46	1	99	Exposure adjustment set value (Color) Text (Copy document mode)
I	PRTD.PHOTO_CTC	46	1	99	Exposure adjustment set value (Color) Printed Photo (Copy document mode)





Disp PosNo.	DispChara	Default Value	Min Value	Max Value	Contents
A	OFFSET ODD	150	0	255	CCD odd number offset initial value/green
B	OFFSET EVEN	150	0	255	CCD even number offset initial value/green
C	GAIN ODD	130	0	255	CCD odd number gain initial value/green
D	GAIN EVEN	130	0	255	CCD even number gain initial value/green
A	OFFSET ODD	150	0	255	CCD odd number offset initial value/red
B	OFFSET EVEN	150	0	255	CCD even number offset initial value/red
C	GAIN ODD	160	0	255	CCD odd number gain initial value/red
D	GAIN EVEN	160	0	255	CCD even number gain initial value/red



Note Never set to another value than the standard value.

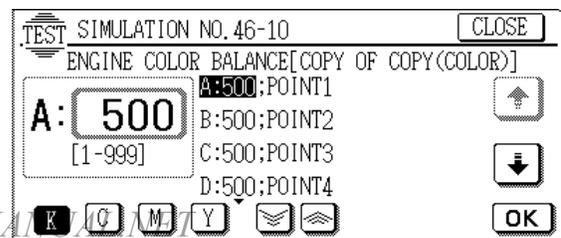
#### 46 - 10

Purpose	Adjustment
Function (Purpose)	Used to adjust the copy color balance (gamma for each color). (Color/Copy document mode)
Section	ICU
Item	Picture quality                      Color balance
Operation/ Procedure	1. Select the color to be adjusted with the color keys (K, C, M, Y).

2. Select the adjustment point with [↑], [↓] keys.
3. Enter the adjustment value of the selected point with the 10-key.
4. Press the [OK] key.  
(The entered value is set.)

#### <SIM46-10 Data detail>

Disp PosNo.	Disp Chara	Default Value	Min Value	Max Value	Contents
A	POINT1	500	1	999	Half tone reference correction table S46 correction quantity: Copy document mode black density 0
↓	↓	↓	↓	↓	↓
O	POINT15	500	1	999	Half tone reference correction table S46 correction quantity: Copy document mode black density 14
A	POINT1	500	1	999	Half tone reference correction table S46 correction quantity: Copy document mode cyan density 0
↓	↓	↓	↓	↓	↓
O	POINT15	500	1	999	Half tone reference correction table S46 correction quantity: Copy document mode cyan density 14
A	POINT1	500	1	999	Half tone reference correction table S46 correction quantity: Copy document mode magenta density 0
↓	↓	↓	↓	↓	↓
O	POINT15	500	1	999	Half tone reference correction table S46 correction quantity: Copy document mode magenta density 14
A	POINT1	500	1	999	Half tone reference correction table S46 correction quantity: Copy document mode yellow density 0
↓	↓	↓	↓	↓	↓
O	POINT15	500	1	999	Half tone reference correction table S46 correction quantity: Copy document mode yellow density 14



## 46 - 11

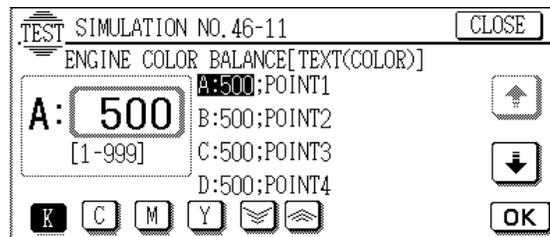
Purpose	Adjustment
Function (Purpose)	Used to set the copy color balance (gamma for each color). (Color/Text mode)
Section	ICU
Item	Picture quality Color balance
Operation/ Procedure	1. Select the color to be adjusted with the color keys (K, C, M, Y). 2. Select the adjustment point with [↑], [↓] keys.

- Enter the adjustment value of the selected point with the 10-key.
- Press the [OK] key.  
(The entered value 2 is set.)

### <SIM46-11 Data detail>

Disp PosNo.	Disp Chara	Default Value	Min Value	Max Value	Contents
A	POINT1	500	1	999	Half tone reference correction table S46 correction quantity: black density 0 for text
↓	↓	↓	↓	↓	↓
O	POINT15	500	1	999	Half tone reference correction table S46 correction quantity: black density 14 for text
A	POINT1	500	1	999	Half tone reference correction table S46 correction quantity: cyan density 0 for text
↓	↓	↓	↓	↓	↓
O	POINT15	500	1	999	Half tone reference correction table S46 correction quantity: cyan density 14 for text
A	POINT1	500	1	999	Half tone reference correction table S46 correction quantity: magenta density 0 for text
↓	↓	↓	↓	↓	↓
O	POINT15	500	1	999	Half tone reference correction table S46 correction quantity: magenta density 14 for text
A	POINT1	500	1	999	Half tone reference correction table S46 correction quantity: yellow density 0 for text
↓	↓	↓	↓	↓	↓

Disp PosNo.	Disp Chara	Default Value	Min Value	Max Value	Contents
O	POINT15	500	1	999	Half tone reference correction table S46 correction quantity: yellow density 14 for text



## 46 - 12

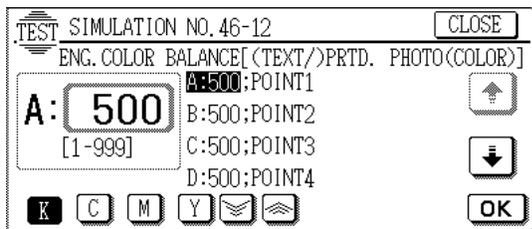
Purpose	Adjustment
Function (Purpose)	Used to adjust the copy color balance (gamma for each color). (Color/Text Printed Photo/Printed Photo mode)
Section	ICU
Item	Picture quality Color balance
Operation/ Procedure	1. Select the color to be adjusted with the color keys (K, C, M, Y).

- Select the adjustment point with [↑], [↓] keys.
- Enter the adjustment value of the selected point with the 10-key.
- Press the [OK] key.  
(The entered value 2 is set.)

### <SIM46-12 Data detail>

Disp PosNo.	Disp Chara	Default Value	Min Value	Max Value	Contents
A	POINT1	500	1	999	Half tone reference correction table S46 correction quantity: Text Printed Photo/Printed Photo black density 0
↓	↓	↓	↓	↓	↓
O	POINT15	500	1	999	Half tone reference correction table S46 correction quantity: Text Printed Photo black density 14
A	POINT1	500	1	999	Half tone reference correction table S46 correction quantity: Text Printed Photo/Printed Photo cyan density 0
↓	↓	↓	↓	↓	↓

Disp PosNo.	Disp Chara	Default Value	Min Value	Max Value	Contents
O	POINT15	500	1	999	Half tone reference correction table S46 correction quantity: Text Printed Photo/Printed Photo cyan density 14
A	POINT1	500	1	999	Half tone reference correction table S46 correction quantity: Text Printed Photo/Printed Photo magenta density 0
↓	↓	↓	↓	↓	↓
O	POINT15	500	1	999	Half tone reference correction table S46 correction quantity: Text Printed Photo/Printed Photo magenta density 14
A	POINT1	500	1	999	Half tone reference correction table S46 correction quantity: Text Printed Photo/Printed Photo yellow density 0
↓	↓	↓	↓	↓	↓
O	POINT15	500	1	999	Half tone reference correction table S46 correction quantity: Text Printed Photo/Printed Photo yellow density 14



### 46 - 13

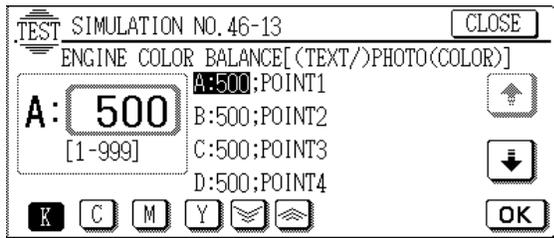
Purpose	Adjustment
Function (Purpose)	Used to adjust the copy color balance (gamma for each color). (Color/Text Photo/Photograph mode)
Section	ICU
Item	Picture quality                      Color balance
Operation/ Procedure	1. Select the color to be adjusted with the color keys (K, C, M, Y).

2. Select the adjustment point with [↑], [↓] keys.
3. Enter the adjustment value of the selected point with the 10-key.

4. Press the [OK] key.  
(The entered value 2 is set.)

### <SIM46-13 Data detail>

Disp PosNo.	Disp Chara	Default Value	Min Value	Max Value	Contents
A	POINT1	500	1	999	Half tone reference correction table S46 correction quantity: Text Photo/Photo black density 0
↓	↓	↓	↓	↓	↓
O	POINT15	500	1	999	Half tone reference correction table S46 correction quantity: Text Photo/Photo black density 14
A	POINT1	500	1	999	Half tone reference correction table S46 correction quantity: Text Photo/Photo cyan density 0
↓	↓	↓	↓	↓	↓
O	POINT15	500	1	999	Half tone reference correction table S46 correction quantity: Text Photo/Photo cyan density 14
A	POINT1	500	1	999	Half tone reference correction table S46 correction quantity: Text Photo/Photo magenta density 0
↓	↓	↓	↓	↓	↓
O	POINT15	500	1	999	Half tone reference correction table S46 correction quantity: Text Photo/Photo magenta density 14
A	POINT1	500	1	999	Half tone reference correction table S46 correction quantity: Text Photo/Photo yellow density 0
↓	↓	↓	↓	↓	↓
O	POINT15	500	1	999	Half tone reference correction table S46 correction quantity: Text Photo/Photo yellow density 14



#### 46 - 14

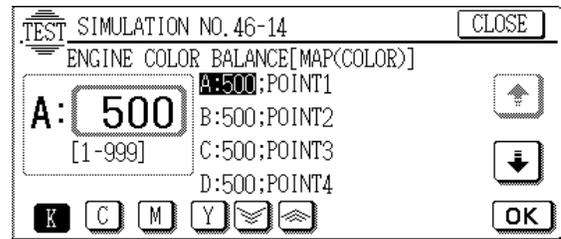
Purpose	Adjustment
Function (Purpose)	Used to set the copy color balance (gamma for each color). (Color/Map mode)
Section	ICU
Item	Picture quality                      Color balance
Operation/ Procedure	1. Select the color to be adjusted with the color keys (K, C, M, Y).

2. Select the adjustment point with [↑], [↓] keys.
3. Enter the adjustment value of the selected point with the 10-key.
4. Press the [OK] key.  
(The entered value 2 is set.)

#### <SIM46-14 Data detail>

Disp PosNo.	Disp Chara	Default Value	Min Value	Max Value	Contents
A	POINT1	500	1	999	Half tone reference correction table S46 correction quantity: black density 0 for map
↓	↓	↓	↓	↓	↓
O	POINT15	500	1	999	Half tone reference correction table S46 correction quantity: black density 14 for map
A	POINT1	500	1	999	Half tone reference correction table S46 correction quantity: cyan density 0 for map
↓	↓	↓	↓	↓	↓
O	POINT15	500	1	999	Half tone reference correction table S46 correction quantity: cyan density 14 for map
A	POINT1	500	1	999	Half tone reference correction table S46 correction quantity: magenta density 0 for map
↓	↓	↓	↓	↓	↓

Disp PosNo.	Disp Chara	Default Value	Min Value	Max Value	Contents
O	POINT15	500	1	999	Half tone reference correction table S46 correction quantity: magenta density 14 for map
A	POINT1	500	1	999	Half tone reference correction table S46 correction quantity: yellow density 0 for map
↓	↓	↓	↓	↓	↓
O	POINT15	500	1	999	Half tone reference correction table S46 correction quantity: yellow density 14 for map



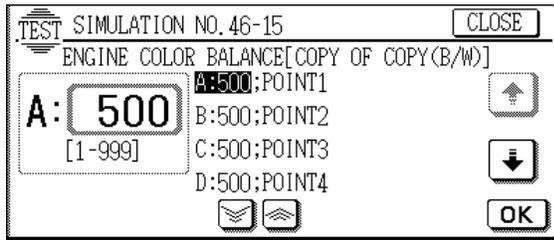
#### 46 - 15

Purpose	Adjustment
Function (Purpose)	Used to adjust the copy density (gamma). (Monochrome/Copy document mode)
Section	ICU
Item	Picture quality                      Density
Operation/ Procedure	1. Select the adjustment point with [↑], [↓] keys. 2. Enter the adjustment value of the selected point with the 10-key.

3. Press the [OK] key.  
(The entered value 2 is set.)

#### <SIM46-15 Data detail>

Disp PosNo.	Disp Chara	Default Value	Min Value	Max Value	Contents
A	POINT1	500	1	999	Half tone reference correction table S46 correction quantity: Copy document mode black B/W density 0
↓	↓	↓	↓	↓	↓
O	POINT15	500	1	999	Half tone reference correction table S46 correction quantity: Copy document mode black B/W density 14



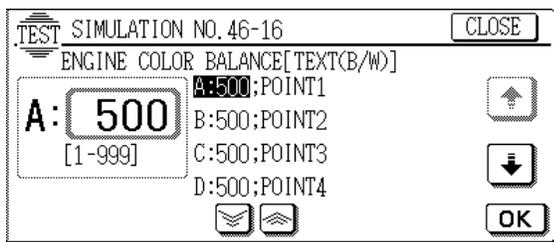
#### 46 - 16

Purpose	Adjustment
Function (Purpose)	Used to adjust the copy density (gamma). (Monochrome/Test mode)
Section	ICU
Item	Picture quality                      Density
Operation/ Procedure	1. Select the adjustment point with [↑], [↓] keys. 2. Enter the adjustment value of the selected point with the 10-key.

3. Press the [OK] key.  
(The entered value is set.)

#### <SIM46-16 Data detail>

Disp Pos	Disp Chara	Default Value	Min Value	Max Value	Contents
A	POINT1	500	1	999	Half tone reference correction table S46 correction quantity: black B/W density 0 for text
↓	↓	↓	↓	↓	↓
O	POINT15	500	1	999	Half tone reference correction table S46 correction quantity: black B/W density 14 for text



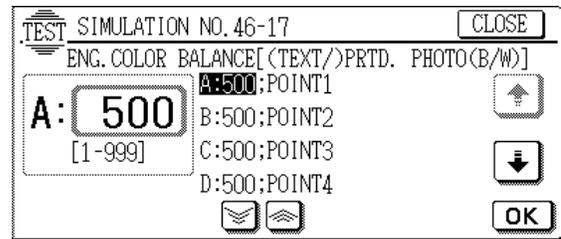
#### 46 - 17

Purpose	Adjustment
Function (Purpose)	Used to adjust the copy density (gamma). (Monochrome/Text Printed Photo/Printed Photo mode)
Section	ICU
Item	Picture quality                      Density
Operation/ Procedure	1. Select the adjustment point with [↑], [↓] keys. 2. Enter the adjustment value of the selected point with the 10-key.

3. Press the [OK] key.  
(The entered value is set.)

#### <SIM46-17 Data detail>

Disp PosNo.	Disp Chara	Default Value	Min Value	Max Value	Contents
A	POINT1	500	1	999	Half tone reference correction table S46 correction quantity: Text Printed photo/Printed Photo black B/W density 0
↓	↓	↓	↓	↓	↓
O	POINT15	500	1	999	Half tone reference correction table S46 correction quantity: Text Printed photo/Printed Photo black B/W density 14



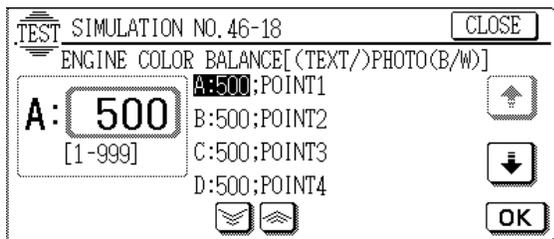
#### 46 - 18

Purpose	Adjustment
Function (Purpose)	Used to adjust the copy density (gamma). (Monochrome/Text Photo/Photo mode)
Section	ICU
Item	Picture quality                      Density
Operation/ Procedure	1. Select the adjustment point with [↑], [↓] keys. 2. Enter the adjustment value of the selected point with the 10-key.

3. Press the [OK] key.  
(The entered value is set.)

#### <SIM46-18 Data detail>

Disp PosNo.	Disp Chara	Default Value	Min Value	Max Value	Contents
A	POINT1	500	1	999	Half tone reference correction table S46 correction quantity: Text Photo/Photo black B/W density 0
↓	↓	↓	↓	↓	↓
O	POINT15	500	1	999	Half tone reference correction table S46 correction quantity: Text Photo/Photo black B/W density 14



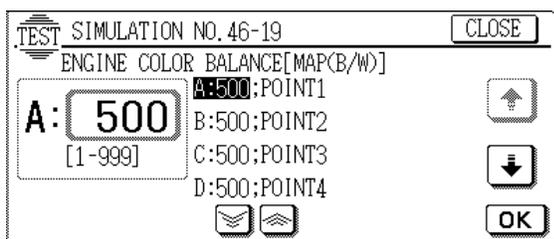
### 46 - 19

Purpose	Adjustment
Function (Purpose)	Used to adjust the copy density (gamma). (Monochrome/Map mode)
Section	ICU
Item	Picture quality Density
Operation/ Procedure	1. Select the adjustment point with [↑], [↓] keys. 2. Enter the adjustment value of the selected point with the 10-key.

3. Press the [OK] key.  
(The entered value is set.)

#### <SIM46-19 Data detail>

Disp PosNo.	Disp Chara	Default Value	Min Value	Max Value	Contents
A	POINT1	500	1	999	Half tone reference correction table S46 correction quantity: black B/W density 0 for map
↓	↓	↓	↓	↓	↓
O	POINT15	500	1	999	Half tone reference correction table S46 correction quantity: black B/W density 14 for map



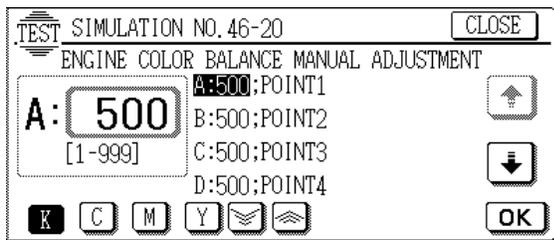
### 46 - 20

Purpose	Adjustment
Function (Purpose)	Used to adjust the copy density (gamma). (Color/ All modes) (The copy color balances (gamma) in all copy modes are changed.) The operations are the same as SIM 46-21, but printing is not performed.
Section	ICU
Item	Picture quality Color balance
Operation/ Procedure	1. Select the color to be adjusted with the color keys (K, C, M, Y).

2. Select the adjustment point with [↑], [↓] keys.
3. Enter the adjustment value of the selected point with the 10-key.
4. Press the [OK] key.  
(The entered value is set.)
5. Press the [EXECUTE] key.  
The color balance adjustment test pattern corresponding to the entered adjustment value is printed.

Disp PosNo.	Disp Chara	Default Value	Min Value	Max Value	Contents
A	POINT1	500	1	999	Half tone reference correction table S46 correction quantity: black density 0 for all
↓	↓	↓	↓	↓	↓
O	POINT15	500	1	999	Half tone reference correction table S46 correction quantity: black density 14 for all
A	POINT1	500	1	999	Half tone reference correction table S46 correction quantity: cyan density 0 for all
↓	↓	↓	↓	↓	↓
O	POINT15	500	1	999	Half tone reference correction table S46 correction quantity: cyan density 14 for all
A	POINT1	500	1	999	Half tone reference correction table S46 correction quantity: magenta density 0 for all
↓	↓	↓	↓	↓	↓
O	POINT15	500	1	999	Half tone reference correction table S46 correction quantity: magenta density 14 for all
A	POINT1	500	1	999	Half tone reference correction table S46 correction quantity: yellow density 0 for all
↓	↓	↓	↓	↓	↓

Disp PosNo.	Disp Chara	Default Value	Min Value	Max Value	Contents
O	POINT15	500	1	999	Half tone reference correction table S46 correction quantity: yellow density 14 for all



#### 46 - 21

Purpose	Adjustment
Function (Purpose)	Used to adjust the copy color balance (gamma). (Color/All modes) (The color balance (gamma) in all the copy modes is changed.) Printing is performed while adjustment.
Section	ICU
Item	Picture quality Color balance
Operation/ Procedure	1. Select the color to be adjusted with the color keys (K, C, M, Y).

2. Select the adjustment point with [↑], [↓] keys.
3. Enter the adjustment value of the selected point with the 10-key.
4. Press the [OK] key.  
(The entered value is set.)
5. Press the [EXECUTE] key.  
The color balance adjustment test pattern corresponding to the entered adjustment value is printed.

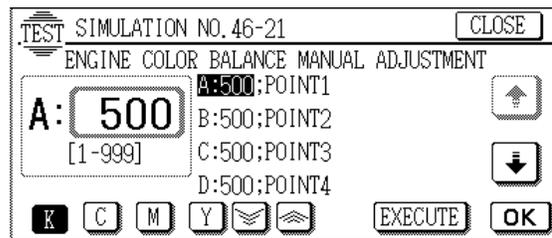
Disp PosNo.	Disp Chara	Default Value	Min Value	Max Value	Contents
A	POINT1	500	1	999	Half tone reference correction table S46 correction quantity: black density 0 for all
↓	↓	↓	↓	↓	↓
O	POINT15	500	1	999	Half tone reference correction table S46 correction quantity: black density 14 for all
A	POINT1	500	1	999	Half tone reference correction table S46 correction quantity: cyan density 0 for all
↓	↓	↓	↓	↓	↓
O	POINT15	500	1	999	Half tone reference correction table S46 correction quantity: cyan density 14 for all

Disp PosNo.	Disp Chara	Default Value	Min Value	Max Value	Contents
A	POINT1	500	1	999	Half tone reference correction table S46 correction quantity: magenta density 0 for all
↓	↓	↓	↓	↓	↓
O	POINT15	500	1	999	Half tone reference correction table S46 correction quantity: magenta density 14 for all
A	POINT1	500	1	999	Half tone reference correction table S46 correction quantity: yellow density 0 for all
↓	↓	↓	↓	↓	↓
O	POINT15	500	1	999	Half tone reference correction table S46 correction quantity: yellow density 14 for all

#### Common to all colors

Disp Chara	Default Value	Min Value	Max Value	Contents
COPIES	1	1	999	Number of sheets of self print
PAPER SEL:***	2	1	6	Paper feed tray when self print is executed

\*\*\*: The display item differs depending on the data value.



Note Do not change the setting in normal cases.

#### 46 - 23

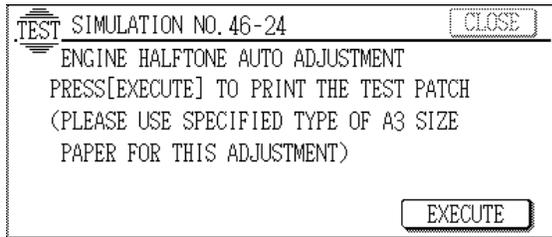
Purpose	Setting
Function (Purpose)	Used to the half tone high density correction operation.
Section	Image process (Photoconductor/Developing/Transfer/Cleaning)
Item	Operation
Operation/ Procedure	

Select Enable.

**46 - 24**

Purpose	Adjustment
Function (Purpose)	Used to adjust the print (printer engine) color balance (gamma). (Auto adjustment)
Item	Picture quality                      Color balance
Operation/ Procedure	1. Press the [EXECUTE] key. (A3 or 11 × 17" paper is automatically selected.) The color patch image (adjustment pattern) is printed out.

- Set the color patch image (adjustment pattern) paper printed in procedure 1) on the original table.
- Press the SERVICE key on the operation panel and press the [EXECUTE] key.  
The copy color balance adjustment (step 1) is automatically performed and the color balance check patch image is printed out.
- Press the REPEAT key on the operation panel.
- Press the [EXECUTE] key.  
The color patch image (adjustment pattern) is printed out.
- Set the color patch image (adjustment pattern) paper printed in procedure 5) on the original table. (Place so that the darker patch is on the left side.)
- Press the SERVICE key on the operation panel and press the [EXECUTE] key.  
The copy color balance adjustment (step 2) is automatically performed and the color balance check patch image is printed out.
- Press the [OK] key on the operation panel.  
According to the adjustment data, initial setup of half tone image correction is performed.

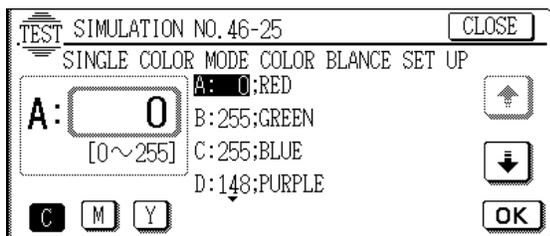


**46 - 25**

Purpose	Adjustment
Function (Purpose)	Used to adjust the copy color balance. (Single color copy mode)
Section	ICU
Item	Picture quality
Operation/ Procedure	1. Select a color to be adjusted with the color key (R, G, B, P, O, BR).

- Enter the adjustment value of the selected color with the 10-key.
- Press the [OK] key. (The adjustment value is set.)  
By pressing the C/M/Y key, the color density level (R,G,B,P,O,BR) (adjustment value) of each color (C/M/Y) is displayed.

Disp PosNo.	Disp Chara	Default Value	Min Value	Max Value	Contents
<b>C</b>					
A	RED	0	0	255	Set ratio of CYAN for single color: red
B	GREEN	255	0	255	Set ratio of CYAN for single color: green
C	BLUE	255	0	255	Set ratio of CYAN for single color: blue
D	PURPLE	148	0	255	Set ratio of CYAN for single color: purple
E	ORANGE	38	0	255	Set ratio of CYAN for single color: orange
F	BROWN	131	0	255	Set ratio of CYAN for single color: brown
<b>M</b>					
A	RED	255	0	255	Set ratio of MAGENTA for single color: red
B	GREEN	0	0	255	Set ratio of MAGENTA for single color: green
C	BLUE	255	0	255	Set ratio of MAGENTA for single color: blue
D	PURPLE	238	0	255	Set ratio of MAGENTA for single color: purple
E	ORANGE	140	0	255	Set ratio of MAGENTA for single color: orange
F	BROWN	255	0	255	Set ratio of MAGENTA for single color: brown
<b>Y</b>					
A	RED	255	0	255	Set ratio of YELLOW for single color: red
B	GREEN	255	0	255	Set ratio of YELLOW for single color: green
C	BLUE	0	0	255	Set ratio of YELLOW for single color: blue
D	PURPLE	105	0	255	Set ratio of YELLOW for single color: purple
E	ORANGE	255	0	255	Set ratio of YELLOW for single color: orange
F	BROWN	229	0	255	Set ratio of YELLOW for single color: brown



#### 46 - 26

Purpose	Setting
Function (Purpose)	Used to set the copy color balance adjustment value to the default. (Single color copy mode)
Section	ICU
Item	Picture quality
Operation/ Procedure	1. Select a color whose value is set to the default with the key.

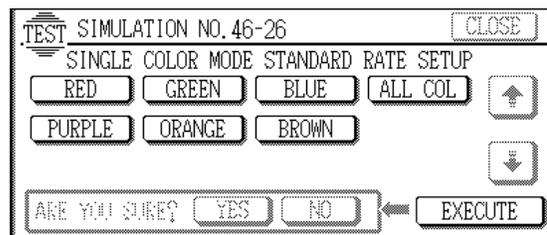
(When ALL COL key is pressed, all six colors are selected.)

2. Press the [EXECUTE] key.
3. Press the [YES] key.

The copy color balance adjustment value is set to the default.

Disp PosNo.	Disp Chara	Default Value	Contents
1	RED	0	Set ratio of CYAN for single color: red
		255	Set ratio of MAGENTA for single color: red
		255	Set ratio of YELLOW for single color: red
2	GREEN	255	Set ratio of CYAN for single color: green
		0	Set ratio of MAGENTA for single color: green
		255	Set ratio of YELLOW for single color: green
3	BLUE	255	Set ratio of CYAN for single color: blue
		255	Set ratio of MAGENTA for single color: blue
		0	Set ratio of YELLOW for single color: blue
5	PURPLE	148	Set ratio of CYAN for single color: purple
		238	Set ratio of MAGENTA for single color: purple
		105	Set ratio of YELLOW for single color: purple
6	ORANGE	38	Set ratio of CYAN for single color: orange
		140	Set ratio of MAGENTA for single color: orange
		255	Set ratio of YELLOW for single color: orange

Disp PosNo.	Disp Chara	Default Value	Contents
7	BROWN	131	Set ratio of CYAN for single color: brown
		255	Set ratio of MAGENTA for single color: brown
		229	Set ratio of YELLOW for single color: brown
4	ALL COL		All the above data are set to the default.



#### 46 - 27

Purpose	Adjustment
Function (Purpose)	Used to adjust the black toner component image gamma. (Adjustment of the reproduction capability of black characters and lines)
Section	ICU
Item	Picture quality
Operation/ Procedure	1. Enter the adjustment value with the 10-key. 2. Press the [OK] key.

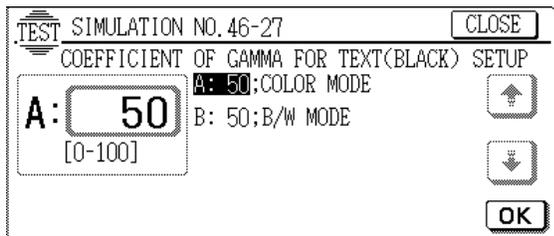
This simulation is used to adjust the reproduction capability of black characters and black line edge areas by varying the gamma of black toner component image. Especially thin black characters and lines are affected by this adjustment.

Note that the black toner component image quantity differs depending on each copy mode. When checking the result of this adjustment, therefore, be careful of the selected copy mode. It is advisable to use the Text/Printed Photo copy mode for this adjustment.

The greater the adjustment value is, the darker the black toner component (edge area) image is, and vice versa.

Set to normally default value.

Disp PosNo.	Disp Chara	Default Value	Min Value	Max Value	Contents
A	COLOR MODE	70	0	100	Set value of calculation coefficient of black text engine, gamma curve (color)
B	B/W MODE	50	0	100	Set value of calculation coefficient of black text engine, gamma curve (monochrome)



## 48

### 48 - 1

Purpose	Adjustment
Function (Purpose)	Used to adjust the copy magnification ratio (main scan, sub scan direction).
Item	Picture quality Image size/Magnification
Operation/ Procedure	1. Select the adjustment mode with [↑], [↓] keys. 2. Enter the adjustment value with the 10-key.

3. Press the [OK] key.

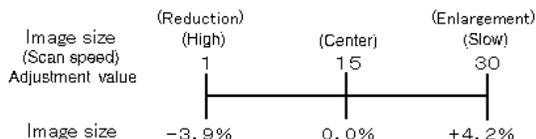
The value entered in procedure 2 is set.

a. Sub scan direction magnification ratio --- (SCAN)

The horizontal print magnification ratio (in the paper transport direction) of the image is adjusted by changing the scan speed in the paper transport direction.

[Adjustment range] : 1 – 30 (Default: 15)

[Adjustment unit] : 0.28 [%/count]

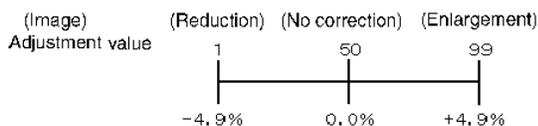


b. Main scan direction magnification ratio --- (F-R)

The vertical print magnification ratio (front frame to near frame) is adjusted in the image process section by the software operation.

[Adjustment range] : 1 – 99 (Default: 50)

[Adjustment unit] : 0.1 [%/count]



(When the set value is changed by 1, the magnification ratio is changed by about 0.1%.)

Default: 50

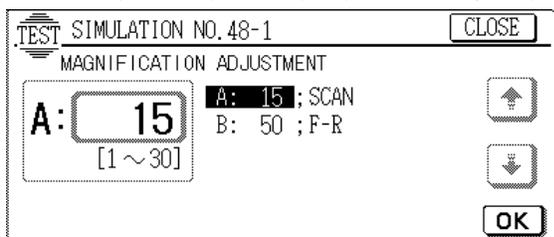
For C – F, there is no need to adjust.

C: Resist adjustment (BLACK) --- (for ICU lack system)

D: Resist adjustment (CYAN) --- (for ICU lack system)

E: Resist adjustment (MAGENTA) --- (for ICU lack system)

F: Resist adjustment (YELLOW) --- (for ICU lack system)



(C – F default: 50)

## 48 - 6

Purpose	Adjustment
Function (Purpose)	Used to adjust each motor rotating speed.
Item	Operation
Operation/ Procedure	1. Select the motor to be adjusted with [↑], [↓] keys. 2. Enter the adjustment value with the 10-key.

3. Press the [OK] key.

- A. RRM Resist motor speed correction value
- B. BELTM Belt transport motor speed correction value
- C. FSM (L) Fusing motor speed correction value (Larger than B4)
- D. FSM (S) Fusing motor speed correction value (Smaller than B4)
- E. DM(BK) Drum motor speed correction value (Black)
- F. DM(CL) Drum motor speed correction value (Color)
- G. PFM PFM speed adjustment value
- H. DVKM Black developing motor speed correction adjustment value
- I. DVCM Color developing motor speed correction adjustment value

The speed is adjusted in the range of 1 – 99 with 50 as the reference value.

**RPM:** The smaller the set value is, the slower the speed is. ±1 for about 0.1% change

**BELTM:** The smaller the set value is, the slower the speed is. ±1 for about 0.1% change

**FSM (L):** The smaller the set value is, the slower the speed is. ±1 for about 0.1% change

**FSM (S):** The smaller the set value is, the slower the speed is. ±1 for about 0.1% change

**DM(BK):** The smaller the set value is, the higher the speed is. ±1 for about 0.15% change

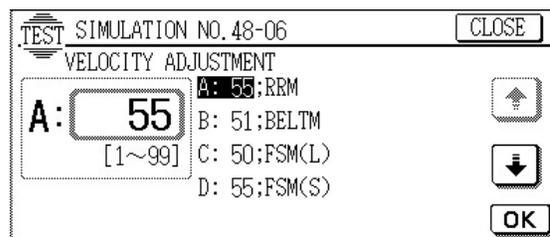
**DM(CL):** The smaller the set value is, the higher the speed is. ±1 for about 0.15% change

**PFM:** The smaller the set value is, the higher the speed is. ±1 for about 0.1% change

**DVKM:** The smaller the set value is, the higher the speed is. ±1 for about 0.1% change

**DVCM:** The smaller the set value is, the higher the speed is. ±1 for about 0.1% change

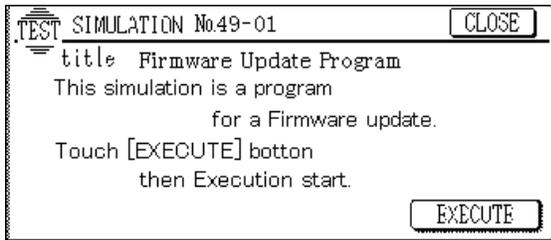
Item	Default
A. RRM	55
B. BELTM	51
C. FSM(L)	55
D. FSM(S)	45
E. DM(BK)	42
F. DM(CL)	40
G. PFM	50
H. DVKM	50
I. DVCM	58



## 49

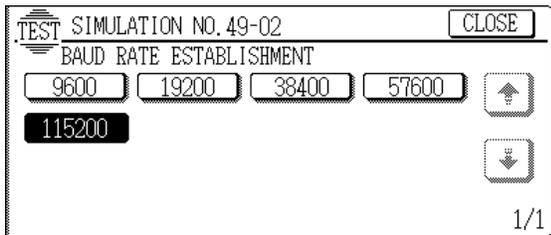
### 49 - 1

Purpose	Other
Function (Purpose)	Used to revise the version of the body firmware.
Section	ICU
Item	Software
Operation/ Procedure	<ol style="list-style-type: none"> <li>When the [EXECUTE] key is pressed, the mode enters the download mode (writing into the Flash ROM).</li> <li>Start a download program (for writing into the Flash ROM) on the PC side, and perform downloading (writing into the Flash ROM).</li> </ol>



### 49 - 2

Purpose	Setting
Function (Purpose)	Used to set the data communication speed in version up of the body firmware.
Section	ICU
Item	Operation
Operation/ Procedure	Press the key corresponding to the data communication speed of the PC. Unit (bps: bit per second)



## 50

### 50 - 1

Purpose	Adjustment
Function (Purpose)	Used to adjust the copy image position and the void area (image loss) on print paper in the copy mode. (The similar adjustment can be made also by SIM 50-2 (Simple method).)
Item	Picture quality                      Image position
Operation/ Procedure	<ol style="list-style-type: none"> <li>Select the adjustment item with [↑] [↓] keys.</li> <li>Enter the adjustment value with the 10-key.</li> </ol>

3. Press the [OK] key.

#### A. Document lead edge distance --- (RRC-A)

This set value is used to adjust timing from when the document scanning is started to when the image lead edge signal (SCAN signal) is supplied.

(0 – 99: Reference value 50) (Default value: 50)

#### B. Paper lead edge time --- (RRC-B)

Used to adjust timing of turning on the resist roller after receiving the resist signal (LD\_START).

(0 – 99: Reference value 50) (Default value: 50)

#### C. Lead edge void area --- (DEN-A)

Used to specify the void area at the lead edge of the document. (0 – 99: Reference value 40) (Default value: 40)

#### D. Rear edge void area --- (DEN-B)

Used to specify the void area at the rear edge of the document. (0 – 99: Reference value 30) (Default value: 30)

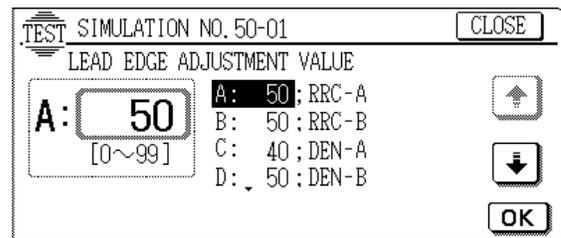
#### E. Lead edge image loss --- (IMAGE LOSS)

Used to specify the image loss.

(0 – 99: Reference value 40) (Default value: 40)

#### Actual adjustment procedures

- Set the lead edge image loss (IMAGE LOSS) and the lead edge void area (DEN-A) to the optional values. (0 – 99/ 0.1mm/step)
- Adjust the document lead edge distance (RRC-A) so that the lead edge image loss of an actual copy image becomes the value set in procedure 1. (0 – 99: 0.24mm/step)
- Adjust RRC-B so that the lead edge image loss of an actual copy image becomes the value set in procedure 1. (0 – 99: 0.12mm/step)
- Adjust the rear edge void area (DEN-B). (0 – 99: 0.1mm/step)



### 50 - 2

Purpose	Adjustment
Function (Purpose)	Used to adjust the copy image position and the void area (image loss) on print paper in the copy mode. (Simple method) (The same content of SIM 50-1. However this simulation is easier to perform.)
Item	Picture quality                      Image position
Operation/ Procedure	<ol style="list-style-type: none"> <li>Select the adjustment item with [↑] [↓] keys.</li> <li>Enter the adjustment value with the 10-key.</li> </ol>

3. Press the [OK] key.

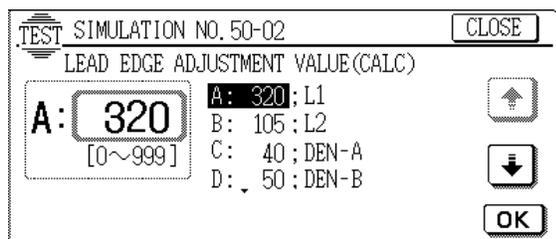
This simulation is used to perform the lead edge adjustment by directly entering the lead edge shift in 400% copy.

Default value

- |   |    |
|---|----|
| A. Document lead edge distance --- (L1) | 0  |
| B. Paper lead edge time --- (L2)        | 0  |
| C. DEN-A                                | 40 |
| D. DEN-B                                | 30 |
| E. IMAGE LOSS                           | 40 |

#### Actual adjustment procedures

- Set the lead edge image loss (IMAGE LOSS) and the lead edge void area (DEN-A) to the optional values. (0 – 99/ 0.1mm/step)
- Set L1/L2 to 0.
- Make a copy at 400% with OC, and enter the shift amount to L1/L2. (0 – 999: 0.1mm/step)
- Repeat procedure 3 so that the paper lead edge void area of actual copy becomes the value set in procedure 1.
- Adjust the rear edge void area (DEN-B). (0 – 99: 0.1mm/step)



## 50 - 10

Purpose	Adjustment
Function (Purpose)	Used to adjust the print image center position. (Adjusted separately for each paper feed section.)
Section	ICU
Item	Picture quality                      Image position
Operation/ Procedure	1. Select the adjustment item (paper feed section) with [↑], [↓] keys.

2. Enter the adjustment value with the 10-key.
3. Press the [OK] key to set the adjustment value entered in procedure 1.  
 When the set value is increased, shift is made backward. When decreased, forward.  
 When the set value is changed by 1, the shift is changed by about 0.1mm.  
 When the [EXECUTE] key is pressed, self print of the print off center adjustment pattern is performed.

To perform G: ADU adjustment, the ADU must be installed. In this case, "K: DUPLEX" must be set to 2.

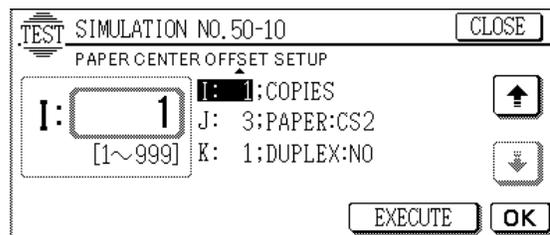
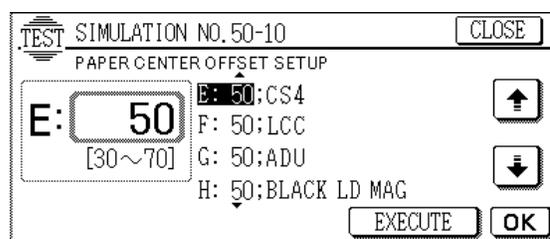
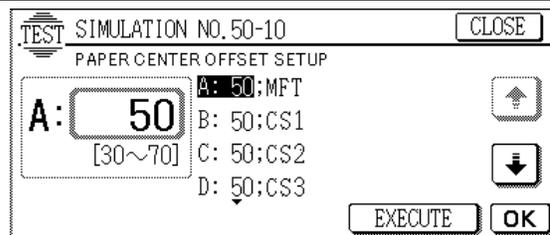
\* Print off center adjustment value: 0.1mm/count

### ICU data

Disp PosNo.	Disp Chara	Default value	Min Value	Max Value	Contents
A	MFT	50	30	70	Print off center adjustment value (Manual feed tray)
B	CS1	50	20	70	Print off center adjustment value (Copier cassette 1)
C	CS2	50	20	70	Print off center adjustment value (Copier cassette 2)
D	CS3	50	20	70	Print off center adjustment value (Copier cassette 3)
E	CS4	50	20	70	Print off center adjustment value (Copier cassette 4)
F	LCC	50	30	70	Print off center adjustment value (LCC)
G	ADU	30	20	70	Print off center adjustment value (ADU)
H	BLACKLD MAG	100	1	199	Main scanning direction print magnification ratio adjustment Vco (BLACK)

### PCU data

Disp PosNo.	Disp Chara	Min Value	Max Value	Contents
I	COPIES	1	999	Print quantity
J	PAPER: MANUAL PAPER: CAS1 PAPER: CAS2 PAPER: CAS3 PAPER: CAS4 PAPER: LCC	1	6	Print paper tray selection
K	DUPLEX:NO DUPLEX: YES	1	2	Duplex print selection



## 50 - 12

Purpose	Adjustment
Function (Purpose)	Used to adjust the print image center position. (Adjusted separately for each document mode.)
Section	ICU
Item	Picture quality                      Image position
Operation/ Procedure	1. Select the adjustment item (paper feed section) with [↑], [↓] keys.

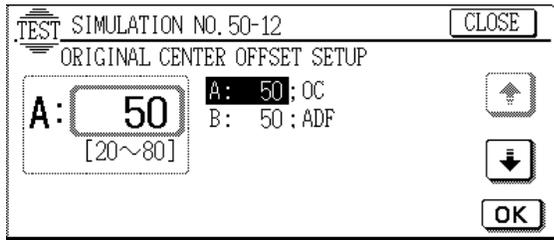
2. Enter the adjustment value with the 10-key.
3. Press the [OK] key to set the adjustment value entered in procedure 1.  
 When the set value is increased, shift is made backward. When decreased, forward.

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

Default: 50

\* Document off center adjustment value: 0.1mm/count

Disp PosNo.	Disp Chara	Default value	Min Value	Max Value	Contents
A	OC	50	20	80	Document off center adjustment value (OC)
B	ADF	50	20	80	Document off center adjustment value (RADF)



## 50 - 20

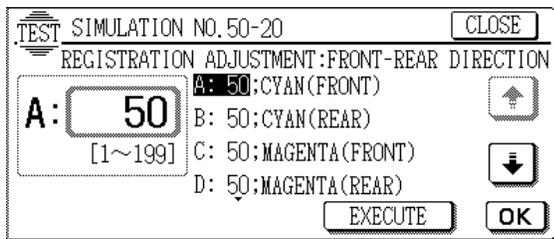
Purpose	Adjustment
Function (Purpose)	Used to adjust color registration in the main scan direction.
Item	Picture quality                      Image position
Operation/ Procedure	1. Select the adjustment item and the set item with [↑], [↓] keys.

2. Enter the adjustment value and the set item with the 10-key.

3. Press the [OK] key to set the adjustment value and the set item entered in procedure 1.

When the [EXECUTE] key is pressed, the main scan direction registration adjustment pattern is printed.

Item	Display	Low	High	Default value	Description
A	CYAN(FRONT)	1	199	100	Tandem adjustment value main scan direction (Cyan laser write start)
B	CYAN(REAR)	1	199	100	Magnification ratio adjustment value main scan direction (Cyan laser)
C	MAGENTA(FRONT)	1	199	100	Tandem adjustment value main scan direction (Magenta laser write start)
D	MAGENTA(REAR)	1	199	100	Magnification ratio adjustment value main scan direction (Magenta laser)
E	YELLOW(FRONT)	1	199	100	Tandem adjustment value main scan direction (Yellow laser write start)
F	YELLOW(REAR)	1	199	100	Magnification ratio adjustment value main scan direction (Yellow laser)
G	COPIES	1	999	1	Copy quantity
H	PAPER :	1	6	3	The display is changed over depending on the paper tray selected and the entered value.
	: MANUAL			1	Manual feed selection
	: CAS1			2	Cassette 1
	: CAS2			3	Cassette 2 (Default)
	: CAS3			4	Cassette 3
	: CAS4			5	Cassette 4
	: LCC			6	LCC selection



## 50 - 21

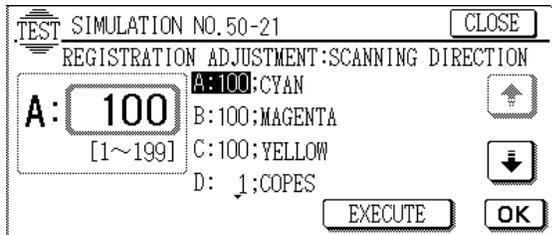
Purpose	Adjustment
Function (Purpose)	Used to adjust the sub scan direction color registration.
Item	Picture quality                      Image position
Operation/ Procedure	1. Select the adjustment item and the set item with [↑], [↓] keys.

2. Enter the adjustment value and the set item with the 10-key.

3. Press the [OK] key to set the adjustment value and the set item entered in procedure 1.

When the [EXECUTE] key is pressed, the main scan direction registration adjustment pattern is printed.

Item	Display	Low	High	Default value	Description
A	CYAN	1	199	100	Tandem adjustment value sub scan direction (Black drum → Cyan drum)
B	MAGENTA	1	199	100	Tandem adjustment value sub scan direction (Cyan drum → Magenta drum)
C	YELLOW	1	199	100	Tandem adjustment value sub scan direction (Magenta drum → Yellow drum)
D	COPIES	1	999	1	Copy quantity
E	PAPER :	1	6	3	The display is changed over depending on the paper tray selected and the entered value.
	: MANUAL			1	Manual feed selection
	: CAS1			2	Cassette 1
	: CAS2			3	Cassette 2 (Default)
	: CAS3			4	Cassette 3
	: CAS4			5	Cassette 4
	: LCC			6	LCC selection



### 50 - 22

Purpose	Adjustment
Function (Purpose)	Used to adjust the color registration (in the main/sub scanning direction). The color registration adjustment (automatic adjustment) can be performed both in the main and the sub scanning directions at the same time.
Item	Picture quality
Operation/ Procedure	1. Press the [EXECUTE] key. The color registration adjustment pattern is printed out.

2. Check the color registration quantity. If it is not in the specified range ( $\pm 1$ ), perform the following procedures.

If the color registration quantity is within the specified range, terminate the simulation.

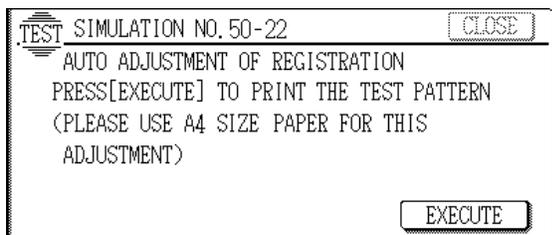
3. Set the printed color registration adjustment pattern on the document table.

Set the color registration adjustment pattern so that the triangle mark come at the center of the left side. Place 10 sheets of white paper on the adjustment pattern.

4. Press the [EXECUTE] key.

The color registration pattern is read and the color registration adjustment is automatically performed.

It takes about 30 sec.



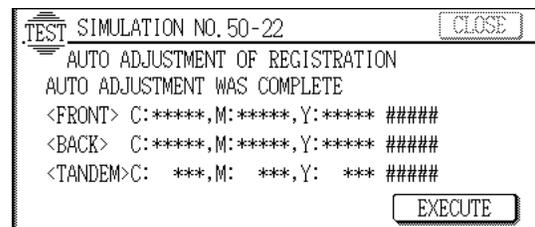
The adjustment result (adjustment value, adjustment level) is displayed.

**EXACT:** Normally completed the adjustment.

**ROUGH:** The accuracy of the adjustment is lower than EXACT due to dusts, dirt, improper setting of the check (adjustment) pattern, etc.

**ERROR:** Adjustment error due to reading error.

When ERROR is displayed, the reading operation and the result of the adjustment are erroneous.



If the adjustment has not been performed normally, investigate for the causes and repair as needed. Then perform the adjustment (procedures 1 – 4) again.

If this adjustment will not work properly, execute the manual adjustment with SIM 50-20/21.

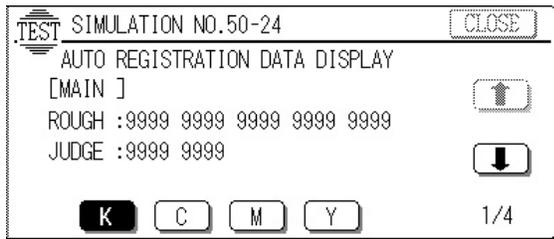
### 50 - 24

Purpose	Adjustment
Function (Purpose)	Auto registration adjustment data display
Operation/ Procedure	

#### [K patch data/Sensor adjustment/Density check/ Each counter/Temperature data]

- Registration adjustment patch sampling data display
- <Display items>

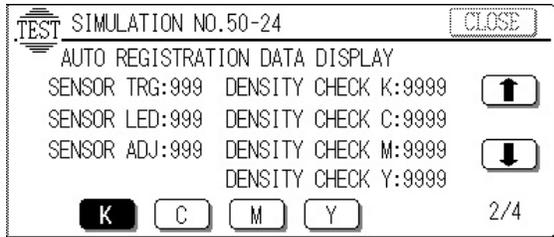
[MAIN]	Main scanning
ROUGH	Rough adjustment
JUDGE	Judgment



- Sensor adjustment result and density check sampling data display

<Display items>

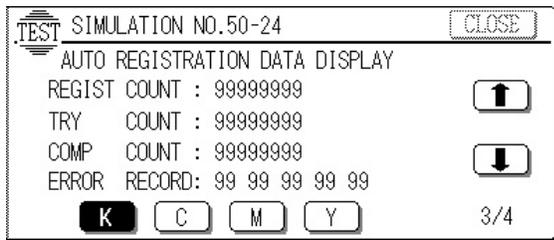
SENSOR TRG	Sensor adjustment target value
SENSOR LED	Sensor adjustment light emitting quantity
SENSOR ADJ	Surface on completion of sensor adjustment
DENSITY CHECK K	Black density check data
DENSITY CHECK C	Cyan density check data
DENSITY CHECK M	Magenta density check data
DENSITY CHECK Y	Yellow density check data



- Each counter and error history display

<Display items>

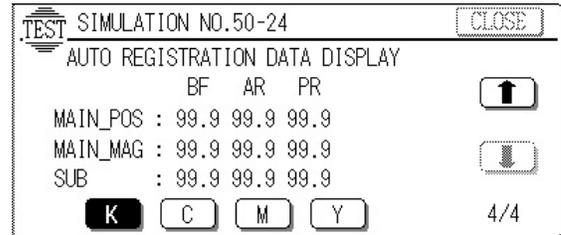
REGIST COUNT	Registration count (Copy quantity)
TRY COUNT	Number of executions
COMP COUNT	Number of success
ERROR RECORD	History of last 5 errors



- Temperature display during adjustment

<Display items>

BF : Previous time	
MAIN_POS	Temperature value in main scanning registration adjustment
MAIN_MAG	Temperature value in main scanning magnification ratio adjustment
SUB	Temperature value in sub scanning registration adjustment
AR : This time	
MAIN_POS	Temperature value in main scanning registration adjustment
MAIN_MAG	Temperature value in main scanning magnification ratio adjustment
SUB	Temperature value in sub scanning registration adjustment
PR : Current	
MAIN_POS	Temperature value in main scanning registration adjustment
MAIN_MAG	Temperature value in main scanning magnification ratio adjustment
SUB	Temperature value in sub scanning registration adjustment



[Details of each item]

- Sensor adjustment

The light emitting quantity is adjusted so that it is in the range of the sensor adjustment target value  $\pm n$ .

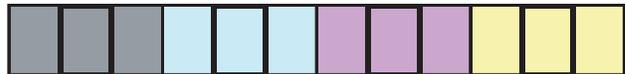
[SENSOR LED] is the value when the sensor receives light quantity in the range of the target value.

[SENSOR ADJ] is the light quantity at that time.

- Density check

For density check, patches of 6.985mm for each color are outputted three times continuously and the second sampling data of them are displayed.

\* Patch image outputted in density check



The light quantities enclosed with thick lines are displayed.

- Registration count

Total print quantity after normal completion of automatic registration adjustment

- Number of executions

Number of executions of automatic registration adjustment (automatic execution & single execution)

- Number of success

Number of normal completion of automatic registration adjustment (automatic execution & single execution)

- Error history

Cause history of abnormal end of the last five automatic registration adjustment

The contents are shown in the table below.

Error number	Content
0	No error
1	Judgment error
2	K density insufficient
3	C density insufficient
4	M density insufficient
5	Y density insufficient
6	Main fine adjustment C error
7	Main fine adjustment M error
8	Main fine adjustment Y error
9	Sub fine adjustment C error
10	Sub fine adjustment M error
11	Sub fine adjustment Y error
12	Main rough adjustment C error
13	Main fine adjustment M error
14	Main rough Y error
15	Sub rough adjustment C error
16	Sub rough adjustment M error
17	Sub rough adjustment Y error
18	Main judgment C error
19	Main judgment M error
20	Main judgment Y error
21	Sub judgment C error
22	Sub judgment M error
23	Sub judgment Y error
98	Resist sensor adjustment error
99	Other abnormal end

- Temperature data  
ICU temperature data display

#### [CMY patch pattern sampling data display]

- Registration adjustment patch sampling data display  
<Display items>

[MAIN]	Main scanning
[SUB ]	Sub scanning
FINE	Fine adjustment
ROUGH	Rough adjustment
JUDGE	Judgment

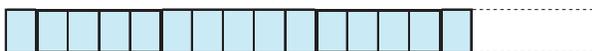
- Sampling data  
The light quantities of six kinds of patches are displayed.
- 1) Images of main scanning fine adjustment/ rough adjustment/ judgment and sub scanning rough adjustment/judgment



- \* Total number of output 4 patches: 5 sets for fine adjustment, 2 sets for judgment

In the above pattern, four patches of 6.953mm are outputted continuously and the average value of the second and the third sampling data of them is displayed.

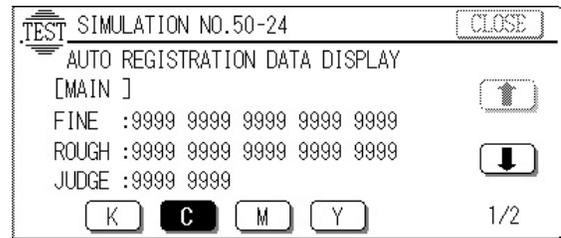
- 2) Image of sub scanning fine adjustment



- \* Total number of output 15 patch: 5 sets  
In the above pattern, fifteen patches of 6.985mm are outputted continuously and the average data of the 2nd - the 5th sampling data and that of the 11th - the 14th sampling data are displayed.

- On K patch

Since K patch is outputted before CMY patches only in rough adjustment and judgment, sampling is performed similarly with image 1) and the result is displayed in each color.



#### 50 - 25

Purpose	Operation test/check
Function (Purpose)	Used to check the operation of color registration adjustment (no print)
Operation/ Procedure	<ol style="list-style-type: none"> <li>1. Press [EXECUTE] key. [EXECUTE] key is highlighted.</li> <li>2. Automatic registration adjustment is started and the process of operation is displayed. Status when starting S [*****] E</li> <li>3. The registration sensor adjustment is performed when starting. When an error is detected, the error display is shown on the screen and [EXECUTE] key returns to the normal display. The sensor adjustment is forcibly interrupted. When the sensor adjustment is normally completed, the pattern for density check is printed. Status when adjustment is completed S [*****] E</li> <li>4. The current toner density is judged from the print pattern of density check. If it is judged as there is no adverse effect on the following patch pattern prints, the registration adjustment patterns are sequentially outputted.</li> </ol>

#### List of patch patterns

Density	Black patch density
	Cyan patch density
	Magenta patch density
	Yellow patch density
Range	Main scanning fine adjustment Cyan patch print
	Main scanning fine adjustment Magenta patch print
	Main scanning fine adjustment Yellow patch print
	Sub scanning fine adjustment Cyan patch print
	Sub scanning fine adjustment Magenta patch print
	Sub scanning fine adjustment Yellow patch print
	Main scanning rough adjustment Cyan patch print
	Main scanning rough adjustment Magenta patch print
	Main scanning rough adjustment Yellow patch print
	Sub scanning rough adjustment Cyan patch print
	Sub scanning rough adjustment Magenta patch print
	Sub scanning rough adjustment Yellow patch print
	Main scanning judgment Cyan patch print
	Main scanning judgment Magenta patch print
	Main scanning judgment Yellow patch print
Sub scanning judgment Cyan patch print	
Sub scanning judgment Magenta patch print	
Sub scanning judgment Yellow patch print	

5. When printing of all the patch patterns and scanning are completed, the adjustment result is judged.

If it is judged as normal, the adjustment result is displayed on the screen and the operation is completed.

If it is judged as abnormal, the error content is displayed and the operation is completed.

\* Since the patch pattern adjustment and judgment are made for each pattern, the operation may be forcibly interrupted.

Status when all patterns are completed S [ ] E

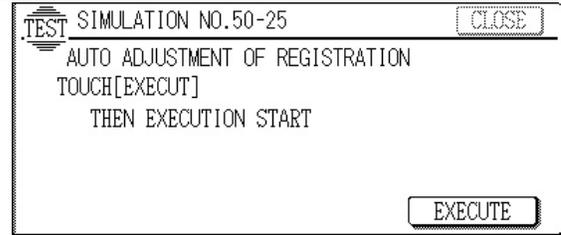
\* When all the asterisks (\*) disappear, the operation is terminated.

Note: This simulation is used for operation check of automatic registration adjustment, and revision of data is not performed.

Error list

Error content	Error list	Error condition setting	Error number	Display name
Adjustment range error	Error judgment	With main/sub judgment patches	01	AUTO_REGI_JUDGE_ERROR
Density error	Black patch density insufficient	800 or less	02	BLACK_DENSITY_ERROR
	Cyan patch density insufficient	100 or less	03	CYAN_DENSITY_ERROR
	Magenta patch density insufficient	100 or less	04	MAGENTA_DENSITY_ERROR
	Yellow patch density insufficient	100 or less	05	YELLOW_DENSITY_ERROR
Range error	Main scanning fine adjustment Cyan patch print error	Range 100 or less	06	CYAN_MAIN_FINE_ERROR
	Main scanning fine adjustment Magenta patch print error	Range 100 or less	07	MAGENTA_MAIN_FINE_ERROR
	Main scanning fine adjustment Yellow patch print error	Range 100 or less	08	YELLOW_MAIN_FINE_ERROR
	Sub scanning fine adjustment Cyan patch print error	Range 100 or less	09	CYAN_SUB_FINE_ERROR
	Sub scanning fine adjustment Magenta patch print error	Range 100 or less	10	MAGENTA_SUB_FINE_ERROR
	Sub scanning fine adjustment Yellow patch print error	Range 100 or less	11	YELLOW_SUB_FINE_ERROR
	Main scanning rough adjustment Cyan patch print error	Range 100 or less	12	CYAN_MAIN_ROUGH_ERROR
	Main scanning rough adjustment Magenta patch print error	Range 100 or less	13	MAGENTA_MAIN_ROUGH_ERROR
	Main scanning rough adjustment Yellow patch print error	Range 100 or less	14	YELLOW_MAIN_ROUGH_ERROR
	Sub scanning rough adjustment Cyan patch print error	Range 100 or less	15	CYAN_SUB_ROUGH_ERROR

Error content	Error list	Error condition setting	Error number	Display name
Range error	Sub scanning rough adjustment Magenta patch print error	Range 100 or less	16	MAGENTA_SUB_ROUGH_ERROR
	Sub scanning rough adjustment Yellow patch print error	Range 100 or less	17	YELLOW_SUB_ROUGH_ERROR
	Main scanning judgment Cyan patch print error	Range 80 or less	18	CYAN_MAIN_JUDGE_ERROR
	Main scanning judgment Magenta patch print error	Range 80 or less	19	MAGENTA_MAIN_JUDGE_ERROR
	Main scanning judgment Yellow patch print error	Range 80 or less	20	YELLOW_MAIN_JUDGE_ERROR
	Sub scanning judgment Cyan patch print error	Range 80 or less	21	CYAN_SUB_JUDGE_ERROR
	Sub scanning judgment Magenta patch print error	Range 80 or less	22	MAGENTA_SUB_JUDGE_ERROR
Sensor error	Sub scanning judgment Yellow patch print error	Range 80 or less	23	YELLOW_SUB_JUDGE_ERROR
	Registration sensor adjustment error	Use another simulation to set the target value. When the target value is not reached for 3 times, it is judged as an error.	98	SENSOR_ADJUST_ERROR
Other errors	Other error end	-	99	OTHERS_ERROR



51

51 - 1

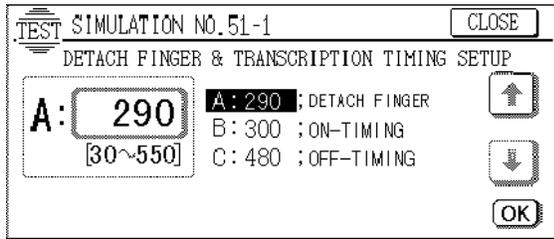
Purpose	Adjustment
Function (Purpose)	Used to adjust the transfer operation and ON timing of the transfer section separation pawl.
Section	Image process Copy (Photoconductor/ Developing/Transfer/ Cleaning)
Item	Operation
Operation/ Procedure	1. Select the adjustment item with [↑], [↓] keys. 2. Enter the adjustment value with the 10-key. 3. Press the [OK] key. (The value entered in procedure 1 is set.)
A:	Separation pawl timing Used to set the time interval from RRC ON timing to BPSS ON. Set range/30 ~ 550 [ms]

**B:** Transfer output start adjustment value  
Used to set the time interval [ms] from RRC ON to K (Black) transfer output start.  
Set range: 1 – 990 [ms]  
Setting is made in the increment of 1ms on the display, however in the increment of 10ms in internal process.

**C:** Transfer output end adjustment value  
Used to set the time interval [ms] from PS-STM stop to K (black) transfer output end.  
Set range: 1 – 990 [ms]  
Setting is made in the increment of 1ms on the display, however in the increment of 10ms in internal process.  
When this simulation is executed, the current set value is displayed.

When the initial value or any value out of the specified range are set, the operation is made with the values shown below.

**A: DETACH FINGER** 290[ms] (Default value)  
**B: TRANSMIT-ON** 300[ms] (Default value)  
**C: TRANSMIT-OFF** 480[ms] (Default value)



## 51 - 2

Purpose	Adjustment
Function (Purpose)	Used to adjust the contact pressure of paper on the resist roller of each section (each paper feed and duplex feed of the copier). (This adjustment is required when the print image position variations are considerably great or when paper jams occur frequently.)
Section	Paper transport (Discharge/Switchback/Transport)
Item	Operation
Operation/ Procedure	1. Select the adjustment mode with [↑],[↓]keys. 2. Enter the adjustment value with the 10-key.

3. Press the [OK] key. (The value entered in procedure 2 is set.)

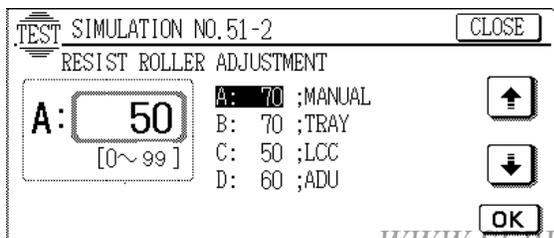
Used to set the resist roller clutch (RRC) ON timing.  
When the set value is increased, the timing is delayed and the paper pressure onto the resist roller is increased. When the set value is changed by 1, the timing is changed by about 1.0msec.  
The set range is 0 – 99 for all.

**MANUAL** Resist quantity adjustment in manual paper feed (Default: 70)  
Resist quantity in the machine tray paper feed Adjustment (Default: 70)

**TRAY** Resist quantity in high speed transport in the copier and the desk paper feed.

**LCC** Resist quantity adjustment in high speed transport in LCC paper feed. (Default: 50)

**ADU** Resist quantity adjustment in ADU paper feed. (Default: 60)



## 52

### 52 - 1

Purpose	Adjustment
Function (Purpose)	Used to adjust the duplex print mode stacking capacity (Used to adjust the stop position of the duplex unit paper tray width alignment plate. The home position of the width alignment plate is changed by software.)
Section	Duplex
Item	Operation
Operation/ Procedure	1. Select mode F with [↑], [↓] keys. 2. Enter the number of the paper tray where A4 or 11" × 8.5" paper is loaded with the 10-key. 3. Enter the adjustment value with the 10-key. 4. Press the [EXECUTE] key. 5. Press the [OK] key.

If there is no paper on the duplex tray, paper feed from the selected paper tray is performed and one sheet of paper is transported to the duplex tray. Then the value set in procedure 3 is set and the alignment plate is operated according to the home position corresponding to the set value.

When the set value is changed by "1", it is changed by about 0.2mm.

When the set value is increased, the alignment plate paper width is decreased.

The set value is in the range of ±50 with 50 at the center.

#### Set item

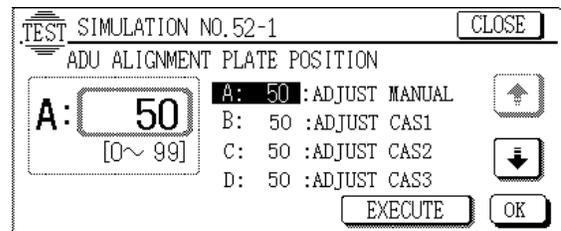
A – E: Alignment plate adjustment value (Default value: 50)

#### Set item

A – E: Alignment plate adjustment value

F: Paper feed selection (Default value: 3)

1. Manual feed
3. Cassette 1
4. Cassette 2
5. Cassette 3
6. LCC



## 53

### 53 - 1

Purpose	Adjustment
Function (Purpose)	Used to adjust the document stop position in each operation mode of RADF.
Section	RADF
Item	Operation
Operation/ Procedure	1. Select the adjustment mode with [↑], [↓] keys. 2. Enter the adjustment value with the 10-key.

3. Press the [OK] key.

The value entered in procedure 2 is set.

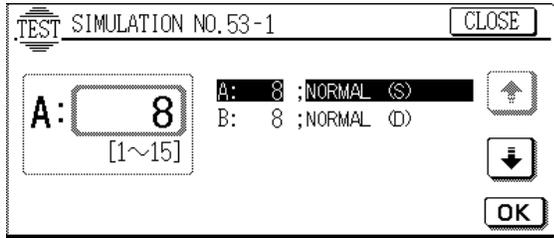
This is used to set the document transport belt stop timing.

**NORMAL(S):** Normal paper single copy stop position adjustment value

**NORMAL(D):** Normal paper duplex copy stop position adjustment value

**[Descriptions on set value]**

08: ±0.000mm (Default)	00: -8.000mm	09: + 1.000mm
	01: -7.000mm	10: + 2.000mm
	02: -6.000mm	11: + 3.000mm
	03: -5.000mm	12: + 4.000mm
	04: -8.000mm	13: + 5.000mm
	05: -8.000mm	14: + 6.000mm
	06: -8.000mm	15: + 7.000mm
	07: -8.000mm	



**53 - 2**

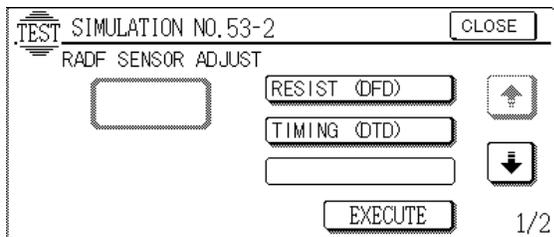
Purpose	Adjustment
Function (Purpose)	Used to adjust the optical sensor sensitivity in RADF.
Section	RADF
Item	Operation
Operation/ Procedure	1. The sensor names are displayed. Select the sensor to be adjusted with the key.

2. Press the [EXECUTE] key.  
The adjustment of the sensor selected in procedure 1 is started. During execution of the adjustment, the [EXECUTE] key is highlighted. If the [EXECUTE] key is pressed under this state, the adjustment can be interrupted.

After completion of the adjustment, the COMPLETE display is shown.

In case of an abnormality, the INCOMPLETE display is shown.

- REGIST (DFD)** Resist sensor
- TIMING (DTD)** Timing sensor
- REVERSE (RDD)** Paper exit/reverse sensor

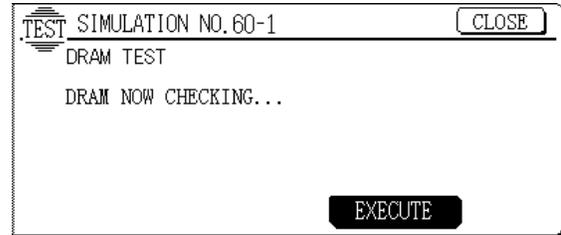


**60**

**60 - 1**

Purpose	Operation test/check
Function (Purpose)	Used to check the operation (read/write) of the ICU main PWB (image DRAM).
Section	ICU
Item	Operation
Operation/ Procedure	1. Press the [EXECUTE] key to check the read/write operations.

2. After completion of the read/write operation check, the check result is displayed with OK or NG.



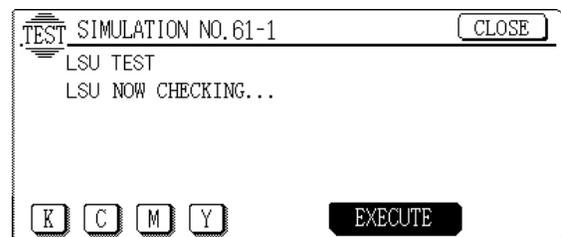
**61**

**61 - 1**

Purpose	Operation test/check
Function (Purpose)	Used to check the operation of the scanner (exposure) unit.
Section	Laser (Exposure)
Item	Operation
Operation/ Procedure	1. Select the unit (K, C, M, Y) to be checked. 2. Press the [EXECUTE] Key The scanner unit is started.

3. After completion of check operation, the result is displayed with OK or NG.  
Used to check whether the sync signal (HSYNC/) is normally outputted or not by operating the laser (exposure) unit (laser motor rotation, laser emission).

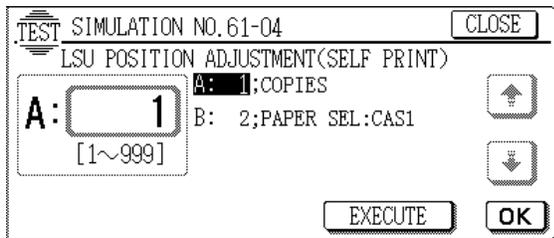
\* When the [EXECUTE] key is pressed without selecting the unit, all units are checked.



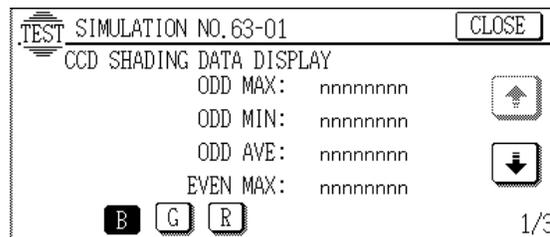
### 61 - 4

Purpose	Adjustment
Function (Purpose)	Used to adjust skew of the scanner (writing) unit laser beam.
Section	Laser (Exposure)
Item	Operation
Operation/ Procedure	1. Select the adjustment mode with [↑], [↓] keys. 2. Enter the adjustment value with the 10-key.

- Press the [OK] key.  
The value entered in procedure 2 is set.
- Press the [EXECUTE] key to print the scanner unit position adjustment pattern.



Description on display item	
Display item	Content
ODD AVE	Shading odd number average value/red
EVEN MAX	Shading even number max. value/red
EVEN MIN	Shading even number min. value/red
EVEN AVE	Shading even number average value/red
ODD/EVEN OFFSET	CCD odd number offset value/red
BLACK OFFSET	CCD even number offset value/red
ADJUST ODD GAIN	CCD odd number gain value/red
ADJUST EVEN GAIN	CCD even number gain value/red



### 63

#### 63 - 1

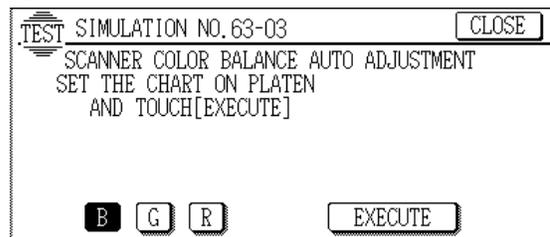
Purpose	Operation data output/Check (Display/Print)
Function (Purpose)	Used to check the result of shading correction. (The shading correction data is displayed.)
Section	Laser (Exposure)
Item	Operation
Operation/ Procedure	Used to display the result of latest shading correction. The displayed page can be shifted with [↑], [↓] keys. Each color data can be checked with the color keys.

Description on display item	
Display item	Content
ODD MAX	Shading odd number max. value/blue
ODD MIN	Shading odd number min. value/blue
ODD AVE	Shading odd number average value/blue
EVEN MAX	Shading even number max. value/blue
EVEN MIN	Shading even number min. value/blue
EVEN AVE	Shading even number average value/blue
ODD/EVEN OFFSET	CCD odd number offset value/blue
BLACK OFFSET	CCD even number offset value/blue
ADJUST ODD GAIN	CCD odd number gain value/blue
ADJUST EVEN GAIN	CCD even number gain value/blue
ODD MAX	Shading odd number max. value/green
ODD MIN	Shading odd number min. value/green
ODD AVE	Shading odd number average value/green
EVEN MAX	Shading even number max. value/green
EVEN MIN	Shading even number min. value/green
EVEN AVE	Shading even number average value/green
ODD/EVEN OFFSET	CCD odd number offset value/green
BLACK OFFSET	CCD even number offset value/green
ADJUST ODD GAIN	CCD odd number gain value/green
ADJUST EVEN GAIN	CCD even number gain value/green
ODD MAX	Shading odd number max. value/red
ODD MIN	Shading odd number min. value/red

#### 63 - 3

Purpose	Adjustment
Function (Purpose)	Used to adjust CCD color balance (gamma). (Normal document mode)
Section	Optical (Image scanning)
Item	Picture quality                      Color balance
Operation/ Procedure	Set the SIT chart (UKOG-0280FCZZ) on the document table and press the [EXECUTE] key. Reading of the automatic adjustment pattern of color coefficient is started and the color coefficient data are calculated and displayed.

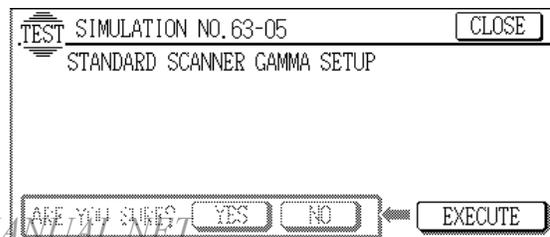
By pressing each color key, the color coefficient data of the color is displayed.



#### 63 - 5

Purpose	Setting
Function (Purpose)	Used to set CCD color balance (gamma) default.
Section	Optical (Image scanning)
Item	Picture quality                      Color balance
Operation/ Procedure	1. Press the [EXECUTE] key, and the [YES] and [NO] keys are highlighted.

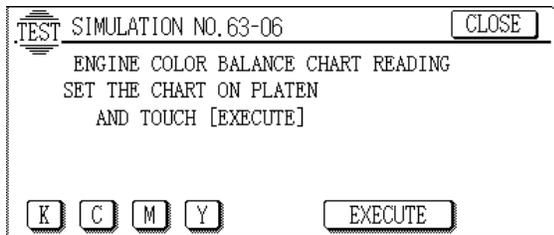
- Press the [YES] key, and the CCD color balance value is set to the default.



### 63 - 6

Purpose	Adjustment/Operation data output/Check (Display/Print)
Function (Purpose)	Used to check the color balance (gamma) adjustment. (Check patch)
Section	ICU
Item	Picture quality                      Color balance
Operation/Procedure	1. Press the [EXECUTE] key, and set the color balance check patch printed in SIM 46-21 to the original table.

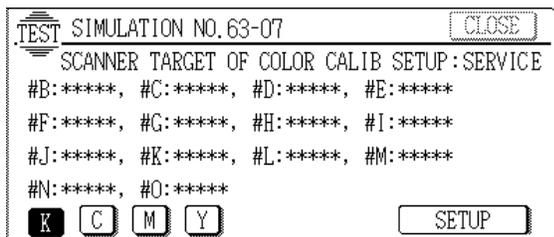
- Scanning is started and the data are displayed on the display.
- The automatic adjustment pattern of the engine color balance in each color can be displayed with each color key.



### 63 - 7

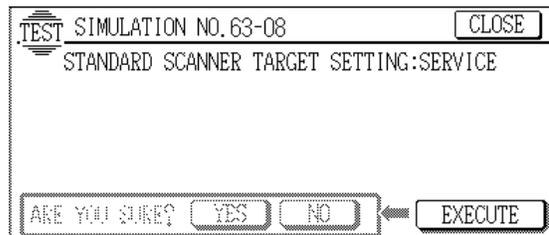
Purpose	Setting
Function (Purpose)	Used to set the target color balance (gamma) for auto color balance adjustment. The standard color balance (gamma) or an optional color balance (gamma) is set as the service target.
Item	Picture quality                      Color balance
Operation/Procedure	1. In the copy color balance adjustment (manual adjustment) (SIM 46-21) mode, the color patch image (adjustment pattern) is outputted. (This must be adjusted properly.)

- Press the SETUP key.
- Set the color patch image (adjustment pattern) paper printed in the copy color balance adjustment (manual adjustment) (SIM 46-21) mode on the original table.
- Press the [EXECUTE] key. The color patch image (adjustment pattern) is read.
- Press the REPEAT key and perform procedure 4) again.
- Press the [OK] key. The color balance corresponding to the color patch image (adjustment pattern) printed in the copy color balance adjustment (manual adjustment) is set as the service target.



### 63 - 8

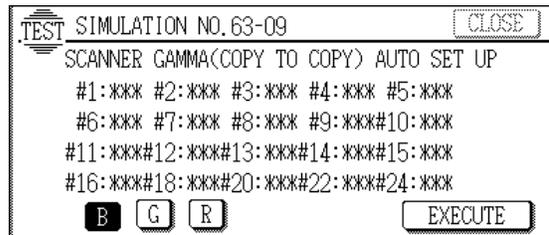
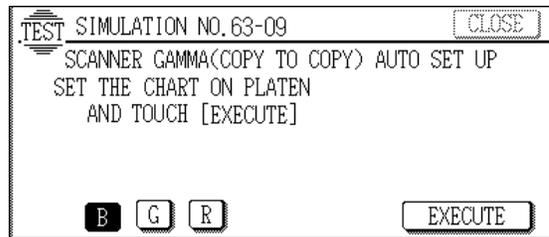
Purpose	Setting
Function (Purpose)	Used to set the target color balance (gamma) for auto color balance adjustment (SIM 46-24). The service target is set to the default (standard) color balance (gamma).
Item	Picture quality                      Color balance
Operation/Procedure	1. Press the [EXECUTE] key. 2. Press the YES key. The service target is set to the default (standard) color balance (gamma).



### 63 - 9

Purpose	Setting
Function (Purpose)	Used to adjust the CCD color balance (gamma). (Copy document mode)
Section	Optical (Image scanning)
Item	Picture quality
Operation/Procedure	1. Place an SIT chart (UKOG-0280FCZZ) on the document table, and make a copy in the TEXT/Printed Photo mode.

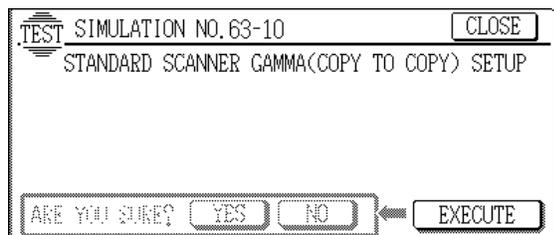
- Set the copy of the SIT chart on the document table.
- Enter the simulation mode of SIM 63-9.
- Press the [EXECUTE] key. The automatic adjustment pattern of the color coefficient is read to calculate and display the color coefficient data. By pressing each color key, the color coefficient data of the color is displayed.



**63 - 10**

Purpose	Setting
Function (Purpose)	Used to set the default of the CCD color balance (gamma). (Copy document mode)
Section	Optical (Image scanning)
Item	Picture quality
Operation/ Procedure	1. When the [EXECUTE] key is pressed, the [YES] and [NO] keys become active. 2. When the [YES] key is pressed, the CCD color balance value is set to the default.

3. Enter the simulation mode of SIM 63-9.



**64**

**64 - 1**

Purpose	Operation test/check
Function (Purpose)	Used to check the operation (self print) of the printer section. (The print pattern, the paper feed mode, the print mode, the print quantity, and the density can be set optionally.)
Section	Printer
Item	Operation
Operation/ Procedure	1. Select the item with [↑], [↓] keys. 2. Enter the print conditions with the 10-key.

3. Press the [EXECUTE] Key.

The self print pattern is printed.

The print color can be specified: [K] black, [C] cyan, [M] magenta, [Y] yellow.

\* : The print pattern 20 & 21 should not be used in the field.

Item	Display item	Low	Hight	Default value	Description
A	PRINT PATTERN	1	21	1	Self print pattern
	= 1				Gradation sub scanning direction (input process)
	= 2				Gradation main scanning direction (input process)
	= 3				Grid (input process)
	= 4				Gradation pattern: 255, 0 – 254, increment of 1 gradation
	= 5				Grid (Half tone)
	= 6				Gradation sub scanning direction (Half tone): 16 steps, 16 intervals, 15 start
	= 7				Gradation main scanning direction (Half tone): 16 steps, 16 intervals, 15 start
	= 8				Equal pitch pattern sub scanning direction 1 by 4
	= 9				Equal pitch pattern main scanning direction 1 by 4
	=10				Equal pitch pattern sub scanning direction 2 by 6
	=11				Equal pitch pattern main scanning direction 2 by 6
	=12				Gradation sub scanning direction (Half tone): 16 steps 2 intervals
	=13				All surface (HT)
	=14				Cross pattern (sub scanning direction color change, YMCK)
	=15				Cross pattern (main scanning direction color change, YMCK)
	=16				8-color print (C, M, Y, MY, CY, CM, CMY, K) main scanning direction
	=17				Each color 10% (A4, A4R) density print
	=18				Dot print (input process)
	=19				Gradation pattern: 255, 0 – 254, increment of 1 gradation, (Text 1 × 1)
	=20				For ICU monitor software setup LSU memory (without input DMA start) (Not operating)
=21				For ICU monitor software setup PG (with input DMA start) (Not operating)	
B	DENSITY	1	255	255	Gradation level
C	MULTI COUNT	1	999	1	Self print quantity setting



Purpose	Operation test/check
Function (Purpose)	Used to check the operation (self print) of the printer section. (The print pattern, the paper feed mode, the print mode, the print quantity, and the density can be set optionally.) (monochrome)
Section	Printer
Item	Operation
Operation/Procedure	1. Select the item with [↑], [↓] keys. 2. Enter the print conditions with the 10-key.

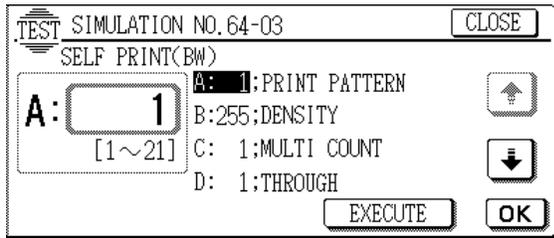
3. Press the [EXECUTE] Key.

The self print pattern is printed.

The print color can be specified: [K] black, [C] cyan, [M] magenta, [Y] yellow.

Item	Display item	Low	High	Default value	Description
A	PRINT PATTERN	1	21	1	Self print pattern
	= 1				Gradation sub scanning direction (input process)
	= 2				Gradation main scanning direction (input process)
	= 3				Grid (input process)
	= 4				Gradation pattern: 255, 0 – 254, increment of 1 gradation
	= 5				Grid (Half tone)
	= 6				Gradation sub scanning direction (Half tone): 16 steps, 16 intervals, 15 start
	= 7				Gradation main scanning direction (Half tone): 16 steps, 16 intervals, 15 start
	= 8				Equal pitch pattern sub scanning direction 1 by 4
	= 9				Equal pitch pattern main scanning direction 1 by 4
	=10				Equal pitch pattern sub scanning direction 2 by 6
	=11				Equal pitch pattern main scanning direction 2 by 6
	=12				Gradation sub scanning direction (Half tone): 16 steps 2 intervals
	=13				All surface (HT)
	=14				Cross pattern (sub scanning direction)
	=15				Cross pattern (main scanning direction)
	=16				Black color print main scanning direction
	=17				Black color 10% (A4, A4R) density print
	=18				Dot print (input process)
	=19				Gradation pattern: 255, 0 – 254, increment of 1 gradation, (Text 1 × 1)
	=20				For ICU monitor software setup LSU memory (without input DMA start) (Not operating)
	=21				For ICU monitor software setup PG (with input DMA start) (Not operating)
=22				Print lattice pattern (25 MHz)	
B	DENSITY	1	255	255	Gradation level
C	MULTI COUNT	1	999	1	Self print quantity setting
D	EXPO:	1	11	1	Density mode
	= 1	THROUGH			No process (through)
	= 2	CHAR/PIC AUTO			Test/Printed Photo Auto
	= 3	CHAR/PIC MANUAL			Text/Printed Photo Manual
	= 4	CHAR/PRPIC AUTO			Text/Photo Auto
	= 5	CHAR/PRPIC MANU			Text/Photo Manual
	= 6	CHAR AUTO			Text Auto
	= 7	CHAR MANUAL			Text manual
	= 8	PRINT PIC			Printed Photo
	= 9	PRINT PAPER			Photo
	= 10	MAP			Map
= 11	STANDARD DITHA			Dither without correction	

Item	Display item	Low	High	Default value	Description
E	PAPER:	1	6	3	Cassette selection
	= 1	MANUAL			Manual paper feed
	= 2	CAS1			Cassette 1 (Default)
	= 3	CAS2			Cassette 2
	= 4	CAS3			Cassette 3
	= 5	LCC			LCC
F	DUPLEX	1	2	1	Duplex print select
	= 1	NO			Single
	= 2	YES			Duplex
G	TYPE	1	5	1	Manual paper kind selection
	= 1	NORMAL			Normal paper
	= 2	THICK 2			Thick paper/Thick special paper
	= 3	OHP 2			OHP quality mode
	= 4	THICK1			Thick paper/Thin special paper
	= 5	OHP1			OHP speed mode



## 65

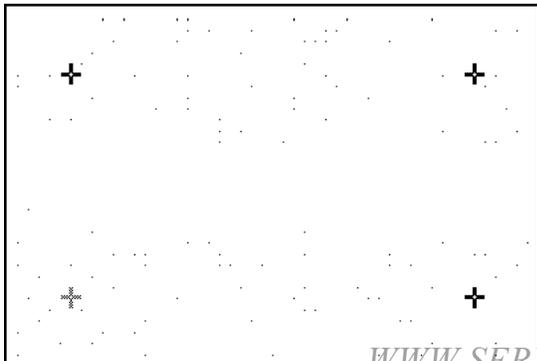
### 65 - 1

Purpose	Adjustment
Function (Purpose)	Used to adjust the touch panel (LCD display section) detection position.
Section	Operation (Display/Operation key)
Operation/ Procedure	Touch the four cross marks. The coordinates at the pressed point are set.

When the coordinates are properly set, the mark "+" on the display turns to gray (blue) and the menu returns to the simulation sub code entry screen.

In case of an abnormality, it returns to the input display.

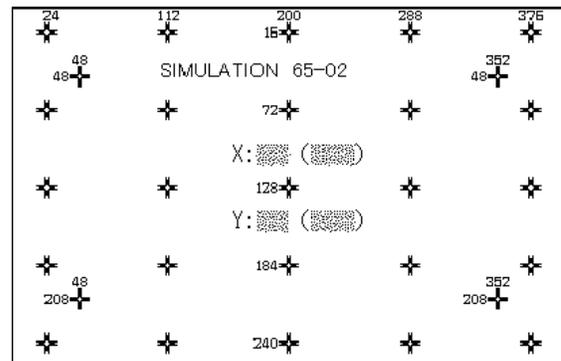
1. Coordinate X on the left upper of the screen (Default: 258)
2. Coordinate Y on the left upper of the screen (Default: 245)
3. Coordinate X on the right upper of the screen (Default: 831)
4. Coordinate Y on the right upper of the screen (Default: 247)
5. Coordinate X on the left lower of the screen (Default: 257)
6. Coordinate Y on the left lower of the screen (Default: 834)
7. Coordinate X on the right lower of the screen (Default: 831)
8. Coordinate Y on the right lower of the screen (Default: 828)



### 65 - 2

Purpose	Operation data output/Check (Display/Print)
Function (Purpose)	Used to check the result of the touch panel (LCD display) detection position adjustment. (The coordinates are displayed.)
Section	Operation (Display/Operation key)
Operation/ Procedure	When the touch panel is pressed, the AD value in each of X and Y directions at that point and the coordinate values are displayed in ( ) as well as the coordinate values of each point.

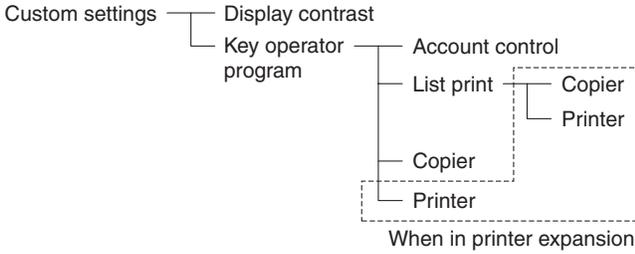
It is based on the coordinates set with SIM 65-1.



# [9] USER PROGRAM

## A. Outline

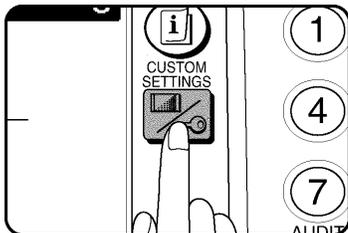
The user program is divided into the following levels.



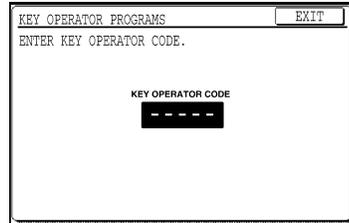
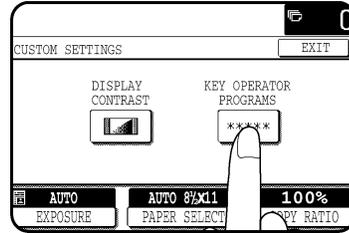
Item	Content	
LCD contrast adjustment	Used to adjust the LCD display contrast.	
<b>Key operator program</b>		
Total use quantity display	Used to display or print the total use quantity of the machine.	
List printout	Copier	Used to print the key operator program list and the setup status.
	Printer	
Copier function setup program	Account control	Used to realize the machine operation status according to the user's request.
	Other function settings	
	Timer settings	
	Enable/disable settings	
	Auto color calibration	

## B. Key operator program

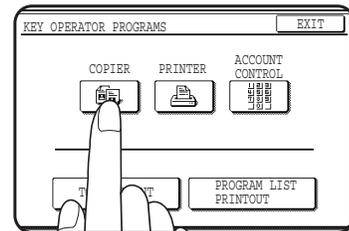
- 1) Touch CUSTOM SETTINGS to enter the user program mode.



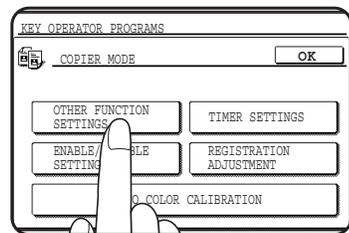
- 2) Touch KEY OPERATOR PROGRAMS on the touch panel.
- 3) The key operator code is requested to be entered. Enter the code. (Default: 00000)



- When an erroneous input is made, an invalid sound is made to cancel the key operator mode and return to the user setup menu.
  - When [C] is pressed during entry, all the entered numbers are cleared.
  - When [END] or [CA] key is pressed, the mode is canceled.
- 4) When the key operator code is properly entered, the menu goes to the key operator program menu. Touch [COPIER] key to go to the copy mode menu.



- 5) When the copy mode menu is displayed, select the suitable item and make detailed setup.



## C. Key operator program list

### Copier key operator programs

Category	Program Name	Function	Initial setup
Other function settings	Key Operator Code Number Change	Used to change the key operator code.	00000
	Exposure Adjustment	Used to adjust the density level in the automatic density mode. Set range: 2 – 4	3
	Toner Save Mode (B/W)	Used to set ON/OFF of the toner save mode. (Effective only in the monochrome mode.) (Excluding UK)	OFF
	Add or Change Extra Preset Ratios	Used to set two fixed magnification ratios of enlargement and reduction in addition to the ten standard, fixed magnification ratios. Set range: Enlargement (400 – 101)/Reduction (99 – 25%)	
	Setting a Maximum Number of Copies	Used to set the upper limit of copy quantity. Set range: 1 – 999	999
	Initial Margin Shift Setting	Used to change the initial set value called in setting the binding margin. * When the ADF is installed, the binding margin of the back surface can also be set. Set range: 0 – 20mm (AB series)/0" – 1" (Inch series)	10mm (AB series) 1/2 (Inch series)
	Erase Width Adjustment	Used to change the initial set value called when setting the edge erase. Set range: 0 – 20mm (AB series)/0" – 1" (Inch series)	10mm (AB series) 1/2 (Inch series)
	Initial Status Setting	Used to set the standard state of the copy mode.	
	Transfer Belt Position	The transfer belt position determines which has priority; the color copy mode or the black-white copy mode in standard standby state. (It relates to the first copy time.)	Color copy
	Initial Color Balance Setting	Used to adjust the balance in the density area divided into 8 section of each of C, M, Y, K. Set range: –4 – +4	
	Size Setting for [EXTRA]	Used to set so that the tray with special size paper is recognized as the tray with fixed size paper.	
	Require Key Operator Code	Used to set the machine so that it cannot be operated until the key operator code is entered after turning on the power.	Disable
	Timer settings	Sleep Mode Setting	Used to set the time to enter the sleep mode. If "Sleep mode inhibit" is set, this function is disabled. Set range: 10 – 240min
Auto Clear Setting		Used to set the auto clear time. If "Auto clear timer inhibit" is set, this function is disabled. Set range: 10 – 240sec (unit: 10sec)	60sec
Preheat Mode Setting		Used to set the time to enter the pre-heat mode. Set range: 10 – 240min	15min
Message Time Setting		Used to set the display time of temporary messages on the panel center. Set range: 1 – 12sec	6sec
Enable/disable settings	Disabling of Beep When Keys Touched	Used to set enable/disable of effective or disable sounds when touching keys.	OFF
	Disabling of Auto Paper Selection	Used to set enable/disable of paper auto selection	OFF
	Disabling of Auto Tray Switching	Used to set enable/disable of tray auto selection.	OFF
	Disabling of Bypass-Tray in Duplex Copy	Used to set enable/disable of use of the manual feed tray in duplex copy.	OFF
	Disabling Deletion of Job Programs	Used to set enable/disable of rewrite and erase of the copy conditions registered by the copy condition registration function (job program).	OFF
	Disabling of Document Feeder (* Only when the RADF is installed)	Used to set enable/disable of use of the document feed unit.	OFF
	Disabling of Duplex Copying	Used to set enable/disable of duplex copy.	OFF
	Disabling of Stapler (* Only when the sorter is installed)	Used to set enable/disable of use of the staple unit.	OFF
	Disabling of Covers Mode	Used to set enable/disable of cover insertion copy.	OFF
	Disabling of PC/Modem Access	Used to enable/disable of access to PC/Modem (RIC system).	ON
Registration Adjustment	Disabling of Sleep Mode	Used to enable/disable of the sleep mode.	OFF
	Disabling of Pre-scan in B/W Copy	Used to enable/disable of pre-scan in black and white copy.	OFF
Registration Adjustment	This program is used to adjust registration if deviation of registration of characters or lines occurs in color copying or printing.		
Auto color calibration	The Auto Color Calibration program enables automatic color gradation correction when it becomes misadjusted.		

**Printer key operator programs (optional)**

Program Name	Function	Initial setup
Enable Bypass-Tray Size Detection	This program is used to enable or disable paper size detection of the bypass tray in the print mode. This setting does not affect the paper size detection in the copy mode.	ON
Enable Bypass-Tray Type Detection	This program is used to ensure that the paper type selected for copying and printing are the same.	ON
Prohibit Bypass-Tray Selection	If this program is set, the bypass tray will not be selected for a print job that specifies auto paper selection or during auto tray switching.	OFF
Prohibit Auto Tray Switching	This program prevents automatic switching between paper trays for print jobs. This program does not affect the auto tray switching function in the copy mode.	OFF
Disabling of Stapler	This program is used to disable use of the stapler of an optional finisher (AR-FN4). If the stapler malfunctions, it can be disabled to prevent further malfunctioning and possible damage to the stapler until it can be serviced.	OFF

**Account control**

Program Name	Function	Initial setup
Auditing Mode	This program is used to enable or disable the basic auditing mode. The auditing mode can be set for both the color and black/white (B/W) modes or for only the color mode.	OFF
Number of Sheets per Account	This program is used to display or print the total number of sheets made against each account number in the color mode and B/W mode respectively.	–
Billing by Account	This program is used to display or print the accumulated cost when a relevant price per sheet has been set using program "Price Setting."	–
Resetting Account	This program is used to reset all audit accounts or to selectively reset individual accounts.	–
Account Number Control	This program is used to register accounts, delete accounts, change an account number, or print all account numbers.	–
Price Setting	This program is used to set the price per sheet of copying, printing or scanning for individual account numbers or all accounts.	–
Account Limit Setting	This program is used to set the maximum number of sheets of copying, printing, and scanning for individual account numbers or all accounts.	–
Account Number Security	This program is used to make it difficult for users to gain access to accounts by entering code numbers through trial and error.	OFF

**Other programs (Total count, Program list printout)**

Program Name	Function	Initial setup
Total Count	This program is used to display the total counts, including counts of the copier, document feeder, duplex module, and stapler.	–
Program List Printout	This program is used to print out the list of available key operator programs.	–

# [10] SELF DIAG MESSAGE AND TROUBLESHOOTING

## 1. Outline

When a trouble occurs in the machine or when the life of a consumable part is nearly expired or when the life is expired, the machine detects and displays it on the display section or notifies to the user or the serviceman by voice messages.

This allows the user and the serviceman to take the suitable action. In case of a trouble, this feature notifies the occurrence of a trouble and stops the machine to minimize the damage.

## 2. Function and purpose

- 1) Securing safety. (The machine is stopped on detection of a trouble.)
- 2) The damage to the machine is minimized. (The machine is stopped on detection of a trouble.)
- 3) By displaying the trouble content, the trouble position can be quickly identified. (This allows to perform an accurate repair, improving the repair efficiency.)
- 4) Preliminary warning of running out of consumable parts allows to arrange for new parts in advance of running out. (This avoids stopping of the machine due to running out the a consumable part.)

## 3. Self diag message kinds

The self diag messages are classified as shown in the table below.

Class 1	User	Warning of troubles which can be recovered by the user. (Paper jam, consumable part life expiration, etc.)
	Serviceman	Warning of troubles which can be recovered only by a serviceman. (Motor trouble, maintenance, etc.)
	Other	—
Class 2	Warning	Warning to the user, not a machine trouble (Preliminary warning of life expiration of a consumable part, etc.)
	Trouble	Warning of a machine trouble. The machine is stopped.
	Other	—

## 4. Self diag operation

### A. Self diag operation and related work flow

The machine always monitors its own state.

When the machine recognizes a trouble, it stops the operation and displays the trouble message.

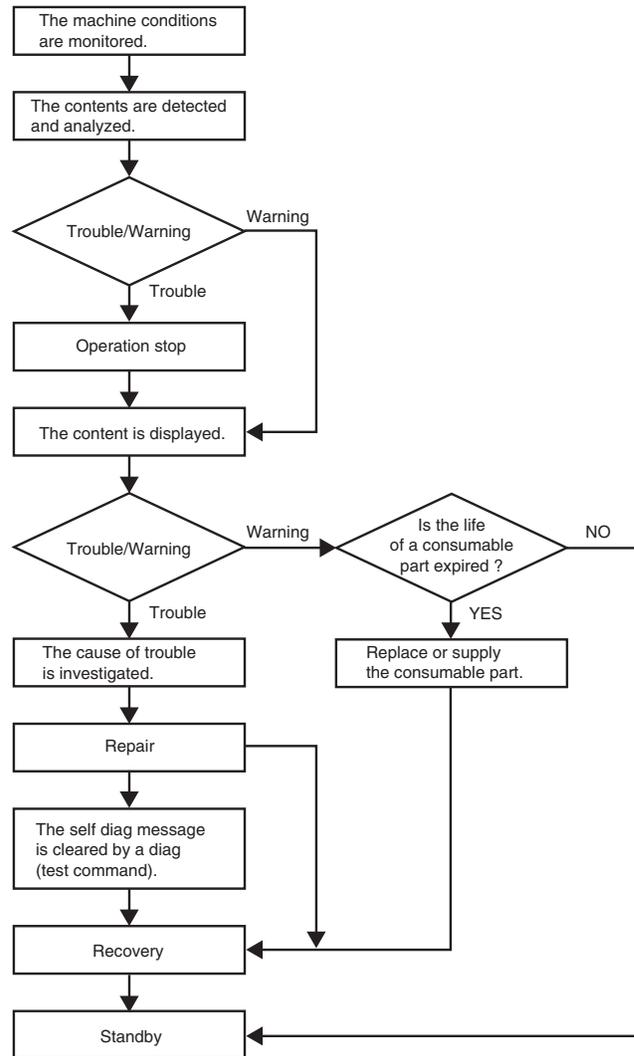
A warning message is displayed when a consumable part life is nearly expired or is expired.

When a warning message is displayed, the machine may be or may not be stopped.

The trouble messages and the warning messages are displayed by the LCD.

Some trouble messages are automatically cleared when the trouble is repaired. Some other troubles must be cleared by a simulation.

Some warning messages of consumable parts are automatically cleared when the trouble is repaired. Some other warning messages must be cleared by a simulation.



## 5. List

Main code	Sub code	Title (Content)	Section	Operation mode	Remedy	NOTE
A0	0	ROM trouble (PCU MAIN PWB)	PCU MAIN PWB	When POWER ON	Power OFF/ON	
C1	10	Main charger trouble (BLACK)	Image process	Warm-up / Initialize	Power Source-ON	
	11	Main charger trouble (CYAN)	Image process	Warm-up / Initialize	Power Source-ON	
	12	Main charger trouble (MAGENTA)	Image process	Warm-up / Initialize	Power Source-ON	
	13	Main charger trouble (YELLOW)	Image process	Warm-up / Initialize	Power Source-ON	
EE	EL	Toner concentration reference control level setup trouble (Overtoner)	Image process (Developing)	SIM 25-2	Power Source-ON	
	EU	Toner concentration reference control level setup trouble (Undertoner)	Image process (Developing)	SIM 25-2	Power source-ON	
E7	10	Shading trouble (Black correction)	Scanner (reading) /ICU SCAN PWB	Warm-up / Initialize	Power source-ON	
	11	Shading trouble (White correction)	Scanner (reading) /ICU SCAN PWB	Warm-up / Initialize	Power source-ON	
	20	Laser beam sensor trouble (BLACK)	Scanner (writing)	All modes	Power source-ON	
	21	Laser beam sensor trouble (CYAN)	Scanner (writing)	All modes	Power source-ON	
	22	Laser beam sensor trouble (MAGENTA)	Scanner (writing)	All modes	Power source-ON	
	23	Laser beam sensor trouble (YELLOW)	Scanner (writing)	All modes	Power source-ON	
	24	Laser beam detection trouble (BLACK)	Scanner (writing)	All modes	Power source-ON	
	25	Laser beam detection trouble (CYAN)	Scanner (writing)	All modes	Power source-ON	
	26	(Laser beam detection trouble (MAGENTA)	Scanner (writing)	All modes	Power source-ON	
	27	Laser beam detection trouble (YELLOW)	Scanner (writing)	All modes	Power source-ON	
	30	ICU PWB FLASH ROM trouble	ICU MAIN PWB	Warm-up / Initialize	Power source-ON	
	90	ICU MAIN PWB - PCU MAIN PWB communication trouble (PCU side detection)	ICU MAIN PWB / PCU MAIN PWB	All modes	Power source-ON	
E8	0	ICU MAIN PWB - PCU MAIN PWB communication trouble (PCU side detection)	ICU MAIN PWB / PCU MAIN PWB	All modes	Power source-ON	
	1	ICU MAIN PWB - PCU MAIN PWB communication trouble (PCU side detection)	ICU MAIN PWB / PCU MAIN PWB	All modes	Power source-ON	
F1	0	Communication trouble between PCU MAIN PWB - Finisher control PWB (Detected by PCU MAIN PWB)	PCU MAIN PWB / Finisher control PWB	When power ON / initial operation	Power OFF/ON	
	2	Finisher paper exit/reversing motor trouble (Finisher side detection)	Finisher paper exit	When power ON / initial operation	Power OFF/ON	
	10	Finisher staple trouble (Finisher side detection)	Finisher stapler	When stapling	Power OFF/ON	
	11	Finisher bundle process trouble (Finisher side detection)	Finisher paper exit	When power ON / initial operation	Power OFF/ON	
	15	Finisher tray lift trouble (Finisher side detection)	Finisher tray lift	All modes	Power OFF/ON	
	19	Finisher alignment trouble (Front side) (Finisher side detection)	Finisher alignment	When POWER ON	Power OFF/ON	
	20	Finisher alignment trouble (Rear side) (Finisher side detection)	Finisher alignment	When POWER ON	Power OFF/ON	

Main code	Sub code	Title (Content)	Section	Operation mode	Remedy	NOTE
F1	70	PCU PWB - sorter control PWB communication trouble (PCU detection)	Sorter / PCU MAIN PWB	Warm-up / Initialize	Power source-ON	
	80	Sorter power abnormality (Sorter side detection)	Sorter	All modes	Power source-ON	
	81	Sorter transport motor trouble (Sorter side detection)	Sorter	Sort/group operation mode	Power source-ON	
	83	Sorter push bar motor trouble (Sorter side detection)	Sorter	Initializing	Power source-ON	
	87	Sorter staple unit oscillation motor trouble (Sorter side detection)	Sorter	Initializing	Power source-ON	
	89	Sorter bin shift motor trouble (Sorter side detection)	Sorter	Sort / Group operation mode	Power source-ON	
	91	Bin paper sensor auto adjustment trouble (Sorter side detection)	Sorter	Sort/group operation mode	Power source-ON	
	94	Sorter staple key trouble	Sorter	Staple	Power source-ON	
F2	40	Toner concentration sensor trouble (BLACK)	Developing	All modes	Power source-ON	
	41	Toner concentration sensor trouble (CYAN)	Developing	All modes	Power source-ON	
	42	Toner concentration sensor trouble (MAGENTA)	Developing	All modes	Power source-ON	
	43	Toner concentration sensor trouble (YELLOW)	Developing	All modes	Power source-ON	
	44	Image density sensor trouble (BLACK) (Transfer belt surface reflection abnormality)	Image process (Transfer)	Image density correction	Power source-ON	Print is disabled in USA. For the other destinations, print is enabled. However, the print density must be forcibly decreased.
	45	Image density sensor trouble (COLOR) (Calibration plate reflection abnormality)	Image process (Transfer)	Image density correction	Power source-ON	Print is disabled in USA. For the other destinations, print is enabled. However, the print density must be forcibly decreased.
	50	Drum marking detection trouble (BLACK)	Image process (OPC drum)	OPC drum rotation	Power source-ON	The error code is stored in the trouble memory (print enabled).
	51	Drum marking detection trouble (CYAN)	Image process (OPC drum)	OPC drum rotation	Power source-ON	The error code is stored in the trouble memory (print enabled).
	52	Drum marking detection trouble (MAGENTA)	Image process (OPC drum)	OPC drum rotation	Power source-ON	The error code is stored in the trouble memory (print enabled).
	53	Drum marking detection trouble (YELLOW)	Image process (OPC drum)	OPC drum rotation	Power source-ON	The error code is stored in the trouble memory (print enabled).
	54	Drum marking sensor gain adjustment error (BLACK)	Image process (OPC drum)	Image density correction	Power source-ON	Print is disabled in USA. For the other destinations, print is enabled. However, the print density must be forcibly decreased.
	55	Drum marking sensor gain adjustment error (CYAN)	Image process (OPC drum)	Image density correction	Power source-ON	Print is disabled in USA. For the other destinations, print is enabled. However, the print density must be forcibly decreased.
	56	Drum marking sensor gain adjustment error (MAGENTA)	Image process (OPC drum)	Image density correction	Power source-ON	Print is disabled in USA. For the other destinations, print is enabled. However, the print density must be forcibly decreased.
	57	Drum marking sensor gain adjustment error (YELLOW)	Image process (OPC drum)	Image density correction	Power source-ON	Print is disabled in USA. For the other destinations, print is enabled. However, the print density must be forcibly decreased.
	58	Process humidity sensor trouble	Image process (Transfer)	All modes	Power source-ON	The error code is stored in the trouble memory (print enabled).
	63	Temperature sensor trouble (Image process)	Image process	All modes	Power source-ON	The error code is stored in the trouble memory (print enabled).
78	Trouble of image density sensor for registration (Transfer belt surface reflection ratio abnormality)	Image process	All modes	Power source-ON		

Main code	Sub code	Title (Content)	Section	Operation mode	Remedy	NOTE
F2	80	Half tone correction (1st patch) trouble (BLACK)	Image process	Image density correction	Power source-ON	
	81	Half tone correction (1st patch) trouble (CYAN)	Image process	Image density correction	Power source-ON	
	82	Half tone correction (1st patch) trouble (MAGENTA)	Image process	Image density correction	Power source-ON	
	83	Half tone correction (1st patch) trouble (YELLOW)	Image process	Image density correction	Power source-ON	
	84	Half tone correction (2nd patch) trouble (BLACK)	Image process	Image density correction	Power source-ON	
	85	Half tone correction (2nd) patch trouble (CYAN)	Image process	Image density correction	Power source-ON	
	86	Half tone correction (2nd) patch trouble (MAGENTA)	Image process	Image density correction	Power source-ON	
	87	Half tone correction (2nd) patch trouble (YELLOW)	Image process	Image density correction	Power source-ON	
	90	Half tone correction trouble	Image process	Image density correction	Power source-ON	
F3	12	Lift-up trouble (Paper 1)	Paper tray 1	Paper tray lift up	Power source-ON	
	22	Lift-up trouble (Paper 2)	Paper tray 2	Paper tray lift up	Power source-ON	
	32	Lift-up trouble (Paper 3)	Paper tray 3	Paper tray lift up	Power source-ON	
	42	Lift-up trouble (Paper 4)	Paper tray 4	Paper tray lift up	Power source-ON	
F9	0	ICU PWB - printer controller communication trouble (ICU detection)	ICU IMAGE PWB / PRINTER CONTROLLER	Warm-up / Printing	Power source-ON	
H2	0	Fusing main temperature sensor (upper) (Thermistor) open / Fusing unit not-installed (THS1)	Fusing	All modes	Power Source-ON	
	1	Fusing main temperature sensor (lower) (Thermistor) open / Fusing unit not-installed (THS2)	Fusing	All modes	Power Source-ON	
	2	Fusing sub temperature sensor (upper) (Thermistor) open / Fusing unit not-installed (THS3)	Fusing	All modes	Power Source-ON	
	3	Fusing sub temperature sensor (lower) (Thermistor) open / Fusing unit not-installed (THS4)	Fusing	All modes	Power Source-ON	
H3	0	Fusing section high temperature trouble (THS1)	Fusing	All modes	SIM 14	
	1	Fusing section high temperature trouble (THS2)	Fusing	All modes	SIM 14	
	2	Fusing section high temperature trouble (THS3)	Fusing	All modes	SIM 14	
	3	Fusing section high temperature trouble (THS4)	Fusing	All modes	SIM 14	
H4	0	Fusing section (upper) low temperature trouble (HL1)	Fusing	All modes	SIM 14	
	1	Fusing section (lower) low temperature trouble (HL2)	Fusing	All modes	SIM 14	
H5	1	Paper jam in the fusing/paper exit section	Fusing	Copy / Print	SIM 14	
H6	0	Fusing oil empty (Oil sensor trouble)	Fusing	All modes	Power Source-ON	
H7	0	AC input voltage (HLV) trouble	Power source	All modes	Power Source-ON	
L1	0	Scanner feed trouble	Scanner (reading)	Initialize / Copy	Power Source-ON	
L3	0	Scanner return trouble	Scanner (reading)	Initialize / Copy	Power Source-ON	

Main code	Sub code	Title (Content)	Section	Operation mode	Remedy	NOTE
L4	3	Fusing motor trouble	Fusing	Warm-up / Copy/ Print	Power Source-ON	
	4	Developing motor trouble (BLACK)	Developing drive	Warm-up / Copy/ Print	Power Source-ON	
	5	Developing motor trouble (COLOR)	Developing drive	Warm-up / Copy / Print	Power Source-ON	
	6	Transfer belt lift trouble	Image process (Transfer)	Color / Monochrome copy (print) mode select	Power Source-ON	
	32	DC power cooling fan trouble	Power source	All modes	Power Source-ON	
L6	10	Scanner (writing) motor lock detection (BLACK)	Scanner (writing)	All modes	Power Source-ON	
	11	Scanner (writing) motor lock detection (CYAN)	Scanner (writing)	All modes	Power Source-ON	
	12	Scanner (writing) motor lock detection (MAGENTA)	Scanner (writing)	All modes	Power Source-ON	
	13	Scanner (writing) motor lock detection (YELLOW)	Scanner (writing)	All modes	Power Source-ON	
L8	1	Power full wave signal (FWS) trouble	Power source	All modes	Power Source-ON	
	2	Power full wave signal (FWS) width trouble	Power source	All modes	Power Source-ON	
PF	0	RIC copy inhibit signal reception	PCU PWB	RIC communication	SIM 17	
U0	0	Operation control PWB - PCU MAIN PWB communication trouble (OPE/PCU detection)	Operation PWB/ PCU MAIN PWB	All modes	Power Source-ON	
	80	PCU MAIN PWB - PCU SUB PWB communication trouble (PCU detection)	PCU SUB PWB/ PCU MAIN PWB	All modes	Power Source-ON	
U2	0	EEPROM read/write error (PCU MAIN PWB)	PCU PWB	Warm-up	SIM 16	
	11	Counter data (EEPROM) check sum error (PCU MAIN PWB)	PCU PWB	All modes	SIM 16	
	12	Setup/Adjustment value data (EEPROM) check sum error (PCU MAIN PWB)	PCU PWB	All modes	SIM 16	
	20	EEPROM read/write error (ICU MAIN PWB)	ICU PWB	Warm-up	SIM 16	
	21	Counter (EEPROM) check sum error (ICU MAIN PWB)	ICU PWB	All modes	SIM 16	
	22	Setup, adjustment value (EEPROM) check sum error (ICU MAIN PWB)	ICU PWB	All modes	SIM 16	
	30	Manufacturing No. data (ICU MAIN PWB / PCU MAIN PWB) discrepancy	ICU PWB / PCU PWB	All modes	SIM 16	
U4	0	PCU MAIN PWB - ADU communication trouble / Discrepancy of the model	PCU PWB / Duplex control PWB	Warm-up / Initialize	Power Source-ON	
	2	ADU Alignment plate operation trouble	Duplex	Initialize/ Duplex copy (print)	Power Source-ON	
	12	ADU transport motor trouble	Duplex	Duplex copy (print)	Power Source-ON	
U5	0	PCU MAIN PWB - RADF communication trouble	PCU PWB / RADF control PWB	Warm-up / Initialize	Power Source-ON	
	1	RADF resist sensor trouble	RADF	RADF	Power Source-ON	
	2	RADF exit sensor trouble	RADF	RADF	Power Source-ON	
	3	RADF timing sensor trouble	RADF	RADF	Power Source-ON	
	11	RADF paper feed motor trouble	RADF	RADF	Power Source-ON	

Main code	Sub code	Title (Content)	Section	Operation mode	Remedy	NOTE
U6	9	Large capacity tray (LCC) lift motor trouble	Large capacity tray	Paper feed	SIM 15	
	20	PCU MAIN PWB - Large capacity tray (LCC) communication trouble / Discrepancy of the model	Large capacity tray control PWB / PCU MAIN PWB	Warm-up / Initialize	Power Source-ON	
	21	Large capacity tray (LCC) transport motor trouble	Large capacity tray	Paper feed	Power Source-ON	
	22	Large capacity tray (LCC) 24V power trouble	Large capacity tray	All modes	Power Source-ON	
	51	LCC non-compatible trouble	Large capacity tray	All modes	Power Source-ON	
U7	0	RIC communication trouble	PCU PWB	RIC communication	Power Source-ON	
UC	0	ICU SCAN PWB - CPT PWB communication trouble	ICU SCAN PWB / CPT PWB	Copy	Power Source-ON	
	1	CPT board program trouble	CPT PWB	Warm-up / Initialize	Power Source-ON	
	2	CPT board ASIC trouble	CPT PWB	Warm-up / Initialize	Power Source-ON	
	3	CPT board ROM trouble	CPT PWB	Warm-up / Initialize	Power Source-ON	
	4	CPT board RAM trouble	CPT PWB	Warm-up / Initialize	Power Source-ON	
	5	CPT board model code data trouble	ICU MAIN PWB / CPT PWB	Warm-up / Initialize	Power Source-ON	

## 6. Details

Main code	Sub code	Title	ROM trouble (PCU MAIN PWB)	
			Display	Lamp
A0	0	Phenomena	Display	Lamp
				Message
			Detail	Mismatch between ROM and PCU MAIN PWB (mismatch in signal levels)
			Section	PCU MAIN PWB
			Operation mode	Power ON
		Note		
		Case 1	Trouble position/ cause	ROM trouble/Improper ROM insertion
			Remedy	(Check) (Repair) Replace the PCU MAIN PWB ROM. (After work)
		Case 2	Trouble position/ cause	PCU MAIN PWB trouble
			Remedy	(Check) (Repair) Replace the PCU MAIN PWB. / Power OFF-ON (After work) Reenter the set values and the adjustment values.

Main code	Sub code	Title	Main charger trouble (BLACK)	
			Display	Lamp
C1	10	Phenomena	Display	Lamp
				Message
			Detail	In warm-up, the image density sensor detects the transfer belt surface and its output exceeds the specified level.
			Section	Image process
			Operation mode	Warm-up / Initialize
		Note		
		Case 1	Trouble position / cause	Main charger output trouble (Toner is attached to the transfer drum due to an abnormal output of the main charger in warm-up.)
			Remedy	(Check) Main charger contact check / Main charger unit check / High voltage PWB, high voltage interface PWB check / Main charger output voltage check  (Repair) Main charger unit replacement / High power PWB, high voltage interface PWB replacement / Main charger output voltage adjustment (SIM 8-2) / Power Source-ON  (After-work) Execute image density correction (SIM 44-6). / Execute half tone density correction (SIM 44-26).

Main code	Sub code	Title	Main charger trouble (BLACK)		
C1	10	Case 2	Trouble position/ cause	Image density sensor trouble	
			Remedy	(Check) Image density sensor check (dirt, output) / Image density sensor calibration plate check / Image density sensor calibration plate switch operation check	
				(Repair) Image density sensor cleaning, replacement / Image density sensor calibration plate cleaning, replacement / Image density sensor calibration plate switch solenoid replacement / Power Source-ON	
				(After-work) Execute ADJ M6.	
			Case 3	Trouble position/ cause	Transfer belt trouble (dirt, scratches)
				Remedy	(Check) Toner dispersion from transfer belt cleaner, OPC drum unit, developing unit
		(Repair) Transfer belt cleaning, replacement / Transfer belt cleaner replacement / OPC drum unit, developing unit cleaning / Power Source-ON			
		(After-work)			
		Case 4	Trouble position/ cause	PCU MAIN PWB trouble	
			Remedy	(Check)	
				(Repair) PCU MAIN PWB replacement / Power Source-ON	
		(After-work) Re-enter the setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)			
		Case 5	Trouble position/ cause	PCU SUB PWB trouble	
			Remedy	(Check) Check the PCU SUB PWB image density sensor circuit.	
				(Repair) PCU SUB PWB replacement / Power Source-ON	
(After-work)					

Main code	Sub code	Title	Main charger trouble (CYAN)	
C1	11	Phenomena	Display	Lamp Message
			Detail	In warm-up, the image density sensor detects the transfer belt surface and its output exceeds the specified level.
			Section	Image process
			Operation mode	Warm-up / Initialize
			Note	
			Case 1	Trouble position/ cause
		Remedy		(Check) Main charger contact check / Main charger unit check / High voltage PWB, high voltage interface PWB check / Main charger output voltage check
				(Repair) Main charger unit replacement / High power PWB, high voltage interface PWB replacement / Main charger output voltage adjustment (SIM 8-2) / Power Source-ON
		(After-work) Execute image density correction (SIM 44-6). / Execute half tone density correction (SIM 44-26).		
		Case 2	Trouble position/ cause	Image density sensor trouble
			Remedy	(Check) Image density sensor check (dirt, output) / Image density sensor calibration plate check / Image density sensor calibration plate switch operation check
		(Repair) Image density sensor cleaning, replacement / Image density sensor calibration plate cleaning, replacement / Image density sensor calibration plate switch solenoid replacement / Power Source-ON		
		(After-work) Execute ADJ M6.		

Main code	Sub code	Title	Main charger trouble (CYAN)		
C1	11	Case 3	Trouble position/cause	Transfer belt trouble (dirt, scratches)	
			Remedy	(Check) Toner dispersion from transfer belt cleaner, OPC drum unit, developing unit	
				(Repair) Transfer belt cleaning, replacement / Transfer belt cleaner replacement / OPC drum unit, developing unit cleaning / Power Source-ON	
				(After-work)	
			Case 4	Trouble position/cause	PCU MAIN PWB trouble
				Remedy	(Check)
		(Repair) PCU MAIN PWB replacement / Power Source-ON			
		(After-work) Re-enter the setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)			
		Case 5	Trouble position/cause	PCU SUB PWB trouble	
			Remedy	(Check) Check the PCU SUB PWB image density sensor circuit.	
				(Repair) PCU SUB PWB replacement / Power Source-ON	
				(After-work)	

Main code	Sub code	Title	Main charger trouble (MAGENTA)	
C1	12	Phenomena	Display	Lamp
				Message
			Detail	In warm-up, the image density sensor detects the transfer belt surface and its output exceeds the specified level.
			Section	Image process
			Operation mode	Warm-up / Initialize
			Note	

Main code	Sub code	Title	Main charger trouble (MAGENTA)		
C1	12	Case 1	Trouble position/cause	Main charger output trouble (Toner is attached to the transfer drum due to an abnormal output of the main charger in warm-up.)	
			Remedy	(Check) Main charger contact check / Main charger unit check / High voltage PWB, high voltage interface PWB check / Main charger output voltage check	
				(Repair) Main charger unit replacement / High power PWB, high voltage interface PWB replacement / Main charger output voltage adjustment (SIM 8-2) / Power Source-ON	
				(After-work) Execute image density correction (SIM 44-6). / Execute half tone density correction (SIM 44-26).	
			Case 2	Trouble position/cause	Image density sensor trouble
				Remedy	(Check) Image density sensor check (dirt, output) / Image density sensor calibration plate check / Image density sensor calibration plate switch operation check
		(Repair) Image density sensor cleaning, replacement / Image density sensor calibration plate cleaning, replacement / Image density sensor calibration plate switch solenoid replacement / Power Source-ON			
		(After-work) Execute ADJ M6.			
		Case 3	Trouble position/cause	Transfer belt trouble (dirt, scratches)	
			Remedy	(Check) Toner dispersion from transfer belt cleaner, OPC drum unit, developing unit	
				(Repair) Transfer belt cleaning, replacement / Transfer belt cleaner replacement / OPC drum unit, developing unit cleaning / Power Source-ON	
		(After-work)			

Main code	Sub code	Title	Main charger trouble (MAGENTA)	
<b>C1</b>	<b>12</b>	Case 4	Trouble position/ cause	PCU MAIN PWB trouble
			Remedy	(Check) (Repair) PCU MAIN PWB replacement / Power Source-ON (After-work) Re-enter the setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)
		Case 5	Trouble position/ cause	PCU SUB PWB trouble
			Remedy	(Check) Check the PCU SUB PWB image density sensor circuit. (Repair) PCU SUB PWB replacement / Power Source-ON (After-work)

Main code	Sub code	Title	Main charger trouble (YELLOW)	
<b>C1</b>	<b>13</b>	Phenomena	Display	Lamp Message
			Detail	In warm-up, the image density sensor detects the transfer belt surface and its output exceeds the specified level.
			Section	Image process
			Operation mode	Warm-up / Initialize
			Note	
		Case 1	Trouble position/ cause	Main charger output trouble (Toner is attached to the transfer drum due to an abnormal output of the main charger in warm-up.)
			Remedy	(Check) Main charger contact check / Main charger unit check / High voltage PWB, high voltage interface PWB check / Main charger output voltage check (Repair) Main charger unit replacement / High power PWB, high voltage interface PWB replacement / Main charger output voltage adjustment (SIM 8-2) / Power Source-ON (After-work) Execute image density correction (SIM 44-6). / Execute half tone density correction (SIM 44-26).

Main code	Sub code	Title	Main charger trouble (YELLOW)	
<b>C1</b>	<b>13</b>	Case 2	Trouble position/ cause	Image density sensor trouble
			Remedy	(Check) Image density sensor check (dirt, output) / Image density sensor calibration plate check / Image density sensor calibration plate switch operation check (Repair) Image density sensor cleaning, replacement / Image density sensor calibration plate cleaning, replacement / Image density sensor calibration plate switch solenoid replacement / Power Source-ON (After-work) Execute ADJ M6.
		Case 3	Trouble position/ cause	Transfer belt trouble (dirt, scratches)
			Remedy	(Check) Toner dispersion from transfer belt cleaner, OPC drum unit, developing unit (Repair) Transfer belt cleaning, replacement / Transfer belt cleaner replacement / OPC drum unit, developing unit cleaning / Power Source-ON (After-work)
		Case 4	Trouble position/ cause	PCU MAIN PWB trouble
			Remedy	(Check) (Repair) PCU MAIN PWB replacement / Power Source-ON (After-work) Re-enter the setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)
		Case 5	Trouble position/ cause	PCU SUB PWB trouble
			Remedy	(Check) Check the PCU SUB PWB image density sensor circuit. (Repair) PCU SUB PWB replacement / Power Source-ON (After-work)

Main code	Sub code	Title	Toner concentration reference control level setup trouble (Overtoner)		
			Display	Lamp	
EE	EL	Phenomena	Display	Lamp	
				Message	
			Detail	When setting the toner concentration reference control level, the toner concentration sensor output is not within the specified range. (The output level is 77 or less.)	
			Section	Image process (Developing)	
			Operation mode	SIM 25-2	
			Note		
		Case 1	Trouble position/ cause	Toner density sensor trouble / Toner density sensor signal line connection trouble	
			Remedy	(Check) Check the toner concentration output level with SIM 25-2. (Repair) Toner concentration sensor replacement (Developing unit replacement) / Power Source-ON (After-work) Execute ADJ M3.	
			Case 2	Trouble position/ cause	Process control PWB trouble
		Case 2	Remedy	(Check) (Repair) Process control PWB replacement / Power Source-ON (After-work)	
			Case 3	Trouble position/ cause	PCU MAIN PWB trouble
				Remedy	(Check) (Repair) PCU MAIN PWB replacement / Power Source-ON (After-work) Re-enter the setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)

Main code	Sub code	Title	Toner concentration reference control level setup trouble (Undertoner)	
			Display	Lamp
EE	EU	Phenomena	Display	Lamp
				Message
			Detail	When setting the toner concentration reference control level, the toner concentration sensor output is not within the specified range. (The output level is 179 or above.)
			Section	Image process (Developing)
			Operation mode	SIM 25-2
			Note	
		Case 1	Trouble position/ cause	Toner density sensor trouble / Toner density sensor signal line connection trouble
			Remedy	(Check) Check the toner concentration output level with SIM 25-2. (Repair) Toner concentration sensor replacement (Developing unit replacement) / Power Source-ON (After-work) Execute ADJ M3.
			Case 2	Trouble position/ cause
		Remedy		(Check) Check the toner concentration sensor output level with SIM 25-2. (Repair) Process control PWB replacement / Power Source-ON (After-work)
				Case 3
		Case 3	Remedy	

Main code	Sub code	Title	Shading trouble (Black correction)	
E7	10	Phenomena	Display	Lamp Message
			Detail	In shading correction, the CCD black reading level is abnormal (with the scanner lamp OFF).
			Section	Scanner (reading) / ICU SCAN PWB
			Operation mode	Warm-up / Initialize
			Note	
			Case 1	Trouble position/ cause
			Remedy	(Check) Check connection of the flat cable between the CCD unit and the ICU SCAN PWB. (Repair) Replace the flat cable between the CCD unit and the ICU SCAN PWB. / Power Source-ON (After-work)
		Case 2	Trouble position/ cause	CCD unit trouble
			Remedy	(Check) Check the CCD black offset level (SIM 46-6). / Check the shading correction result (SIM 63-1). (Repair) Replace the CCD unit. / Power Source-ON (After-work) Adjust ADJM17-ADJ1.
		Case 3	Trouble position/ cause	ICU SCAN PWB, ICU IMAGE PWB, ICU MAIN PWB trouble
			Remedy	(Check) (Repair) Replace ICU SCAN PWB, ICU IMAGE PWB, ICU MAIN PWB. / Power Source-ON (After-work) Adjust ADJM9/M10/M12/M13/M14/M15/M17. / Re-enter setup values and adjustment values. (Install the EEPROM of the defective ICU MAIN PWB to a new ICU MAIN PWB.)

Main code	Sub code	Title	Shading trouble (White correction)	
E7	11	Phenomena	Display	Lamp Message
			Detail	In shading correction, the CCD white reading level is abnormal (with the scanner lamp OFF).
			Section	Scanner (reading) / ICU SCAN PWB
			Operation mode	Warm-up / Initialize
			Note	

Main code	Sub code	Title	Shading trouble (White correction)		
E7	11	Case 1	Trouble position/ cause	Bad connection of the flat cable between the CCD unit and the ICU SCAN PWB.	
			Remedy	(Check) Check connection of the flat cable between the CCD unit and the ICU SCAN PWB. (Repair) Replace the flat cable between the CCD unit and the ICU SCAN PWB. / Power Source-ON (After-work)	
			Case 2	Trouble position/ cause	CCD unit trouble
				Remedy	(Check) CCD black offset level check (SIM 46-6) (Repair) Replace the CCD unit. / Power Source-ON (After-work) Adjust ADJM17-ADJ1.
			Case 3	Trouble position/ cause	ICU SCAN PWB, ICU IMAGE PWB, ICU MAIN PWB trouble
			Remedy	(Check) (Repair) ICU SCAN PWB, ICU IMAGE PWB, ICU MAIN PWB. / Power Source-ON (After-work) Adjust ADJM9/M10/M12/M13/M14/M15/M17. / Re-enter setup values and adjustment values. (Install the EEPROM of the defective ICU MAIN PWB to a new ICU MAIN PWB.)	
		Case 4	Trouble position/ cause	Scanner section dirt (Shading sheet trouble (dirt, scratch)/Lens dirt/Mirror dirt/Reflector dirt)	
			Remedy	(Check) Scanner section dirt check (Repair) Clean the scanner section (shading sheet/lens/CCD/mirror/reflector). / Power Source-ON (After-work)	
		Case 5	Trouble position/ cause	Scanner lamp insufficient light quantity (Scanner lamp trouble/scanner lamp control PWB trouble)	
			Remedy	(Check) Check the scanner lamp applying voltage (62.3V). (Repair) Replace the scanner lamp. / Replace the scanner lamp control PWB. / Power Source-ON (After-work) Adjust ADJM17-ADJ1.	

Main code	Sub code	Title	Laser beam sensor trouble (BLACK)	
			Display	Lamp
E7	20	Phenomena	Display	Lamp
				Message
			Detail	The laser beam sensor cannot detect laser beam. (The sensor signal does not change.)
			Section	Scanner (writing)
			Operation mode	All modes
			Note	
		Case 1	Trouble position/cause	Bad connection of the signal line between the ICU MAIN PWB and the scanner (writing) unit.
			Remedy	(Check) Check connection between the ICU MAIN PWB and the scanner (writing) unit.
				(Repair) Replace the cable and the connector between the ICU MAIN PWB and the scanner (writing) unit. / Power Source-ON
		(After-work)		
		Case 2	Trouble position/cause	Scanner (writing) unit trouble (Scanner (writing) motor trouble / Laser beam sensor trouble / Optical system dirt)
			Remedy	(Check) Check the scanner (writing) unit operation. (SIM 61-1)
				(Repair) Replace the scanner (writing) unit. / Power Source-ON
		(After-work) Adjust ADJM7/ADJM9/ADJM10.		
		Case 3	Trouble position/cause	ICU MAIN PWB trouble
			Remedy	(Check)
				(Repair) Replace the ICU MAIN PWB. / Power Source-ON
		(After-work) Adjust ADJM9/M10/M12/M13/M14/M15/M17. / Re-enter setup values and adjustment values. (Install the EEPROM of the defective ICU MAIN PWB to a new ICU MAIN PWB.)		
		Case 4	Trouble position/cause	Scanner (writing) unit power line (24V/5V) trouble
			Remedy	(Check) Check the door switch (DSWF). / Check the fuse (F706).
(Repair) Replace the door switch (DSWF). / Replace the fuse (F706). / Power Source-ON				
(After-work)				

Main code	Sub code	Title	Laser beam sensor trouble (CYAN)	
			Display	Lamp
E7	21	Phenomena	Display	Lamp
				Message
			Detail	The laser beam sensor cannot detect laser beam. (The sensor signal does not change.)
			Section	Scanner (writing)
			Operation mode	All modes
			Note	
		Case 1	Trouble position/cause	Bad connection of the signal line between the ICU MAIN PWB and the scanner (writing) unit.
			Remedy	(Check) Check connection between the ICU MAIN PWB and the scanner (writing) unit.
				(Repair) Replace the cable and the connector between the ICU MAIN PWB and the scanner (writing) unit. / Power Source-ON
		(After-work)		
		Case 2	Trouble position/cause	Scanner (writing) unit trouble (Scanner (writing) motor trouble/Laser beam sensor trouble/Optical system dirt)
			Remedy	(Check) Check the scanner (writing) unit operation. (SIM 61-1)
				(Repair) Replace the scanner (writing) unit. / Power Source-ON
		(After-work) Adjust ADJM7/ADJM9/ADJM10.		
		Case 3	Trouble position/cause	ICU MAIN PWB trouble
			Remedy	(Check)
				(Repair) Replace the ICU MAIN PWB. / Power Source-ON
		(After-work) Adjust ADJM9/M10/M12/M13/M14/M15/M17. / Re-enter setup values and adjustment values. (Install the EEPROM of the defective ICU MAIN PWB to a new ICU MAIN PWB.)		
		Case 4	Trouble position/cause	Scanner (writing) unit power line (24V/5V) trouble
			Remedy	(Check) Check the door switch (DSWF). / Check the fuse (F706).
(Repair) Replace the door switch (DSWF). / Replace the fuse (F706). / Power Source-ON				
(After-work)				

Main code	Sub code	Title	Laser beam sensor trouble (MAGENTA)	
			Display	Lamp
E7	22	Phenomena	Display	Lamp
				Message
			Detail	The laser beam sensor cannot detect laser beam. (The sensor signal does not change.)
			Section	Scanner (writing)
			Operation mode	All modes
			Note	
		Case 1	Trouble position/cause	Bad connection of the signal line between the ICU MAIN PWB and the scanner (writing) unit.
			Remedy	(Check) Check connection between the ICU MAIN PWB and the scanner (writing) unit.
				(Repair) Replace the cable and the connector between the ICU MAIN PWB and the scanner (writing) unit. / Power Source-ON (After-work)
		Case 2	Trouble position/cause	Scanner (writing) unit trouble (Scanner (writing) motor trouble / Laser beam sensor trouble / Optical system dirt)
			Remedy	(Check) Check the scanner (writing) unit operation. (SIM 61-1)
				(Repair) Replace the scanner (writing) unit. / Power Source-ON (After-work) Adjust ADJM7/ADJM9/ADJM10.
		Case 3	Trouble position/cause	ICU MAIN PWB trouble
			Remedy	(Check)
				(Repair) Replace the ICU MAIN PWB. / Power Source-ON (After-work) Adjust ADJM9/M10/M12/M13/M14/M15/M17. / Re-enter setup values and adjustment values. (Install the EEPROM of the defective ICU MAIN PWB to a new ICU MAIN PWB.)
		Case 4	Trouble position/cause	Scanner (writing) unit power line (24V/5V) trouble
			Remedy	(Check) Check the door switch (DSWF). / Check the fuse (F706).
				(Repair) Replace the door switch (DSWF). / Replace the fuse (F706). / Power Source-ON (After-work)

Main code	Sub code	Title	Laser beam sensor trouble (YELLOW)	
			Display	Lamp
E7	23	Phenomena	Display	Lamp
				Message
			Detail	The laser beam sensor cannot detect laser beam. (The sensor signal does not change.)
			Section	Scanner (writing)
			Operation mode	All modes
			Note	
		Case 1	Trouble position/cause	Bad connection of the signal line between the ICU MAIN PWB and the scanner (writing) unit.
			Remedy	(Check) Check connection between the ICU MAIN PWB and the scanner (writing) unit.
				(Repair) Replace the cable and the connector between the ICU MAIN PWB and the scanner (writing) unit. / Power Source-ON (After-work)
		Case 2	Trouble position/cause	Scanner (writing) unit trouble (Scanner (writing) motor trouble / Laser beam sensor trouble / Optical system dirt)
			Remedy	(Check) Check the scanner (writing) unit operation. (SIM 61-1)
				(Repair) Replace the scanner (writing) unit. / Power Source-ON (After-work) Adjust ADJM7/ADJM9/ADJM10.
		Case 3	Trouble position/cause	ICU MAIN PWB trouble
			Remedy	(Check)
				(Repair) Replace the ICU MAIN PWB. / Power Source-ON (After-work) Adjust ADJM9/M10/M12/M13/M14/M15/M17. / Re-enter setup values and adjustment values. (Install the EEPROM of the defective ICU MAIN PWB to a new ICU MAIN PWB.)
		Case 4	Trouble position/cause	Scanner (writing) unit power line (24V/5V) trouble
			Remedy	(Check) Check the door switch (DSWF). / Check the fuse (F706).
				(Repair) Replace the door switch (DSWF). / Replace the fuse (F706). / Power Source-ON (After-work)

Main code	Sub code	Title	Laser beam detection trouble (BLACK)		
			Display	Lamp	
E7	24	Phenomena	Display	Lamp	
				Message	
			Detail	The laser beam sensor cannot detect laser beam. (The sensor signal does not change.)	
			Section	Scanner (writing)	
			Operation mode	All modes	
			Note		
		Case 1	Trouble position/cause	Bad connection of the signal line between the ICU MAIN PWB and the scanner (writing) unit.	
			Remedy	(Check) Check connection between the ICU MAIN PWB and the scanner (writing) unit.	
				(Repair) Replace the cable and the connector between the ICU MAIN PWB and the scanner (writing) unit. / Power Source-ON	
				(After-work)	
			Case 2	Trouble position/cause	Scanner (writing) unit trouble (Scanner (writing) motor trouble / Laser beam sensor trouble / Optical system dirt)
				Remedy	(Check)
		(Repair) Replace the scanner (writing) unit. / Power Source-ON			
		(After-work) Adjust ADJM7/ADJM9/ADJM10.			
		Case 3		Trouble position/cause	ICU MAIN PWB trouble
				Remedy	(Check)
			(Repair) Replace the ICU MAIN PWB. / Power Source-ON		
			(After-work) Adjust ADJM9/M10/M12/M13/M14/M15/M17. / Re-enter setup values and adjustment values. (Install the EEPROM of the defective ICU MAIN PWB to a new ICU MAIN PWB.)		
			Case 4	Trouble position/cause	Scanner (writing) unit power line (24V/5V) trouble
				Remedy	(Check) Check the door switch (DSWF). / Check the fuse (F706).
		(Repair) Replace the door switch (DSWF). / Replace the fuse (F706). / Power Source-ON			
		(After-work)			

Main code	Sub code	Title	Laser beam detection trouble (CYAN)		
			Display	Lamp	
E7	25	Phenomena	Display	Lamp	
				Message	
			Detail	The laser beam sensor cannot detect laser beam. (The sensor signal does not change.)	
			Section	Scanner (writing)	
			Operation mode	All modes	
			Note		
		Case 1	Trouble position/cause	Bad connection of the signal line between the ICU MAIN PWB and the scanner (writing) unit.	
			Remedy	(Check) Check connection between the ICU MAIN PWB and the scanner (writing) unit.	
				(Repair) Replace the cable and the connector between the ICU MAIN PWB and the scanner (writing) unit. / Power Source-ON	
				(After-work)	
			Case 2	Trouble position/cause	Scanner (writing) unit trouble (Scanner (writing) motor trouble / Laser beam sensor trouble / Optical system dirt)
				Remedy	(Check)
		(Repair) Replace the scanner (writing) unit. / Power Source-ON			
		(After-work) Adjust ADJM7/ADJM9/ADJM10.			
		Case 3		Trouble position/cause	ICU MAIN PWB trouble
				Remedy	(Check)
			(Repair) Replace the ICU MAIN PWB. / Power Source-ON		
			(After-work) Adjust ADJM9/M10/M12/M13/M14/M15/M17. / Re-enter setup values and adjustment values. (Install the EEPROM of the defective ICU MAIN PWB to a new ICU MAIN PWB.)		
			Case 4	Trouble position/cause	Scanner (writing) unit power line (24V/5V) trouble
				Remedy	(Check) Check the door switch (DSWF). / Check the fuse (F706).
		(Repair) Replace the door switch (DSWF). / Replace the fuse (F706). / Power Source-ON			
		(After-work)			

Main code	Sub code	Title	Laser beam detection trouble (MAGENTA)	
			Display	Lamp
E7	26	Phenomena	Display	Lamp
				Message
			Detail	The laser beam sensor cannot detect laser beam. (The sensor signal does not change.)
			Section	Scanner (writing)
			Operation mode	All modes
			Note	
		Case 1	Trouble position/cause	Bad connection of the signal line between the ICU MAIN PWB and the scanner (writing) unit.
			Remedy	(Check) Check connection between the ICU MAIN PWB and the scanner (writing) unit.
				(Repair) Replace the cable and the connector between the ICU MAIN PWB and the scanner (writing) unit. / Power Source-ON
		Case 2	Trouble position/cause	Scanner (writing) unit trouble (Scanner (writing) motor trouble / Laser beam sensor trouble / Optical system dirt)
			Remedy	(Check)
				(Repair) Replace the scanner (writing) unit. / Power Source-ON
		Case 3	Trouble position/cause	ICU MAIN PWB trouble
			Remedy	(Check)
				(Repair) Replace the ICU MAIN PWB. / Power Source-ON
		Case 4	Trouble position/cause	Scanner (writing) unit power line (24V/5V) trouble
			Remedy	(Check) Check the door switch (DSWF). / Check the fuse (F706).
				(Repair) Replace the door switch (DSWF). / Replace the fuse (F706). / Power Source-ON
				(After-work)

Main code	Sub code	Title	Laser beam detection trouble (YELLOW)	
			Display	Lamp
E7	27	Phenomena	Display	Lamp
				Message
			Detail	The laser beam sensor cannot detect laser beam. (The sensor signal does not change.)
			Section	Scanner (writing)
			Operation mode	All modes
			Note	
		Case 1	Trouble position/cause	Bad connection of the signal line between the ICU MAIN PWB and the scanner (writing) unit.
			Remedy	(Check) Check connection between the ICU MAIN PWB and the scanner (writing) unit.
				(Repair) Replace the cable and the connector between the ICU MAIN PWB and the scanner (writing) unit. / Power Source-ON
		Case 2	Trouble position/cause	Scanner (writing) unit trouble (Scanner (writing) motor trouble / Laser beam sensor trouble / Optical system dirt)
			Remedy	(Check)
				(Repair) Replace the scanner (writing) unit. / Power Source-ON
		Case 3	Trouble position/cause	ICU MAIN PWB trouble
			Remedy	(Check)
				(Repair) Replace the ICU MAIN PWB. / Power Source-ON
		Case 4	Trouble position/cause	Scanner (writing) unit power line (24V/5V) trouble
			Remedy	(Check) Check the door switch (DSWF). / Check the fuse (F706).
				(Repair) Replace the door switch (DSWF). / Replace the fuse (F706). / Power Source-ON
				(After-work)

Main code	Sub code	Title	ICU PWB FLASH ROM trouble			
<b>E7</b>	<b>30</b>	Phenomena	Display	Lamp		
				Message		
			Detail	After turning ON the power, consistency of the ICU MAIN PWB and the ROM (FLASH ROM) is checked and no consistency is found.		
				Section	ICU MAIN PWB	
				Operation mode	Warm-up / Initialize	
			Note			
			Case 1	Trouble position/ cause	ICU MAIN PWB trouble / ICU MAIN PWB ROM (FLASH ROM) trouble	
				Remedy	(Check)	
					(Repair) Replace the ICU MAIN PWB. / Replace the ICU MAIN PWB ROM (FLASH ROM). / Power Source-ON	
					(After-work) Adjust ADJM9/M10/M12/M13/M14/M15/M17. / Re-enter setup values and adjustment values. (Install the EEPROM of the defective ICU MAIN PWB to a new ICU MAIN PWB.)	

Main code	Sub code	Title	ICU MAIN PWB - PCU MAIN PWB communication trouble (PCU side detection)			
<b>E7</b>	<b>90</b>	Phenomena	Display	Lamp		
				Message		
			Detail	Caused by line noise on the data line (Hardware trouble)		
				Section	ICU MAIN PWB / PCU MAIN PWB	
				Operation mode	All modes	
			Note			
			Case 1	Trouble position/ cause	PCU MAIN PWB / ICU MAIN PWB signal line connection trouble	
				Remedy	(Check) Check connection of the signal line between the PCU MAIN PWB and the ICU MAIN PWB.	
					(Repair) Repair or replace the cable and the connector between the PCU MAIN PWB and the ICU MAIN PWB. / Power Source-ON	
					(After-work)	

Main code	Sub code	Title	ICU MAIN PWB - PCU MAIN PWB communication trouble (PCU side detection)		
<b>E7</b>	<b>90</b>	Case 2	Trouble position/ cause	PCU MAIN PWB trouble	
			Remedy	(Check)	
				(Repair) Replace the PCU MAIN PWB. / Power Source-ON	
				(After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)	
			Case 3	Trouble position/ cause	ICU MAIN PWB trouble
				Remedy	(Check)
		(Repair) ICU MAIN PWB / Power Source-ON			
		(After-work) Adjust ADJM9/M10/M12/M13/M14/M15/M17. / Re-enter setup values and adjustment values. (Install the EEPROM of the defective ICU MAIN PWB to a new ICU MAIN PWB.)			

Main code	Sub code	Title	ICU MAIN PWB - PCU MAIN PWB communication trouble (PCU side detection)			
<b>E8</b>	<b>0</b>	Phenomena	Display	Lamp		
				Message		
			Detail	No response from ICU PWB for PCU PWB command (Caused by Hardware trouble)		
				Section	ICU MAIN PWB / PCU MAIN PWB	
				Operation mode	All modes	
			Note			
			Case 1	Trouble position/ cause	PCU MAIN PWB / ICU MAIN PWB signal line connection trouble	
				Remedy	(Check) Check connection of the signal line between the PCU MAIN PWB and the ICU MAIN PWB.	
					(Repair) Repair or replace the cable and the connector between the PCU MAIN PWB and the ICU MAIN PWB. / Power Source-ON	
					(After-work)	

Main code	Sub code	Title	ICU MAIN PWB - PCU MAIN PWB communication trouble (PCU side detection)	
E8	0	Case 2	Trouble position/cause	PCU MAIN PWB trouble
			Remedy	(Check) (Repair) Replace the PCU MAIN PWB. / Power Source-ON (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)
			Trouble position/cause	ICU MAIN PWB trouble
		Case 3	Remedy	(Check) (Repair) ICU MAIN PWB / Power Source-ON (After-work) Adjust ADJM9/M10/M12/M13/M14/M15/M17. / Re-enter setup values and adjustment values. (Install the EEPROM of the defective ICU MAIN PWB to a new ICU MAIN PWB.)

Main code	Sub code	Title	ICU MAIN PWB - PCU MAIN PWB communication trouble (PCU side detection)	
E8	1	Case 2	Trouble position/cause	PCU MAIN PWB trouble
			Remedy	(Check) (Repair) Replace the PCU MAIN PWB. / Power Source-ON (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)
			Trouble position/cause	ICU MAIN PWB trouble
		Case 3	Remedy	(Check) (Repair) ICU MAIN PWB / Power Source-ON (After-work) Adjust ADJM9/M10/M12/M13/M14/M15/M17. / Re-enter setup values and adjustment values. (Install the EEPROM of the defective ICU MAIN PWB to a new ICU MAIN PWB.)

Main code	Sub code	Title	ICU MAIN PWB - PCU MAIN PWB communication trouble (PCU side detection)	
E8	1	Phenomena	Display	Lamp Message
			Detail	No response from ICU PWB for PCU PWB command (Caused by software trouble)
			Section	ICU MAIN PWB / PCU MAIN PWB
			Operation mode	All modes
			Note	
			Case 1	Trouble position/cause
		Remedy		(Check) Check connection of the signal line between the PCU MAIN PWB and the ICU MAIN PWB.
				(Repair) Repair or replace the cable and the connector between the PCU MAIN PWB and the ICU MAIN PWB. / Power Source-ON
				(After-work)

Main code	Sub code	Title	Communication trouble between PCU MAIN PWB - Finisher control PWB (Detected by PCU MAIN PWB)	
F1	0	Phenomena	Display	Lamp Message
			Detail	Communication test error after turning on the power or canceling the simulation
			Section	PCU MAIN PWB/Finisher control PWB
			Operation mode	When power ON/Initializing
			Note	
			Case 1	Trouble position/cause
		Remedy		(Check) Check the signal line connection between the PCU MAIN PWB and the finisher control PWB
				(Repair) Repair or replace the connector and the cable between the PCU MAIN PWB and the finisher control PWB/Power OFF-ON.
				(After work)

Main code	Sub code	Title	Communication trouble between PCU MAIN PWB - Finisher control PWB (Detected by PCU MAIN PWB)	
F1	0	Case 2	Trouble position/ cause	Finisher control PWB error
			Remedy	(Check) (Repair) Replace the finisher control PWB./Power OFF-ON (After work) Make various adjustments related to the finisher electric section. (Install the EEPROM of the defective finisher control PWB to a new finisher control PWB.)
			Trouble position/ cause	PCU MAIN PWB trouble
		Case 3	Remedy	(Check) (Repair) Replace the PCU MAIN PWB. / Power OFF-ON (After work) Reenter the set values and the adjustment values. (Install the EEPROM on the defective PCU MAIN PWB to a new PCU MAIN PWB.)
			Trouble position/ cause	PCU MAIN PWB trouble
			Remedy	(Check) (Repair) Replace the PCU MAIN PWB. / Power OFF-ON (After work) Reenter the set values and the adjustment values. (Install the EEPROM on the defective PCU MAIN PWB to a new PCU MAIN PWB.)

Main code	Sub code	Title	Finisher paper exit/reversing motor trouble (Finisher side detection)	
F1	2	Phenomena	Display	Lamp Message
			Detail	In the initial operation, the motor rotation sensor output signal is not recognized within the specified time after output of the finisher paper exit motor / reversing motor ON signal.
			Section	Finisher paper exit
			Operation mode	Power ON/ Initial operation
			Note	
			Case 1	Trouble position/ cause
		Remedy		(Check) Check the paper exit motor / reversing motor / Reversing motor rotation sensor / paper exit motor rotation sensor operations. (SIM 3-1/2) (Repair) Replace the paper exit motor. / Replace the paper exit motor rotation sensor. / Power OFF-ON (After work)

Main code	Sub code	Title	Finisher paper exit/reversing motor trouble (Finisher side detection)	
F1	2	Case 2	Trouble position/ cause	Paper exit mechanism section trouble
			Remedy	(Check) Check the paper exit mechanism section operation. (SIM 3-1/2) (Repair) Replace or repair parts of the paper exit mechanism section. / Power OFF-ON (After work)
			Trouble position/ cause	Finisher control PWB trouble
		Case 3	Remedy	(Check) Check the finisher control PWB operation. (SIM 3-1/2) (Repair) Replace the finisher control PWB. / Power OFF-ON (After work) Make various adjustments related to the finisher electric section. (Install the EEPROM of the defective finisher control PWB to a new finisher control PWB.)
			Trouble position/ cause	Finisher control PWB trouble
			Remedy	(Check) Check the finisher control PWB operation. (SIM 3-1/2) (Repair) Replace the finisher control PWB. / Power OFF-ON (After work) Make various adjustments related to the finisher electric section. (Install the EEPROM of the defective finisher control PWB to a new finisher control PWB.)

Main code	Sub code	Title	Finisher staple trouble (Finisher side detection)	
F1	10	Phenomena	Display	Lamp Message
			Detail	The staple home position sensor signal OFF is not recognized within the specified time after output of the staple motor ON signal. / Though the staple home position sensor OFF signal is recognized after output of the staple motor ON signal, but the staple home position sensor ON signal is not recognized within the specified time.
			Section	Finisher stapler
			Operation mode	Stapling
			Note	
			Case 1	Trouble position/ cause
		Remedy		(Check) Check the operation of the staple motor/staple home position sensor. (SIM 3-1/2) (Repair) Replace the staple motor. / Replace the staple home position sensor. / Power OFF-ON (After work)

Main code	Sub code	Title	Finisher staple trouble (Finisher side detection)	
<b>F1</b>	<b>10</b>	Case 2	Trouble position/ cause	Staple unit mechanism section trouble
			Remedy	(Check) Check the staple unit mechanism section operation. (SIM 3-1/2) (Repair) Replace or repair the staple unit. / Power OFF-ON (After work)
		Case 3	Trouble position/ cause	Finisher control PWB trouble
			Remedy	(Check) (SIM3-1/2) Check the finisher control PWB operation. (SIM 3-1/2) (Repair) Replace the finisher control PWB. / Power OFF-ON (After work) Make various adjustments related to the finisher electric section. (Install the EEPROM of the defective finisher control PWB to a new finisher control PWB.)

Main code	Sub code	Title	Finisher bundle process trouble (Finisher side detection)	
<b>F1</b>	<b>11</b>	Case 2	Trouble position/ cause	Return roller mechanism section trouble
			Remedy	(Check) Return roller mechanism section (SIM 3-1/2) (Repair) Repair the return roller mechanism section. / Power OFF-ON (After work)
		Case 3	Trouble position/ cause	Finisher control PWB trouble
			Remedy	(Check) Check the finisher control PWB operation. (SIM 3-1/2) (Repair) Replace the finisher control PWB. / Power OFF-ON (After work) Make various adjustments related to the finisher electric section. (Install the EEPROM of the defective finisher control PWB to a new finisher control PWB.)

Main code	Sub code	Title	Finisher bundle process trouble (Finisher side detection)	
<b>F1</b>	<b>11</b>	Phenomena	Display	Lamp Message
			Detail	In the initial operation, the return roller home position sensor signal ON is not recognized within the specified time after starting rotation of the return roller. / In the initial operation, the bundle exit belt home position sensor OFF is not recognized within the specified time after starting bundle exit operation. / In the initial operation, the bundle exit belt home position sensor signal ON is not recognized within the specified time after starting bundle exit operation.
			Section	Finisher paper exit
			Operation mode	Power ON / Initial operation
			Note	
		Case 1	Trouble position/ cause	Bundle process motor trouble / Return roller home position sensor trouble
			Remedy	(Check) Check operations of the bundle process motor/return roller home position sensor. (SIM 3-1/2) (Repair) Replace the bundle process motor. / Replace the return roller home position sensor. / Power OFF-ON (After work)

Main code	Sub code	Title	Finisher tray lift trouble (Finisher side detection)	
<b>F1</b>	<b>15</b>	Phenomena	Display	Lamp Message
			Detail	In the tray lift up operation, the tray upper limit sensor ON is recognized. / The specified number or more of the tray lift motor rotation sensor signals are not recognized within the specified time after starting rotation of the tray lift motor. / The tray paper height sensor ON is not recognized within the specified time after starting the tray lift up operation. / The tray paper height sensor OFF is not recognized within the specified time after starting the tray lift down operation.
			Section	Finisher tray lift
			Operation mode	All modes
			Note	
		Case 1	Trouble position/ cause	Tray lift mechanism section trouble
			Remedy	(Check) Check the tray lift mechanism section. (SIM 3-1/2) (Repair) Repair the tray lift mechanism section. / Power OFF-ON (After work)

Main code	Sub code	Title	Finisher tray lift trouble (Finisher side detection)	
F1	15	Case 2	Trouble position/cause	Tray lift motor trouble / Tray upper limit sensor trouble / Tray lift motor rotation sensor trouble / Tray height sensor trouble
			Remedy	(Check) Check the operations of the tray lift motor / tray upper limit sensor / tray lift motor rotation sensor / tray height sensor. (SIM 3-1/2) (Repair) Replace the tray lift motor. / Replace the tray upper limit sensor. / Replace the tray lift motor rotation sensor. / Replace the tray height sensor. (After work)
		Case 3	Trouble position/cause	Finisher control PWB trouble
			Remedy	(Check) Check the operation of the finisher control PWB. (SIM 3-1/2) (Repair) Replace the finisher control PWB. / Power OFF-ON (After work) Make various adjustments related to the finisher electric section. (Install the EEPROM of the defective finisher control PWB to a new finisher control PWB.)

Main code	Sub code	Title	Finisher alignment trouble (Front side) (Finisher side detection)	
F1	19	Phenomena	Display	Lamp Message
			Detail	In the initial operation, the alignment plate home position sensor signal OFF is not recognized within the specified time after starting rotation of the alignment motor. / In the initial operation, the alignment plate home position sensor signal ON is not recognized within the specified time after starting rotation of the alignment motor.
			Section	Finisher alignment
			Operation mode	Power ON
			Note	
		Case 1	Trouble position/cause	Alignment mechanism section trouble (Front side)
			Remedy	(Check) Check the alignment mechanism section. (Front side) (SIM 3-1/2) (Repair) Repair the alignment mechanism section (Front side). / Power OFF-ON (After work)

Main code	Sub code	Title	Finisher alignment trouble (Front side) (Finisher side detection)	
F1	19	Case 2	Trouble position/cause	Alignment motor trouble / Alignment plate home position sensor trouble (Front side)
			Remedy	(Check) Check the operations of the alignment motor/alignment plate home position sensor (Front side). (SIM 3-1/2) (Repair) Replace the alignment motor. / Replace the alignment plate home position sensor. (Front side) (After work)
		Case 3	Trouble position/cause	Finisher control PWB trouble
			Remedy	(Check) Check the finisher control PWB operation. (SIM 3-1/2) (Repair) Replace the finisher control PWB. / Power OFF-ON (After work) Make various adjustments related to the finisher electric section. (Install the EEPROM of the defective finisher control PWB to a new finisher control PWB.)

Main code	Sub code	Title	Finisher alignment trouble (Rear side) (Finisher side detection)	
F1	20	Phenomena	Display	Lamp Message
			Detail	In the initial operation, the alignment plate home position sensor signal OFF is not recognized within the specified time after starting rotation of the alignment motor. / In the initial operation, the alignment plate home position sensor signal ON is not recognized within the specified time after starting rotation of the alignment motor. (Rear side)
			Section	Finisher alignment
			Operation mode	Power ON
			Note	
		Case 1	Trouble position/cause	Alignment mechanism section trouble (Rear side)
			Remedy	(Check) Check the alignment mechanism section (Rear side). (SIM 3-1/2) (Repair) Repair the alignment mechanism section (Rear side). / Power OFF-ON (After work)

Main code	Sub code	Title	Finisher alignment trouble (Rear side) (Finisher side detection)	
F1	20	Case 2	Trouble position/cause	Alignment motor trouble / Alignment plate home position sensor trouble (Rear side)
			Remedy	(Check) Check the operations of the alignment motor/alignment plate home position sensor (Rear side). (SIM 3-1/2)
				(Repair) Replace the alignment motor. / Replace the alignment plate home position sensor (Rear side). (After work)
		Case 3	Trouble position/cause	Finisher control PWB trouble
			Remedy	(Check) Check the finisher control PWB operation. (SIM 3-1/2)
	(Repair) Replace the finisher control PWB. / Power OFF-ON (After work) Make various adjustments related to the finisher electric section. (Install the EEPROM of the defective finisher control PWB to a new finisher control PWB.)			

Main code	Sub code	Title	PCU PWB - sorter control PWB communication trouble (PCU detection)	
F1	70	Phenomena	Display	Lamp Message
			Detail	Communication test error after turning ON the power or canceling a simulation.
			Section	Sorter / PCU MAIN PWB
			Operation mode	Warm-up / Initialize
			Note	
			Case 1	Trouble position/cause
		Remedy		(Check) Check connection of the signal line between the PCU MAIN PWB and the sorter. (Repair) Repair or replace the cable and the connector between the PCU MAIN PWB and the ICU MAIN PWB. / Power Source-ON (After-work)
		Case 2	Trouble position/cause	Sorter control PWB trouble
			Remedy	(Check) (Repair) Replace the sorter control PWB. / Power Source-ON (After-work)

Main code	Sub code	Title	PCU PWB - sorter control PWB communication trouble (PCU detection)	
F1	70	Case 3	Trouble position/cause	PCU MAIN PWB trouble
			Remedy	(Check) (Repair) Replace the PCU MAIN PWB. / Power Source-ON (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)

Main code	Sub code	Title	Sorter power abnormality (Sorter side detection)	
F1	80	Phenomena	Display	Lamp Message
			Detail	Sorter control PWB +24V power abnormality (Low voltage)
			Section	Sorter
			Operation mode	All modes
			Note	
			Case 1	Trouble position/cause
		Remedy		(Check) Check connection between the DC main PWB and the sorter control PWB. (Repair) Repair or replace the harness and the connector between the DC main PWB and the sorter control PWB. / Power Source-ON (After-work)
		Case 2	Trouble position/cause	Sorter control PWB trouble
			Remedy	(Check) Check the power source in the sorter control PWB. (SIM 3-2) (Repair) Replace the sorter control PWB. / Power Source-ON (After-work)

Main code	Sub code	Title	Sorter transport motor trouble (Sorter side detection)		
			Display	Lamp	
F1	81	Phenomena	Display	Lamp	
				Message	
			Detail	The motor rotation sensor output signal is not recognized within the specified time after outputting the sorter transport motor ON signal. / The transport guide sensor signal is not recognized within the specified time after outputting the transport guide ON signal.	
			Section	Sorter	
			Operation mode	Sort/group operation mode	
			Note		
			Case 1	Trouble position/ cause	Transport motor trouble / Transport motor rotation sensor trouble
				Remedy	(Check) "Check operations of the transport motor, the transport guide, and the sensor. (SIM 3-1/2)" (Repair) Replace the transport motor. / Replace the transport motor rotation sensor. / Power Source-ON (After-work)
			Case 2	Trouble position/ cause	"Transport guide sensor trouble, transport guide home position sensor trouble"
				Remedy	(Check) Check operations of the transport guide sensor and the transport guide home position sensor. (SIM 3-1/2) (Repair) Replace the transport guide sensor. / Replace the transport guide home position sensor. / Power Source-ON (After-work)
		Case 3	Trouble position/ cause	Paper transport mechanism section trouble	
			Remedy	(Check) Check operations of the paper transport mechanism section. (SIM 3-1/2) (Repair) Repair or replace the parts of the paper transport mechanism section. / Power Source-ON (After-work)	
		Case 4	Trouble position/ cause	Sorter control PWB trouble.	
			Remedy	(Check) Check operations of the sorter control PWB. (SIM 3-1/2) (Repair) Replace the sorter control PWB. / Power Source-ON (After-work)	

Main code	Sub code	Title	Sorter push bar motor trouble (Sorter side detection)		
			Display	Lamp	
F1	83	Phenomena	Display	Lamp	
				Message	
			Detail	The push bar sensor signal is not recognized within 2sec from start of initializing. / The push bar does not complete its operation within 2sec from start of operation.	
			Section	Sorter	
			Operation mode	Initializing	
			Note		
			Case 1	Trouble position/ cause	Push bar motor trouble / Push bar home position sensor trouble
				Remedy	(Check) Check operations of the push bar motor and the push bar home position sensor. (SIM 3-1/2) (Repair) Replace the push bar motor. / Replace the push bar home position sensor. / Power Source-ON (After-work)
			Case 2	Trouble position/ cause	Circuit breaker operation
				Remedy	(Check) Check the cause of an overcurrent. (Repair) Reset the circuit breaker. / Power Source-ON (After-work)
		Case 3	Trouble position/ cause	Paper push bar mechanism section trouble	
			Remedy	(Check) Check operations of the paper push bar mechanism section. (SIM3-1/2) (Repair) Repair or replace the parts in the paper push bar mechanism section. / Power Source-ON (After-work)	
		Case 4	Trouble position/ cause	Sorter control PWB trouble.	
			Remedy	(Check) Check operations of the sorter control PWB. (SIM3-1/2) (Repair) Replace the sorter control PWB. / Power Source-ON (After-work)	

Main code	Sub code	Title	Sorter staple unit oscillation motor trouble (Sorter side detection)		
F1	87	Phenomena	Display	Lamp Message	
			Detail	The stapler shift home position sensor signal is not recognized within 1sec from start of initializing. / The stapler shift home position sensor signal polarity change is not recognized within 1sec from start of stapler shift operation. / The rotation sensor output signal is not recognized within 0.25sec from output of the stapler shift motor ON signal.	
			Section	Sorter	
			Operation mode	Initializing	
			Note		
			Case 1	Trouble position/ cause	Stapler shift motor trouble / Stapler shift home position sensor trouble
				Remedy	(Check) Check operations of the stapler shift motor/ stapler shift home position sensor. (SIM3-1/2)
					(Repair) Replace the stapler shift motor. / Replace the stapler shift home position sensor. / Power Source-ON
					(After-work)
			Case 2	Trouble position/ cause	Staple shift mechanism section trouble
		Remedy		(Check) Check operations of the staple shift mechanism section. (SIM3-1/2)	
				(Repair) Repair or replace the parts of the staple shift mechanism section. / Power Source-ON	
				(After-work)	
		Case 3	Trouble position/ cause	Circuit breaker operation	
			Remedy	(Check) Check the cause of an overcurrent.	
				(Repair) Reset the circuit breaker. / Power Source-ON	
				(After-work)	
		Case 4	Trouble position/ cause	Sorter control PWB trouble.	
			Remedy	(Check) Check operations of the sorter control PWB. (SIM3-1/2)	
				(Repair) Replace the sorter control PWB. / Power Source-ON	
(After-work)					

Main code	Sub code	Title	Sorter bin shift motor trouble (Sorter side detection)		
F1	89	Phenomena	Display	Lamp Message	
			Detail	The lead cam position sensor signal is not recognized within the specified time after outputting the bin shift motor ON signal. / The guide bar home position is not recognized within the specified time after start of the guide bar operation. / The rotation sensor output signal is not recognized within the specified time after outputting the bin shift motor ON signal.	
			Section	Sorter	
			Operation mode	Sort/Group operation mode	
			Note		
			Case 1	Trouble position/ cause	Bin shift motor trouble / Lead cam position sensor
				Remedy	(Check) Check operations of the bin shift motor / lead cam home position sensor. (SIM3-1/2)
					(Repair) Replace the bin shift motor. / Replace the lead cam position sensor. / Power Source-ON
					(After-work)
			Case 2	Trouble position/ cause	Bin shift mechanism section trouble
		Remedy		(Check) Check operations of the bin shift mechanism section. (SIM 3-1/2)	
				(Repair) Repair or replace the parts in the bin shift mechanism section. / Power Source-ON	
				(After-work)	
		Case 3	Trouble position/ cause	Circuit breaker operation	
			Remedy	(Check) Check the cause of an overcurrent.	
				(Repair) Reset the circuit breaker. / Power Source-ON	
		Case 4	Trouble position/ cause	Sorter control PWB trouble.	
			Remedy	(Check) Check operations of the sorter control PWB. (SIM3-1/2)	
				(Repair) Replace the sorter control PWB. / Power Source-ON	
		(After-work)			

Main code	Sub code	Title	Bin paper sensor auto adjustment trouble (Sorter side detection)			
F1	91	Phenomena	Display	Lamp		
				Message		
			Detail	Sensor output abnormality in sensor detection level adjustment		
				Section	Sorter	
			Operation mode	sort/group operation mode		
			Note			
			Case 1	Trouble position/cause	Bin paper sensor trouble	
					Remedy	(Check) Check operations of bin paper sensor. (SIM3-1/2) (Repair) Replace or adjust the bin paper sensor. / Power Source-ON (After-work)
				Case 2	Trouble position/cause	Sorter control PWB trouble.
						Remedy

Main code	Sub code	Title	Sorter staple key trouble			
F1	94	Phenomena	Display	Lamp		
				Message		
			Detail	The continuous ON state of the manual staple key is recognized after 5 sec of starting copying.		
				Section	Sorter	
			Operation mode	Staple		
			Note			
			Case 1	Trouble position/cause	Staple key trouble	
					Remedy	(Check) Staple key operation check (SIM 3-2) (Repair) Staple key replacement/Power OFF/ON (After-work)
				Case 2	Trouble position/cause	Sorter control PWB trouble.
						Remedy

Main code	Sub code	Title	Toner concentration sensor trouble (BLACK)			
F2	40	Phenomena	Display	Lamp		
				Message		
			Detail	Toner density sensor output line open		
				Section	Developing	
			Operation mode	All modes		
			Note			
			Case 1	Trouble position/cause	Bad connection of the toner density sensor, the process control PWB, and the PCU MAIN PWB	
					Remedy	(Check) Check connections of the toner density sensor, the process control PWB, and the PCU MAIN PWB. (Repair) Replace the toner density sensor. / Power Source-ON (After-work)
				Case 2	Trouble position/cause	Process control PWB trouble
						Remedy
			Case 3	Trouble position/cause	PCU MAIN PWB trouble	
					Remedy	(Check) Check the toner density sensor output level with SIM 25-1. (Repair) Replace the PCU MAIN PWB. / Power Source-ON (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)

Main code	Sub code	Title	Toner concentration sensor trouble (CYAN)		
			Display	Lamp	
F2	41	Phenomena	Display	Lamp	
				Message	
			Detail	Toner density sensor output line open	
			Section	Developing	
			Operation mode	All modes	
			Note		
		Case 1	Trouble position/cause	Bad connection of the toner density sensor, the process control PWB, and the PCU MAIN PWB	
			Remedy	(Check) Check connections of the toner density sensor, the process control PWB, and the PCU MAIN PWB. (Repair) Replace the toner density sensor. / Power Source-ON (After-work)	
			Case 2	Trouble position/cause	Process control PWB trouble
				Remedy	(Check) Check the toner density sensor output level with SIM 25-1. (Repair) Replace the process control PWB. / Power Source-ON (After-work)
		Case 3	Trouble position/cause	PCU MAIN PWB trouble	
			Remedy	(Check) Check the toner density sensor output level with SIM 25-1. (Repair) Replace the PCU MAIN PWB. / Power Source-ON (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)	

Main code	Sub code	Title	Toner concentration sensor trouble (MAGENTA)		
			Display	Lamp	
F2	42	Phenomena	Display	Lamp	
				Message	
			Detail	Toner density sensor output line open	
			Section	Developing	
			Operation mode	All modes	
			Note		
		Case 1	Trouble position/cause	Bad connection of the toner density sensor, the process control PWB, and the PCU MAIN PWB	
			Remedy	(Check) Check connections of the toner density sensor, the process control PWB, and the PCU MAIN PWB. (Repair) Replace the toner density sensor. / Power Source-ON (After-work)	
			Case 2	Trouble position/cause	Process control PWB trouble
				Remedy	(Check) Check the toner density sensor output level with SIM 25-1. (Repair) Replace the process control PWB. / Power Source-ON (After-work)
		Case 3	Trouble position/cause	PCU MAIN PWB trouble	
			Remedy	(Check) Check the toner density sensor output level with SIM 25-1. (Repair) Replace the PCU MAIN PWB. / Power Source-ON (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)	

Main code	Sub code	Title	Toner concentration sensor trouble (YELLOW)		
F2	43	Phenomena	Display	Lamp	
				Message	
			Detail	Toner density sensor output line open	
			Section	Developing	
			Operation mode	All modes	
			Note		
		Case 1	Trouble position/cause	Bad connection of the toner density sensor, the process control PWB, and the PCU MAIN PWB	
			Remedy	(Check) Check connections of the toner density sensor, the process control PWB, and the PCU MAIN PWB. (Repair) Replace the toner density sensor. / Power Source-ON (After-work)	
			Case 2	Trouble position/cause	Process control PWB trouble
				Remedy	(Check) Check the toner density sensor output level with SIM 25-1. (Repair) Replace the process control PWB. / Power Source-ON (After-work)
		Case 3	Trouble position/cause	PCU MAIN PWB trouble	
			Remedy	(Check) Check the toner density sensor output level with SIM 25-1. (Repair) Replace the PCU MAIN PWB. / Power Source-ON (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)	

Main code	Sub code	Title	Image density sensor trouble (BLACK) (Transfer belt surface reflection abnormality)				
F2	44	Phenomena	Display	Lamp			
				Message			
			Detail	In the image density correction, the transfer belt surface is read by the image density sensor and the sensor gain is adjusted so that the output becomes a fixed value. However, the output of the specified range cannot be obtained even though the sensor gain is changed.			
			Section	Image process (Transfer)			
			Operation mode	Image density correction			
			Note	Print is disabled in USA. For the other destinations, print is enabled. However, the print density must be forcibly decreased.			
			Case 1	Trouble position/cause	Image density sensor trouble		
				Remedy	(Check) Check the image density sensor (dirt, output) (SIM44-2) / Check the image density sensor calibration plate. / Check the operation of the image density sensor calibration plate switching. (Repair) Clean or replace the image density sensor. / Clean or replace the image density sensor calibration plate. / Replace the image density sensor calibration plate switch solenoid. / Power Source-ON (After-work) Adjust ADJ M6		
					Case 2	Trouble position/cause	Transfer belt trouble (dirt, scratch)
						Remedy	(Check) Toner dispersion from the transfer belt, the OPC drum unit, and the developing unit (Repair) Clean or replace the transfer belt. / Replace the transfer belt cleaner. / Clean the OPC drum and the developing unit. / Power Source-ON (After-work)
			Case 3	Trouble position/cause	PCU SUB PWB trouble		
				Remedy	(Check) Check the PCU SUM PWB image density sensor circuit. (Repair) PCU SUB PWB replacement / Power Source-ON (After-work)		

Main code	Sub code	Title	Image density sensor trouble (COLOR) (Calibration plate reflection abnormality)		
F2	45	Phenomena	Display	Lamp	
				Message	
			Detail	In the image density correction, the calibration plate is read by the image density sensor and the sensor gain is adjusted so that the output becomes a fixed value. However, the output of the specified range cannot be obtained even though the sensor gain is changed.	
			Section	Image process (Transfer)	
			Operation mode	Image density correction	
			Note	Print is disabled in USA. For the other destinations, print is enabled. However, the print density must be forcibly decreased.	
			Case 1	Trouble position/ cause	Image density sensor trouble
				Remedy	(Check) Check the image density sensor (dirt, output) (SIM44-2) / Check the image density sensor calibration plate. / Check the operation of the image density sensor calibration plate switching.  (Repair) Clean or replace the image density sensor. / Clean or replace the image density sensor calibration plate. / Replace the image density sensor calibration plate switch solenoid. / Power Source-ON (After-work) Adjust ADJ M6
			Case 2	Trouble position/ cause	Calibration plate trouble (dirt, scratch)
				Remedy	(Check) Toner dispersion from the transfer belt, the OPC drum unit, and the developing unit  (Repair) Clean or replace the calibration plate. / Replace the transfer belt cleaner. / Clean the OPC drum and the developing unit. / Power Source-ON (After-work)
		Case 3	Trouble position/ cause	PCU SUB PWB trouble	
			Remedy	(Check) Check the PCU SUM PWB image density sensor circuit.  (Repair) PCU SUB PWB replacement / Power Source-ON (After-work)	

Main code	Sub code	Title	Drum marking detection trouble (BLACK)		
F2	50	Phenomena	Display	Lamp	
				Message	
			Detail	The drum marking is not recognized. / The size and the number of drum markings are not specified ones.	
			Section	Image process (OPC drum)	
			Operation mode	OPC drum rotation	
			Note	The error code is stored in the trouble memory (print enabled).	
			Case 1	Trouble position/ cause	Drum marking sensor trouble (dirt, output)
				Remedy	(Check) Drum marking sensor output check (SIM44-2)  (Repair) Clean or replace the drum marking sensor. / Power Source-ON (After-work)
			Case 2	Trouble position/ cause	Bad connection of the signal line of PCU MAIN PWB / process control PWB / drum marking sensor.
				Remedy	(Check) Check connection of the signal line of PCU MAIN PWB / process control PWB / drum marking sensor.  (Repair) Repair or replace the cable and the connector between PCU MAIN PWB / Process control PWB / Drum marking sensor. / Power Source-ON (After-work)
		Case 3	Trouble position/ cause	PCU MAIN PWB trouble	
			Remedy	(Check)  (Repair) Replace the PCU MAIN PWB. / Power Source-ON  (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)	

Main code	Sub code	Title	Drum marking detection trouble (BLACK)	
F2	50	Case 4	Trouble position/ cause	OPC drum surface dirt, scratch / A different type of OPC drum is installed.
			Remedy	(Check) Check dirt and scratches on the OPC drum surface, and the type of OPC drum.  (Repair) Clean the OPC drum surface. / Replace the OPC drum. / Power Source-ON  (After-work) Refer to the requirement item 2 of maintenance servicing and consumable parts replacement.

Main code	Sub code	Title	Drum marking detection trouble (CYAN)	
F2	51	Phenomena	Display	Lamp Message
			Detail	The drum marking is not recognized. / The size and the number of drum markings are not specified ones.
			Section	Image process (OPC drum)
			Operation mode	OPC drum rotation
			Note	The error code is stored in the trouble memory (print enabled).
		Case 1	Trouble position/ cause	Drum marking sensor trouble (dirt, output)
			Remedy	(Check) Drum marking sensor output check (SIM44-2)  (Repair) Clean or replace the drum marking sensor. / Power Source-ON  (After-work)
		Case 2	Trouble position/ cause	Bad connection of the signal line of PCU MAIN PWB / process control PWB / drum marking sensor.
			Remedy	(Check) Check connection of the signal line of PCU MAIN PWB / process control PWB / drum marking sensor.  (Repair) Repair or replace the cable and the connector between PCU MAIN PWB / Process control PWB / Drum marking sensor. / Power Source-ON  (After-work)

Main code	Sub code	Title	Drum marking detection trouble (CYAN)	
F2	51	Case 3	Trouble position/ cause	PCU MAIN PWB trouble
			Remedy	(Check)  (Repair) Replace the PCU MAIN PWB. / Power Source-ON  (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)
		Case 4	Trouble position/ cause	OPC drum surface dirt, scratch / A different type of OPC drum is installed.
			Remedy	(Check) Check dirt and scratches on the OPC drum surface, and the type of OPC drum.  (Repair) Clean the OPC drum surface. / Replace the OPC drum. / Power Source-ON  (After-work) Refer to the requirement item 2 of maintenance servicing and consumable parts replacement.

Main code	Sub code	Title	Drum marking detection trouble (MAGENTA)	
F2	52	Phenomena	Display	Lamp Message
			Detail	The drum marking is not recognized. / The size and the number of drum markings are not specified ones.
			Section	Image process (OPC drum)
			Operation mode	OPC drum rotation
			Note	The error code is stored in the trouble memory (print enabled).
		Case 1	Trouble position/ cause	Drum marking sensor trouble (dirt, output)
			Remedy	(Check) Drum marking sensor output check (SIM44-2)  (Repair) Clean or replace the drum marking sensor. / Power Source-ON  (After-work)

Main code	Sub code	Title	Drum marking detection trouble (MAGENTA)		
F2	52	Case 2	Trouble position/cause	Bad connection of the signal line of PCU MAIN PWB / process control PWB / drum marking sensor.	
			Remedy	(Check) Check connection of the signal line of PCU MAIN PWB / process control PWB / drum marking sensor.  (Repair) Repair or replace the cable and the connector between PCU MAIN PWB / Process control PWB / Drum marking sensor. / Power Source-ON (After-work)	
			Case 3	Trouble position/cause	PCU MAIN PWB trouble
				Remedy	(Check) (Repair) Replace the PCU MAIN PWB. / Power Source-ON (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)
				Case 4	Trouble position/cause
			Remedy		(Check) Check dirt and scratches on the OPC drum surface, and the type of OPC drum. (Repair) Clean the OPC drum surface. / Replace the OPC drum. / Power Source-ON (After-work) Refer to the requirement item 2 of maintenance servicing and consumable parts replacement.

Main code	Sub code	Title	Drum marking detection trouble (YELLOW)	
F2	53	Phenomena	Display	Lamp Message
			Detail	The drum marking is not recognized. / The size and the number of drum markings are not specified ones.
			Section	Image process (OPC drum)
			Operation mode	OPC drum rotation
			Note	The error code is stored in the trouble memory (print enabled).

Main code	Sub code	Title	Drum marking detection trouble (YELLOW)		
F2	53	Case 1	Trouble position/cause	Drum marking sensor trouble (dirt, output)	
			Remedy	(Check) Drum marking sensor output check (SIM44-2) (Repair) Clean or replace the drum marking sensor. / Power Source-ON (After-work)	
			Case 2	Trouble position/cause	Bad connection of the signal line of PCU MAIN PWB / process control PWB / drum marking sensor.
				Remedy	(Check) Check connection of the signal line of PCU MAIN PWB / process control PWB / drum marking sensor. (Repair) Repair or replace the cable and the connector between PCU MAIN PWB / Process control PWB / Drum marking sensor. / Power Source-ON (After-work)
			Case 3	Trouble position/cause	PCU MAIN PWB trouble
				Remedy	(Check) (Repair) Replace the PCU MAIN PWB. / Power Source-ON (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)
		Case 4	Trouble position/cause	OPC drum surface dirt, scratch / A different type of OPC drum is installed.	
			Remedy	(Check) Check dirt and scratches on the OPC drum surface, and the type of OPC drum. (Repair) Clean the OPC drum surface. / Replace the OPC drum. / Power Source-ON (After-work) Refer to the requirement item 2 of maintenance servicing and consumable parts replacement.	

Main code	Sub code	Title	Drum marking sensor gain adjustment error (BLACK)		
F2	54	Phenomena	Display	Lamp	
				Message	
			Detail	In the image density correction, the drum surface area is read by the drum marking sensor and the sensor gain is adjusted so that the output becomes a fixed value. However, the output of the specified range cannot be obtained even though the sensor gain is changed.	
			Section	Image process (OPC drum)	
			Operation mode	Image density correction	
			Note	Print is disabled in USA. For the other destinations, print is enabled. However, the print density must be forcibly decreased.	
			Case 1	Trouble position/ cause	Drum marking sensor trouble (dirt, output)
			Remedy	(Check) Drum marking sensor output check (SIM44-2)	
				(Repair) Clean or replace the drum marking sensor. / Power Source-ON	
				(After-work)	
		Case 2	Trouble position/ cause	Bad connection of the signal line between PCU MAIN PWB / Process control PWB / Drum marking sensor	
			Remedy	(Check) Check connection of the signal line between PCU MAIN PWB / Process control PWB / Drum marking sensor.	
				(Repair) Repair or replacement of the cable and the connector between the PCU MAIN PWB / Process control PWB / Drum marking sensor. / Power Source-ON	
				(After-work)	
		Case 3	Trouble position/ cause	PCU MAIN PWB trouble	
			Remedy	(Check)	
				(Repair) Replace the PCU MAIN PWB. / Power Source-ON	
				(After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)	

Main code	Sub code	Title	Drum marking sensor gain adjustment error (BLACK)	
F2	54	Case 4	Trouble position/ cause	OPC drum surface dirt, scratch / A different type of OPC drum is installed.
			Remedy	(Check) Check dirt and scratches on the OPC drum surface, and the type of OPC drum.
				(Repair) Clean the OPC drum surface. / Replace the OPC drum. / Power Source-ON
				(After-work) Refer to the requirement item 2 of maintenance servicing and consumable parts replacement.

Main code	Sub code	Title	Drum marking sensor gain adjustment error (CYAN)		
F2	55	Phenomena	Display	Lamp	
				Message	
			Detail	In the image density correction, the drum surface area is read by the drum marking sensor and the sensor gain is adjusted so that the output becomes a fixed value. However, the output of the specified range cannot be obtained even though the sensor gain is changed.	
			Section	Image process (OPC drum)	
			Operation mode	Image density correction	
			Note	Print is disabled in USA. For the other destinations, print is enabled. However, the print density must be forcibly decreased.	
			Case 1	Trouble position/ cause	Drum marking sensor trouble (dirt, output)
			Remedy	(Check) Drum marking sensor output check (SIM44-2)	
				(Repair) Clean or replace the drum marking sensor. / Power Source-ON	
				(After-work)	

Main code	Sub code	Title	Drum marking sensor gain adjustment error (CYAN)	
F2	55	Case 2	Trouble position/ cause	Bad connection of the signal line between PCU MAIN PWB / Process control PWB / Drum marking sensor
			Remedy	(Check) Check connection of the signal line between PCU MAIN PWB / Process control PWB / Drum marking sensor. (Repair) Repair or replacement of the cable and the connector between the PCU MAIN PWB / Process control PWB / Drum marking sensor. / Power Source-ON (After-work)
		Case 3	Trouble position/ cause	PCU MAIN PWB trouble
			Remedy	(Check) (Repair) Replace the PCU MAIN PWB. / Power Source-ON (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)
		Case 4	Trouble position/ cause	OPC drum surface dirt, scratch / A different type of OPC drum is installed.
			Remedy	(Check) Check dirt and scratches on the OPC drum surface, and the type of OPC drum. (Repair) Clean the OPC drum surface. / Replace the OPC drum. / Power Source-ON (After-work) Refer to the requirement item 2 of maintenance servicing and consumable parts replacement.

Main code	Sub code	Title	Drum marking sensor gain adjustment error (MAGENTA)		
F2	56	Phenomena	Display	Lamp Message	
			Detail	In the image density correction, the drum surface area is read by the drum marking sensor and the sensor gain is adjusted so that the output becomes a fixed value. However, the output of the specified range cannot be obtained even though the sensor gain is changed.	
			Section	Image process (OPC drum)	
			Operation mode	Image density correction	
			Note	Print is disabled in USA. For the other destinations, print is enabled. However, the print density must be forcibly decreased.	
			Case 1	Trouble position/ cause	Drum marking sensor trouble (dirt, output)
				Remedy	(Check) Drum marking sensor output check (SIM44-2) (Repair) Clean or replace the drum marking sensor. / Power Source-ON (After-work)
		Case 2	Trouble position/ cause	Bad connection of the signal line between PCU MAIN PWB / Process control PWB / Drum marking sensor	
			Remedy	(Check) Check connection of the signal line between PCU MAIN PWB / Process control PWB / Drum marking sensor. (Repair) Repair or replacement of the cable and the connector between the PCU MAIN PWB / Process control PWB / Drum marking sensor. / Power Source-ON (After-work)	
		Case 3	Trouble position/ cause	PCU MAIN PWB trouble	
			Remedy	(Check) (Repair) Replace the PCU MAIN PWB. / Power Source-ON (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)	

Main code	Sub code	Title	Drum marking sensor gain adjustment error (MAGENTA)	
F2	56	Case 4	Trouble position/cause	OPC drum surface dirt, scratch / A different type of OPC drum is installed.
			Remedy	(Check) Check dirt and scratches on the OPC drum surface, and the type of OPC drum.  (Repair) Clean the OPC drum surface. / Replace the OPC drum. / Power Source-ON  (After-work) Refer to the requirement item 2 of maintenance servicing and consumable parts replacement.

Main code	Sub code	Title	Drum marking sensor gain adjustment error (YELLOW)	
F2	57	Phenomena	Display	Lamp Message
			Detail	In the image density correction, the drum surface area is read by the drum marking sensor and the sensor gain is adjusted so that the output becomes a fixed value. However, the output of the specified range cannot be obtained even though the sensor gain is changed.
			Section	Image process (OPC drum)
			Operation mode	Image density correction
			Note	Print is disabled in USA. For the other destinations, print is enabled. However, the print density must be forcibly decreased.
		Case 1	Trouble position/cause	Drum marking sensor trouble (dirt, output)
			Remedy	(Check) Drum marking sensor output check (SIM44-2)  (Repair) Clean or replace the drum marking sensor. / Power Source-ON  (After-work)

Main code	Sub code	Title	Drum marking sensor gain adjustment error (YELLOW)	
F2	57	Case 2	Trouble position/cause	Bad connection of the signal line between PCU MAIN PWB / Process control PWB / Drum marking sensor
			Remedy	(Check) Check connection of the signal line between PCU MAIN PWB / Process control PWB / Drum marking sensor.  (Repair) Repair or replacement of the cable and the connector between the PCU MAIN PWB / Process control PWB / Drum marking sensor. / Power Source-ON  (After-work)
		Case 3	Trouble position/cause	PCU MAIN PWB trouble
			Remedy	(Check)  (Repair) Replace the PCU MAIN PWB. / Power Source-ON  (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)
		Case 4	Trouble position/cause	OPC drum surface dirt, scratch / A different type of OPC drum is installed.
			Remedy	(Check) Check dirt and scratches on the OPC drum surface, and the type of OPC drum.  (Repair) Clean the OPC drum surface. / Replace the OPC drum. / Power Source-ON  (After-work) Refer to the requirement item 2 of maintenance servicing and consumable parts replacement.

Main code	Sub code	Title	Process humidity sensor trouble	
F2	58	Phenomena	Display	Lamp Message
			Detail	Process humidity sensor output line open
			Section	Image process (Transfer)
			Operation mode	All modes
			Note	The error code is stored in the trouble memory (print enabled).

Main code	Sub code	Title	Process humidity sensor trouble	
<b>F2</b>	<b>58</b>	Case 1	Trouble position/ cause	Bad connection between the image density sensor and the PCU SUB PWB.
			Remedy	(Check) Check connection of the humidity sensor and the PCU SUB PWB. (Repair) Replace the humidity sensor. / Power Source-ON (After-work) Adjust ADJ M6
		Case 2	Trouble position/ cause	PCU SUB PWB trouble
			Remedy	(Check) Check the PCU SUB PWB humidity sensor circuit. (Repair) PCU SUB PWB replacement / Power Source-ON (After-work)

Main code	Sub code	Title	Temperature sensor trouble (Image process)	
<b>F2</b>	<b>63</b>	Phenomena	Display	Lamp Message
			Detail	Temperature sensor (image process) output line open
			Section	Image process
			Operation mode	All modes
			Note	The error code is stored in the trouble memory (print enabled).
			Case 1	Trouble position/ cause
			Remedy	(Check) Check connection of the temperature sensor, the process control PWB, and the PCU MAIN PWB. (Repair) Replace the temperature sensor (process control PWB). / Power Source-ON (After-work)
		Case 2	Trouble position/ cause	PCU MAIN PWB trouble
			Remedy	(Check) Check the output level of the PCU MAIN PWB humidity sensor. (Repair) Replace the PCU MAIN PWB. / Power Source-ON (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)

Main code	Sub code	Title	Trouble of image density sensor for registration (Transfer belt surface reflection ratio abnormality)		
<b>F2</b>	<b>78</b>	Phenomena	Display	Lamp Message	
			Detail	Before starting registration, the transfer belt surface is scanned with the image density sensor to adjust the sensor gain so that the output becomes a fixed value. However, when the sensor gain is changed, the value is not within the specified range.	
			Section	Image process	
			Operation mode	All modes	
			Note		
			Case 1	Trouble position/ cause	Image density sensor trouble, disconnection of the harness between the PCU PWB and the image density sensor, dirt on the image density sensor.
				Remedy	(Check) / (Repair) When "Error" occurs in the gain adjustment of SIM 44-2: Check the sensor and the harness. (After-work)
			Case 2	Trouble position/ cause	Calibration plate solenoid operation trouble
				Remedy	(Check) / (Repair) Check the calibration plate solenoid operation. (After-work)
			Case 3	Trouble position/ cause	Insufficient cleaning of the transfer belt.
			Remedy	(Check) / (Repair) Check the transfer belt surface. (After-work)	

Main code	Sub code	Title	Half tone correction (1st patch) trouble (BLACK)		
<b>F2</b>	<b>80</b>	Phenomena	Display	Lamp Message	
			Detail	In half tone image density correction, the toner patch density is abnormally low or high.	
			Section	Image process	
			Operation mode	Image density correction	
			Note		
			Case 1	Trouble position/ cause	Image density sensor trouble
				Remedy	(Check) Check the image density sensor (dirt, output). (SIM44-2) (Repair) Clean or replace the image density sensor. / Power Source-ON (After-work) Adjust ADJ M6

Main code	Sub code	Title	Half tone correction (1st patch) trouble (BLACK)	
F2	80	Case 2	Trouble position/cause	Transfer belt trouble (dirt, scratch)
			Remedy	(Check) Toner dispersion from transfer belt cleaner, OPC drum unit, developing unit
				(Repair) Transfer belt cleaning, replacement / Transfer belt cleaner replacement / OPC drum unit, developing unit cleaning / Power Source-ON
		Case 3	Trouble position/cause	PCU SUB PWB trouble
			Remedy	(Check) Check the PCU SUB PWB humidity sensor circuit.
				(Repair) PCU SUB PWB replacement / Power Source-ON
		(After-work)		
		Case 4	Trouble position/cause	PCU MAIN PWB trouble
			Remedy	(Check)
				(Repair) Replace the PCU MAIN PWB. / Power Source-ON
		(After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)		
		Case 5	Trouble position/cause	Main charger output trouble
			Remedy	(Check) Main charger contact check / Main charger unit check / High voltage power PWB, high voltage interface PWB check / Main charger output voltage check
				(Repair) Main charger unit replacement / High voltage power PWB, high voltage interface PWB replacement / Main charger output voltage adjustment (SIM 8-2) / Power Source-ON
		(After-work) Execute the image density correction (SIM 44-6). / Execute the half tone density correction (SIM 44-26).		

Main code	Sub code	Title	Half tone correction (1st patch) trouble (BLACK)	
F2	80	Case 6	Trouble position/cause	Developing bias output trouble
			Remedy	(Check) Developing bias contact check / High voltage PWB check / Developing bias voltage check
				(Repair) High voltage power PWB replacement / Developing bias output voltage adjustment (SIM8-1) / Power Source-ON
		(After-work) Execute the image density correction (SIM 44-6). / Execute the half tone density correction (SIM 44-26).		
		Case 7	Trouble position/cause	Transfer trouble
			Remedy	(Check) Transfer roller check / High voltage power PWB check / Transfer voltage check
				(Repair) Transfer roller replacement / High voltage power PWB replacement / Transfer output voltage adjustment (SIM 8-6) / Power Source-ON
		(After-work) Execute the image density correction (SIM 44-6). / Execute the half tone density correction (SIM 44-26).		
		Case 8	Trouble position/cause	Scanner (writing) unit trouble (Scanner (writing) motor trouble / Laser beam sensor trouble / Internal optical system dirt)
			Remedy	(Check) Check the operation of the scanner (writing) unit. (SIM 61-1)
				(Repair) Replace the scanner (writing) unit. / Power Source-ON
		(After-work) Adjust ADJM7/ADJM9/ADJM10		

Main code	Sub code	Title	Half tone correction (1st patch) trouble (CYAN)	
F2	81	Phenomena	Display	Lamp Message
			Detail	In half tone image density correction, the toner patch density is abnormally low or high.
			Section	Image process
			Operation mode	Image density correction
			Note	
			Case 1	Trouble position/ cause
			Remedy	(Check) Check the image density sensor (dirt, output). (SIM44-2) (Repair) Clean or replace the image density sensor. / Power Source-ON (After-work) Adjust ADJ M6
		Case 2	Trouble position/ cause	Transfer belt trouble (dirt, scratch)
			Remedy	(Check) Toner dispersion from transfer belt cleaner, OPC drum unit, developing unit (Repair) Transfer belt cleaning, replacement / Transfer belt cleaner replacement / OPC drum unit, developing unit cleaning / Power Source-ON (After-work)
		Case 3	Trouble position/ cause	PCU SUB PWB trouble
			Remedy	(Check) Check the PCU SUB PWB humidity sensor circuit. (Repair) PCU SUB PWB replacement / Power Source-ON (After-work)
		Case 4	Trouble position/ cause	PCU MAIN PWB trouble
			Remedy	(Check) (Repair) Replace the PCU MAIN PWB. / Power Source-ON (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)

Main code	Sub code	Title	Half tone correction (1st patch) trouble (CYAN)		
F2	81	Case 5	Trouble position/ cause	Main charger output trouble	
			Remedy	(Check) Main charger contact check / Main charger unit check / High voltage power PWB, high voltage interface PWB check / Main charger output voltage check (Repair) Main charger unit replacement / High voltage power PWB, high voltage interface PWB replacement / Main charger output voltage adjustment (SIM 8-2) / Power Source-ON (After-work) Execute the image density correction (SIM 44-6). / Execute the half tone density correction (SIM 44-26).	
			Case 6	Trouble position/ cause	Developing bias output trouble
				Remedy	(Check) Developing bias contact check / High voltage PWB check / Developing bias voltage check (Repair) High voltage power PWB replacement / Developing bias output voltage adjustment (SIM8-1) / Power Source-ON (After-work) Execute the image density correction (SIM 44-6). / Execute the half tone density correction (SIM 44-26).
			Case 7	Trouble position/ cause	Transfer trouble
				Remedy	(Check) Transfer roller check / High voltage power PWB check / Transfer voltage check (Repair) Transfer roller replacement / High voltage power PWB replacement / Transfer output voltage adjustment (SIM 8-6) / Power Source-ON (After-work) Execute the image density correction (SIM 44-6). / Execute the half tone density correction (SIM 44-26).

Main code	Sub code	Title	Half tone correction (1st patch) trouble (CYAN)	
F2	81	Case 8	Trouble position/ cause	Scanner (writing) unit trouble (Scanner (writing) motor trouble / Laser beam sensor trouble / Internal optical system dirt)
			Remedy	(Check) Check the operation of the scanner (writing) unit. (SIM 61-1) (Repair) Replace the scanner (writing) unit. / Power Source-ON (After-work) Adjust ADJM7/ADJM9/ADJM10

Main code	Sub code	Title	Half tone correction (1st patch) trouble (MAGENTA)	
F2	82	Phenomena	Display	Lamp Message
			Detail	In half tone image density correction, the toner patch density is abnormally low or high.
			Section	Image process
			Operation mode	Image density correction
			Note	
		Case 1	Trouble position/ cause	Image density sensor trouble
			Remedy	(Check) Check the image density sensor (dirt, output). (SIM44-2) (Repair) Clean or replace the image density sensor. / Power Source-ON (After-work) Adjust ADJ M6
		Case 2	Trouble position/ cause	Transfer belt trouble (dirt, scratch)
			Remedy	(Check) Toner dispersion from transfer belt cleaner, OPC drum unit, developing unit (Repair) Transfer belt cleaning, replacement / Transfer belt cleaner replacement / OPC drum unit, developing unit cleaning / Power Source-ON (After-work)
		Case 3	Trouble position/ cause	PCU SUB PWB trouble
			Remedy	(Check) Check the PCU SUB PWB humidity sensor circuit. (Repair) PCU SUB PWB replacement / Power Source-ON (After-work)

Main code	Sub code	Title	Half tone correction (1st patch) trouble (MAGENTA)	
F2	82	Case 4	Trouble position/ cause	PCU MAIN PWB trouble
			Remedy	(Check) (Repair) Replace the PCU MAIN PWB. / Power Source-ON (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)
		Case 5	Trouble position/ cause	Main charger output trouble
			Remedy	(Check) Main charger contact check / Main charger unit check / High voltage power PWB, high voltage interface PWB check / Main charger output voltage check (Repair) Main charger unit replacement / High voltage power PWB, high voltage interface PWB replacement / Main charger output voltage adjustment (SIM 8-2) / Power Source-ON (After-work) Execute the image density correction (SIM 44-6). / Execute the half tone density correction (SIM 44-26).
		Case 6	Trouble position/ cause	Developing bias output trouble
			Remedy	(Check) Developing bias contact check / High voltage PWB check / Developing bias voltage check (Repair) High voltage power PWB replacement / Developing bias output voltage adjustment (SIM8-1) / Power Source-ON (After-work) Execute the image density correction (SIM 44-6). / Execute the half tone density correction (SIM 44-26).

Main code	Sub code	Title	Half tone correction (1st patch) trouble (MAGENTA)	
F2	82	Case 7	Trouble position/ cause	Transfer trouble
			Remedy	(Check) Transfer roller check / High voltage power PWB check / Transfer voltage check (Repair) Transfer roller replacement / High voltage power PWB replacement / Transfer output voltage adjustment (SIM 8-6) / Power Source-ON (After-work) Execute the image density correction (SIM 44-6). / Execute the half tone density correction (SIM 44-26).
		Case 8	Trouble position/ cause	Scanner (writing) unit trouble (Scanner (writing) motor trouble / Laser beam sensor trouble / Internal optical system dirt)
			Remedy	(Check) Check the operation of the scanner (writing) unit. (SIM 61-1) (Repair) Replace the scanner (writing) unit. / Power Source-ON (After-work) Adjust ADJM7/ADJM9/ADJM10

Main code	Sub code	Title	Half tone correction (1st patch) trouble (YELLOW)	
F2	83	Phenomena	Display	Lamp Message
			Detail	In half tone image density correction, the toner patch density is abnormally low or high.
			Section	Image process
			Operation mode	Image density correction
			Note	
		Case 1	Trouble position/ cause	Image density sensor trouble
			Remedy	(Check) Check the image density sensor (dirt, output). (SIM44-2) (Repair) Clean or replace the image density sensor. / Power Source-ON (After-work) Adjust ADJ M6

Main code	Sub code	Title	Half tone correction (1st patch) trouble (YELLOW)	
F2	83	Case 2	Trouble position/ cause	Transfer belt trouble (dirt, scratch)
			Remedy	(Check) Toner dispersion from transfer belt cleaner, OPC drum unit, developing unit (Repair) Transfer belt cleaning, replacement / Transfer belt cleaner replacement / OPC drum unit, developing unit cleaning / Power Source-ON (After-work)
		Case 3	Trouble position/ cause	PCU SUB PWB trouble
			Remedy	(Check) Check the PCU SUB PWB humidity sensor circuit. (Repair) PCU SUB PWB replacement / Power Source-ON (After-work)
		Case 4	Trouble position/ cause	PCU MAIN PWB trouble
			Remedy	(Check) (Repair) Replace the PCU MAIN PWB. / Power Source-ON (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB.)
		Case 5	Trouble position/ cause	Main charger output trouble
			Remedy	(Check) Main charger contact check / Main charger unit check / High voltage power PWB, high voltage interface PWB check / Main charger output voltage check (Repair) Main charger unit replacement / High voltage power PWB, high voltage interface PWB replacement / Main charger output voltage adjustment (SIM 8-2) / Power Source-ON (After-work) Execute the image density correction (SIM 44-6). / Execute the half tone density correction (SIM 44-26).

Main code	Sub code	Title	Half tone correction (1st patch) trouble (YELLOW)	
F2	83	Case 6	Trouble position/ cause	Developing bias output trouble
			Remedy	(Check) Developing bias contact check / High voltage PWB check / Developing bias voltage check
				(Repair) High voltage power PWB replacement / Developing bias output voltage adjustment (SIM8-1) / Power Source-ON
				(After-work) Execute the image density correction (SIM 44-6). / Execute the half tone density correction (SIM 44-26).
		Case 7	Trouble position/ cause	Transfer trouble
			Remedy	(Check) Transfer roller check / High voltage power PWB check / Transfer voltage check
				(Repair) Transfer roller replacement / High voltage power PWB replacement / Transfer output voltage adjustment (SIM 8-6) / Power Source-ON
				(After-work) Execute the image density correction (SIM 44-6). / Execute the half tone density correction (SIM 44-26).
		Case 8	Trouble position/ cause	Scanner (writing) unit trouble (Scanner (writing) motor trouble / Laser beam sensor trouble / Internal optical system dirt)
			Remedy	(Check) Check the operation of the scanner (writing) unit. (SIM 61-1)
				(Repair) Replace the scanner (writing) unit. / Power Source-ON

Main code	Sub code	Title	Half tone correction (2nd patch) trouble (BLACK)		
F2	84	Phenomena	Display	Lamp Message	
			Detail	In the half toner image density correction, the toner patch densities at the boundary sections of the low density area, the medium density area, and the high density area are abnormally different from each other.	
			Section	Image process	
			Operation mode	Image density correction	
			Note		
			Case 1	Trouble position/ cause	Image density sensor trouble
				Remedy	(Check) Check the image density sensor (dirt, output). (SIM44-2)
		(Repair) Clean or replace the image density sensor. / Power Source-ON			
		(After-work) Adjust ADJ M6			
		Case 2	Trouble position/ cause	Transfer belt trouble (dirt, scratch)	
			Remedy	(Check) Toner dispersion from transfer belt cleaner, OPC drum unit, developing unit	
				(Repair) Transfer belt cleaning, replacement / Transfer belt cleaner replacement / OPC drum unit, developing unit cleaning / Power Source-ON	
		(After-work)			
		Case 3	Trouble position/ cause	PCU SUB PWB trouble	
			Remedy	(Check) Check the PCU SUB PWB humidity sensor circuit.	
				(Repair) PCU SUB PWB replacement / Power Source-ON	
		(After-work)			
		Case 4	Trouble position/ cause	PCU MAIN PWB trouble	
			Remedy	(Check)	
				(Repair) Replace the PCU MAIN PWB. / Power Source-ON	
		(After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)			

Main code	Sub code	Title	Half tone correction (2nd patch) trouble (BLACK)	
<b>F2</b>	<b>84</b>	Case 5	Trouble position/ cause	Main charger output trouble
			Remedy	(Check) Main charger contact check / Main charger unit check / High voltage power PWB, high voltage interface PWB check / Main charger output voltage check  (Repair) Main charger unit replacement / High voltage power PWB, high voltage interface PWB replacement / Main charger output voltage adjustment (SIM 8-2) / Power Source-ON  (After-work) Execute the image density correction (SIM 44-6). / Execute the half tone density correction (SIM 44-26).
		Case 6	Trouble position/ cause	Developing bias output trouble
			Remedy	(Check) Developing bias contact check / High voltage PWB check / Developing bias voltage check  (Repair) High voltage power PWB replacement / Developing bias output voltage adjustment (SIM8-1) / Power Source-ON  (After-work) Execute the image density correction (SIM 44-6). / Execute the half tone density correction (SIM 44-26).
		Case 7	Trouble position/ cause	Transfer trouble
			Remedy	(Check) Transfer roller check / High voltage power PWB check / Transfer voltage check  (Repair) Transfer roller replacement / High voltage power PWB replacement / Transfer output voltage adjustment (SIM 8-6) / Power Source-ON  (After-work) Execute the image density correction (SIM 44-6). / Execute the half tone density correction (SIM 44-26).

Main code	Sub code	Title	Half tone correction (2nd patch) trouble (BLACK)	
<b>F2</b>	<b>84</b>	Case 8	Trouble position/ cause	Scanner (writing) unit trouble (Scanner (writing) motor trouble / Laser beam sensor trouble / Internal optical system dirt)
			Remedy	(Check) Check the operation of the scanner (writing) unit. (SIM 61-1)  (Repair) Replace the scanner (writing) unit. / Power Source-ON  (After-work) Adjust ADJM7/ADJM9/ADJM10

Main code	Sub code	Title	Half tone correction (2nd) patch trouble (CYAN)	
<b>F2</b>	<b>85</b>	Phenomena	Display	Lamp Message
			Detail	In the half toner image density correction, the toner patch densities at the boundary sections of the low density area, the medium density area, and the high density area are abnormally different from each other.
			Section	Image process
			Operation mode	Image density correction
			Note	
		Case 1	Trouble position/ cause	Image density sensor trouble
			Remedy	(Check) Check the image density sensor (dirt, output). (SIM44-2)  (Repair) Clean or replace the image density sensor. / Power Source-ON  (After-work) Adjust ADJ M6
		Case 2	Trouble position/ cause	Transfer belt trouble (dirt, scratch)
			Remedy	(Check) Toner dispersion from transfer belt cleaner, OPC drum unit, developing unit  (Repair) Transfer belt cleaning, replacement / Transfer belt cleaner replacement / OPC drum unit, developing unit cleaning / Power Source-ON  (After-work)
		Case 3	Trouble position/ cause	PCU SUB PWB trouble
			Remedy	(Check) Check the PCU SUB PWB humidity sensor circuit.  (Repair) PCU SUB PWB replacement / Power Source-ON  (After-work)

Main code	Sub code	Title	Half tone correction (2nd) patch trouble (CYAN)	
F2	85	Case 4	Trouble position/cause	PCU MAIN PWB trouble
			Remedy	(Check) (Repair) Replace the PCU MAIN PWB. / Power Source-ON (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)
		Case 5	Trouble position/cause	Main charger output trouble
			Remedy	(Check) Main charger contact check / Main charger unit check / High voltage power PWB, high voltage interface PWB check / Main charger output voltage check (Repair) Main charger unit replacement / High voltage power PWB, high voltage interface PWB replacement / Main charger output voltage adjustment (SIM 8-2) / Power Source-ON (After-work) Execute the image density correction (SIM 44-6). / Execute the half tone density correction (SIM 44-26).
		Case 6	Trouble position/cause	Developing bias output trouble
			Remedy	(Check) Developing bias contact check / High voltage PWB check / Developing bias voltage check (Repair) High voltage power PWB replacement / Developing bias output voltage adjustment (SIM8-1) / Power Source-ON (After-work) Execute the image density correction (SIM 44-6). / Execute the half tone density correction (SIM 44-26).

Main code	Sub code	Title	Half tone correction (2nd) patch trouble (CYAN)	
F2	85	Case 7	Trouble position/cause	Transfer trouble
			Remedy	(Check) Transfer roller check / High voltage power PWB check / Transfer voltage check (Repair) Transfer roller replacement / High voltage power PWB replacement / Transfer output voltage adjustment (SIM 8-6) / Power Source-ON (After-work) Execute the image density correction (SIM 44-6). / Execute the half tone density correction (SIM 44-26).
		Case 8	Trouble position/cause	Scanner (writing) unit trouble (Scanner (writing) motor trouble / Laser beam sensor trouble / Internal optical system dirt)
			Remedy	(Check) Check the operation of the scanner (writing) unit. (SIM 61-1) (Repair) Replace the scanner (writing) unit. / Power Source-ON (After-work) Adjust ADJM7/ADJM9/ADJM10

Main code	Sub code	Title	Half tone correction (2nd) patch trouble (MAGENTA)	
F2	86	Phenomena	Display	Lamp Message
			Detail	In the half toner image density correction, the toner patch densities at the boundary sections of the low density area, the medium density area, and the high density area are abnormally different from each other.
			Section	Image process
			Operation mode	Image density correction
			Note	
		Case 1	Trouble position/cause	Image density sensor trouble
			Remedy	(Check) Check the image density sensor (dirt, output). (SIM44-2) (Repair) Clean or replace the image density sensor. / Power Source-ON (After-work) Adjust ADJ M6

Main code	Sub code	Title	Half tone correction (2nd) patch trouble (MAGENTA)	
F2	86	Case 2	Trouble position/cause	Transfer belt trouble (dirt, scratch)
			Remedy	(Check) Toner dispersion from transfer belt cleaner, OPC drum unit, developing unit
				(Repair) Transfer belt cleaning, replacement / Transfer belt cleaner replacement / OPC drum unit, developing unit cleaning / Power Source-ON (After-work)
		Case 3	Trouble position/cause	PCU SUB PWB trouble
			Remedy	(Check) Check the PCU SUB PWB humidity sensor circuit.
				(Repair) PCU SUB PWB replacement / Power Source-ON (After-work)
		Case 4	Trouble position/cause	PCU MAIN PWB trouble
			Remedy	(Check)
				(Repair) Replace the PCU MAIN PWB. / Power Source-ON (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)
		Case 5	Trouble position/cause	Main charger output trouble
			Remedy	(Check) Main charger contact check / Main charger unit check / High voltage power PWB, high voltage interface PWB check / Main charger output voltage check
				(Repair) Main charger unit replacement / High voltage power PWB, high voltage interface PWB replacement / Main charger output voltage adjustment (SIM 8-2) / Power Source-ON (After-work) Execute the image density correction (SIM 44-6). / Execute the half tone density correction (SIM 44-26).

Main code	Sub code	Title	Half tone correction (2nd) patch trouble (MAGENTA)	
F2	86	Case 6	Trouble position/cause	Developing bias output trouble
			Remedy	(Check) Developing bias contact check / High voltage PWB check / Developing bias voltage check
				(Repair) High voltage power PWB replacement / Developing bias output voltage adjustment (SIM8-1) / Power Source-ON
		(After-work) Execute the image density correction (SIM 44-6). / Execute the half tone density correction (SIM 44-26).		
		Case 7	Trouble position/cause	Transfer trouble
			Remedy	(Check) Transfer roller check / High voltage power PWB check / Transfer voltage check
				(Repair) Transfer roller replacement / High voltage power PWB replacement / Transfer output voltage adjustment (SIM 8-6) / Power Source-ON (After-work) Execute the image density correction (SIM 44-6). / Execute the half tone density correction (SIM 44-26).
		Case 8	Trouble position/cause	Scanner (writing) unit trouble (Scanner (writing) motor trouble / Laser beam sensor trouble / Internal optical system dirt)
			Remedy	(Check) Check the operation of the scanner (writing) unit. (SIM 61-1)
		(Repair) Replace the scanner (writing) unit. / Power Source-ON (After-work) Adjust ADJM7/ADJM9/ADJM10		

Main code	Sub code	Title	Half tone correction (2nd) patch trouble (YELLOW)	
F2	87	Phenomena	Display	Lamp Message
			Detail	In the half toner image density correction, the toner patch densities at the boundary sections of the low density area, the medium density area, and the high density area are abnormally different from each other.
			Section	Image process
			Operation mode	Image density correction
			Note	

Main code	Sub code	Title	Half tone correction (2nd) patch trouble (YELLOW)	
F2	87	Case 1	Trouble position/ cause	Image density sensor trouble
			Remedy	(Check) Check the image density sensor (dirt, output). (SIM44-2)
				(Repair) Clean or replace the image density sensor. / Power Source-ON
		(After-work) Adjust ADJ M6		
		Case 2	Trouble position/ cause	Transfer belt trouble (dirt, scratch)
			Remedy	(Check) Toner dispersion from transfer belt cleaner, OPC drum unit, developing unit
				(Repair) Transfer belt cleaning, replacement / Transfer belt cleaner replacement / OPC drum unit, developing unit cleaning / Power Source-ON
		(After-work)		
		Case 3	Trouble position/ cause	PCU SUB PWB trouble
			Remedy	(Check) Check the PCU SUB PWB humidity sensor circuit.
				(Repair) PCU SUB PWB replacement / Power Source-ON
				(After-work)
(Check)				
Case 4	Trouble position/ cause	PCU MAIN PWB trouble		
	Remedy	(Repair) Replace the PCU MAIN PWB. / Power Source-ON		
		(After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)		

Main code	Sub code	Title	Half tone correction (2nd) patch trouble (YELLOW)			
F2	87	Case 5	Trouble position/ cause	Main charger output trouble		
			Remedy	(Check) Main charger contact check / Main charger unit check / High voltage power PWB, high voltage interface PWB check / Main charger output voltage check		
				(Repair) Main charger unit replacement / High voltage power PWB, high voltage interface PWB replacement / Main charger output voltage adjustment (SIM 8-2) / Power Source-ON		
				(After-work) Execute the image density correction (SIM 44-6). / Execute the half tone density correction (SIM 44-26).		
				Case 6	Trouble position/ cause	Developing bias output trouble
					Remedy	(Check) Developing bias contact check / High voltage PWB check / Developing bias voltage check
		(Repair) High voltage power PWB replacement / Developing bias output voltage adjustment (SIM8-1) / Power Source-ON				
		(After-work) Execute the image density correction (SIM 44-6). / Execute the half tone density correction (SIM 44-26).				
		Case 7	Trouble position/ cause	Transfer trouble		
			Remedy	(Check) Transfer roller check / High voltage power PWB check / Transfer voltage check		
				(Repair) Transfer roller replacement / High voltage power PWB replacement / Transfer output voltage adjustment (SIM 8-6) / Power Source-ON		
		(After-work) Execute the image density correction (SIM 44-6). / Execute the half tone density correction (SIM 44-26).				

Main code	Sub code	Title	Half tone correction (2nd) patch trouble (YELLOW)	
F2	87	Case 8	Trouble position/ cause	Scanner (writing) unit trouble (Scanner (writing) motor trouble / Laser beam sensor trouble / Internal optical system dirt)
			Remedy	(Check) Check the operation of the scanner (writing) unit. (SIM 61-1) (Repair) Replace the scanner (writing) unit. / Power Source-ON (After-work) Adjust ADJM7/ADJM9/ADJM10

Main code	Sub code	Title	Half tone correction trouble	
F2	90	Phenomena	Display	Lamp Message
			Detail	The max. value of the difference (between colors) between the half tone correction value and the previous correction value exceeds the specified level.
			Section	Image process
			Operation mode	Image density correction
			Note	
		Case 1	Trouble position/ cause	Image density sensor trouble
			Remedy	(Check) Check the image density sensor (dirt, output) (SIM44-2) / Check the image density sensor calibration plate. / Check the operation of the image density sensor calibration plate switching. (Repair) Clean or replace the image density sensor. / Clean or replace the image density sensor calibration plate. / Replace the image density sensor calibration plate switch solenoid. / Power Source-ON (After-work) Adjust ADJ M6
		Case 2	Trouble position/ cause	Transfer belt trouble (dirt, scratch)
			Remedy	(Check) Toner dispersion from the transfer belt, the OPC drum unit, and the developing unit (Repair) Clean or replace the transfer belt. / Replace the transfer belt cleaner. / Clean the OPC drum and the developing unit. / Power Source-ON (After-work)

Main code	Sub code	Title	Half tone correction trouble	
F2	90	Case 3	Trouble position/ cause	PCU SUB PWB trouble
			Remedy	(Check) Check the PCU SUB PWB image density sensor circuit. (Repair) PCU SUB PWB replacement / Power Source-ON (After-work)
		Case 4	Trouble position/ cause	PCU MAIN PWB trouble
			Remedy	(Check) (Repair) Replace the PCU MAIN PWB. / Power Source-ON (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)
		Case 5	Trouble position/ cause	Main charger output trouble
			Remedy	(Check) Main charger contact check / Main charger unit check / High voltage power PWB, high voltage interface PWB check / Main charger output voltage check (Repair) Main charger unit replacement / High voltage power PWB, high voltage interface PWB replacement / Main charger output voltage adjustment (SIM 8-2) / Power Source-ON (After-work) Execute the image density correction (SIM 44-6). / Execute the half tone density correction (SIM 44-26).
		Case 6	Trouble position/ cause	Developing bias output trouble
			Remedy	(Check) Developing bias contact check / High voltage PWB check / Developing bias voltage check (Repair) High voltage power PWB replacement / Developing bias output voltage adjustment (SIM8-1) / Power Source-ON (After-work) Execute the image density correction (SIM 44-6). / Execute the half tone density correction (SIM 44-26).

Main code	Sub code	Title	Half tone correction trouble	
<b>F2</b>	<b>90</b>	Case 7	Trouble position/cause	Transfer trouble
			Remedy	(Check) Transfer roller check / High voltage power PWB check / Transfer voltage check (Repair) Transfer roller replacement / High voltage power PWB replacement / Transfer output voltage adjustment (SIM 8-6) / Power Source-ON (After-work) Execute the image density correction (SIM 44-6). / Execute the half tone density correction (SIM 44-26).
		Case 8	Trouble position/cause	Scanner (writing) unit trouble (Scanner (writing) motor trouble / Laser beam sensor trouble / Internal optical system dirt)
			Remedy	(Check) Check the operation of the scanner (writing) unit. (SIM 61-1) (Repair) Replace the scanner (writing) unit. / Power Source-ON (After-work) Adjust ADJM7/ADJM9/ADJM10

Main code	Sub code	Title	Lift up trouble (Paper 1)	
<b>F3</b>	<b>12</b>	Phenomena	Display	Lamp Message
			Detail	Lifting is not completed (LUD1) is not turned ON within the specified time after turning ON the lift motor.
			Section	Paper tray 1
			Operation mode	Paper tray lift up
			Note	
		Case 1	Trouble position/cause	LUD1 detector trouble
			Remedy	(Check) Check operation of the LUD1 detector (SIM 30-2). (Repair) Replace the LUD1 detector. / Power Source-ON (After-work)
		Case 2	Trouble position/cause	Lift mechanism (motor, etc.) trouble
			Remedy	(Check) Check operations of the lift mechanism section (motor, etc.). (Repair) Replace the e lift unit. / Power Source-ON (After-work)

Main code	Sub code	Title	Lift up trouble (Paper 1)	
<b>F3</b>	<b>12</b>	Case 3	Trouble position/cause	Bad connection between the PCU MAIN PWB and the lift unit.
			Remedy	(Check) Check connection between the PCU MAIN PWB and the lift unit. (Repair) Repair or replace the connector and cables of the PCU MAIN PWB and the lift unit. / Power Source-ON (After-work)
		Case 4	Trouble position/cause	PCU MAIN PWB trouble
			Remedy	(Check) (Repair) Replace the PCU MAIN PWB. / Power Source-ON (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)

Main code	Sub code	Title	Lift up trouble (Paper 2)	
<b>F3</b>	<b>22</b>	Phenomena	Display	Lamp Message
			Detail	Lifting is not completed (LUD2) is not turned ON within the specified time after turning ON the lift motor.
			Section	Paper tray 2
			Operation mode	Paper tray lift up
			Note	
		Case 1	Trouble position/cause	LUD2 detector trouble
			Remedy	(Check) Check operation of the LUD2 detector (SIM 30-2). (Repair) Replace the LUD2 detector. / Power Source-ON (After-work)
		Case 2	Trouble position/cause	Lift mechanism (motor, etc.) trouble
			Remedy	(Check) Check operations of the lift mechanism section (motor, etc.). (Repair) replace the e lift unit. / Power Source-ON (After-work)

Main code	Sub code	Title	Lift up trouble (Paper 2)	
F3	22	Case 3	Trouble position/cause	Bad connection between the PCU MAIN PWB and the lift unit.
			Remedy	(Check) Check connection between the PCU MAIN PWB and the lift unit.
				(Repair) Repair or replace the connector and cables of the PCU MAIN PWB and the lift unit. / Power Source-ON
				(After-work)
		Case 4	Trouble position/cause	PCU MAIN PWB trouble
			Remedy	(Check)
				(Repair) Replace the PCU MAIN PWB. / Power Source-ON
				(After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)

Main code	Sub code	Title	Lift up trouble (Paper 3)	
F3	32	Case 3	Trouble position/cause	Bad connection between the PCU MAIN PWB and the lift unit.
			Remedy	(Check) Check connection between the PCU MAIN PWB and the lift unit.
				(Repair) Repair or replace the connector and cables of the PCU MAIN PWB and the lift unit. / Power Source-ON
				(After-work)
		Case 4	Trouble position/cause	PCU MAIN PWB trouble
			Remedy	(Check)
				(Repair) Replace the PCU MAIN PWB. / Power Source-ON
				(After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)

Main code	Sub code	Title	Lift up trouble (Paper 3)		
F3	32	Phenomena	Display	Lamp	
				Message	
			Detail	Lifting is not completed (LUD3) is not turned ON within the specified time after turning ON the lift motor.	
				Section	Paper tray 3
				Operation mode	Paper tray lift up
			Note		
			Case 1	Trouble position/cause	LUD3 detector trouble
		Remedy		(Check) Check operation of the LUD3 detector (SIM 30-2).	
				(Repair) Replace the LUD3 detector. / Power Source-ON	
				(After-work)	
		Case 2	Trouble position/cause	Lift mechanism (motor, etc.) trouble	
			Remedy	(Check) Check operations of the lift mechanism section (motor, etc.).	
				(Repair) replace the e lift unit. / Power Source-ON	
				(After-work)	

Main code	Sub code	Title	Lift up trouble (Paper 4)		
F3	42	Phenomena	Display	Lamp	
				Message	
			Detail	Lifting is not completed (LUD4) is not turned ON within the specified time after turning ON the lift motor.	
				Section	Paper tray 4
				Operation mode	Paper tray lift up
			Note		
			Case 1	Trouble position/cause	LUD4 detector trouble
		Remedy		(Check) Check operation of the LUD4 detector (SIM 30-2).	
				(Repair) Replace the LUD4 detector. / Power Source-ON	
				(After-work)	
		Case 2	Trouble position/cause	Lift mechanism (motor, etc.) trouble	
			Remedy	(Check) Check operations of the lift mechanism section (motor, etc.).	
				(Repair) replace the e lift unit. / Power Source-ON	
				(After-work)	

Main code	Sub code	Title	Lift up trouble (Paper 4)	
F3	42	Case 3	Trouble position/cause	Bad connection between the PCU MAIN PWB and the lift unit.
			Remedy	(Check) Check connection between the PCU MAIN PWB and the lift unit.
				(Repair) Repair or replace the connector and cables of the PCU MAIN PWB and the lift unit. / Power Source-ON
				(After-work)
		Case 4	Trouble position/cause	PCU MAIN PWB trouble
			Remedy	(Check)
(Repair) Replace the PCU MAIN PWB. / Power Source-ON				
(After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)				

Main code	Sub code	Title	ICU PWB - printer controller communication trouble (ICU detection)	
F9	0	Phenomena	Display	Lamp
				Message
			Detail	Communication (protocol, data) error
			Section	ICU IMAGE PWB / PRINTER CONTROLLER
			Operation mode	Warm-up / Printing
			Note	
			Case 1	Trouble position/cause
		Remedy		(Check) Check the printer I/F PWB.
				(Repair) Replace the printer I/F PWB. / Power Source-ON
		(After-work)		
		Case 2	Trouble position/cause	Bad connection of the signal line between the printer controller and the ICU image PWB.
			Remedy	(Check) Check the signal line between the printer controller and the ICU image PWB.
				(Repair) Repair or replace the cable and the connector between the printer controller and the ICU image PWB. / Power Source-ON
(After-work)				

Main code	Sub code	Title	ICU PWB - printer controller communication trouble (ICU detection)	
F9	0	Case 3	Trouble position/cause	ICU IMAGE PWB trouble
			Remedy	(Check)
				(Repair) ICU IMAGE PWB replacement / Power Source-ON
		(After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)		
		Case 4	Trouble position/cause	Printer controller trouble
			Remedy	(Check) Check the printer controller.
(Repair) Repair or replace the printer controller. / Power Source-ON				
(After-work)				

Main code	Sub code	Title	Fusing main temperature sensor (upper) (Thermistor) open / Fusing unit not-installed (THS1)		
H2	0	Phenomena	Display	Lamp	
				Message	
			Detail	Fusing main temperature sensor (upper) (Thermistor) output line open (A voltage of 4.6V or above is detected.) / The fusing unit is not installed.	
				Section	Fusing
			Operation mode	All modes	
			Note		
			Case 1	Trouble position/cause	Fusing main temperature sensor (upper) (Thermistor) output line open trouble
				Remedy	(Check) Bad connection between the fusing main temperature sensor (upper) (Thermistor) and the PCU SUB PWB
					(Repair) Check connection of the fusing main temperature sensor (upper) (Thermistor) and the PCU SUB PWB. / Power Source-ON
		(After-work) Repair or replace the harness and connector between the fusing main temperature sensor (upper) (Thermistor) and the PCU SUB PWB.			

Main code	Sub code	Title	Fusing main temperature sensor (upper) (Thermistor) open / Fusing unit not-installed (THS1)	
H2	0	Case 2	Trouble position/ cause	PCU SUB PWB trouble
			Remedy	(Check) Check the PCU SUB PWB fusing temperature sensor circuit. (Repair) PCU SUB PWB replacement / Power Source-ON (After-work)

Main code	Sub code	Title	Fusing main temperature sensor (lower) (Thermistor) open / Fusing unit not-installed (THS2)	
H2	1	Phenomena	Display	Lamp Message
			Detail	Fusing main temperature sensor (lower) (Thermistor) output line open (A voltage of 4.6V or above is detected.) / The fusing unit is not installed.
			Section	Fusing
			Operation mode	All modes
			Note	
		Case 1	Trouble position/ cause	Fusing main temperature sensor (lower) (Thermistor) output line open trouble
			Remedy	(Check) Bad connection between the fusing main temperature sensor (lower) (Thermistor) and the PCU SUB PWB (Repair) Check connection of the fusing main temperature sensor (lower) (Thermistor) and the PCU SUB PWB. / Power Source-ON (After-work) Repair or replace the harness and connector between the fusing main temperature sensor (lower) (Thermistor) and the PCU SUB PWB.
		Case 2	Trouble position/ cause	PCU SUB PWB trouble
			Remedy	(Check) Check the PCU SUB PWB fusing temperature sensor circuit. (Repair) PCU SUB PWB replacement / Power Source-ON (After-work)

Main code	Sub code	Title	Fusing sub temperature sensor (upper) (Thermistor) open / Fusing unit not-installed (THS3)	
H2	2	Phenomena	Display	Lamp Message
			Detail	Fusing sub temperature sensor (upper) (Thermistor) output line open (A voltage of 4.6V or above is detected.) / The fusing unit is not installed.
			Section	Fusing
			Operation mode	All modes
			Note	
		Case 1	Trouble position/ cause	Fusing sub temperature sensor (upper) (Thermistor) output line open trouble
			Remedy	(Check) Bad connection between the fusing sub temperature sensor (upper) (Thermistor) and the PCU SUB PWB (Repair) Check connection of the fusing sub temperature sensor (upper) (Thermistor) and the PCU SUB PWB. / Power Source-ON (After-work) Repair or replace the harness and connector between the fusing sub temperature sensor (upper) (Thermistor) and the PCU SUB PWB.
		Case 2	Trouble position/ cause	PCU SUB PWB trouble
			Remedy	(Check) Check the PCU SUB PWB fusing temperature sensor circuit. (Repair) PCU SUB PWB replacement / Power Source-ON (After-work)

Main code	Sub code	Title	Fusing sub temperature sensor (lower) (Thermistor) open / Fusing unit not-installed (THS4)	
H2	3	Phenomena	Display	Lamp Message
			Detail	Fusing main temperature sensor (lower) (Thermistor) output line open (A voltage of 4.6V or above is detected.) / The fusing unit is not installed.
			Section	Fusing
			Operation mode	All modes
			Note	

Main code	Sub code	Title	Fusing sub temperature sensor (lower) (Thermistor) open / Fusing unit not-installed (THS4)	
<b>H2</b>	<b>3</b>	Case 1	Trouble position/ cause	Fusing main temperature sensor (lower) (Thermistor) output line open trouble
			Remedy	(Check) Bad connection between the fusing main temperature sensor (lower) (Thermistor) and the PCU SUB PWB  (Repair) Check connection of the fusing main temperature sensor (lower) (Thermistor) and the PCU SUB PWB. / Power Source-ON  (After-work) Repair or replace the harness and connector between the fusing main temperature sensor (lower) (Thermistor) and the PCU SUB PWB.
		Case 2	Trouble position/ cause	PCU SUB PWB trouble
			Remedy	(Check) Check the PCU SUB PWB fusing temperature sensor circuit.  (Repair) PCU SUB PWB replacement / Power Source-ON  (After-work)

Main code	Sub code	Title	Fusing section high temperature trouble (THS1)	
<b>H3</b>	<b>0</b>	Phenomena	Display	Lamp Message
			Detail	The fusing temperature rises above 220°C. (The temperature sensor (Thermistor) voltage of 0.85V or less is detected.)
			Section	Fusing
			Operation mode	All modes
			Note	
		Case 1	Trouble position/ cause	Temperature sensor (Thermistor) trouble
			Remedy	(Check) Check for dirt on the temperature sensor (Thermistor).  (Repair) Clean or replace the temperature sensor (Thermistor). / SIM 14  (After-work)
		Case 2	Trouble position/ cause	PCU SUB PWB trouble
			Remedy	(Check) Check the PCU SUB PWB fusing temperature sensor circuit.  (Repair) PCU SUB PWB replacement / SIM 14  (After-work)

Main code	Sub code	Title	Fusing section high temperature trouble (THS1)	
<b>H3</b>	<b>0</b>	Case 3	Trouble position/ cause	Heater lamp control PWB (AC SUB PWB) trouble
			Remedy	(Check) Check the operation of the heater lamp. (SIM 5-2)  (Repair) Replace the heater lamp control PWB (AC SUB PWB). / SIM 14  (After-work)

Main code	Sub code	Title	Fusing section high temperature trouble (THS2)	
<b>H3</b>	<b>1</b>	Phenomena	Display	Lamp Message
			Detail	The fusing temperature rises above 220°C. (The temperature sensor (Thermistor) voltage of 0.85V or less is detected.)
			Section	Fusing
			Operation mode	All modes
			Note	
		Case 1	Trouble position/ cause	Temperature sensor (Thermistor) trouble
			Remedy	(Check) Check for dirt on the temperature sensor (Thermistor).  (Repair) Clean or replace the temperature sensor (Thermistor). / SIM 14  (After-work)
		Case 2	Trouble position/ cause	PCU SUB PWB trouble
			Remedy	(Check) Check the PCU SUB PWB fusing temperature sensor circuit.  (Repair) PCU SUB PWB replacement / SIM 14  (After-work)
		Case 3	Trouble position/ cause	Heater lamp control PWB (AC SUB PWB) trouble
			Remedy	(Check) Check the operation of the heater lamp. (SIM 5-2)  (Repair) Replace the heater lamp control PWB (AC SUB PWB). / SIM 14  (After-work)

Main code	Sub code	Title	Fusing section high temperature trouble (THS3)		
H3	2	Phenomena	Display	Lamp Message	
			Detail	The fusing temperature rises above 220°C. (The temperature sensor (Thermistor) voltage of 0.85V or less is detected.)	
			Section	Fusing	
			Operation mode	All modes	
			Note		
			Case 1	Trouble position/cause	Temperature sensor (Thermistor) trouble
				Remedy	(Check) Check for dirt on the temperature sensor (Thermistor).
					(Repair) Clean or replace the temperature sensor (Thermistor). / SIM 14 (After-work)
			Case 2	Trouble position/cause	PCU SUB PWB trouble
				Remedy	(Check) Check the PCU SUB PWB fusing temperature sensor circuit. (Repair) PCU SUB PWB replacement / SIM 14 (After-work)
		Case 3			Trouble position/cause
			Remedy	(Check) Check the operation of the heater lamp. (SIM 5-2) (Repair) Replace the heater lamp control PWB (AC SUB PWB). / SIM 14 (After-work)	

Main code	Sub code	Title	Fusing section high temperature trouble (THS4)		
H3	3	Phenomena	Display	Lamp Message	
			Detail	The fusing temperature rises above 220°C. (The temperature sensor (Thermistor) voltage of 0.85V or less is detected.)	
			Section	Fusing	
			Operation mode	All modes	
			Note		
			Case 1	Trouble position/cause	Temperature sensor (Thermistor) trouble
				Remedy	(Check) Check for dirt on the temperature sensor (Thermistor). (Repair) Clean or replace the temperature sensor (Thermistor). / SIM 14 (After-work)

Main code	Sub code	Title	Fusing section high temperature trouble (THS4)			
H3	3	Case 2	Trouble position/cause	PCU SUB PWB trouble		
			Remedy	(Check) Check the PCU SUB PWB fusing temperature sensor circuit. (Repair) PCU SUB PWB replacement / SIM 14 (After-work)		
				Case 3	Trouble position/cause	Heater lamp control PWB (AC SUB PWB) trouble
					Remedy	(Check) Check the operation of the heater lamp. (SIM 5-2) (Repair) Replace the heater lamp control PWB (AC SUB PWB). / SIM 14 (After-work)

Main code	Sub code	Title	Fusing section (upper) low temperature trouble (HL1)		
H4	0	Phenomena	Display	Lamp Message	
			Detail	The specified temperature is not reached within the specified time (5 min) after starting warm-up.	
			Section	Fusing	
			Operation mode	All modes	
			Note		
			Case 1	Trouble position/cause	Temperature sensor (Thermistor) trouble
				Remedy	(Check) Check for dirt on the temperature sensor (Thermistor). (Repair) Clean or replace the temperature sensor (Thermistor). / SIM 14 (After-work)
					Case 2
			Remedy	(Check) Check the PCU SUB PWB fusing temperature sensor circuit. (Repair) PCU SUB PWB replacement / SIM 14 (After-work)	
				Case 3	
		Remedy	(Check) Check the operation of the heater lamp. (SIM 5-2) (Repair) Replace the heater lamp control PWB (AC SUB PWB). / SIM 14 (After-work)		

Main code	Sub code	Title	Fusing section (upper) low temperature trouble (HL1)	
H4	0	Case 4	Trouble position/cause	AC main power PWB trouble
			Remedy	(Check) Check the operation of the heater lamp. (SIM 5-2).
				(Repair) AC main power PWB replacement / SIM 14 (After-work)
		Case 5	Trouble position/cause	Interlock switch (door) trouble
			Remedy	(Check) Check the interlock switch (door).
				(Repair) Replace the interlock switch (door). / SIM 14 (After-work)
		Case 6	Trouble position/cause	Thermostat operation or trouble
			Remedy	(Check) Check the thermostat contact.
				(Repair) Reset or replace the thermostat. / SIM 14 (After-work)
		Case 7	Trouble position/cause	Heater lamp trouble
			Remedy	(Check) Check the operation of the heater lamp. (SIM5-2)
				(Repair) Replace the heater lamp. / SIM 14 (After-work)

Main code	Sub code	Title	Fusing section (lower) low temperature trouble (HL2)		
H4	1	Phenomena	Display	Lamp	
				Message	
			Detail	The specified temperature is not reached within the specified time (5 min) after starting warm-up.	
				Section	Fusing
			Operation mode	All modes	
			Note		
			Case 1	Trouble position/cause	Temperature sensor (Thermistor) trouble
		Remedy		(Check) Check for dirt on the temperature sensor (Thermistor).	
				(Repair) Clean or replace the temperature sensor (Thermistor). / SIM 14 (After-work)	

Main code	Sub code	Title	Fusing section (lower) low temperature trouble (HL2)	
H4	1	Case 2	Trouble position/cause	PCU SUB PWB trouble
			Remedy	(Check) Check the PCU SUB PWB fusing temperature sensor circuit.
				(Repair) PCU SUB PWB replacement / SIM 14 (After-work)
		Case 3	Trouble position/cause	Heater lamp control PWB (AC SUB PWB) trouble
			Remedy	(Check) Check the operation of the heater lamp. (SIM 5-2)
				(Repair) Replace the heater lamp control PWB (AC SUB PWB). / SIM 14 (After-work)
		Case 4	Trouble position/cause	AC main power PWB trouble
			Remedy	(Check) Check the operation of the heater lamp. (SIM 5-2).
				(Repair) AC main power PWB replacement / SIM 14 (After-work)
		Case 5	Trouble position/cause	Interlock switch (door) trouble
			Remedy	(Check) Check the interlock switch (door).
				(Repair) Replace the interlock switch (door). / SIM 14 (After-work)
		Case 6	Trouble position/cause	Thermostat operation or trouble
			Remedy	(Check) Check the thermostat contact.
				(Repair) Reset or replace the thermostat. / SIM 14 (After-work)
		Case 7	Trouble position/cause	Heater lamp trouble
			Remedy	(Check) Check the operation of the heater lamp. (SIM5-2)
				(Repair) Replace the heater lamp. / SIM 14 (After-work)

Main code	Sub code	Title	Paper jam in the fusing/paper exit section	
<b>H5</b>	<b>1</b>	Phenomena	Display	Lamp Message
			Detail	POD/DPID do not detect 3 sheets of paper continuously.
			Section	Fusing
			Operation mode	Copy / Print
			Note	
		Case 1	Trouble position/ cause	Paper remaining in the fusing section
			Remedy	(Check) Check for remaining paper. (Repair) Remove remaining paper. / SIM 14 (After-work)
		Case 2	Trouble position/ cause	POD/DPID detector trouble
			Remedy	(Check) Check operations of POD/DPID detectors. (SIM 30-1) (Repair) Replace the POD/DPID detectors. / SIM 14 (After-work)
		Case 3	Trouble position/ cause	Fusing unit installation trouble
			Remedy	(Check) Check installation of the fusing unit. (Repair) Install the fusing unit properly. / SIM 14 (After-work)
		Case 4	Trouble position/ cause	Fusing unit installation trouble
			Remedy	(Check) (Repair) SIM 14 (After-work)
		Case 5	Trouble position/ cause	PCU SUB PWB trouble
			Remedy	(Check) Check the PCU SUB PWB fusing temperature sensor circuit. (Repair) PCU SUB PWB replacement / SIM 14 (After-work)
		Case 6	Trouble position/ cause	PCU MAIN PWB trouble
			Remedy	(Check) (Repair) Replace the PCU MAIN PWB. / SIM 14 (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)

Main code	Sub code	Title	Fusing oil empty (Oil sensor trouble)	
<b>H6</b>	<b>0</b>	Phenomena	Display	Lamp Message
			Detail	Fusing oil empty is detected.
			Section	Fusing
			Operation mode	All modes
			Note	
		Case 1	Trouble position/ cause	Insufficient remaining quantity of fusing oil
			Remedy	(Check) Check the remaining quantity of fusing oil. (Repair) Supply fusing oil. / Power Source-ON (After-work)
		Case 2	Trouble position/ cause	Fusing oil sensor trouble
			Remedy	(Check) Check operation of the fusing oil sensor. (SIM30-1) (Repair) Replace the fusing oil sensor. / Power Source-ON (After-work)
		Case 3	Trouble position/ cause	PCU SUB PWB trouble
			Remedy	(Check) Check the PCU SUB PWB fusing oil sensor circuit. (Repair) PCU SUB PWB replacement / Power Source-ON (After-work)

Main code	Sub code	Title	AC input voltage (HLV) trouble	
<b>H7</b>	<b>0</b>	Phenomena	Display	Lamp Message
			Detail	An AC input voltage of 0.5V or less or 4.0V or above is detected more than 50 times repeatedly in sampling. (Sampling interval: 10msec)
			Section	Power source
			Operation mode	All modes
			Note	
		Case 1	Trouble position/ cause	DC SUB power PWB trouble
			Remedy	(Check) Check the DC SUB power PWB HLV signal circuit. (Repair) DC SUB power PWB replacement / Power Source-ON (After-work)

Main code	Sub code	Title		AC input voltage (HLV) trouble	
H7	0	Case 2		Trouble position/ cause	PCU SUB PWB trouble
				Remedy	(Check) Check the PCU SUB PWB HLV signal circuit. (Repair) PCU SUB PWB replacement / Power Source-ON (After-work)

Main code	Sub code	Title		Scanner feed trouble	
L1	0	Case 4		Trouble position/ cause	PCU MAIN PWB trouble
				Remedy	(Check) (Repair) Replace the PCU MAIN PWB. / Power Source-ON (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)

Main code	Sub code	Title		Scanner feed trouble	
L1	0	Phenomena		Display	Lamp Message
				Detail	Scanner feed is not completed within the specified time. (The scanner home position sensor (MHPS) does not turn OFF within the specified time after outputting the scanner motor ON (feeding start) signal.)
				Section	Scanner (reading)
				Operation mode	Initialize / Copy
				Note	
		Case 1		Trouble position/ cause	Scanner home position sensor (MHPS) trouble
				Remedy	(Check) Check the scanner home position sensor (MHPS) operation. (SIM 1-1/1-2) (Repair) Replace the scanner home position sensor (MHPS). / Power Source-ON (After-work)
		Case 2		Trouble position/ cause	Scanner motor trouble / Scanner motor control PWB trouble
				Remedy	(Check) Check the scanner motor. / Check the scanner motor control PWB. (SIM 1-1) (Repair) Replace the scanner motor. / Replace the scanner motor control PWB. / Power Source-ON (After-work)
		Case 3		Trouble position/ cause	Scanner mechanism section trouble
				Remedy	(Check) Check the scanner mechanism section. (Repair) "Repair the scanner mechanism section (scanner driver wire, drive pulley, etc.)." / Power Source-ON (After-work)

Main code	Sub code	Title		Scanner return trouble	
L3	0	Phenomena		Display	Lamp Message
				Detail	Scanner feed is not completed within the specified time. (The scanner home position sensor (MHPS) does not turn OFF within the specified time after outputting the scanner motor ON (feeding start) signal.)
				Section	Scanner (reading)
				Operation mode	Initialize / Copy
				Note	
		Case 1		Trouble position/ cause	Scanner home position sensor (MHPS) trouble
				Remedy	(Check) Check the scanner home position sensor (MHPS) operation. (SIM 1-1/1-2) (Repair) Replace the scanner home position sensor (MHPS). / Power Source-ON (After-work)
		Case 2		Trouble position/ cause	Scanner motor trouble / Scanner motor control PWB trouble
				Remedy	(Check) Check the scanner motor. / Check the scanner motor control PWB. (SIM 1-1) (Repair) Replace the scanner motor. / Replace the scanner motor control PWB. / Power Source-ON (After-work)

Main code	Sub code	Title	Scanner return trouble	
<b>L3</b>	<b>0</b>	Case 3	Trouble position/ cause	Scanner mechanism section trouble
			Remedy	(Check) Check the scanner mechanism section. (Repair) Repair the scanner mechanism section (scanner driver wire, drive pulley, etc.) / Power Source-ON (After-work)
		Case 4	Trouble position/ cause	PCU MAIN PWB trouble
			Remedy	(Check) (Repair) Replace the PCU MAIN PWB. / Power Source-ON (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)

Main code	Sub code	Title	Fusing motor trouble	
<b>L4</b>	<b>3</b>	Phenomena	Display	Lamp Message
			Detail	The motor lock signal is detected for 3.5sec during rotation of the fusing motor.
			Section	Paper feed
			Operation mode	Paper feed
			Note	
		Case 1	Trouble position/ cause	Fusing motor trouble
			Remedy	(Check) Check the fusing motor operation. (SIM 6-1) (Repair) Replace the fusing motor. / Power Source-ON (After-work)
		Case 2	Trouble position/ cause	PCU MAIN PWB trouble
			Remedy	(Check) (Repair) Replace the PCU MAIN PWB. / Power Source-ON (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)

Main code	Sub code	Title	Fusing motor trouble	
<b>L4</b>	<b>3</b>	Case 3	Trouble position/ cause	Fusing mechanism section trouble.
			Remedy	(Check) Check the loads in the fusing mechanism section. (Repair) Repair or replace parts in the fusing mechanism section. / Power Source-ON (After-work)

Main code	Sub code	Title	Developing motor trouble (BLACK)	
<b>L4</b>	<b>4</b>	Phenomena	Display	Lamp Message
			Detail	The motor lock signal is detected for 3.5sec during rotation of the developing motor.
			Section	Developing drive
			Operation mode	Warm-up / Copy / Print
			Note	
		Case 1	Trouble position/ cause	Developing motor trouble
			Remedy	(Check) Check the developing motor operation (SIM 25-1). (Repair) Replace the developing motor. / Power Source-ON (After-work)
		Case 2	Trouble position/ cause	Developing mechanism section trouble
			Remedy	(Check) Check the loads of the developing mechanism section. (Repair) Repair or replace the parts in the developing mechanism section. / Power Source-ON (After-work)
		Case 3	Trouble position/ cause	PCU MAIN PWB trouble
			Remedy	(Check) (Repair) Replace the PCU MAIN PWB. / Power Source-ON (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)

Main code	Sub code	Title	Developing motor trouble (COLOR)	
L4	5	Phenomena	Display	Lamp
				Message
			Detail	The motor lock signal is detected for 3.5sec during rotation of the developing motor.
			Section	Developing drive
			Operation mode	Warm-up / Copy / Print
			Note	
		Case 1	Trouble position/ cause	Developing motor trouble
			Remedy	(Check) Check the developing motor operation (SIM 25-1). (Repair) Replace the developing motor. / Power Source-ON (After-work)
		Case 2	Trouble position/ cause	Developing mechanism section trouble
			Remedy	(Check) Check the loads of the developing mechanism section. (Repair) Repair or replace the parts in the developing mechanism section. / Power Source-ON (After-work)
		Case 3	Trouble position/ cause	PCU MAIN PWB trouble
			Remedy	(Check) (Repair) Replace the PCU MAIN PWB. / Power Source-ON (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)
		Case 4	Trouble position/ cause	Developing motor power line trouble
			Remedy	(Check) Check the fuse (F707). (Repair) Replace the fuse (F707). / Power Source-ON (After-work)

Main code	Sub code	Title	Transfer belt lift trouble	
L4	6	Phenomena	Display	Lamp
				Message
			Detail	The transfer unit home position sensor (BLLD) ON/ OFF is not detected (kept ON or OFF) when the transfer unit is lifted up and down.
			Section	Image process (Transfer)
			Operation mode	Color/Monochrome copy (print) mode select
			Note	
		Case 1	Trouble position/ cause	Transfer belt lift motor trouble
			Remedy	(Check) Check the transfer belt lift motor. (SIM 6-1) (Repair) Replace the transfer belt lift motor. / Power Source-ON (After-work)
		Case 2	Trouble position/ cause	Transfer unit home position sensor (BLUD) trouble
			Remedy	(Check) Check the transfer unit home position sensor (BLUD) operation. (SIM 30-1) (Repair) Replace the transfer unit home position sensor (BLUD). / Power Source-ON (After-work)
		Case 3	Trouble position/ cause	Transfer unit lift mechanism section trouble
			Remedy	(Check) Check the transfer unit lift mechanism section. (Repair) Repair the transfer unit lift mechanism or replace the parts. / Power Source-ON (After-work)
		Case 4	Trouble position/ cause	PCU SUB PWB trouble
			Remedy	(Check) PCU SUB PWB transfer lift motor circuit check. (Repair) PCU SUB PWB replacement / Power Source-ON (After-work)

Main code	Sub code	Title	DC power cooling fan trouble	
L4	32	Phenomena	Display	Lamp Message
			Detail	Sampling is made 35 times at an interval of 100ms from rotation of the DC power cooling fan motor, and all the trouble signals are at HIGH level.
			Section	Power source
			Operation mode	All modes
			Note	
			Case 1	Trouble position/ cause
		Remedy	(Check) Check the DC power cooling fan motor operations. (SIM 6-2)	
			(Repair) Replace the DC power cooling fan motor. (After-work)	
		Case 2	Trouble position/ cause	Harness connection trouble between the PCU MAIN PWB and the DC power cooling fan motor. Control circuit trouble
			Remedy	(Check) Check the harness and the connector between the PCU MAIN PWB and the DC power cooling fan motor. (Repair) Replace the PCU MAIN PWB or the DC power cooling fan motor. (After-work)

Main code	Sub code	Title	Scanner (writing) motor lock detection (BLACK)	
L6	10	Phenomena	Display	Lamp Message
			Detail	Scanner (writing) unit (LSU) polygon motor lock signal detection trouble (The lock signal is not detected for 10 sec after turning on the polygon motor.)
			Section	Scanner (writing)
			Operation mode	All modes
			Note	
			Case 1	Trouble position/ cause
		Remedy		(Check) Scanner (writing) unit (LSU) operation check (SIM 61-1)
			(Repair) Replace the scanner (writing) unit (LSU). / Power Source-ON	
			(After-work) Adjust ADJM7/ADJM9/ADJM10	

Main code	Sub code	Title	Scanner (writing) motor lock detection (BLACK)	
L6	10	Case 2	Trouble position/ cause	ICU MAIN PWB trouble
			Remedy	(Check)
				(Repair) ICUMAIN PWB replacement / Power Source-ON (After-work) Adjust ADJM9/M10/M12/M13/M14/M15/M17. / Re-enter setup values and adjustment values. (Install the EEPROM of the defective ICU MAIN PWB to a new ICU MAIN PWB.)

Main code	Sub code	Title	Scanner (writing) motor lock detection (CYAN)	
L6	11	Phenomena	Display	Lamp Message
			Detail	Scanner (writing) unit (LSU) polygon motor lock signal detection trouble (The lock signal is not detected for 10 sec after turning on the polygon motor.)
			Section	Scanner (writing)
			Operation mode	All modes
			Note	
			Case 1	Trouble position/ cause
		Remedy		(Check) Scanner (writing) unit (LSU) operation check (SIM 61-1)
			(Repair) Replace the scanner (writing) unit (LSU). / Power Source-ON	
			(After-work) Adjust ADJM7/ADJM9/ADJM10	
		Case 2	Trouble position/ cause	ICU MAIN PWB trouble
			Remedy	(Check)
		(Repair) ICUMAIN PWB replacement / Power Source-ON (After-work) Adjust ADJM9/M10/M12/M13/M14/M15/M17. / Re-enter setup values and adjustment values. (Install the EEPROM of the defective ICU MAIN PWB to a new ICU MAIN PWB.)		

Main code	Sub code	Title	Scanner (writing) motor lock detection (MAGENTA)		
L6	12	Phenomena	Display	Lamp	
				Message	
			Detail	Scanner (writing) unit (LSU) polygon motor lock signal detection trouble (The lock signal is not detected for 10 sec after turning on the polygon motor.)	
			Section	Scanner (writing)	
			Operation mode	All modes	
			Note		
		Case 1	Trouble position/ cause	Scanner (writing) unit (LSU) trouble	
			Remedy	(Check) Scanner (writing) unit (LSU) operation check (SIM 61-1)	
				(Repair) Replace the scanner (writing) unit (LSU). / Power Source-ON	
				(After-work) Adjust ADJM7/ADJM9/ADJM10	
			Case 2	Trouble position/ cause	ICU MAIN PWB trouble
				Remedy	(Check)
			(Repair) ICUMAIN PWB replacement / Power Source-ON		
			(After-work) Adjust ADJM9/M10/M12/M13/M14/M15/M17. / Re-enter setup values and adjustment values. (Install the EEPROM of the defective ICU MAIN PWB to a new ICU MAIN PWB.)		

Main code	Sub code	Title	Scanner (writing) motor lock detection (YELLOW)	
L6	13	Phenomena	Display	Lamp
				Message
			Detail	Scanner (writing) unit (LSU) polygon motor lock signal detection trouble (The lock signal is not detected for 10 sec after turning on the polygon motor.)
			Section	Scanner (writing)
			Operation mode	All modes
			Note	
		Case 1	Trouble position/ cause	Scanner (writing) unit (LSU) trouble
			Remedy	(Check) Scanner (writing) unit (LSU) operation check (SIM 61-1)
				(Repair) Replace the scanner (writing) unit (LSU). / Power Source-ON
				(After-work) Adjust ADJM7/ADJM9/ADJM10

Main code	Sub code	Title	Scanner (writing) motor lock detection (YELLOW)	
L6	13	Case 2	Trouble position/ cause	ICU MAIN PWB trouble
			Remedy	(Check)
				(Repair) ICUMAIN PWB replacement / Power Source-ON
				(After-work) Adjust ADJM9/M10/M12/M13/M14/M15/M17. / Re-enter setup values and adjustment values. (Install the EEPROM of the defective ICU MAIN PWB to a new ICU MAIN PWB.)

Main code	Sub code	Title	Power full wave signal (FWS) trouble	
L8	1	Phenomena	Display	Lamp
				Message
			Detail	The power full wave signal (FWS) is not detected. / AC power waveform distortion, noise
			Section	Power source
			Operation mode	All modes
			Note	
		Case 1	Trouble position/ cause	Fusing oil collection pipe section short connector trouble
			Remedy	(Check) Check the fusing oil collection pipe section short connector.
				(Repair) Replace the fusing oil collection pipe section short connector. / Power Source-ON
				(After-work)
		Case 2	Trouble position/ cause	PCU SUB PWB trouble
			Remedy	(Check) Check the power full wave signal (FWS) circuit.
				(Repair) PCU SUB PWB replacement / Power Source-ON
				(After-work)
		Case 3	Trouble position/ cause	PCU MAIN PWB trouble
			Remedy	(Check) Check the power full wave signal (FWS) circuit.
				(Repair) Replace the PCU MAIN PWB. / Power Source-ON
				(After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)

Main code	Sub code	Title	Power full wave signal (FWS) trouble	
L8	1	Case 4	Trouble position/cause	DC SUB power PWB trouble
			Remedy	(Check) Check the power full wave signal (FWS) circuit. (Repair) DC SUB power PWB replacement / Power Source-ON (After-work)

Main code	Sub code	Title	Power full wave signal (FWS) width trouble	
L8	2	Case 4	Trouble position/cause	PCU SUB PWB trouble
			Remedy	(Check) Check the power full wave signal (FWS) circuit. (Repair) PCU SUB PWB replacement / Power Source-ON (After-work)

Main code	Sub code	Title	Power full wave signal (FWS) width trouble	
L8	2	Phenomena	Display	Lamp Message
			Detail	The power full wave signal (FWS) is not detected. / AC power waveform distortion, noise (When the detection cycle is judged as 69Hz or more or 42.5Hz or less.)
			Section	Power source
			Operation mode	All modes
			Note	
		Case 1	Trouble position/cause	Fusing oil collection pipe section short connector trouble
			Remedy	(Check) Check the fusing oil collection pipe section short connector. (Repair) Replace the fusing oil collection pipe section short connector. / Power Source-ON (After-work)
		Case 2	Trouble position/cause	PCU SUB PWB trouble
			Remedy	(Check) Check the power full wave signal (FWS) circuit. (Repair) PCU SUB PWB replacement / Power Source-ON (After-work)
		Case 3	Trouble position/cause	PCU MAIN PWB trouble
			Remedy	(Check) Check the power full wave signal (FWS) circuit. (Repair) Replace the PCU MAIN PWB. / Power Source-ON (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)

Main code	Sub code	Title	RIC copy inhibit signal reception	
PF	0	Phenomena	Display	Lamp Message
			Detail	The RIC copy inhibit command is received through RIC I/F from the host.
			Section	PCU PWB
			Operation mode	RIC communication
			Note	
		Case 1	Trouble position/cause	The copy inhibit command is received from the host.
			Remedy	(Check) (Repair) Use SIM 27-1 to ignore the copy inhibit command. / SIM 17 (After-work)
		Case 2	Trouble position/cause	PCU MAIN PWB trouble
			Remedy	(Check) RIC I/F circuit check (Repair) Replace the PCU MAIN PWB. / SIM 17 (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)

Main code	Sub code	Title	Operation control PWB - PCU MAIN PWB communication trouble (OPE/PCU detection)	
U0	0	Phenomena	Display	Lamp Message
			Detail	Communication (protocol, data) error
			Section	Operation PWB / PCU MAIN PWB
			Operation mode	All modes
			Note	

Main code	Sub code	Title	Operation control PWB - PCU MAIN PWB communication trouble (OPE/PCU detection)	
U0	0	Case 1	Trouble position/cause	Bad connection of the signal line between the PCU MAIN PWB and the operation control PWB
			Remedy	(Check) Check the signal line between the PCU MAIN PWB and the operation control PWB.
				(Repair) Repair or replace the cable and the connector between the PCU MAIN PWB and the operation control PWB. / Power Source-ON (After-work)
		Case 2	Trouble position/cause	PCU MAIN PWB trouble
			Remedy	(Check) (Repair) Replace the PCU MAIN PWB. / Power Source-ON (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)
				Case 3
		Remedy	(Check) (Repair) Operation control PWB replacement / Power Source-ON (After-work)	

Main code	Sub code	Title	PCU MAIN PWB - PCU SUB PWB communication trouble (PCU detection)	
U0	80	Phenomena	Display	Lamp Message
			Detail	Communication (protocol, data) error
			Section	PCU SUB PWB / PCU MAIN PWB
			Operation mode	All modes
			Note	
			Case 1	Trouble position/cause
		Remedy		(Check) Check connection of the signal line between the PCU MAIN PWB and the PCU SUB PWB. (Repair) Repair or replace the cable and the connector of the PCU MAIN PWB and the PCU SUB PWB. / Power Source-ON (After-work)

Main code	Sub code	Title	PCU MAIN PWB - PCU SUB PWB communication trouble (PCU detection)	
U0	80	Case 2	Trouble position/cause	PCU MAIN PWB trouble
			Remedy	(Check) (Repair) Replace the PCU MAIN PWB. / Power Source-ON (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)
				Case 3
		Remedy	(Check) (Repair) PCU SUB PWB replacement / Power Source-ON (After-work)	

Main code	Sub code	Title	EEPROM read/write error (PCU MAIN PWB)	
U2	0	Phenomena	Display	Lamp Message
			Detail	EEPROM read/write error
			Section	PCU PWB
			Operation mode	Warm-up
			Note	
			Case 1	Trouble position/cause
		Remedy		(Check) (Repair) Replace the EEPROM. / SIM 16 (After-work)
			Case 2	Trouble position/cause
		Remedy		(Check) (Repair) Replace the PCU MAIN PWB. / SIM 16 (After-work) Re-enter the set values and the adjustment values.

Main code	Sub code	Title	Counter data (EEPROM) check sum error (PCU MAIN PWB)	
U2	11	Phenomena	Display	Lamp Message
			Detail	Counter data area check sum error
			Section	PCU PWB
			Operation mode	All modes
			Note	

Main code	Sub code	Title	Counter data (EEPROM) check sum error (PCU MAIN PWB)	
U2	11	Case 1	Trouble position/cause	EEPROM trouble
			Remedy	(Check) (Repair) Replace the EEPROM. / SIM 16 (After-work)
			Case 2	Trouble position/cause
		Remedy		(Check) (Repair) Replace the PCU MAIN PWB. / SIM 16 (After-work) Re-enter the set values and the adjustment values.

Main code	Sub code	Title	EEPROM read/write error (ICU MAIN PWB)	
U2	20	Case 2	Trouble position/cause	ICU MAIN PWB trouble
			Remedy	(Check) (Repair) ICU MAIN PWB replacement / SIM 16 (After-work) Adjust ADJM9/M10/M12/M13/M14/M15/M17. / Re-enter setup values and adjustment values. (Install the EEPROM of the defective ICU MAIN PWB to a new ICU MAIN PWB.)

Main code	Sub code	Title	Setup/adjustment value data (EEPROM) check sum error (PCU MAIN PWB)	
U2	12	Phenomena	Display	Lamp Message
			Detail	Setup/adjustment data area check sum error
			Section	PCU PWB
			Operation mode	All modes
			Note	
			Case 1	Trouble position/cause
		Remedy		(Check) (Repair) Replace the EEPROM. / SIM 16 (After-work)
		Case 2		Trouble position/cause
			Remedy	(Check) (Repair) Replace the PCU MAIN PWB. / SIM 16 (After-work) Re-enter the set values and the adjustment values.

Main code	Sub code	Title	Counter (EEPROM) check sum error (ICU MAIN PWB)	
U2	21	Phenomena	Display	Lamp Message
			Detail	Counter data area check sum error
			Section	ICU PWB
			Operation mode	All modes
			Note	
			Case 1	Trouble position/cause
		Remedy		(Check) (Repair) Replace the EEPROM. / SIM 16 (After-work)
		Case 2		Trouble position/cause
			Remedy	(Check) (Repair) ICU MAIN PWB replacement / SIM 16 (After-work) Adjust ADJM9/M10/M12/M13/M14/M15/M17. / Re-enter setup values and adjustment values. (Install the EEPROM of the defective ICU MAIN PWB to a new ICU MAIN PWB.)

Main code	Sub code	Title	EEPROM read/write error (ICU MAIN PWB)	
U2	20	Phenomena	Display	Lamp Message
			Detail	EEPROM read/write error
			Section	ICU PWB
			Operation mode	Warm-up
			Note	
		Case 1	Trouble position/cause	EEPROM trouble
Remedy	(Check) (Repair) Replace the EEPROM. / SIM 16 (After-work)			

Main code	Sub code	Title	Setup, adjustment value (EEPROM) check sum error (ICU MAIN PWB)	
U2	22	Phenomena	Display	Lamp Message
			Detail	Setup/adjustment data area check sum error
			Section	ICU PWB
			Operation mode	All modes
			Note	
			Case 1	Trouble position/cause
		Remedy		(Check) (Repair) Replace the EEPROM. / SIM 16 (After-work)

Main code	Sub code	Title	Setup, adjustment value (EEPROM) check sum error (ICU MAIN PWB)	
<b>U2</b>	<b>22</b>	Case 2	Trouble position/ cause	ICU MAIN PWB trouble
			Remedy	(Check) (Repair) ICUMAIN PWB replacement / SIM 16 (After-work) Adjust ADJM9/M10/M12/M13/M14/M15/M17. / Re-enter setup values and adjustment values. (Install the EEPROM of the defective ICU MAIN PWB to a new ICU MAIN PWB.)

Main code	Sub code	Title	Manufacturing No. data (ICU MAIN PWB / PCU MAIN PWB) discrepancy	
<b>U2</b>	<b>30</b>	Phenomena	Display	Lamp Message
			Detail	The serial No. data stored in the ICU MAIN PWB (EEPROM) and that in the PCU MAIN PWB (EEPROM) do not coincide.
			Section	ICU PWB / PCU PWB
			Operation mode	All modes
			Note	
		Case 1	Trouble position/ cause	When replacing the ICU MAIN PWB or the PCU MAIN PWB, the serial No. data is not entered.
			Remedy	(Check) (Repair) Enter the correct serial No. data to the ICU MAIN PWB and the PCU MAIN PWB (EEPROM). / SIM 16 (After-work)

Main code	Sub code	Title	PCU MAIN PWB - ADU communication trouble / Discrepancy of the model	
<b>U4</b>	<b>0</b>	Phenomena	Display	Lamp Message
			Detail	Communication test error in warm-up / Discrepancy of the model
			Section	PCU PWB / Duplex control PWB
			Operation mode	Warm-up / Initialize
			Note	

Main code	Sub code	Title	PCU MAIN PWB - ADU communication trouble / Discrepancy of the model	
<b>U4</b>	<b>0</b>	Case 1	Trouble position/ cause	Bad connection of the signal line between the PCU MAIN PWB and the ADU control PWB.
			Remedy	(Check) Check connection of the signal line between the PCU MAIN PWB and the ADU control PWB. (Repair) Repair or replace the cable and the connector between the PCU MAIN PWB and the ADU control PWB. / Power Source-ON (After-work)
		Case 2	Trouble position/ cause	PCU MAIN PWB trouble
			Remedy	(Check) (Repair) Replace the PCU MAIN PWB. / Power Source-ON (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)
		Case 3	Trouble position/ cause	ADU control PWB trouble
			Remedy	(Check) (Repair) ADU control PWB replacement / Power Source-ON (After-work)

Main code	Sub code	Title	ADU alignment plate operation trouble	
<b>U4</b>	<b>2</b>	Phenomena	Display	Lamp Message
			Detail	The home position sensor (DPHPS) detects the home position sensor for 1sec or more after starting separating operation of the alignment plate from the home position. / The home position is not detected within 5sec after starting returning operation to the home position.
			Section	Duplex
			Operation mode	Initialize / Duplex copy (print)
			Note	

Main code	Sub code	Title	ADU alignment plate operation trouble		
U4	2	Case 1	Trouble position/cause	Alignment home position sensor (DPHPS) trouble	
			Remedy	(Check) Check the alignment home position sensor (DPHPS) operation. (SIM9-1/2/4)	
				(Repair) Replace the alignment home position sensor (DPHPS). / Power Source-ON	
				(After-work)	
			Case 2	Trouble position/cause	Duplex alignment motor trouble.
				Remedy	(Check) Check the duplex alignment motor operation. (SIM9-1/2/4)
		(Repair) Replace the duplex alignment motor. / Power Source-ON			
		Case 3	Trouble position/cause	Duplex mechanism section trouble	
			Remedy	(Check) Check the duplex mechanism section operation. (SIM9-1/2/4)	
				(Repair) Repair or replace the duplex mechanism section. / Power Source-ON	
		Case 4	Trouble position/cause	PCU MAIN PWB trouble	
			Remedy	(Check)	
				(Repair) Replace the PCU MAIN PWB. / Power Source-ON	
		Case 5	Trouble position/cause	ADU control PWB trouble	
			Remedy	(Check)	
				(Repair) ADU control PWB replacement / Power Source-ON	
					(After-work)

Main code	Sub code	Title	ADU transport motor trouble		
U4	12	Phenomena	Display	Lamp	
				Message	
			Detail	The motor rotation sensor (RE) signal cycle becomes 50msec or more after 1sec from turning ON the ADU transport motor. / The motor rotation sensor (RE) signal is detected more than 100 times during 100msec after 5sec from turning OFF the ADU transport motor.	
				Section	Duplex
				Operation mode	Duplex copy (print)
			Note		
			Case 1	Trouble position/cause	Duplex transport motor trouble
				Remedy	(Check) Check the duplex transport motor operation. (SIM9-1/2/4)
		(Repair) Replace the duplex transport motor. / Power Source-ON			
		Case 2	Trouble position/cause	Duplex transport motor rotation sensor (DMRE) trouble	
			Remedy	(Check) Duplex transport motor rotation sensor (DMRE) operation check (SIM 9-1/2/4)	
				(Repair) Replace the duplex transport motor rotation sensor (DMRE). / Power Source-ON	
		Case 3	Trouble position/cause	Duplex mechanism section trouble	
			Remedy	(Check) Duplex mechanism section operation check (SIM9-1/2/4)	
				(Repair) Repair or replace the duplex mechanism section. / Power Source-ON	
		Case 4	Trouble position/cause	ADU control PWB trouble	
			Remedy	(Check)	
				(Repair) ADU control PWB replacement / Power Source-ON	
					(After-work)

Main code	Sub code	Title	PCU MAIN PWB - RADF communication trouble	
U5	0	Phenomena	Display	Lamp Message
			Detail	Communication test error in warm-up
			Section	PCU PWB / RADF control PWB
			Operation mode	Warm-up / Initialize
			Note	
			Case 1	Trouble position/ cause
	Remedy	(Check) Check connection of the signal line between the PCU MAIN PWB and the RADF control PWB.		
		(Repair) Repair or replace the cable and the connector between the PCU MAIN PWB and the RADF control PWB. / Power Source-ON (After-work)		
	Case 2	Trouble position/ cause	PCU MAIN PWB trouble	
		Remedy	(Check)	
			(Repair) Replace the PCU MAIN PWB. / Power Source-ON (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)	
	Case 3	Trouble position/ cause	RADF control PWB trouble	
		Remedy	(Check) (Repair) RADF control PWB replacement / Power Source-ON (After-work)	

Main code	Sub code	Title	RADF resist sensor trouble	
U5	1	Phenomena	Display	Lamp Message
			Detail	RADF resist sensor detection trouble
			Section	RADF
			Operation mode	RADF
			Note	
			Case 1	Trouble position/ cause
	Remedy	(Check) Check operation of the RADF resist sensor. (SIM 2-2)		
		(Repair) Replace the RADF resist sensor. / Power Source-ON (After-work)		

Main code	Sub code	Title	RADF resist sensor trouble	
U5	1	Case 2	Trouble position/ cause	RADF control PWB trouble
			Remedy	(Check)
				(Repair) RADF control PWB replacement / Power Source-ON
				(After-work)

Main code	Sub code	Title	RADF exit sensor trouble	
U5	2	Phenomena	Display	Lamp Message
			Detail	RADF paper exit sensor detection trouble
			Section	RADF
			Operation mode	RADF
			Note	
			Case 1	Trouble position/ cause
	Remedy	(Check) Check the RADF paper exit sensor operation. (SIM 2-2)		
		(Repair) Replace the RADF paper exit sensor. / Power Source-ON (After-work)		
		Case 2	Trouble position/ cause	RADF control PWB trouble
	Remedy	(Check)		
		(Repair) RADF control PWB replacement / Power Source-ON (After-work)		

Main code	Sub code	Title	RADF timing sensor trouble	
U5	3	Phenomena	Display	Lamp Message
			Detail	RADF timing sensor detection trouble
			Section	RADF
			Operation mode	RADF
			Note	
			Case 1	Trouble position/ cause
	Remedy	(Check) Check the RADF timing sensor operation. (SIM 2-2)		
		(Repair) Replace the RADF timing sensor. / Power Source-ON (After-work)		

Main code	Sub code	Title	RADF timing sensor trouble	
<b>U5</b>	<b>3</b>	Case 2	Trouble position/ cause	RADF control PWB trouble
			Remedy	(Check) (Repair) RADF control PWB replacement / Power Source-ON (After-work)

Main code	Sub code	Title	RADF paper feed motor trouble	
<b>U5</b>	<b>11</b>	Phenomena	Display	Lamp Message
			Detail	RADF paper feed motor lock / Motor rpm abnormality / Overcurrent to the motor
			Section	RADF
			Operation mode	RADF
			Note	
			Case 1	Trouble position/ cause
			Remedy	(Check) Check the RADF paper feed motor operation. (SIM2-1/2/3) (Repair) Replace the RADF paper feed motor. / Power Source-ON (After-work)
		Case 2	Trouble position/ cause	RADF control PWB trouble
			Remedy	(Check) (Repair) RADF control PWB replacement / Power Source-ON (After-work)

Main code	Sub code	Title	Large capacity tray (LCC) lift motor trouble	
<b>U6</b>	<b>9</b>	Phenomena	Display	Lamp Message
			Detail	The rotation sensor output signal does not change when the lift motor is turned ON. / The rotation sensor output signal changes after turning OFF the lift motor.
			Section	Large capacity tray
			Operation mode	Paper feed
			Note	
			Case 1	Trouble position/ cause
			Remedy	(Check) Check the lift motor rotation sensor operation. (Repair) Replace the lift motor rotation sensor. / SIM 15 (After-work)

Main code	Sub code	Title	Large capacity tray (LCC) lift motor trouble	
<b>U6</b>	<b>9</b>	Case 2	Trouble position/ cause	"Lift mechanism (motor, etc.) trouble"
			Remedy	(Check) "Check the lift mechanism (motor, etc.) operation. (SIM4-3)" (Repair) Replace the lift unit (lift motor). / SIM 15 (After-work)
			Case 3	Trouble position/ cause
			Remedy	(Check) (Repair) Replace the large capacity tray (LCC) control PWB. / SIM 15 (After-work)
		Case 4	Trouble position/ cause	PCU MAIN PWB trouble
			Remedy	(Check) (Repair) Replace the PCU MAIN PWB. / SIM 15 (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)

Main code	Sub code	Title	PCU MAIN PWB - Large capacity tray (LCC) communication trouble / Discrepancy of the model	
<b>U6</b>	<b>20</b>	Phenomena	Display	Lamp Message
			Detail	Communication test error in warm-up / Discrepancy of the model
			Section	Large capacity tray control PWB / PCU MAIN PWB
			Operation mode	Warm-up / Initialize
			Note	
			Case 1	Trouble position/ cause
			Remedy	(Check) Check connection of the signal line between the PCU MAIN PWB and the large capacity tray (LCC) control PWB. (Repair) Repair or replace the cable and the connector between the PCU MAIN PWB and the large capacity tray (LCC) control PWB. / Power Source-ON (After-work)

Main code	Sub code	Title	PCU MAIN PWB - Large capacity tray (LCC) communication trouble / Discrepancy of the model	
U6	20	Case 2	Trouble position/ cause	PCU MAIN PWB trouble
			Remedy	(Check) (Repair) Replace the PCU MAIN PWB. / Power Source-ON (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)
		Case 3	Trouble position/ cause	Large capacity tray (LCC) control PWB trouble
			Remedy	(Check) (Repair) Large capacity tray (LCC) control PWB replacement / Power Source-ON (After-work)

Main code	Sub code	Title	Large capacity tray (LCC) transport motor trouble	
U6	21	Phenomena	Display	Lamp Message
			Detail	The rotation sensor output signal does not change when the transport motor is turned ON. / The rotation sensor output signal changes after turning OFF the transport motor.
			Section	Large capacity tray
			Operation mode	Paper feed
			Note	
		Case 1	Trouble position/ cause	Transport motor trouble
			Remedy	(Check) Check the transport motor operation. (SIM 4-3) (Repair) Replace the transport motor. / Power Source-ON (After-work)
Case 2	Trouble position/ cause	Transport mechanism section trouble		
	Remedy	(Check) Check the transport mechanism section operation. (SIM 4-3) (Repair) Repair or replace the transport mechanism section. / Power Source-ON (After-work)		

Main code	Sub code	Title	Large capacity tray (LCC) transport motor trouble	
U6	21	Case 3	Trouble position/ cause	Large capacity tray (LCC) control PWB trouble
			Remedy	(Check) (Repair) Large capacity tray (LCC) control PWB replacement / Power Source-ON (After-work)

Main code	Sub code	Title	Large capacity tray (LCC) 24V power trouble	
U6	22	Phenomena	Display	Lamp Message
			Detail	DC24V power is not supplied to the large capacity tray (LCC).
			Section	Large capacity tray
			Operation mode	All modes
			Note	
		Case 1	Trouble position/ cause	Bad connection between the DC MAIN power PWB and the large capacity tray (LCC)
			Remedy	(Check) Check connection between the fuse (F708), the DC MAIN power PWB and the large capacity tray (LCC). (Repair) Replace the fuse (F708). Repair or replace the wire and the connector between the DC MAIN power PWB and the large capacity tray (LCC) control PWB. / Power Source-ON (After-work)
Case 2	Trouble position/ cause	Large capacity tray (LCC) control PWB trouble		
	Remedy	(Check) (Repair) Large capacity tray (LCC) control PWB replacement / Power Source-ON (After-work)		

Main code	Sub code	Title	LCC non-compatible trouble	
U6	51	Phenomena	Display	Lamp Message
			Detail	Detection of LCC connection incompatible with the AR-C330.
			Section	Large capacity tray
			Operation mode	All modes
			Note	
		Case 1	Trouble position/ cause	Detection of the AR-LC2(N), etc. incompatible with the AR-C330.
			Remedy	(Check) (Repair) Connect the AR-LC9. (After-work)

Main code	Sub code	Title	RIC communication trouble		
<b>U7</b>	<b>0</b>	Phenomena	Display	Lamp	
				Message	
			Detail	Communication test error in warm-up	
			Section	PCU PWB	
			Operation mode	RIC communication	
			Note		
			Case 1	Trouble position/ cause	Bad connection of the signal line between the PCU MAIN PWB and the RIC I/F.
				Remedy	(Check) Check connection of the signal line between the PCU MAIN PWB and the RIC I/F.  (Repair) Repair or replace the cable and the connector between the PCU MAIN PWB and the RIC I/F / Power Source-ON  (After-work)
			Case 2	Trouble position/ cause	PCU MAIN PWB trouble
				Remedy	(Check)  (Repair) Replace the PCU MAIN PWB. / Power Source-ON  (After-work) Re-enter setup values and adjustment values. (Install the EEPROM of the defective PCU MAIN PWB to a new PCU MAIN PWB.)

Main code	Sub code	Title	ICU SCAN PWB - CPT PWB communication trouble		
<b>UC</b>	<b>0</b>	Phenomena	Display	Lamp	
				Message	
			Detail		
			Section	ICU SCAN PWB / CPT PWB	
			Operation mode	Copy	
			Note		
			Case 1	Trouble position/ cause	CPT PWB trouble
				Remedy	(Check) CPT PWB connector check  (Repair) CPT PWB replacement / Power Source-ON  (After-work)
			Case 2	Trouble position/ cause	ICU SCAN PWB trouble
				Remedy	(Check) ICU SCAN PWB connector check  (Repair) ICU SCAN PWB replacement / Power Source-ON  (After-work)

Main code	Sub code	Title	CPT board program trouble		
<b>UC</b>	<b>1</b>	Phenomena	Display	Lamp	
				Message	
			Detail	CPT PWB program hung up	
			Section	CPT PWB	
			Operation mode	Warm-up / Initialize	
			Note		
			Case 1	Trouble position/ cause	CPT PWB trouble
				Remedy	(Check) If the trouble cannot be canceled by turning ON/OFF the power repeatedly, replace the CPT PWB.  (Repair) CPT PWB replacement / Power Source-ON  (After-work)

Main code	Sub code	Title	CPT board ASIC trouble		
<b>UC</b>	<b>2</b>	Phenomena	Display	Lamp	
				Message	
			Detail	Gate array abnormality on the CPT PWB	
			Section	CPT PWB	
			Operation mode	Warm-up / Initialize	
			Note		
			Case 1	Trouble position/ cause	CPT PWB trouble
				Remedy	(Check) If the trouble cannot be canceled by turning ON/OFF the power repeatedly, replace the CPT PWB.  (Repair) CPT PWB replacement / Power Source-ON  (After-work)

Main code	Sub code	Title	CPT board ROM trouble		
<b>UC</b>	<b>3</b>	Phenomena	Display	Lamp	
				Message	
			Detail	CPT PWB ROM abnormality	
			Section	CPT PWB	
			Operation mode	Warm-up / Initialize	
			Note		
			Case 1	Trouble position/ cause	CPT PWB trouble
				Remedy	(Check)  (Repair) CPT PWB replacement / Power Source-ON  (After-work)

Main code	Sub code	Title	CPT board RAM trouble		
<b>UC</b>	<b>4</b>	Phenomena	Display	Lamp	
				Message	
			Detail	CPT PWB RAM abnormality	
			Section	CPT PWB	
			Operation mode	Warm-up / Initialize	
			Note		
			Case 1	Trouble position/ cause	CPT PWB trouble
					Remedy
				(Repair) CPT PWB replacement / Power Source-ON	
				(After-work)	

Main code	Sub code	Title	CPT board model code data trouble		
<b>UC</b>	<b>5</b>	Phenomena	Display	Lamp	
				Message	
			Detail	The model code data sent from the CPU PWB to the ICU SCAN PWB is abnormal.	
			Section	ICU MAIN PWB / CPT PWB	
			Operation mode	Warm-up / Initialize	
			Note		
			Case 1	Trouble position/ cause	CPT PWB trouble
					Remedy
				(Repair) CPT PWB replacement / Power Source-ON	
				(After-work)	

# [11] MAINTENANCE AND DISASSEMBLY/ASSEMBLY

## 1. Necessary procedure for maintenance and servicing

### (1) Items to be performed before maintenance servicing 1

Item	Simulation	
Check the print counter value of each section in each operation mode.	22	1
Check the number of times of paper jams and troubles.	22	2
Check the paper jam positions and contents.	22	3
Check the paper jam positions and contents. (RADF section)	22	12
Check the trouble contents.	22	4
Prints the list of setups and adjustment values.	22	6
Check the number of use of the RADF, the sorter and the scanner.	22	8
Check the number of use of paper feed sections.	22	9

## (2) Necessary work items in maintenance service

The work items necessary for maintenance are shown below.  
Perform the work according to the following description when other than maintenance (when replacing a consumable part/when repairing and checking (without replacement of consumable parts)/when installing/when cleaning the scanner (reading) section/etc.)

No	JOB No	Work item	Simulation	When installing	Repair (When a consumable part is replaced)/maintenance				When in repair/check (without replacing consumable parts)
					After replacing OPC drum	After replacing developer	After replacing transfer belt	After disposing transfer section waste toner	
1	ADJ M3	Toner concentration reference control level setup	25	*		*			
2		Developer counter clear	24			*			
3		OPC drum counter clear	24		*				
4	ADJ M5	Image density sensor adjustment	44						
5	ADJ M6	Image density sensor position adjustment	44			*			*
6	ADJ M7	Image skew adjustment	64			*			*
7	ADJ M8	OPC drum phase adjustment	44	*					
8		Transfer section waste toner counter clear	24				*		
9		Half-tone correction level is set to zero.	44						
10	ADJ M9A (ADJ M9)	Sub scan direction image resist adjustment	50				*		
11	ADJ M9A (ADJ M10)	Main scan direction image resist adjustment	50				*		
12	ADJ M17	Copy quality adjustment					*		

Job No. indicates the title number of adjustment items specified in the chapter of the adjustments. Refer to Use this number when referring to the details, as necessary.  
When the developer counter is cleared (SIM 24-5) and the OPC drum counter is cleared (SIM 24-7), the image density correction (process correction) is automatically performed.

### (3) Items to be performed after maintenance servicing 3

Item	Simulation	
Paper jam, trouble data clear	24	1
Each paper feed section use number counter clear	24	2
RADF, sorter, scanner use number counter clear	24	3
Maintenance counter clear	24	4
Setup and adjustment data output	22	6

### (4) Maintenance display

When the maintenance timing is reached, the following display is shown.

MAINTENANCE REQUIRED CODE: XX

The above two-digit code indicates the kind and the count of the maintenance counter.

The meaning of the CODE indication is as shown below.

CODE (XX) 1st digit	Meaning	
A	5K	Maintenance counter value set with SIM 21-1.
B	10K	
C	15K	
D	20K	
E	40K	
F	80K	

CODE (XX) 2nd digit	Meaning
T	The total maintenance counter has reached the value set with SIM 21-1.
C	The color maintenance counter has reached the value set with SIM 21-1.
A	Both the total maintenance counter and the color maintenance counter have reached the values set with SIM 21-1.

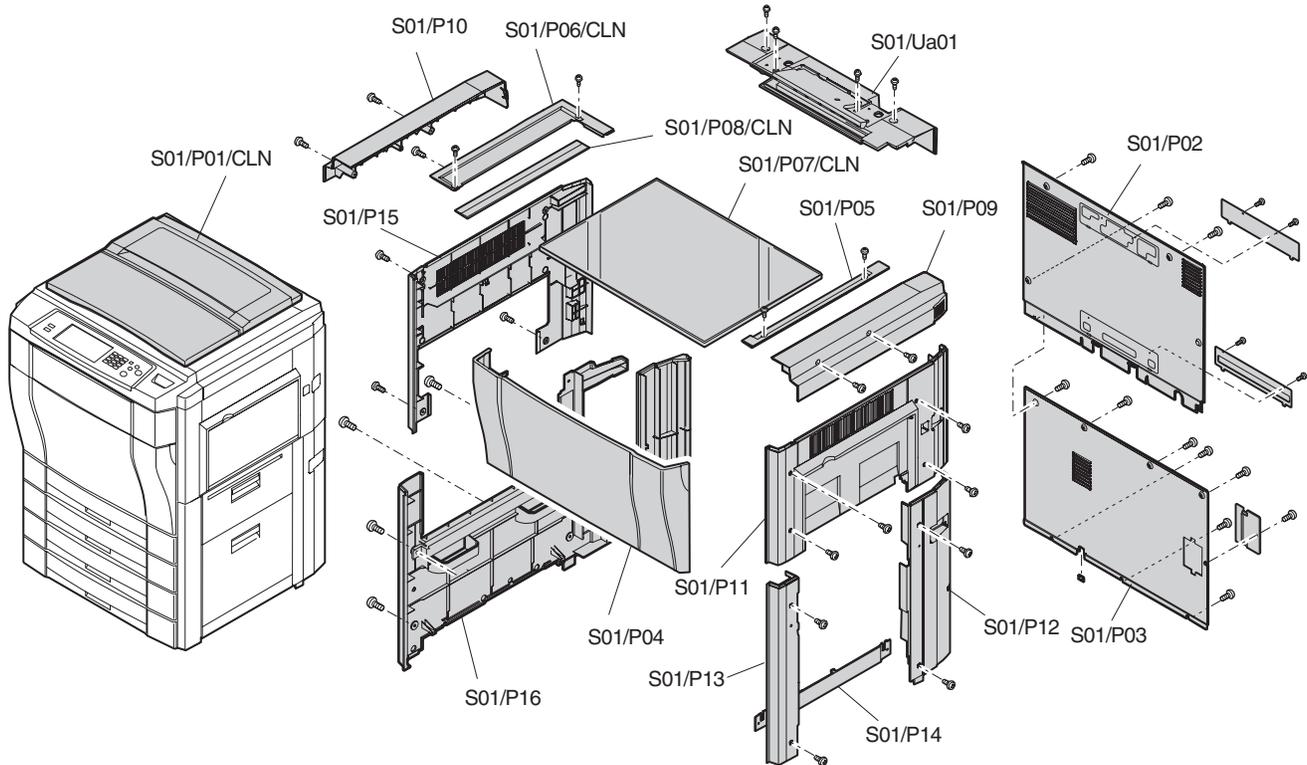
After completion of maintenance, reset this display with SIM 24-4.

## 2. List

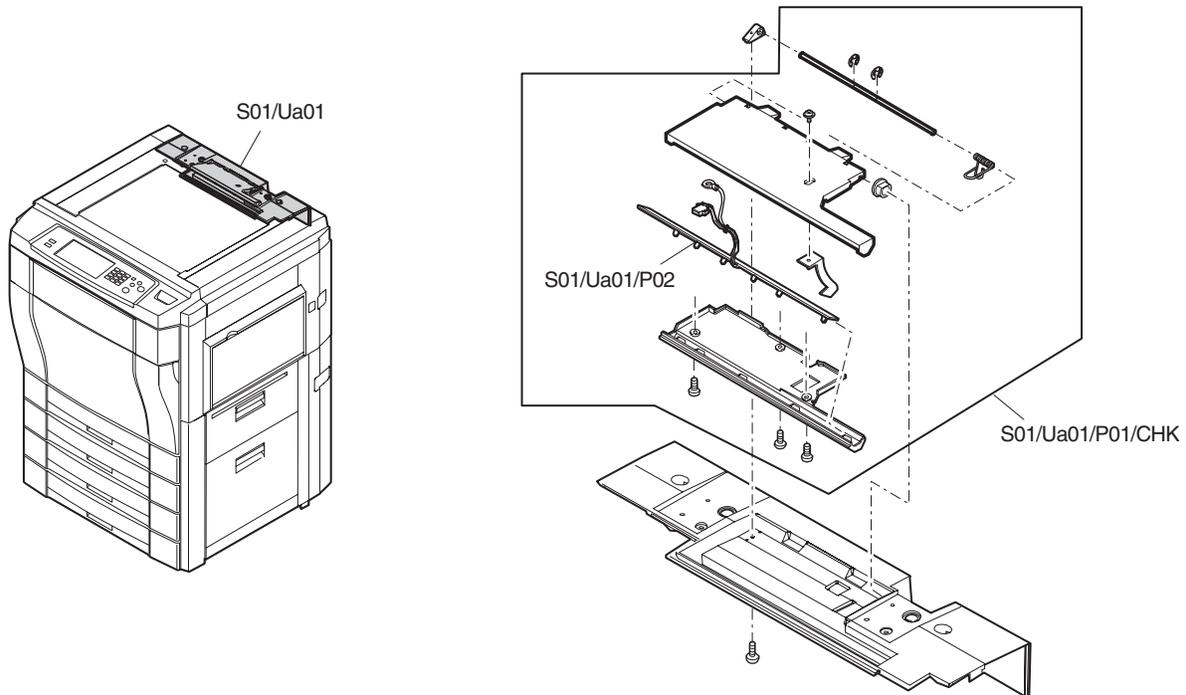
- OIL/GRE (Lubricate, grease); CLN (Cleaning); ADJ (Adjustment); REP (Replacement, installation); CP (Change position); CHK (Check); (Clean, replace, lubricate, grease as necessary); ABL (Disassembly, assembly)

### S01 External fitting section

Unit		Part		JOB CODE	Every service call	40K	80K	120K	160K	200K	240K	280K	320K	Remark
U No.	Unit name	P No.	Part name											
		P01	Original cover	ABL										
				CLN	*	*	*	*	*	*	*	*	*	
		P02	Rear cabinet upper	ABL										
		P03	Rear cabinet lower	ABL										
		P04	Front cabinet	ABL										
		P05	Glass holder right	ABL										
		P06	Glass holder left	ABL										
		P07	Table glass	CLN	*	*	*	*	*	*	*	*	*	
				ABL										
		P08	Shading glass	CLN	*	*	*	*	*	*	*	*	*	
				ABL										
		P09	Upper cabinet right	ABL										
		P10	Upper cabinet left	ABL										
		P11	Right cabinet upper	ABL										
		P12	Right cabinet lower rear	ABL										
		P13	Right cabinet lower front	ABL										
		P14	Right cabinet lower front	ABL										
		P15	Left cabinet upper	ABL										
		P16	Left cabinet lower	ABL										

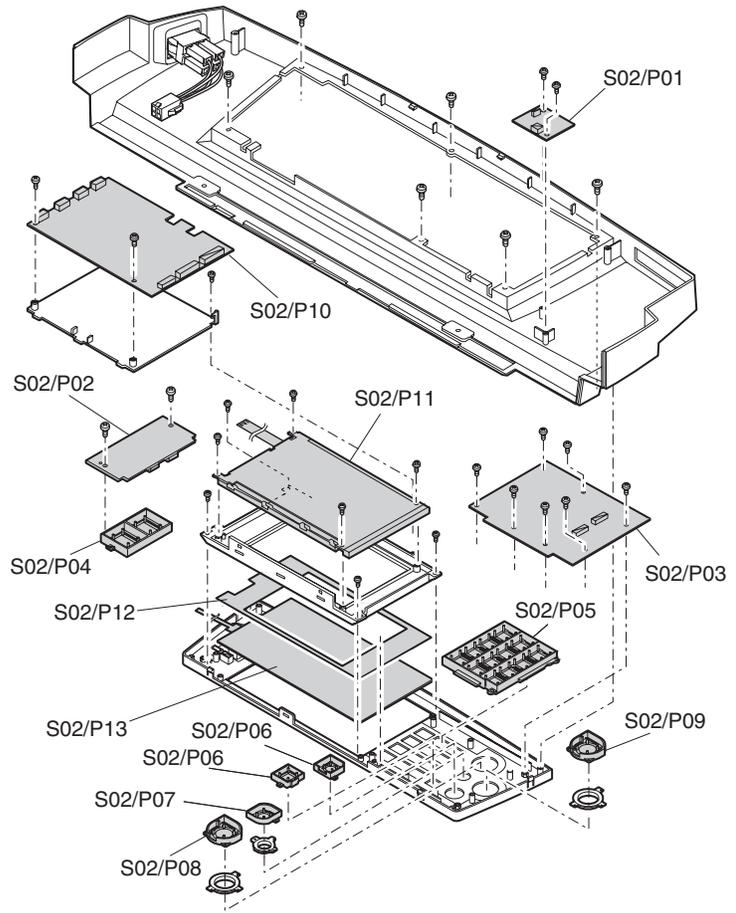
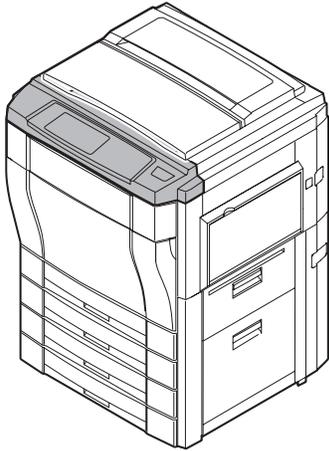


Unit		Part		Job CODE	Every service call	40K	80K	120K	160K	200K	240K	280K	320K	Remark		
U No.	Unit name	P No.	Part name													
Ua01	Upper cabinet rear unit			ABL												
		P01	Original size sensor unit (light emitting)	CHK	*	*	*	*								
		P02	Original size sensor PWB (Light emitting)	ABL												



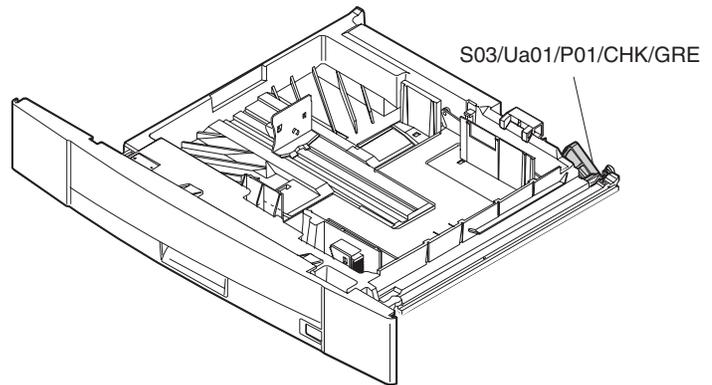
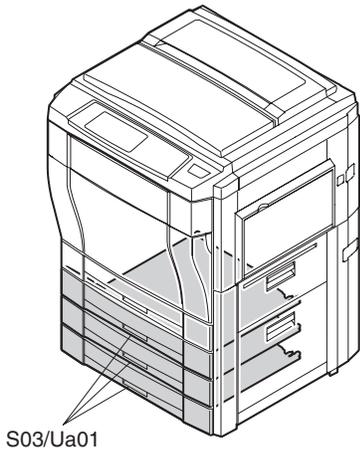
## S02 Operation section

Unit		Part		Job CODE	Every service call	40K	80K	120K	160K	200K	240K	280K	320K	Remark		
U No.	Unit name	P No.	Part name													
Ua01	Operation unit			ABL												
		P01	Inverter PWB	ABL												
		P02	OP PWB L	ABL												
		P03	OP PWB R	ABL												
		P04	Select key	ABL												
		P05	10-key	ABL												
		P06	CL key	ABL												
		P07	Interruption key	ABL												
		P08	Copy key	ABL												
		P09	Color select key	ABL												
		P10	OP control PWB	ABL												
		P11	LCD	ABL												
		P12	LCD sheet	ABL												
P13	Touch panel	ABL														

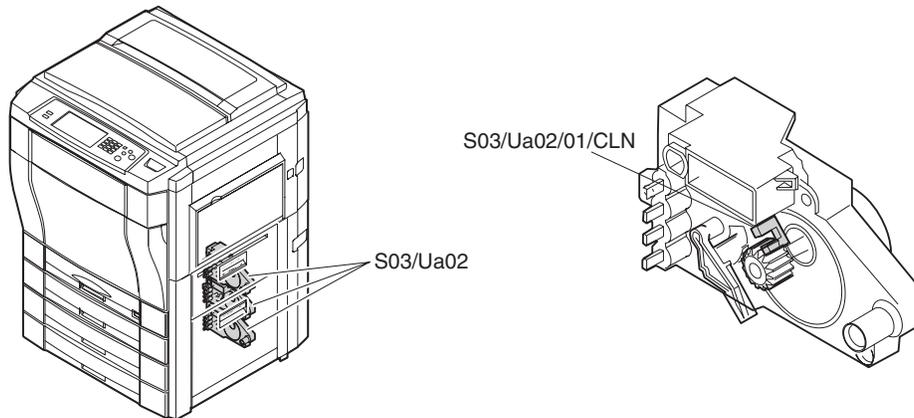


### S03 Paper feed, paper transport section

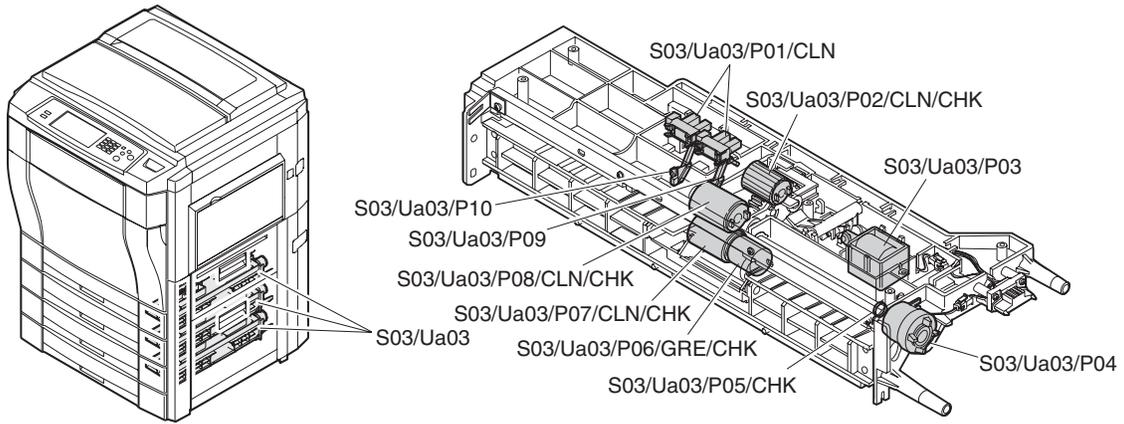
Unit		Part		JOB CODE	Every service call	40K	80K	120K	160K	200K	240K	280K	320K	Remark
U No.	Unit name	P No.	Part name											
Ua01	Paper tray unit	P01	Gear	ABL										
				CHK	*									
				GRE		*		*		*		*		



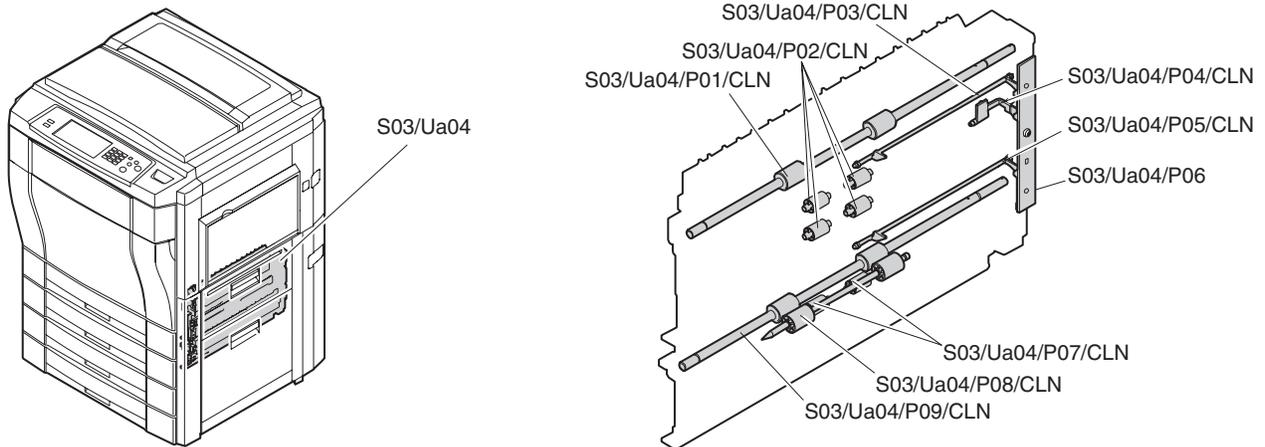
Unit		Part		JOB CODE	Every service call	40K	80K	120K	160K	200K	240K	280K	320K	Remark
U No.	Unit name	P No.	Part name											
Ua02	Paper tray lift up unit			ABL										
		P01	Lift position sensor	CLN										



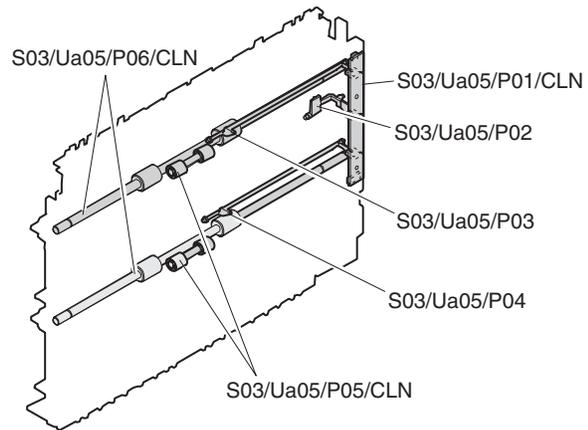
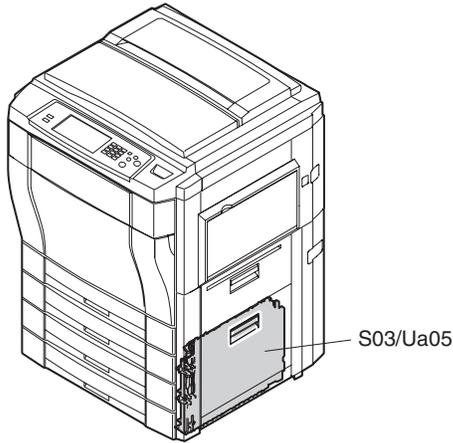
Unit		Part		JOB CODE	Every service call	40K	80K	120K	160K	200K	240K	280K	320K	Remark		
U No.	Unit name	P No.	Part name													
Ua03	Paper feed unit			ABL												
		P01	Detector	CLN			*		*		*		*			
				ABL												
		P02	Pick-up roller	CLN	*	*	*		*		*		*			
				CHK			*		*		*		*		Replace within 2 years after installation of a new part.	
		P03	Pick-up solenoid	ABL												
		P04	Paper feed electromagnetic clutch	ABL												
		P05	Earth spring	CHK												
		P06	Torque limiter	GRE					*					*		
				CHK	*		*				*				Replace within 2 years after installation of a new part.	
		P07	Separation roller	CLN			*		*		*		*		*	
				CHK	*	*	*		*		*		*		Replace within 2 years after installation of a new part.	
				ABL												
P08	Paper feed roller	CLN	*	*	*		*		*		*		*			
		CHK			*		*		*		*		*	Replace within 2 years after installation of a new part.		
P09	Sensor lever	ABL														
P10	Paper feed lever	ABL														



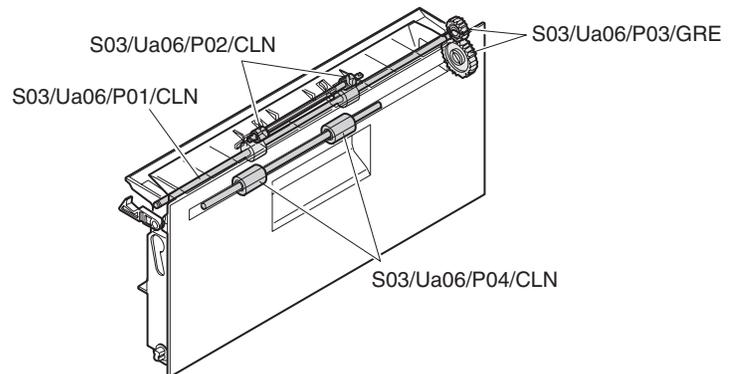
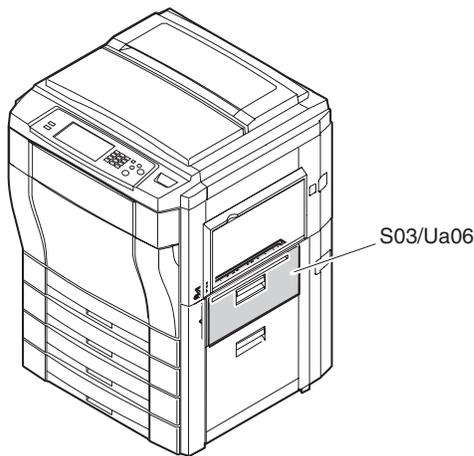
Unit		Part		JOB CODE	Every service call	40K	80K	120K	160K	200K	240K	280K	320K	Remark	
U No.	Unit name	P No.	Part name												
Ua04	Transport upper unit	P01	Transport roller	ABL											
				CLN	*	*	*	*	*	*	*	*	*	*	
		P02	Idle roller	ABL											
				CLN	*	*	*	*	*	*	*	*	*		
		P03	Actuator	ABL											
		P04	Actuator	ABL											
		P05	Actuator	ABL											
		P06	IFD PWB (detector)	CLN			*		*		*		*		
				ABL											
		P07	Idle roller	ABL											
				CLN	*	*	*	*	*	*	*	*	*		
		P08	Idle roller	ABL											
				CLN	*	*	*	*	*	*	*	*	*		
		P09	Transport roller	ABL											
				CLN	*	*	*	*	*	*	*	*	*		



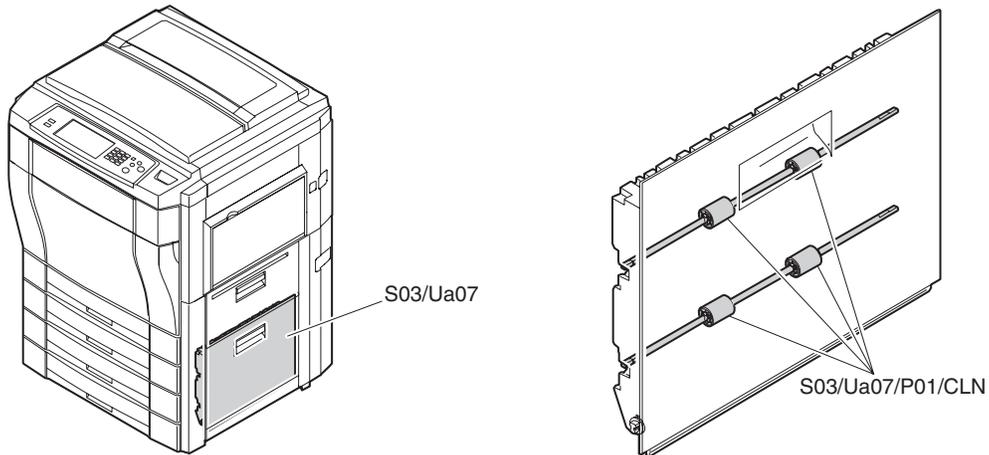
Unit		Part		JOB CODE	Every service call	40K	80K	120K	160K	200K	240K	280K	320K	Remark		
U No.	Unit name	P No.	Part name													
Ua05	Transport lower unit	P01	PFD PWB (Detector)	ABL												
				CLN		*		*		*		*				
		P02	Actuator	ABL												
				CLN		*		*		*		*				
		P03	Actuator	ABL												
		P04	Actuator	ABL												
		P05	Idle roller	ABL												
				CLN	*	*	*	*	*	*	*	*	*	*	*	
P06	Transport roller	ABL														
		CLN	*	*	*	*	*	*	*	*	*	*	*			



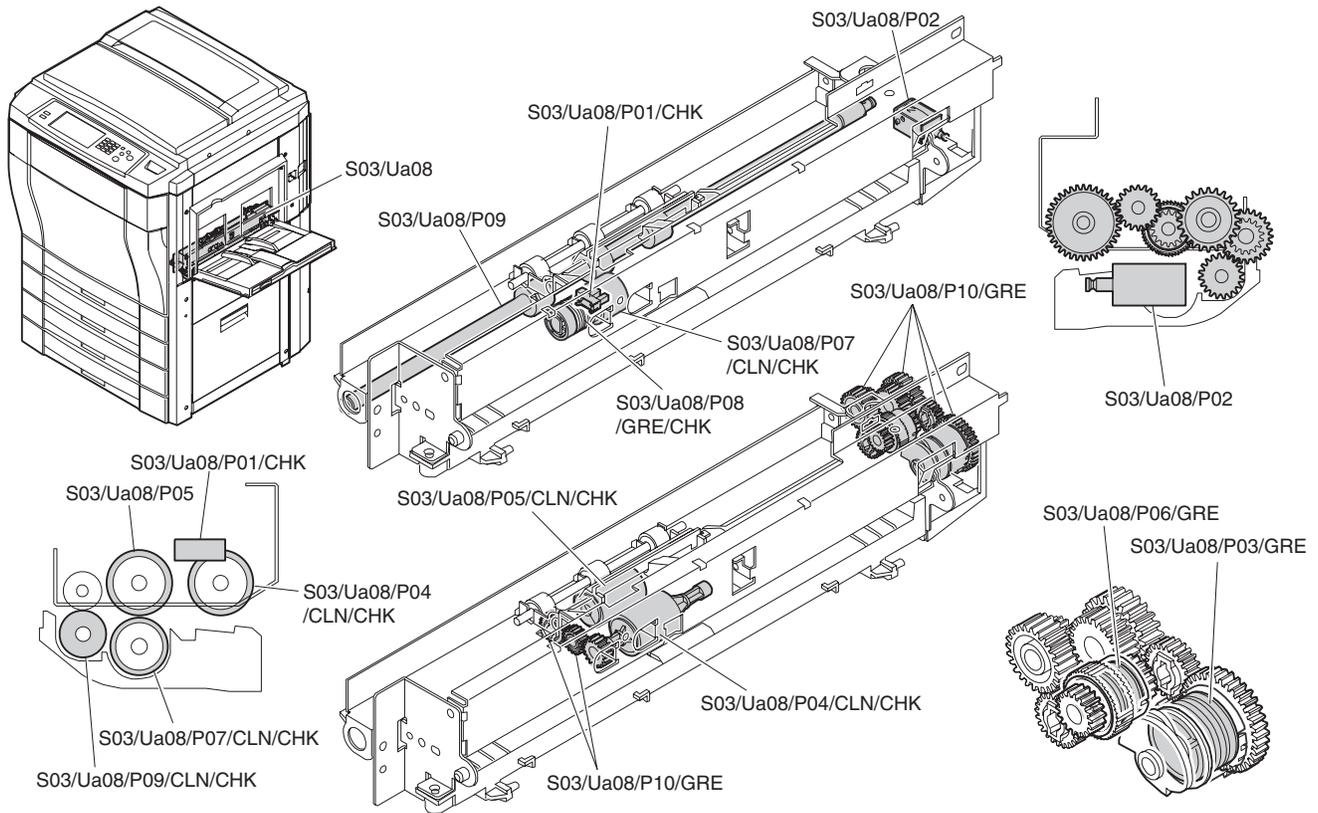
Unit		Part		JOB CODE	Every service call	40K	80K	120K	160K	200K	240K	280K	320K	Remark		
U No.	Unit name	P No.	Part name													
Ua06	Right door upper unit	P01	Transport roller	ABL												
				CLN	*	*	*	*	*	*	*	*	*			
		P02	Idle roller	ABL												
				CLN	*	*	*	*	*	*	*	*	*			
		P03	Gear	ABL												
				GRE												
		P04	Idle roller	ABL												
				CLN	*	*	*	*	*	*	*	*	*	*		



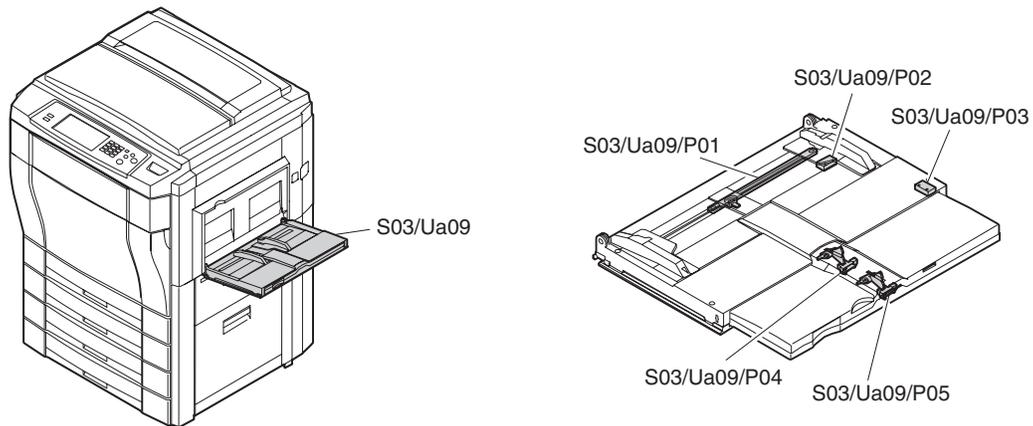
Unit		Part		JOB CODE	Every service call	40K	80K	120K	160K	200K	240K	280K	320K	Remark
U No.	Unit name	P No.	Part name											
Ua07	Right door lower unit	P01	Idle roller	ABL										
				ABL										
				CLN	*	*	*	*	*	*	*	*	*	*



Unit		Part		JOB CODE	Every service call	40K	80K	120K	160K	200K	240K	280K	320K	Remark	
U No.	Unit name	P No.	Part name												
Ua08	Manual paper feed unit	P01	Detector	CHK			*		*		*		*		
		P02	Pick-up solenoid	ABL											
		P03	Clutch spring	GRE					*					*	
				CHK	*	*				*					
		P04	Pick-up roller	CLN	*	*	*	*	*	*	*	*	*	*	
				CHK			*		*		*		*	*	Replace within 2 years after installation of a new part.
		P05	Paper feed roller	CLN	*	*	*	*	*	*	*	*	*	*	
				CHK			*		*		*		*	*	Replace within 2 years after installation of a new part.
		P06	Clutch spring	GRE					*					*	
				CHK	*	*	*	*	*	*	*	*	*	*	
		P07	Separation roller	CLN	*	*	*	*	*	*	*	*	*	*	
				CHK			*		*		*		*	*	Replace within 2 years after installation of a new part.
		P08	Limiter spring	GRE					*					*	
CHK	*			*	*	*	*	*	*	*	*	*	Replace within 2 years after installation of a new part.		
P09	Transport roller	CLN	*	*	*	*	*	*	*	*	*	*			
		CHK			*		*		*		*	*	Replace within 2 years after installation of a new part.		
P10	Gear	GRE													

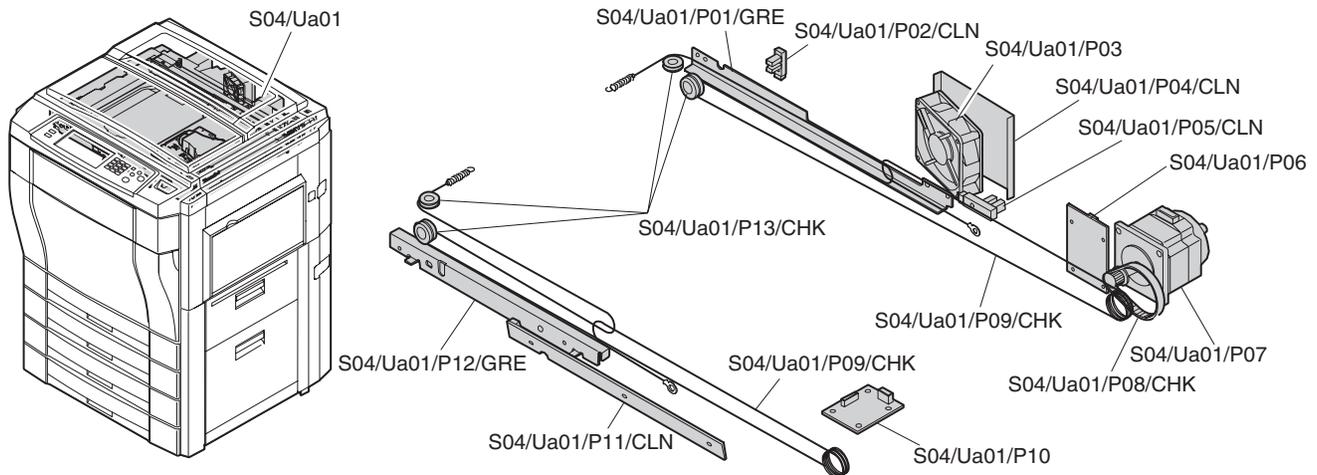


Unit		Part		JOB CODE	Every service call	40K	80K	120K	160K	200K	240K	280K	320K	Remark	
U No.	Unit name	P No.	Part name												
Ua09	Manual paper feed tray	P01	Paper width sensor	ABL											
		P02	Tray SW-S	ABL											
		P03	Tray SW-L	ABL											
		P04	Paper length detector 1	ABL											
		P05	Paper length detector 2	ABL											

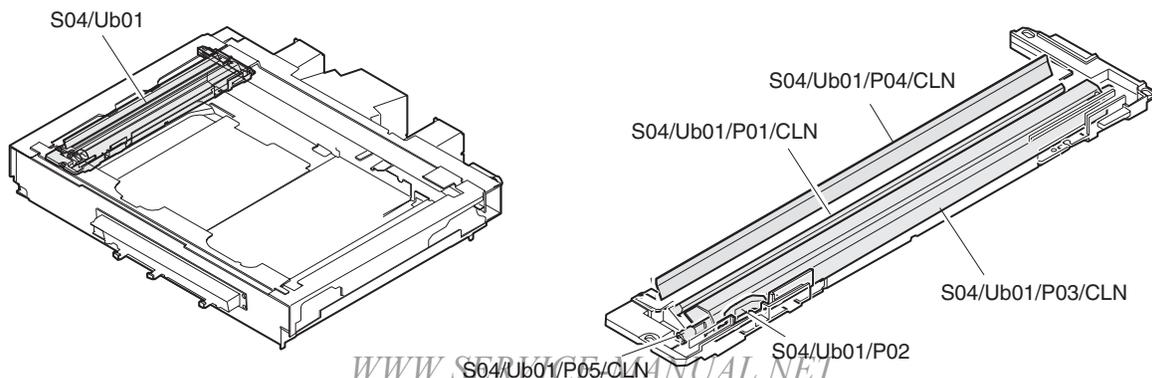


# S04 Scanner (reading) section

Unit		Part		JOB CODE	Every service call	40K	80K	120K	160K	200K	240K	280K	320K	Remark		
U No.	Unit name	P No.	Part name													
Ua01	Scanner (reading) unit			ABL												
		P01	Scanner rail R	GRE		*	*	*	*	*	*	*	*	*		
		P02	Scanner home position sensor	CLN			*		*		*		*			
		P03	Fan motor	ABL												
		P04	Filter	CLN		*	*	*	*	*	*	*	*	*		
		P05	OC cover open sensor	CLN	*	*	*	*	*	*	*	*	*	*		
		P06	Scanner motor PWB	ABL												
		P07	Scanner motor	ABL												
		P08	MB drive belt	CHK		*	*	*	*	*	*	*	*	*	*	
				ABL												
		P09	MB wire	CHK		*	*	*	*	*	*	*	*	*	*	
				ABL												
		P10	CCD power PWB	ABL												
P11	Original size sensor PWB	CLN		*	*	*	*	*	*	*	*	*				
P12	Scanner rail F	GRE		*	*	*	*	*	*	*	*	*				
P13	MB wire pulley	CHK		*	*	*	*	*	*	*	*	*				

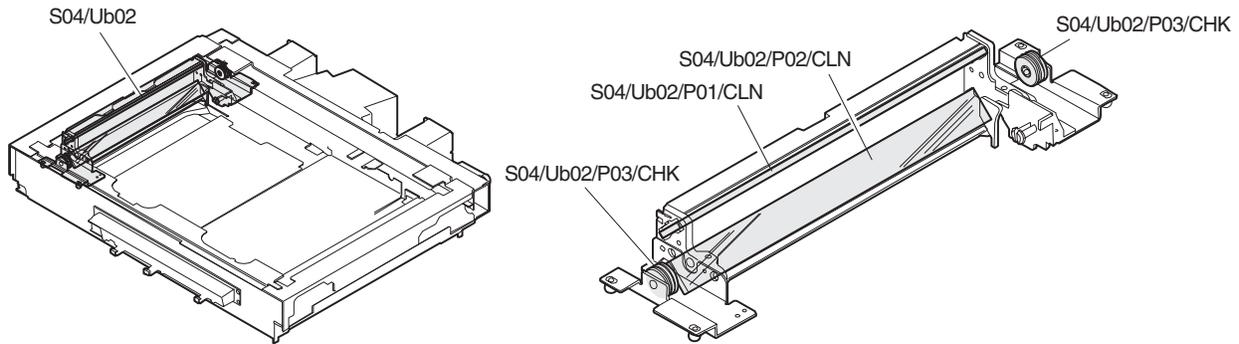


Unit		Part		JOB CODE	Every service call	40K	80K	120K	160K	200K	240K	280K	320K	Remark	
U No.	Unit name	P No.	Part name												
Ub01	Scanner unit A			ABL											
		P01	No. 1 mirror	CLN	*	*	*	*	*	*	*	*	*	*	
		P02	Thermal fuse unit	ABL											
		P03	Reflector	CLN	*	*	*	*	*	*	*	*	*	*	
		P04	Sub reflector	CLN	*	*	*	*	*	*	*	*	*	*	
		P05	Scanner lamp	CLN	*	*	*	*	*	*	*	*	*	*	*
ABL															

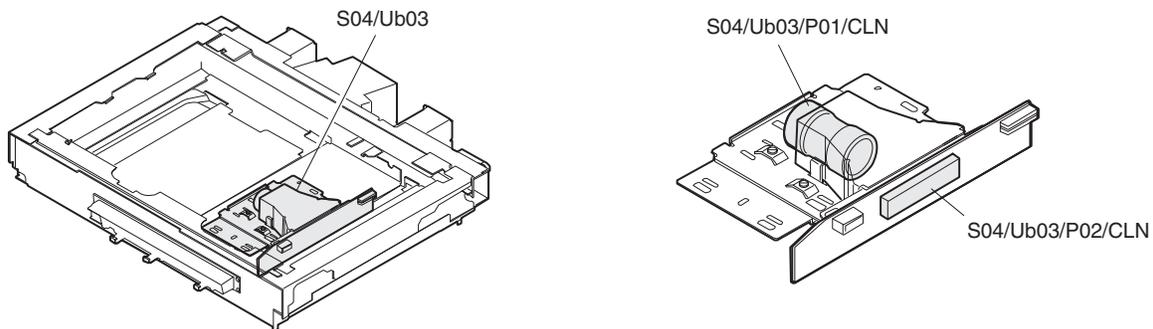


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Unit		Part		JOB CODE	Every service call	40K	80K	120K	160K	200K	240K	280K	320K	Remark	
U No.	Unit name	P No.	Part name												
Ub02	Scanner unit B			ABL											
		P01	No. 2 mirror	CLN	*	*	*	*	*	*	*	*	*	*	
		P02	No. 3 mirror	CLN	*	*	*	*	*	*	*	*	*	*	
		P03	Wire pulley	CHK		*	*	*	*	*	*	*	*	*	

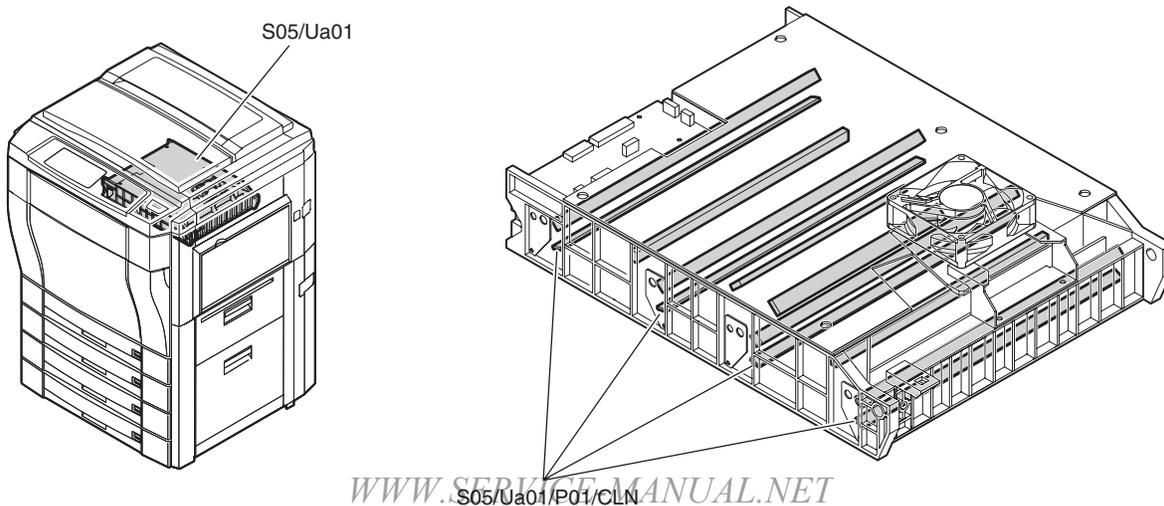


Unit		Part		JOB CODE	Every service call	40K	80K	120K	160K	200K	240K	280K	320K	Remark	
U No.	Unit name	P No.	Part name												
Ub03	CCD unit			ABL											
		P01	CCD lens	CLN	*	*	*	*	*	*	*	*	*	*	
		P02	CCD unit	CLN	*	*	*	*	*	*	*	*	*	*	



## S05 Scanner (writing) section

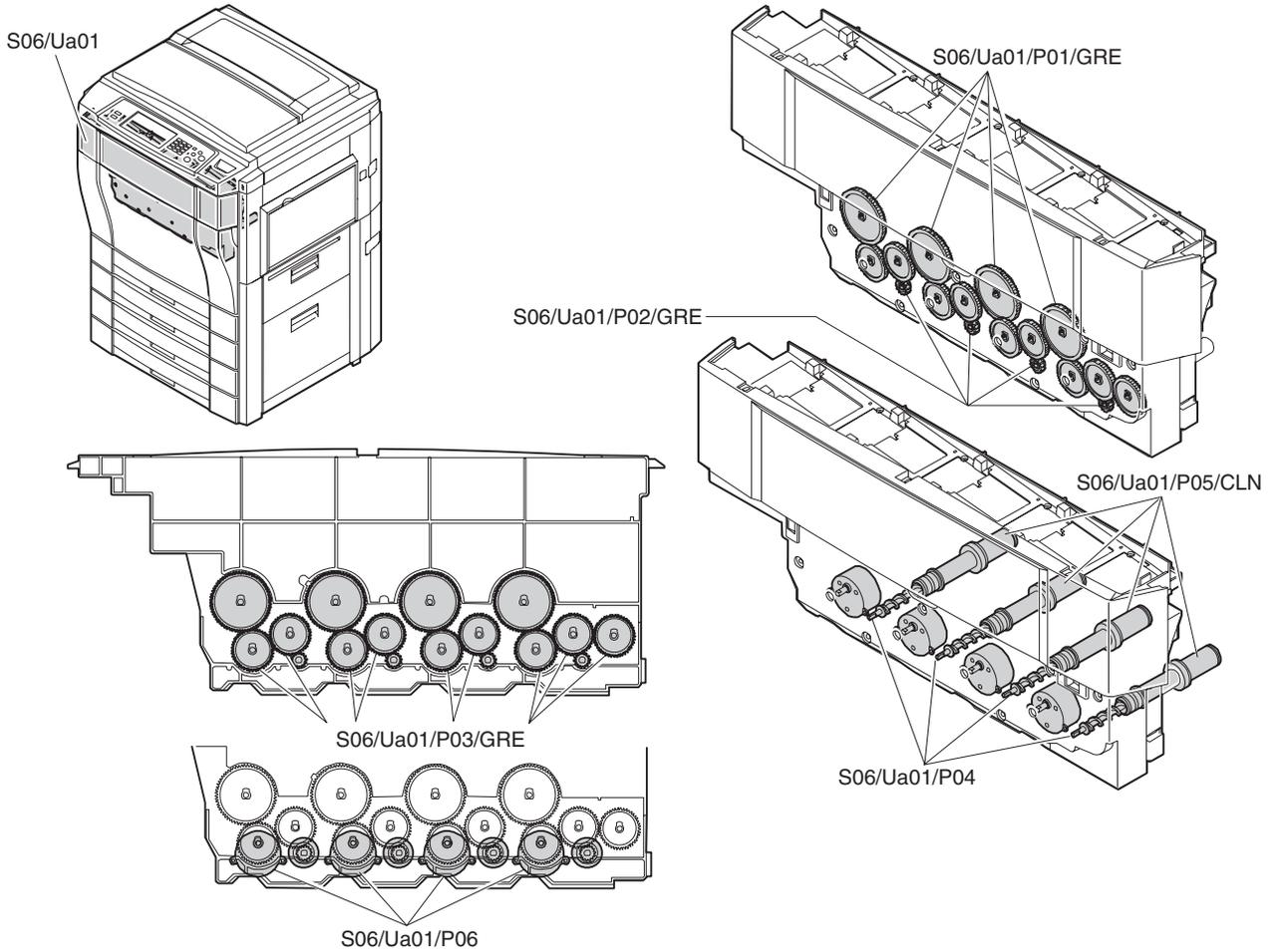
Unit		Part		JOB CODE	Every service call	40K	80K	120K	160K	200K	240K	280K	320K	Remark
U No.	Unit name	P No.	Part name											
Ua01	LSU unit			ABL										
		P01	Filter	CLN	*	*	*	*	*	*	*	*	*	*



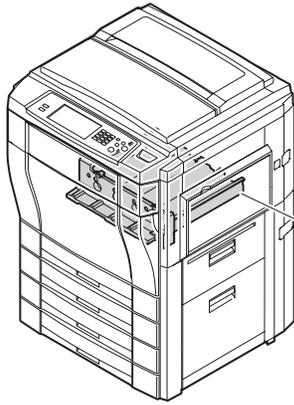
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# S06 Image process section

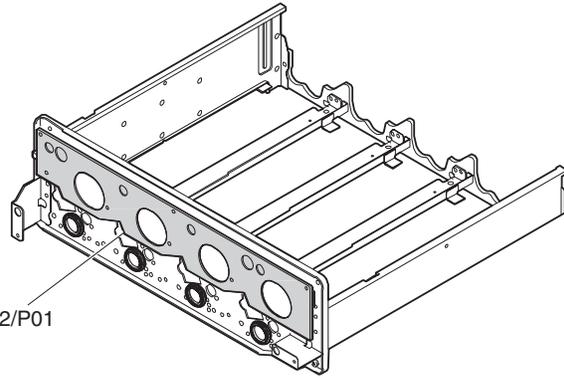
Unit		Part		JOB CODE	Every service call	40K	80K	120K	160K	200K	240K	280K	320K	Remark	
U No.	Unit name	P No.	Part name												
Ua01	Toner hopper unit			ABL											
		P01	Gear	GRE											
		P02	Gear	GRE											
		P03	Gear	GRE											
		P04	Toner transport screw	ABL											
		P05	Pipe shutter	CLN	*	*	*	*	*	*	*	*	*	*	*
P06	Toner supply motor	ABL													



Unit		Part		JOB CODE	Every service call	40K	80K	120K	160K	200K	240K	280K	320K	Remark
U No.	Unit name	P No.	Part name											
Ua02	Process frame unit													
		P01	Process control PWB	ABL										

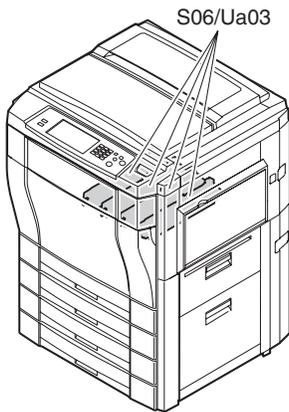


S06/Ua02

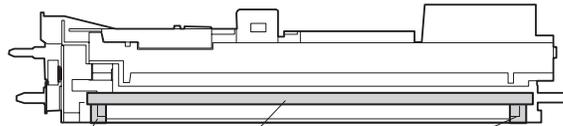


S06/Ua02/P01

Unit		Part		JOB CODE	Every service call	40K	80K	120K	160K	200K	240K	280K	320K	Remark		
U No.	Unit name	P No.	Part name													
Ua03	DV unit															
		P01	Gear	GRE												
		P02	DV seal	REP			*		*		*		*		*	
				CHK		*		*		*		*		*		*
		P03	DV side seal F	CHK		*	*	*	*	*	*	*	*	*	*	
		P04	DV side seal R	CHK		*	*	*	*	*	*	*	*	*	*	
		P05	Drum mark sensor	CLN		*	*	*	*	*	*	*	*	*	*	
		P06	ATC sensor	ABL												
		P07	Developer	REP		*	*	*	*	*	*	*	*	*	*	
P08	Duct	CLN		*	*	*	*	*	*	*	*	*	*			



S06/Ua03



S06/Ua03/P08/CLN

S06/Ua03/P04/CHK

S06/Ua03/P03/CHK

S06/Ua03/P02/CHK/REP

S06/Ua03/P05/CLN

S06/Ua03/P04/CHK

S06/Ua03/P02/CHK/REP

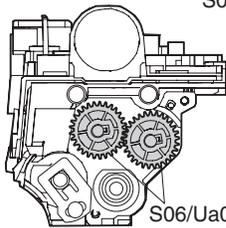
S06/Ua03/P01/GRE

S06/Ua03/P03/CHK

S06/Ua03/P01/GRE

S06/Ua03/P06

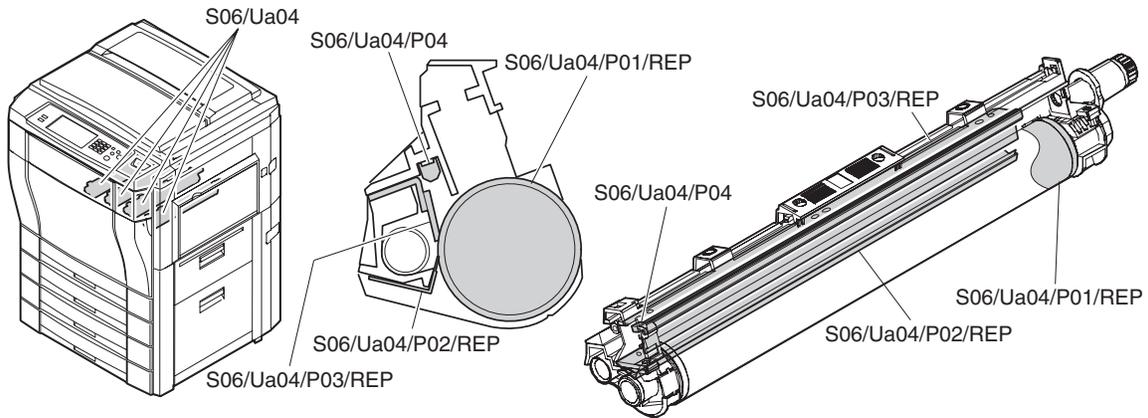
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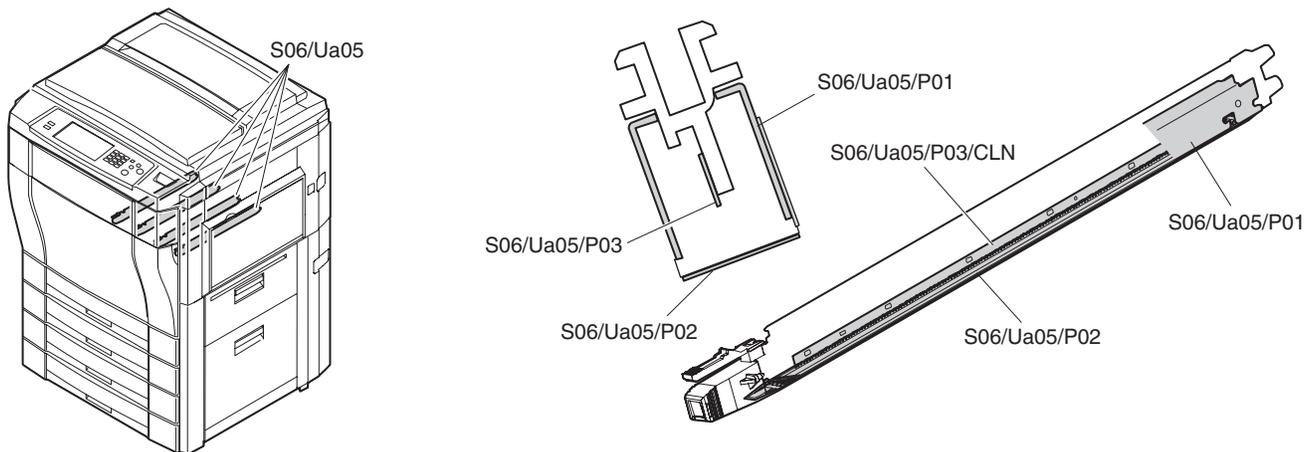
S06/Ua03/P01/GRE

S06/Ua03/P01/GRE

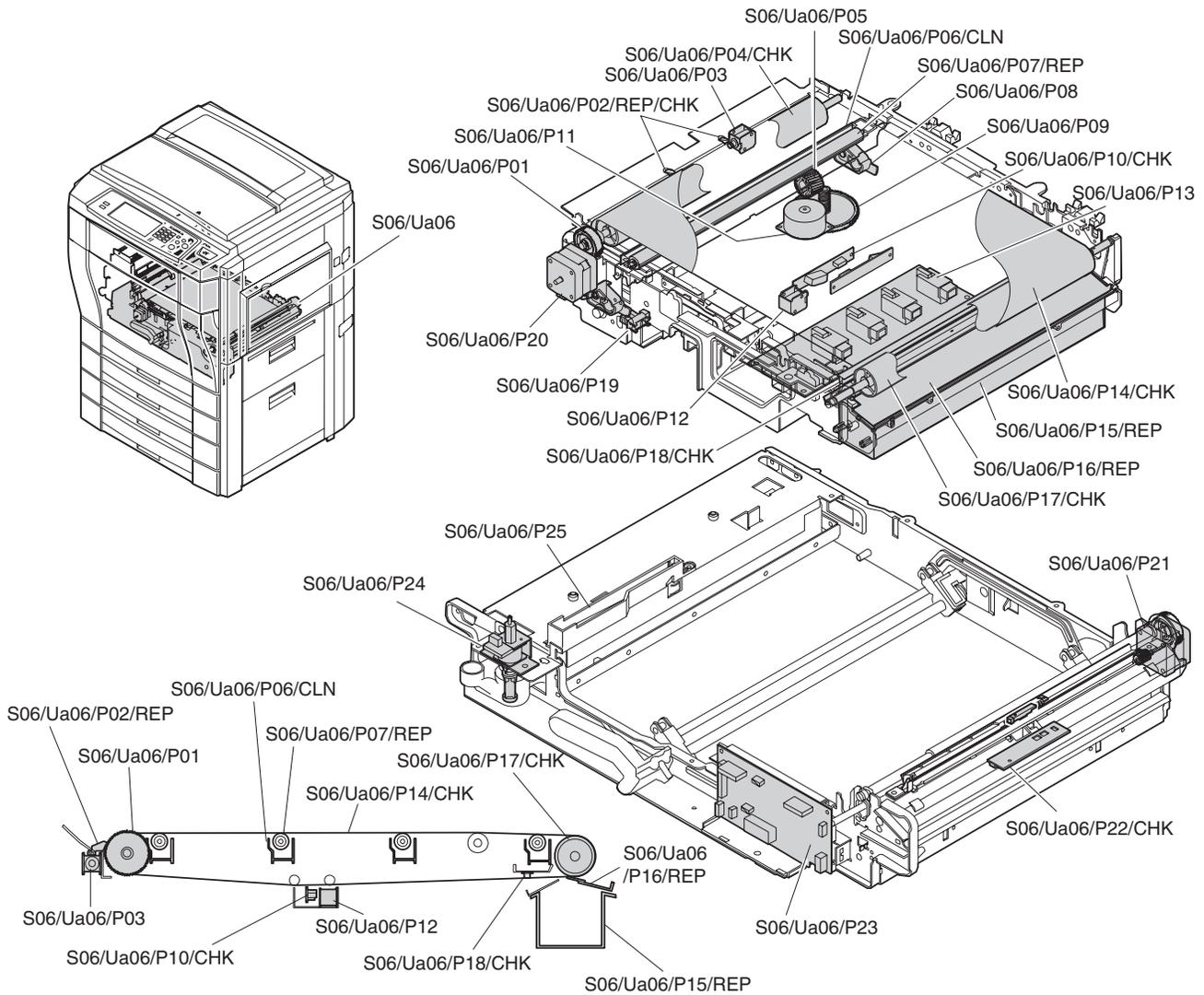
Unit		Part		JOB CODE	Every service call	40K	80K	120K	160K	200K	240K	280K	320K	Remark	
U No.	Unit name	P No.	Part name												
Ua04	OPC drum unit	P01	OPC drum	ABL										After replacement, reset the OPC drum correction counter with SIM 24-7.	
				REP	*	*	*	*	*	*	*	*	*		
		P02	Toner reception seal	REP			*		*		*			*	
				CHK		*		*		*		*		*	
		P03	Cleaning blade	REP		*	*	*	*	*	*	*	*	*	Replace within 2 years after installation of a new part.
P04	DL PWB unit	CLN	*	*	*	*	*	*	*	*	*	*			



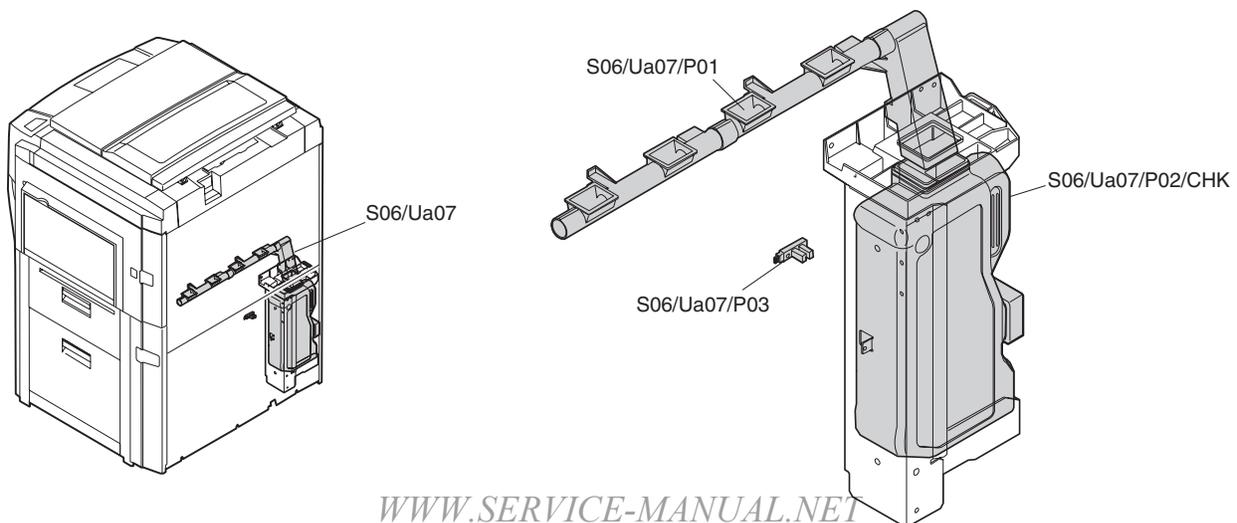
Unit		Part		JOB CODE	Every service call	40K	80K	120K	160K	200K	240K	280K	320K	Remark
U No.	Unit name	P No.	Part name											
Ua05	MC unit			CHK	*									
				REP		*	*	*	*	*	*	*	*	*
		P01	MC case	CLN	*									
		P02	MC grid	CLN	*									
		P03	Charging plate	CLN	*									



Unit		Part		JOB CODE	Every service call	40K	80K	120K	160K	200K	240K	280K	320K	Remark		
U No.	Unit name	P No.	Part name													
Ua06	Transfer unit			CHK					*				*	When replacing the unit		
		P01	Transfer belt drive gear	GRE												
		P03	Separation pawl solenoid	ABL												
		P04	Belt drive roller	CHK		*	*	*	*	*	*	*	*	*		
		P05	Gear	GRE												
		P06	Transfer discharge sheet	CLN					*						*	
				CHK		*	*	*		*	*	*				
		P07	Transfer roller	REP					*						*	Replace it every 160K.
				CHK		*	*	*		*	*	*				
		P08	Lift cam	GRE												
		P09	Idle gear	GRE												
		P10	Image density sensor	CHK		*	*	*	*	*	*	*	*	*	*	
		P11	Transfer belt lift motor	ABL												
		P12	Image density sensor solenoid	ABL												
		P13	High voltage power PWB (TC)	ABL												
		P14	Transfer belt	CHK		*	*	*		*	*	*	*			
				REP					*					*		
		P15	Waste toner tank	REP	*	*	*	*	*	*	*	*	*	*	*	After replacement, reset the waste toner counter with SIM 24-8.
		P16	Transfer belt cleaning blade	REP					*						*	
				CHK		*	*	*		*	*	*	*			Replace within 80K or 2 years after installation of a new part.
		P17	Transfer belt idle roller	CHK		*	*	*	*	*	*	*	*	*	*	
		P18	Transfer belt cleaner	CHK		*	*	*	*	*	*	*	*	*	*	
		P19	Transfer unit sensor	CHK		*	*	*	*	*	*	*	*	*	*	
		P20	Belt drive motor	ABL												
		P21	RR motor	ABL												
P22	Humidity sensor	CHK		*	*	*	*	*	*	*	*	*	*			
P23	PCU sub PWB	ABL														
P24	Oil pump	CHK														
P25	Oil filter unit	REP		*	*	*	*	*	*	*	*	*	*			



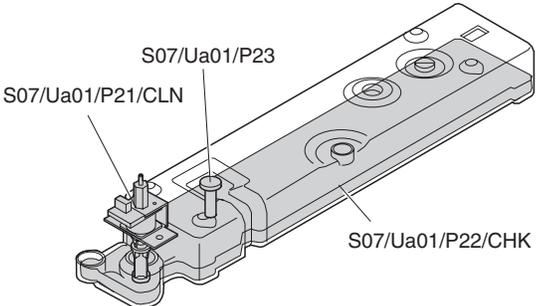
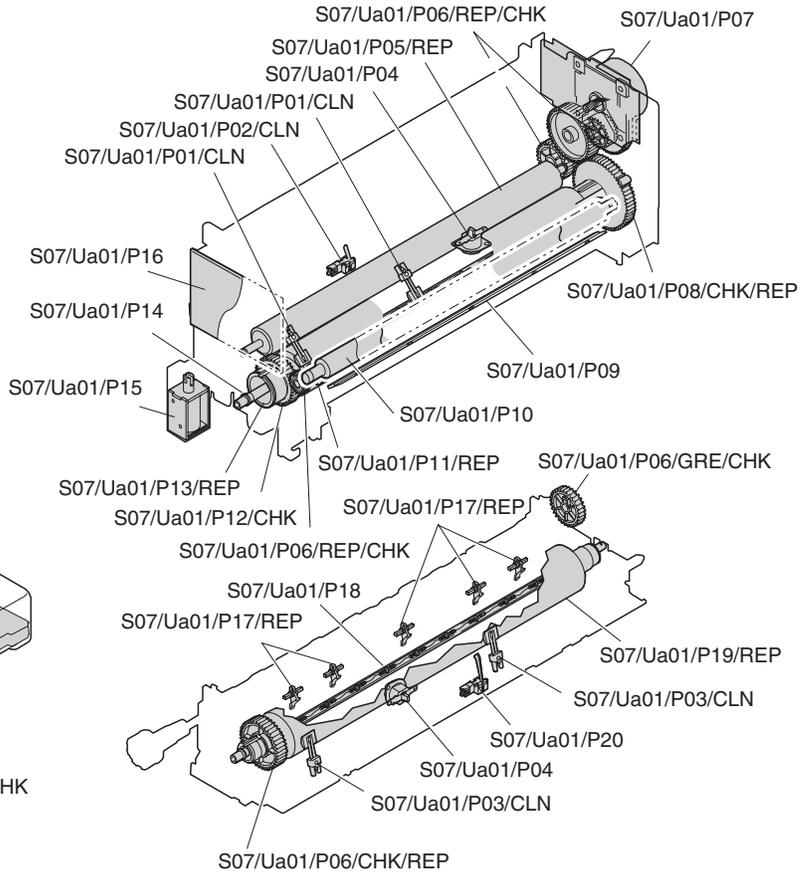
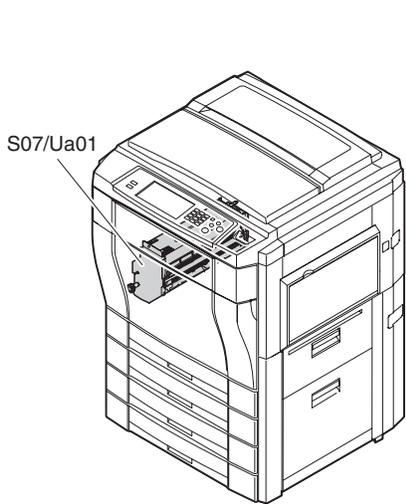
Unit	Part		JOB	Every	40K	80K	120K	160K	200K	240K	280K	320K	Remark
U No.	Unit name	P No.	Part name	CODE	service								
Ua07	Waste toner unit				call								
		P01	Waste toner transport unit	ABL									
		P02	Waste toner bottle	CHK	*								User replacement
		P03	Waste toner full sensor	ABL									



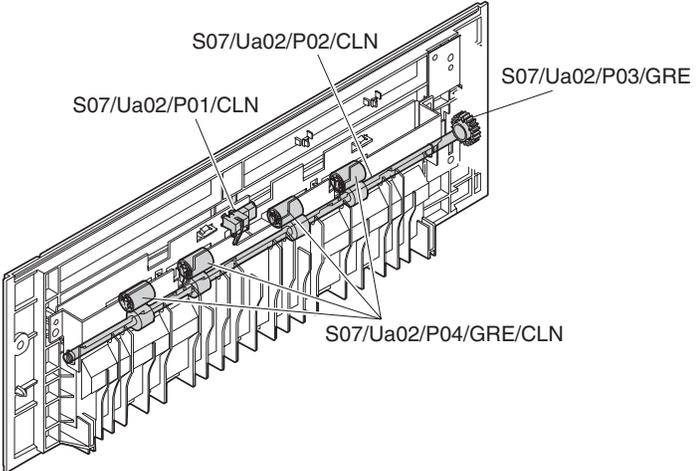
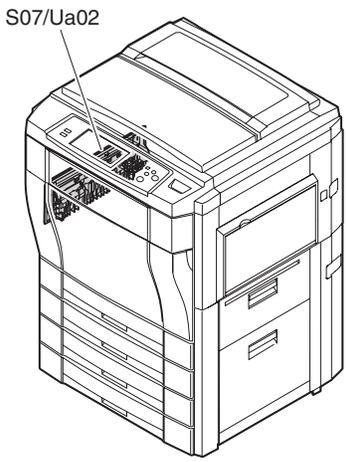
# S07 Fusing/paper exit sections

Unit		Part		JOB CODE	Every service call	40K	80K	120K	160K	200K	240K	280K	320K	Remark		
U No.	Unit name	P No.	Part name													
Ua01	Fusing unit			CHK		*	*	*	*	*	*	*	*	When replacing the unit		
		P01	Thermistor (Upper) 2 pcs	CHK		*	*	*	*	*	*	*	*	*		
		P02	Duplex paper exit detector	CLN				*		*		*		*		
		P03	Thermistor (Lower) 2 pcs.	CHK			*	*	*	*	*	*	*	*		
		P04	Thermostat (Upper/Lower)	ABL												
		P05	Upper cleaning roller	REP			*	*	*	*	*	*	*	*	Replace within 40K or 2 years after installation of a new part.	
		P06	Gear *1	REP							*				*	
				CHK			*	*	*	*	*	*	*	*	*	
		P07	Fusing drive motor	ABL												
		P08	Upper heat roller gear R *2	REP			*	*	*	*	*	*	*	*	*	
				CHK												
				ABL												
		P09	Oil applying felt	REP			*	*	*	*	*	*	*	*	*	
				ABL												
		P10	Oil applying blade	REP			*	*	*	*	*	*	*	*	*	Replace within 40K or 2 years after installation of a new part.
				ABL												
		P11	Oil applying roller	REP			*	*	*	*	*	*	*	*	*	Replace within 40K or 2 years after installation of a new part.
				ABL												
		P12	Upper heat roller gear F *2	CHK												
				REP			*	*	*	*	*	*	*	*	*	
				ABL												
		P13	Upper heat roller *2	REP			*	*	*	*	*	*	*	*	*	Replace within 40K or 2 years after installation of a new part.
				ABL												
P14	Upper heater lamp	ABL														
P15	Duplex gate solenoid	ABL														
P16	Heater lamp control PWB (AC sub PWB)	ABL														
P17	Lower separation pawl	REP			*	*	*	*	*	*	*	*	*			
P18	Lower heater lamp	ABL														
P19	Lower heat roller *1	REP			*	*	*	*	*	*	*	*	*	Replace within 40K or 2 years after installation of a new part.		
		ABL														
P20	Paper entry detector	CLN				*		*		*		*				
P21	Oil pump/Filter	CHK			*	*	*	*	*	*	*	*	*			
P22	Oil	CHK			*	*	*	*	*	*	*	*	*			
P23	Oil sensor	ABL														

\*1, \*2: Replacement is made by the whole unit of the heat roller unit. [WWW.SERVICE-MANUAL.NET](http://WWW.SERVICE-MANUAL.NET)

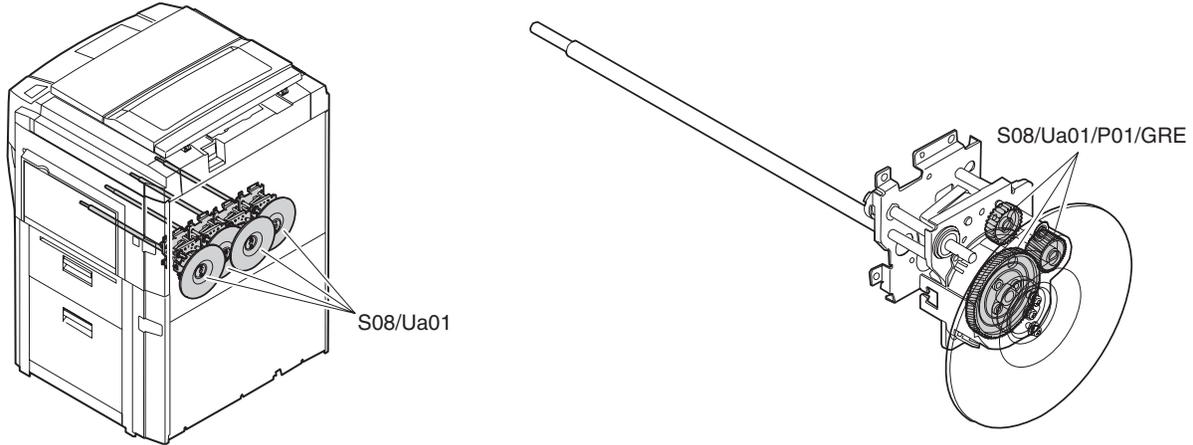


Unit		Part		JOB CODE	Every service call	40K	80K	120K	160K	200K	240K	280K	320K	Remark	
U No.	Unit name	P No.	Part name	JOB CODE											
Ua02	Paper exit unit			ABL											
		P01	Paper exit detector	CLN			*		*		*		*		
		P02	Paper exit roller	CLN	*	*	*	*	*	*	*	*	*	*	
		P03	Gear	GRE											
		P04	Paper exit idle roller	GRE											Inside
				CLN		*	*	*	*	*	*	*	*		

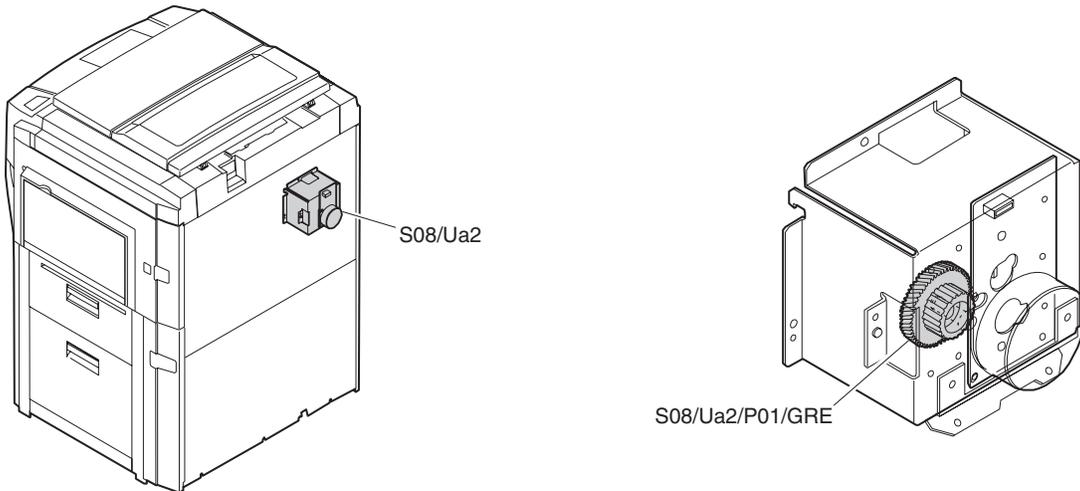


# S08 Drive section

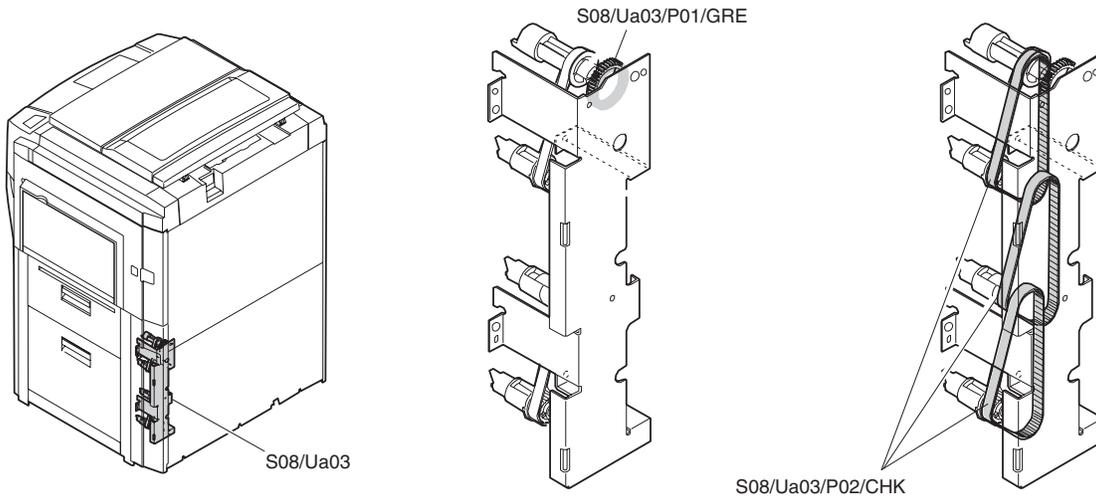
Unit		Part		JOB CODE	Every service call	40K	80K	120K	160K	200K	240K	280K	320K	Remark
U No.	Unit name	P No.	Part name											
Ua01	OPC drum drive unit			ABL										
		P01	Gear	GRE	*	*	*	*	*	*	*	*	*	*



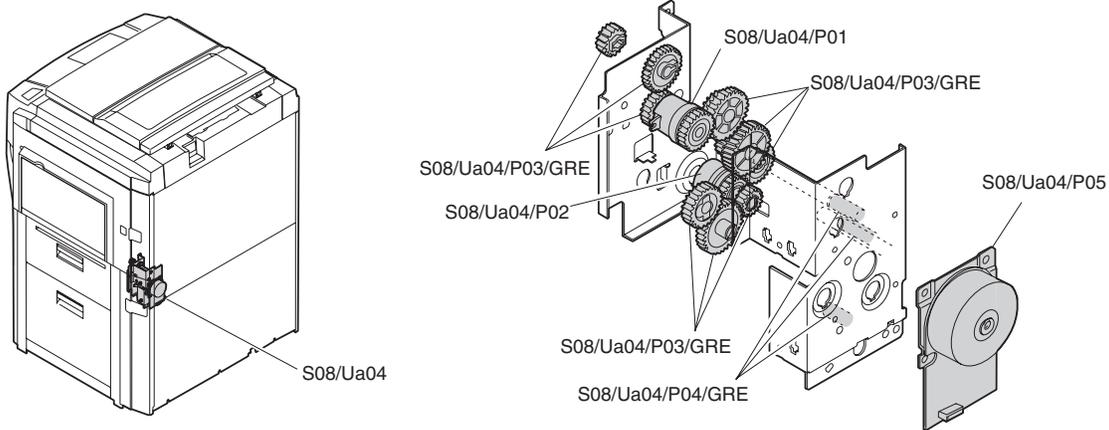
Unit		Part		JOB CODE	Every service call	40K	80K	120K	160K	200K	240K	280K	320K	Remark
U No.	Unit name	P No.	Part name											
Ua02	Developer drive unit			ABL										
		P01	Gear	GRE		*	*	*	*	*	*	*	*	*



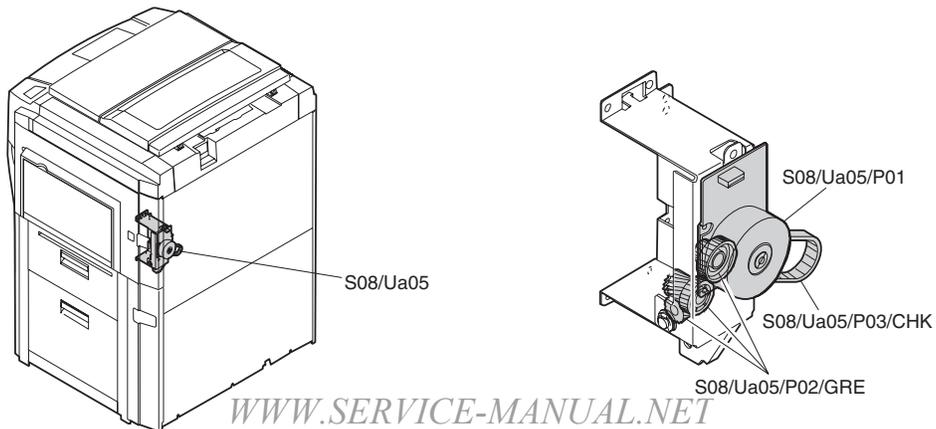
Unit		Part		JOB CODE	Every service call	40K	80K	120K	160K	200K	240K	280K	320K	Remark
U No.	Unit name	P No.	Part name											
Ua03	Paper feed drive unit			ABL										
		P01	Gear	GRE	*	*	*	*	*	*	*	*	*	*
		P02	Belt	CHK	*	*	*	*	*	*	*	*	*	*



Unit		Part		JOB CODE	Every service call	40K	80K	120K	160K	200K	240K	280K	320K	Remark	
U No.	Unit name	P No.	Part name												
Ua04	Paper feed drive unit			ABL											
		P01	Manual paper feed clutch	ABL											
		P02	Paper feed clutch	ABL											
		P03	Gear	GRE	*	*	*	*	*	*	*	*	*	*	
		P04	Shaft	GRE											
		P05	Paper feed motor	ABL											

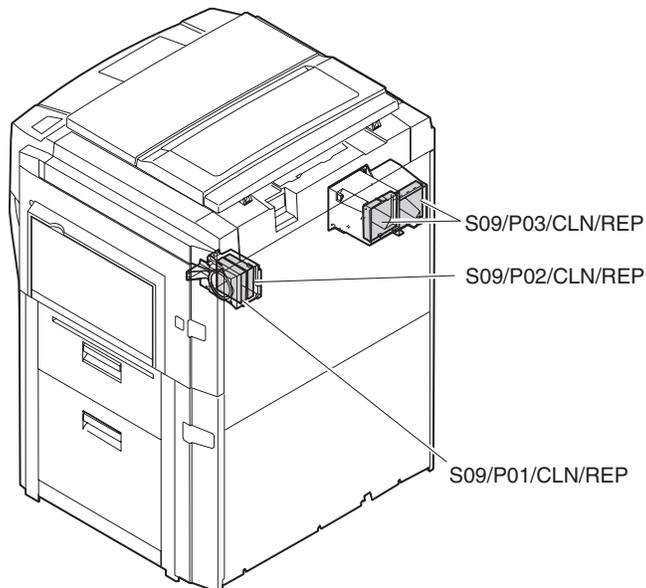


Unit		Part		JOB CODE	Every service call	40K	80K	120K	160K	200K	240K	280K	320K	Remark	
U No.	Unit name	P No.	Part name												
Ua05	Developer drive unit (K)			ABL											
		P01	Motor	ABL											
		P02	Gear	GRE	*	*	*	*	*	*	*	*	*	*	
		P03	Belt	CHK	*	*	*	*	*	*	*	*	*	*	



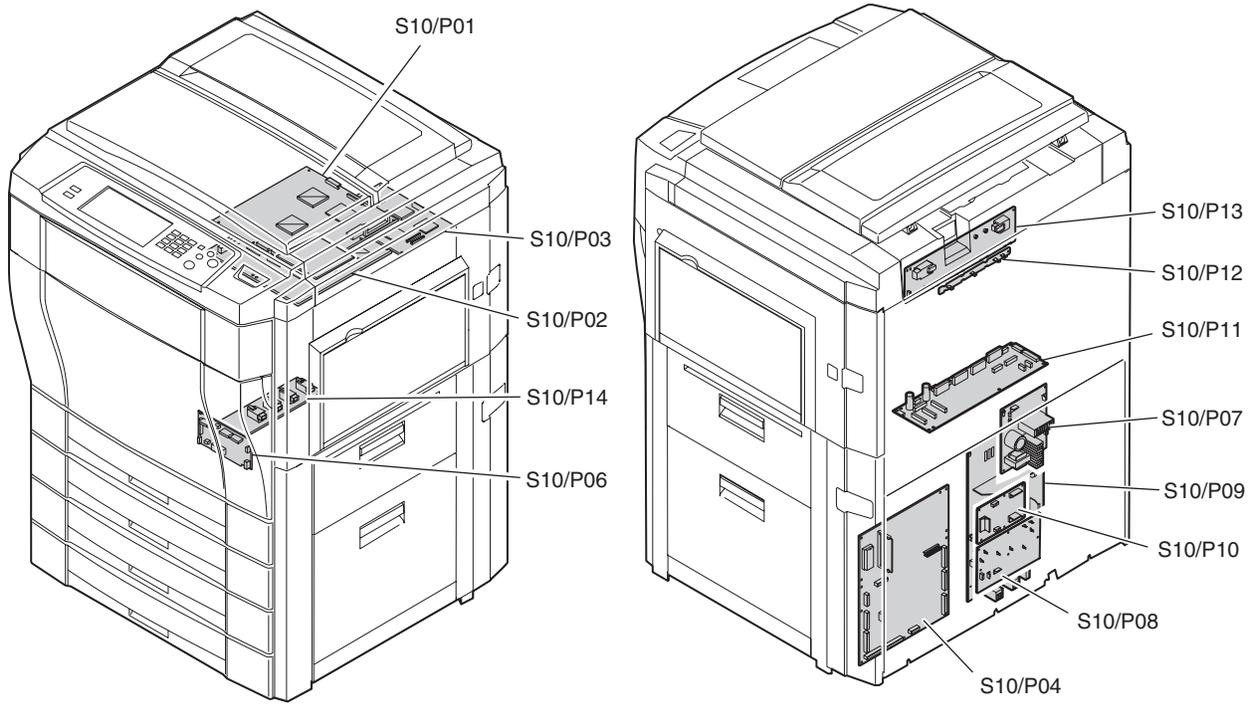
## S09 Filter

Unit		Part		JOB CODE	Every service call	40K	80K	120K	160K	200K	240K	280K	320K	Remark	
U No.	Unit name	P No.	Part name												
		P01	Ozone filter	CLN		*		*		*		*			
				REP			*		*		*		*		
		P02	Toner duct filter	CLN		*		*		*		*		*	
				REP			*		*		*		*		
		P03	Process filter	CLN		*		*		*		*		*	
				REP			*		*		*		*		*



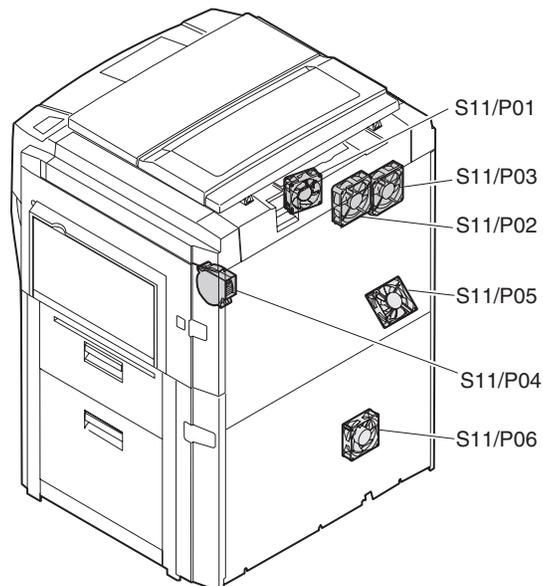
## S10 PWB

Unit		Part		JOB CODE	Every service call	40K	80K	120K	160K	200K	240K	280K	320K	Remark	
U No.	Unit name	P No.	Part name												
		P01	ICU MAIN PWB	ABL											
		P02	ICU IMAGE PWB	ABL											
		P03	ICU SCAN PWB	ABL											
		P04	PCU MAIN PWB	ABL											
		P06	PCU SUB PWB	ABL											
		P07	Scanner lamp control PWB	ABL											
		P08	AC main power PWB	ABL											
		P09	DC power PWB	ABL											
		P10	Power control PWB												
		P11	OPC drum drive/ Signal interface PWB	ABL											
		P12	High voltage power interface PWB	ABL											
		P13	High voltage power PWB (Main charger, developing bias)	ABL											
		P14	High voltage power PWB (Transfer charger)	ABL											



## S11 Fan motor

Unit		Part		JOB CODE	Every service call	40K	80K	120K	160K	200K	240K	280K	320K	Remark
U No.	Unit name	P No.	Part name											
		P01	Scanner (reading) cooling fan motor	ABL										
		P02	Scanner (writing) cooling fan motor	ABL										
		P03	Fusing exhaust fan motor	ABL										
		P04	Process exhaust fan motor	ABL										
		P05	Development color motor cooling fan motor	ABL										
		P06	Power cooling fan motor	ABL										

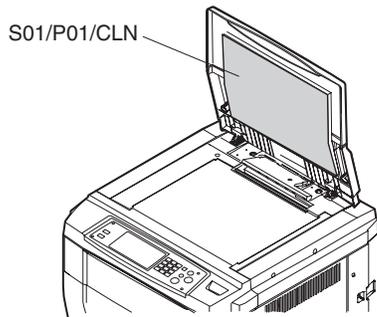


### 3. Details

## S01 External fitting section

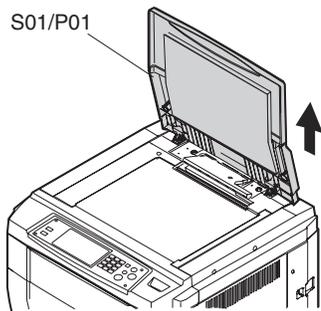
### S01/P01 Original cover

- 1) Open the original cover (S01/P01).



\* Clean the original cover (S01/P01) with alcohol.

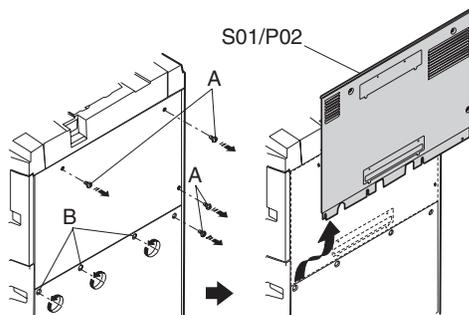
- 2) Lift the original cover (S01/P01) upward.



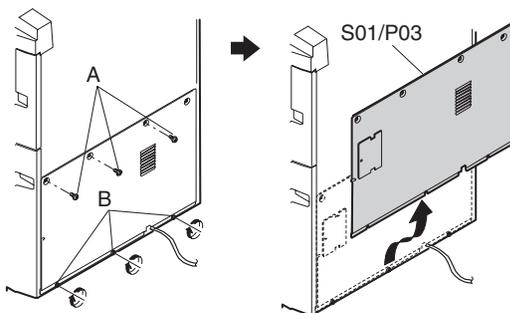
### S01/P02 Rear cabinet upper

### S01/P03 Rear cabinet lower

- 1) Loosen screw (A) and screw (B).
- 2) Remove the rear cabinet upper (S01/P02).

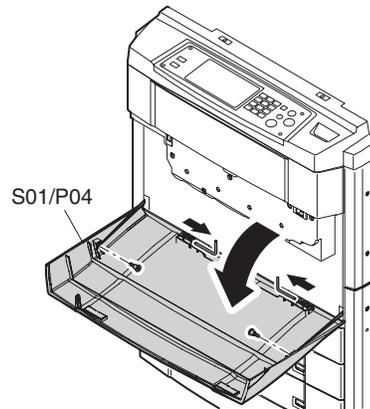


- 3) Loosen screw (A) and screw (B).
- 4) Remove the rear cabinet lower (S01/P03).



### S01/P04 Front cabinet

- 1) Loosen two screws, and remove the band.
- 2) Remove the L-shaped pin, and remove the hinge front cabinet (P01/P04) from the machine hinge.



### S01/P05 Glass holder right

### S01/P06 Glass holder left

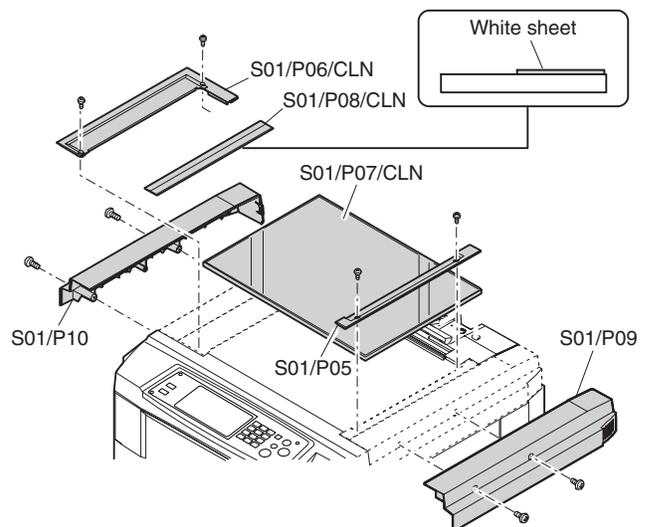
### S01/P07 Table glass

### S01/P08 Shading glass

### S01/P09 Upper cabinet right

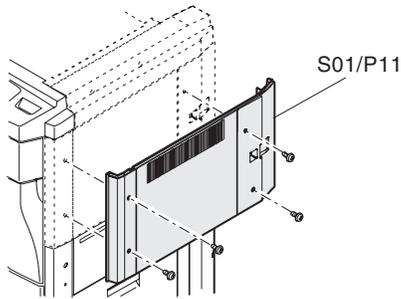
### S01/P10 Upper cabinet left

- 1) Remove the screw, and remove the upper cabinet right (S01/P09).
- 2) Remove the screw, and remove the upper cabinet left (S01/P10).
- 3) Remove the screw, and remove the glass holder right (S01/P05).
- 4) Remove the screw, and remove the glass holder left (S01/P06).
- 5) Remove the table glass (S01/P07).
  - \* Clean the table glass (S01/P07) with absolute alcohol.
- 6) Remove the shading glass (S01/P08). Clean the table glass (S01/P07) with absolute alcohol.
  - \* Clean the shading glass (S01/P08) with absolute alcohol.
  - \* When attaching, face the white sheet upward.



### S01/P11 Right cabinet upper

- 1) Remove the screw.
- 2) Remove the right cabinet upper (S01/P11).

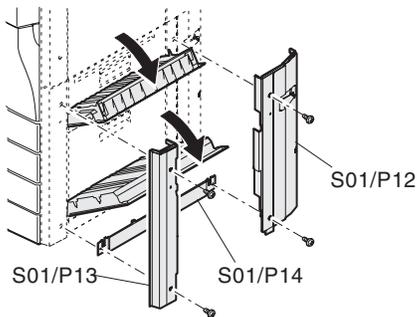


### S01/P12 Right cabinet lower rear

### S01/P13 Right cabinet lower front

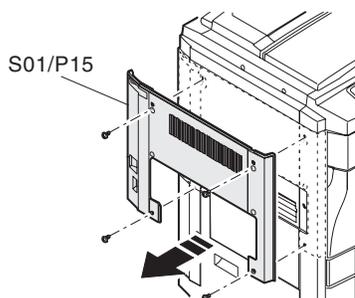
### S01/P14 Right cabinet lower

- 1) Open the right door upper unit and the right door lower unit.
- 2) Remove the screw and remove the right cabinet lower front (S01/P13).
- 3) Remove the screw and remove the right cabinet lower rear (S01/P12) and right cabinet lower (S01/P14).



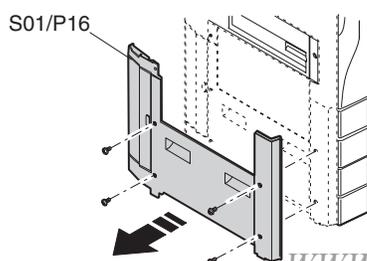
### S01/P15 Left cabinet upper

- 1) Remove the screw, and remove the left cabinet upper (S01/P15).



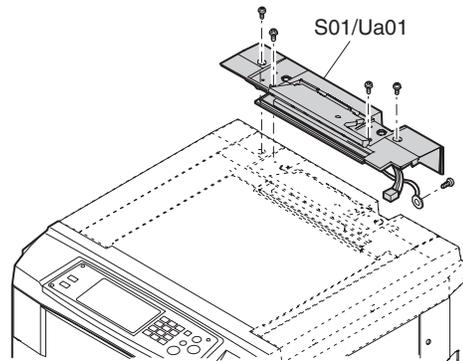
### S01/P16 Left cabinet lower

Remove the screw, and remove the left cabinet lower (S01/P16).



### S01/Ua01 Rear cabinet upper unit

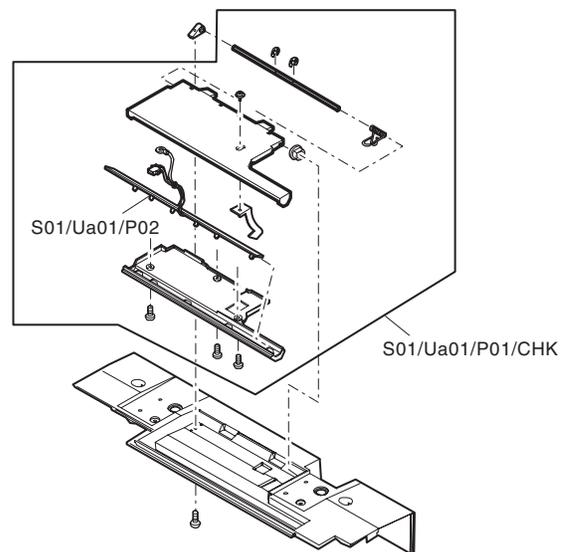
- 1) Remove the rear cabinet. [S01/P02]
- 2) Remove the screw, and remove the earth pin and the connector.
- 3) Remove the upper cabinet rear unit (S01/Ua01).



### S01/Ua01/P01 Original size sensor unit (Light emitting)

### S01/Ua01/P02 Original size sensor PWB (Light emitting)

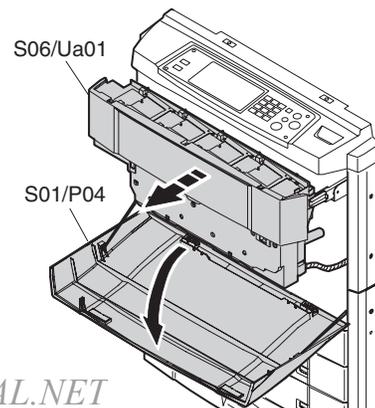
\* Clean the original size sensor PWB (light emitting)



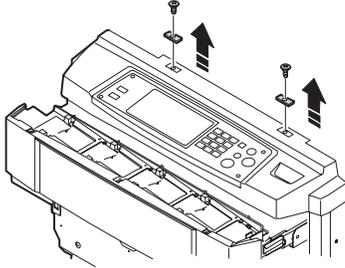
## S02 Operation section

### S02/Ua01 Operation unit

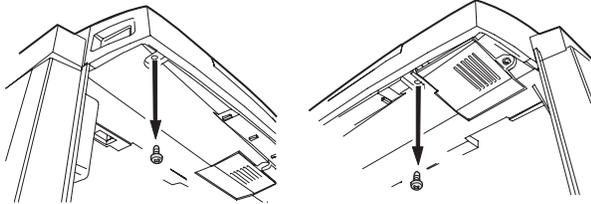
- 1) Open the front cabinet, and pull out the hopper unit (S06/Ua01).



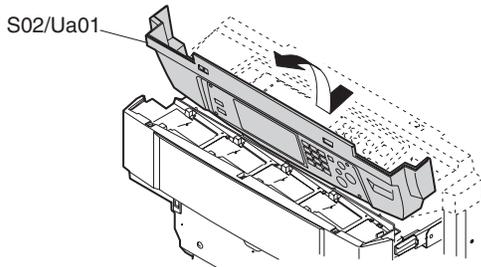
- Remove the screw, and remove the magnet plate.



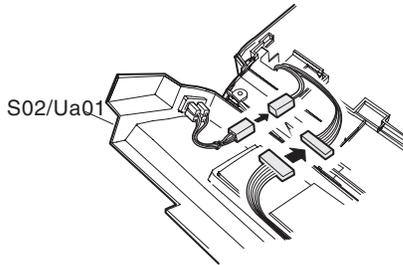
- Remove two screws on the back of the operation unit.



- Pull out the operation unit (S02/Ua01) and put it upside down.

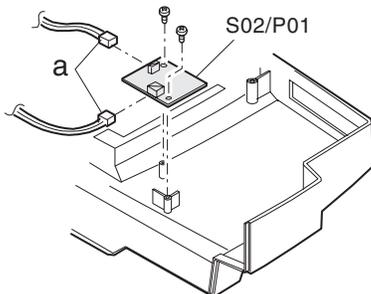


- Remove the connector, and remove the operation unit (S02/Ua01).



### S02/P01 Inverter PWB

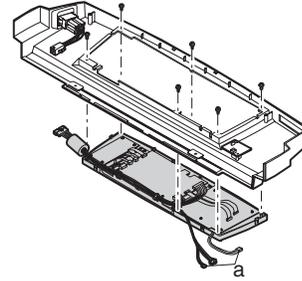
- Remove the connectors (a).
- Remove the screws and remove the inverter PWB (S02/P01).



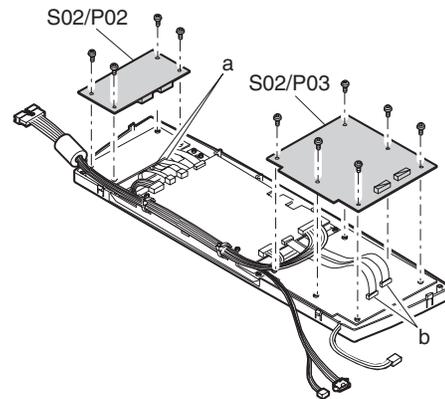
### S02/P02 OP PWB L

### S02/P03 OP PWB R

- Remove the connectors (a).
- Remove the screw, and remove the operation panel B.

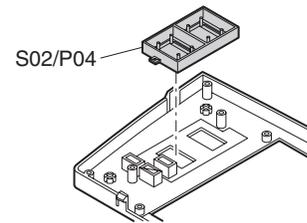


- Remove two flat cables (a).
- Remove the screws, and remove the OP PWB L (S02/P02).
- Remove the flat cables (b).
- Remove the screws, and remove the OP PWB R (S02/P03).



### S02/P04 Select key

- Remove the select key (S02/P04).



### S02/P05 10-key

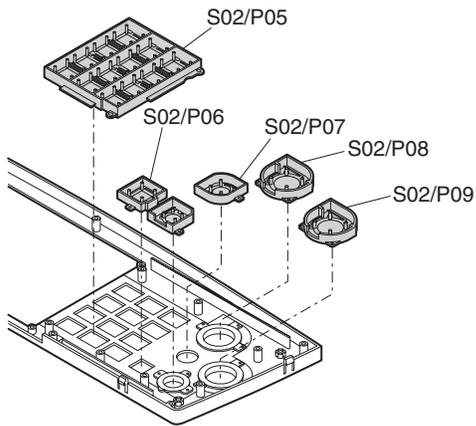
### S02/P06 CL key

### S02/P07 Interruption key

### S02/P08 Copy key

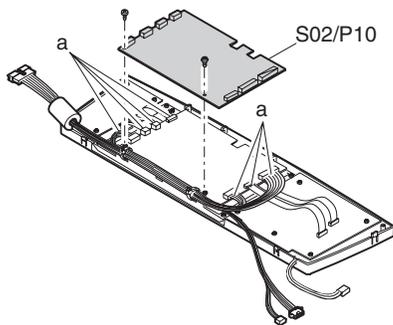
### S02/P09 Color select key

- Remove the 10-key (S02/P05).
- Remove the CL key (S02/P06).
- Remove the interruption key (S02/P07).
- Remove the copy key (S02/P08).
- Remove the color select key (S02/P09).
- Remove the CA key.



### S02/P10 OP control PWB

- 1) Remove the flat cable and connectors (a).
- 2) Remove two screws, and remove the OP control PWB (S02/P10).

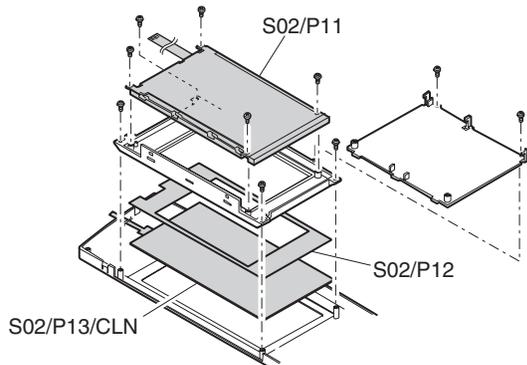


### S02/P11 LCD unit

### S02/P12 LCD sheet

### S02/P13 Touch panel

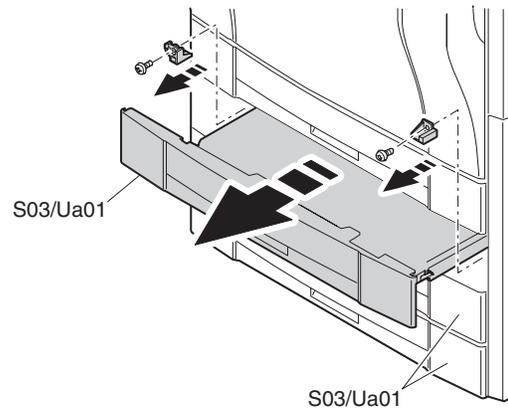
- 1) Remove the screw, and remove the LCD holder B.
  - 2) Remove the screw, and remove the LCD unit (S02/P11).
  - 3) Remove the screw, and remove the LCD holder A.
  - 4) Remove the LCD sheet (S02/P12).
  - 5) Remove the touch panel (S02/P13).
- \* Clean with alcohol.



## S03 Paper feed/transport section

### S03/Ua01 Paper tray unit

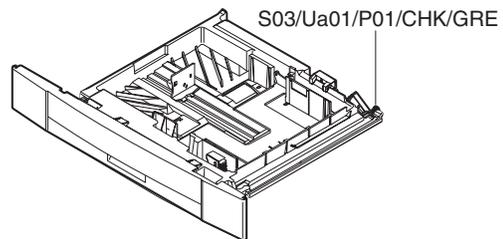
- 1) Remove the screw, and remove the tray stoppers L and R.



- 2) Remove the paper tray unit (S03/Ua01).

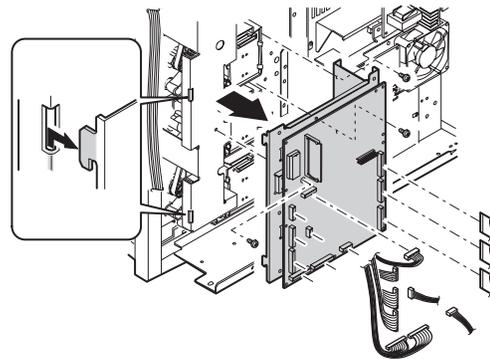
### S03/Ua01/P01 Earth spring

- \* Apply grease to the gear (S03/Ua01/P01).

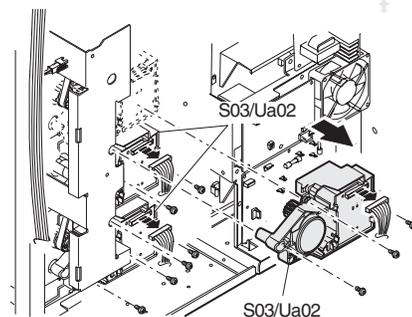


### S03/Ua02 Paper tray lift up unit

- 1) Remove the rear cabinet lower. [S01/P03]

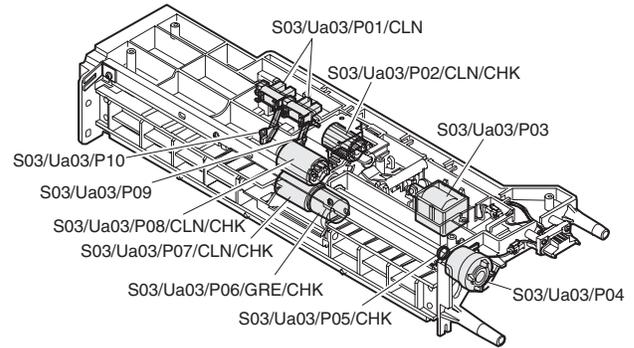
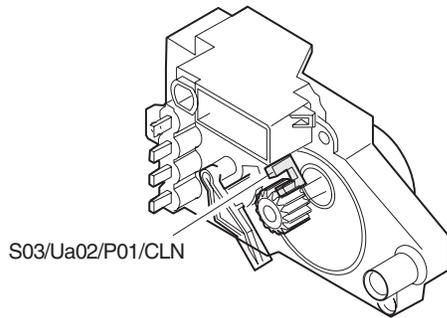


- 2) Remove the screw, and remove the PCU main PWB unit.
- 3) Remove the screw, and remove the paper tray lift up unit (S03/Ua02).



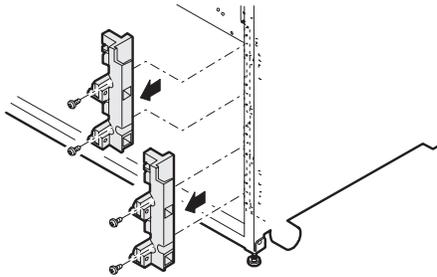
### S03/Ua02/P01 Lift position sensor

- \* Clean the photo sensor (S03/Ua02/P01).

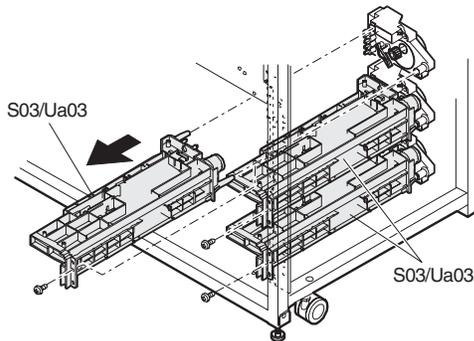


### S03/Ua03 Paper feed unit

- 1) Remove the whole paper tray unit. [S03/Ua01]
- 2) Remove the screw, and remove the rail cover R.

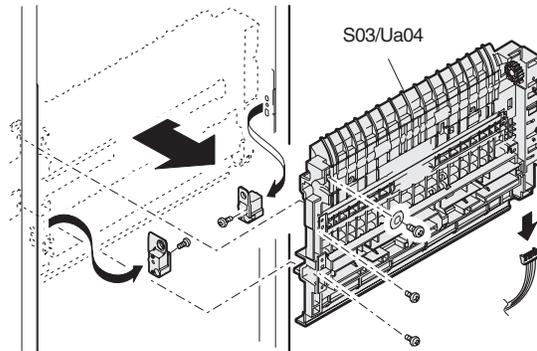


- 3) Remove the screw, and remove the paper feed unit (S03/Ua03).



### S03/Ua04 Transport upper unit

- 1) Remove the right cabinet left front. [S01/P12]
- 2) Remove the right cabinet lower rear and the right cabinet lower. [S01/P13], [S01/P14]
- 3) Remove the right door upper unit. [S03/Ua06]
- 4) Remove the right door lower unit. [S03/Ua07]
- 5) Remove the rail cover R.
- 6) Remove the transport lower unit. [S03/Ua05]
- 7) Remove the connector.
- 8) Remove the screw, and remove the right door fulcrums F and R.
- 9) Remove the screw, and remove the transport upper unit (U03/Ua04).



### S03/Ua02/P01 Detector

### S03/Ua02/P02 Pick-up roller

### S03/Ua02/P05 Brake spring

### S03/Ua02/P06 Torque limiter

### S03/Ua02/P07 Separation roller

### S03/Ua02/P08 Paper feed roller

- \* Clean the detector (S03/Ua02/P01).
- \* Clean the pick-up roller (S03/Ua02/P02).
- \* Apply oil to the brake spring (S03/Ua02/P05).
- \* Apply oil to the torque limiter (S03/Ua02/P06).
- \* Clean the separation roller (S03/Ua02/P07).
- \* Clean the paper feed roller (S03/Ua02/P08).

### S03/Ua04/P01 Transport roller

### S03/Ua04/P02 Idle roller

### S03/Ua04/P03 Actuator

### S03/Ua04/P04 Actuator

### S03/Ua04/P05 Actuator

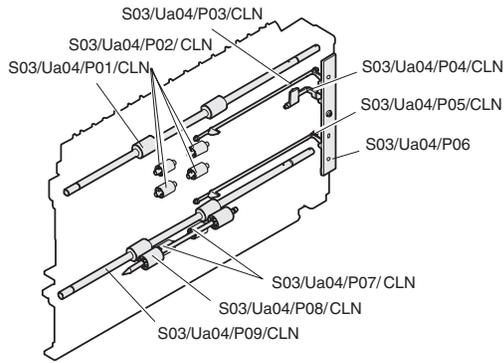
### S03/Ua04/P06 IFD PWB

### S03/Ua04/P07 Idle roller

### S03/Ua04/P08 Idle roller

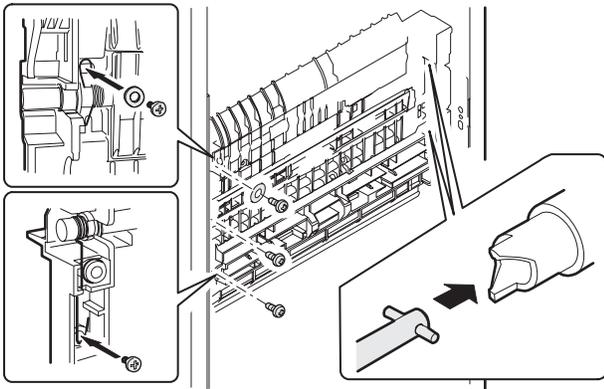
### S03/Ua04/P09 Transport roller

- \* Clean the transport roller (S03/Ua04/P01).
- \* Clean the idle roller (S03/Ua04/P02).
- \* Clean the IFD PWB (S03/Ua04/P06).
- \* Clean the idle roller (S03/Ua04/P07).
- \* Apply grease to the idle roller (S03/Ua04/P08).
- \* Clean the transport roller (S03/Ua04/P09).



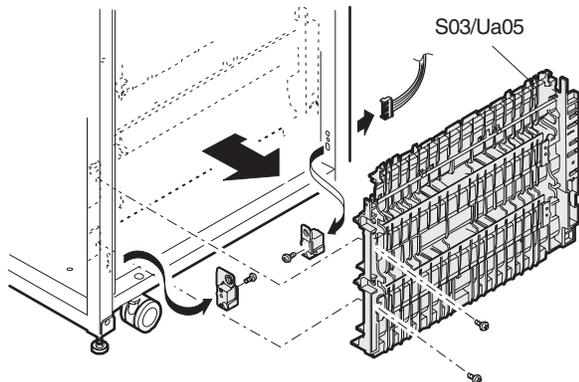
**<Note for assembly>**

- \* Engage the transport roller R side projection with the paper feed drive coupling.
- \* When tightening screws, tighten the transport roller earth spring together.



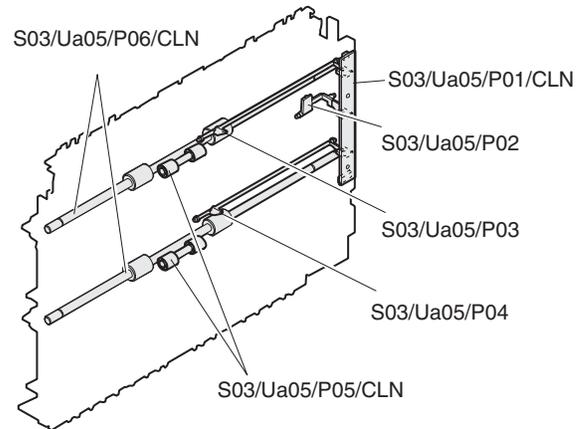
**S03/Ua05 Transport lower unit**

- 1) Remove the right cabinet lower front. [S01/P12]
- 2) Remove the right cabinet lower rear and the right cabinet lower. [S01/P13], [S01/P14]
- 3) Remove the right door upper unit. [S03/Ua06]
- 4) Remove the right door lower unit. [S03/Ua07]
- 5) Remove the CS rail cover R.
- 6) Remove the screw, and remove the right door fulcrums F, R.
- 7) Remove the connector.
- 8) Remove the screw, and remove the transport lower unit (S03/Ua05).



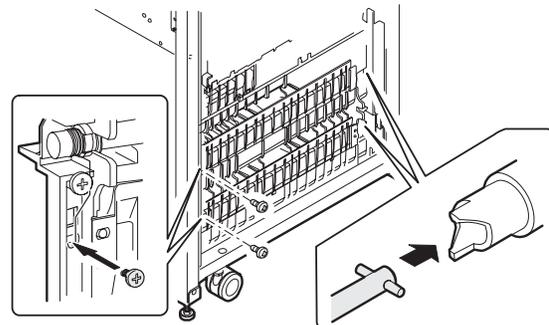
- S03/Ua05/P01** PFD PWB
- S03/Ua05/P02** Actuator
- S03/Ua05/P03** Actuator
- S03/Ua05/P04** Actuator
- S03/Ua05/P05** Idle roller
- S03/Ua05/P06** Transport roller

- \* Clean the PFD PWB (S03/Ua05/P01).
- \* Clean the idle roller (S03/Ua05/P05).
- \* Clean the transport roller (S03/Ua05/P06).



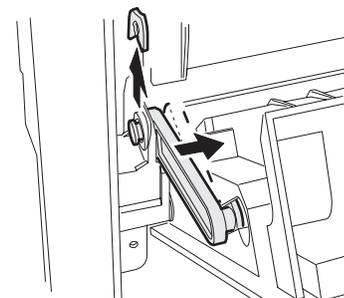
**<Note for assembly>**

- \* Engage the transport roller R side projection with the paper feed drive coupling.
- \* When tightening screws, tighten the transport roller earth spring together.

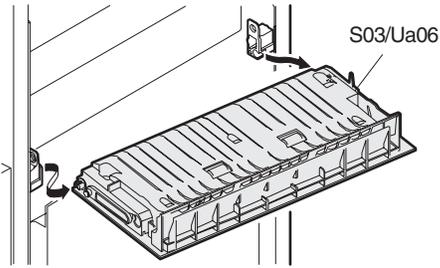


**S03/Ua06 Right door upper unit**

- 1) Remove the right door cabinet lower front. [S01/P12]
- 2) Remove the right cabinet lower rear and the right cabinet lower. [S01/P13], [S01/P14]
- 3) Open the right door upper unit (S03/Ua06).
- 4) Remove the E-ring, and remove the stopper from the right door fulcrum F side.



- 5) Put the right door upper unit horizontal, and remove it from the right door fulcrum R side.



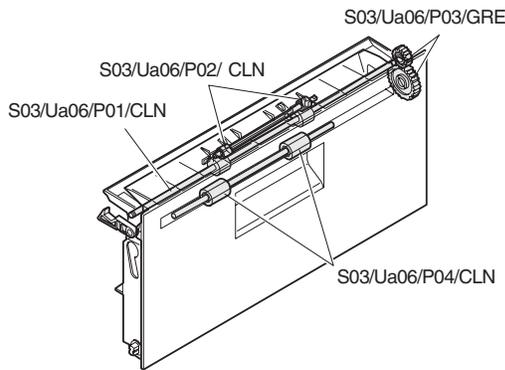
**S03/Ua06/P01 Transport roller**

**S03/Ua06/P02 Idle roller**

**S03/Ua06/P03 Gear**

**S03/Ua06/P04 Idle roller**

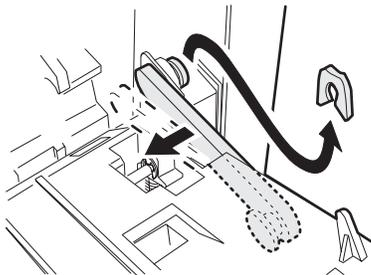
- \* Clean the transport roller (S03/Ua06/P01).
- \* Clean the idle roller (S03/Ua06/P02).
- \* Clean the idle roller (S03/Ua06/P04).



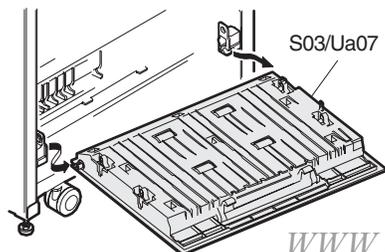
- \* Apply grease to the gear (S03/Ua06/P03).

**S03/Ua07 Right door lower unit**

- 1) Remove the right door cabinet lower front. [S01/P12]
- 2) Remove the right cabinet lower rear and the right cabinet lower. [S01/P13], [S01/P14]
- 3) Open the right door lower unit (S03/Ua07).
- 4) Remove the E-ring, and remove the stopper from the right door fulcrum R side.

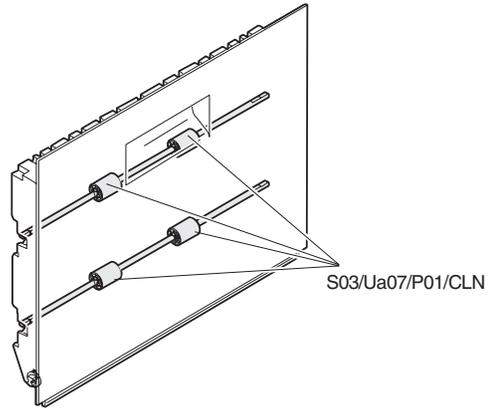


- 5) Put the right door upper unit horizontal, and remove it from the right door fulcrum R side.



**S03/Ua07/P01 Transport idle roller**

- \* Clean the idle roller (S03/Ua07/P01).



**S03/Ua08 Manual paper feed unit**

**S03/Ua08/P01 Detector**

**S03/Ua08/P02 Pick-up solenoid**

**S03/Ua08/P03 Clutch spring**

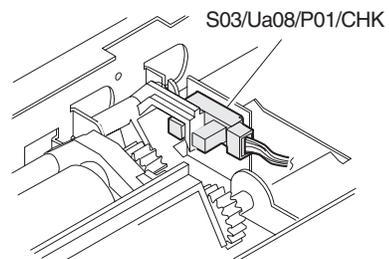
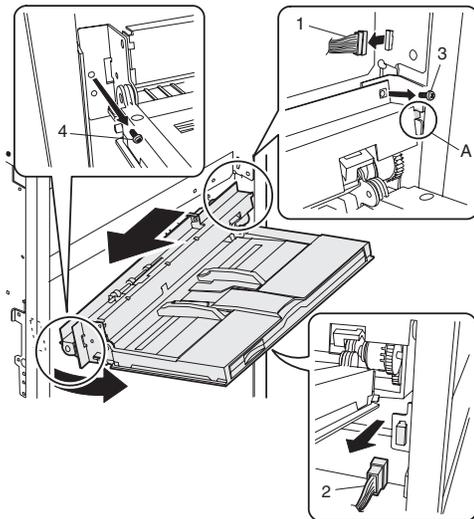
**S03/Ua08/P04 Pick-up roller**

**S03/Ua08/P05 Paper feed roller**

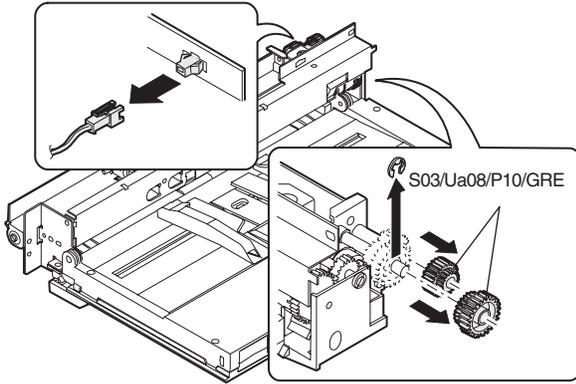
**S03/Ua08/P06 Clutch spring**

- 1) Remove the upper cabinet right. [S01/P09]
- 2) Remove the right cabinet upper. [S01/P11]
- 3) Remove the right cabinet lower rear.
- 4) Remove the connector.
- 5) Remove the screw, and remove the manual paper feed tray unit. [S03/Ua08]

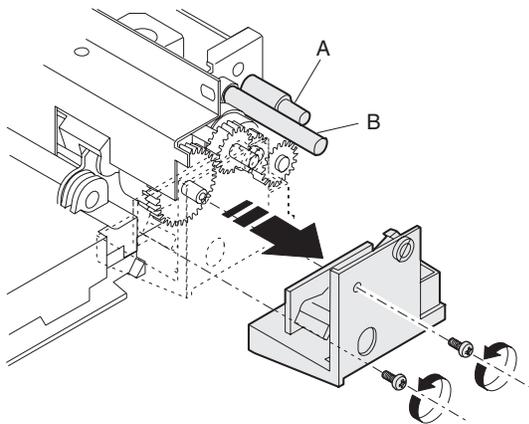
- \* When assembling, insert the projection A into the hole.



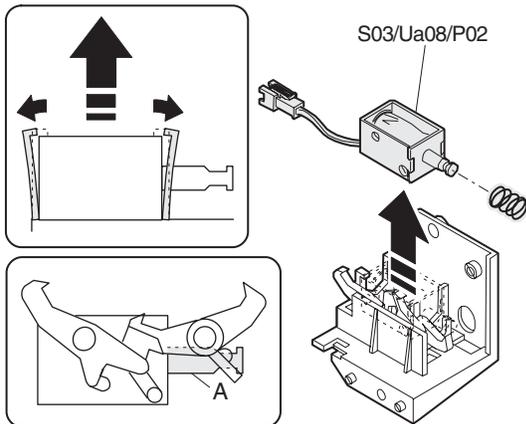
- 6) Remove the connector.
- 7) Remove the E-ring, and remove two gears.



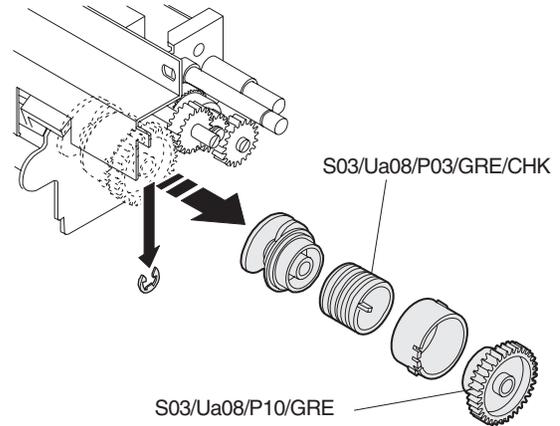
- 8) Remove the manual paper feed tray and the solenoid clutch.
  - \* When assembling, pass the solenoid harness between shafts A and B.



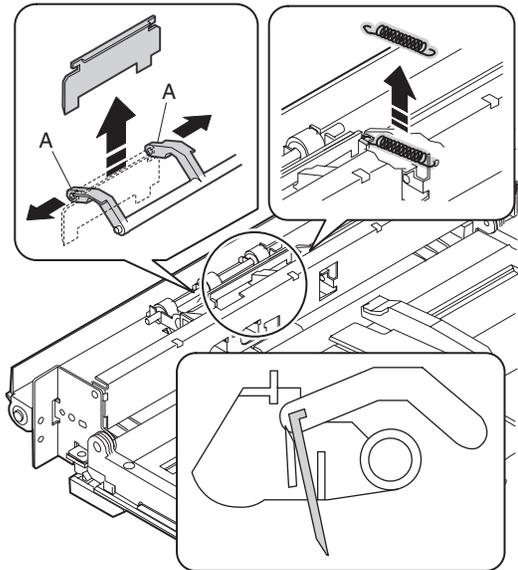
- 9) Open the pawl, and remove the pick-up solenoid (S03/Ua08/P02).
  - \* When assembling, hang the shaft A.



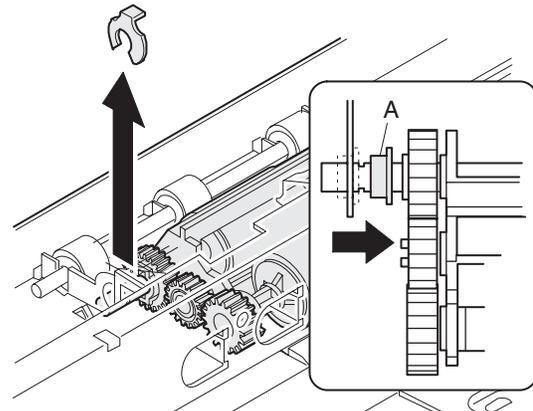
- 10) Remove the E-ring, and remove the manual paper feed clutch spring (S03/Ua08/P03).
  - \* Apply grease to the clutch spring and gear.



- 11) Remove the manual paper feed shutter spring.
- 12) Open section A and remove the manual paper feed stopper.
  - \* When assembling, be careful of the stopper position.

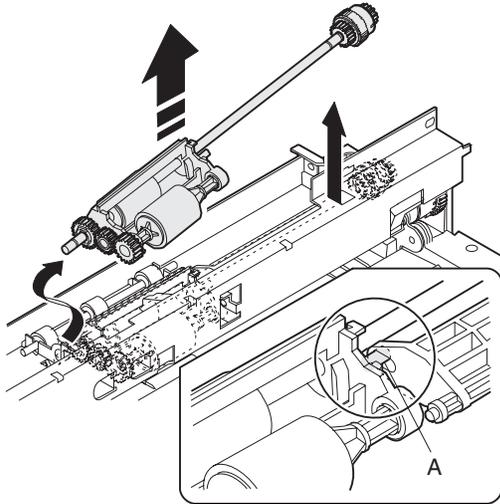


- 13) Remove the stopper, and slide the bearing A.



14) Remove the pick-up roller unit.

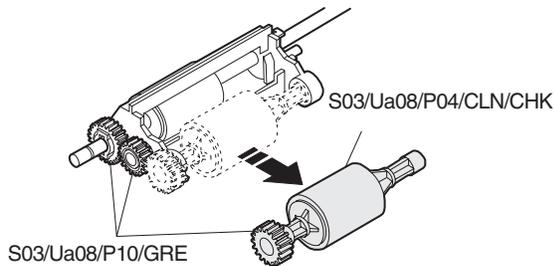
\* When assembling, hang the boss A on the manual paper feed arm B.



15) Remove the pick-up roller (S03/Ua08/P04).

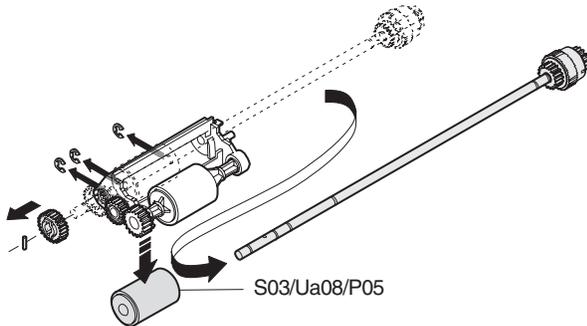
\* Clean the roller with alcohol.  
\* Apply oil to the gear.

16) Remove three E-rings, and remove the parallel pin and gear.



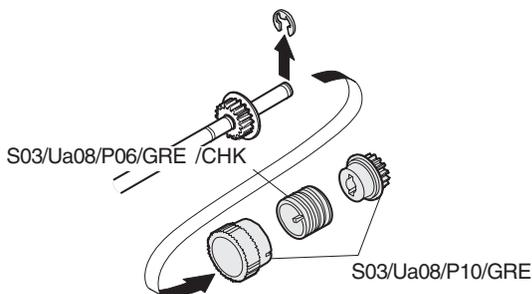
17) Pull out the paper feed roller, and remove the paper feed roller (S03/Ua08/P05).

\* Clean the roller with alcohol.



18) Remove the E-ring, and remove the manual paper feed clutch spring. [S03/Ua08/P06]

\* Apply grease to the clutch spring and the gear.



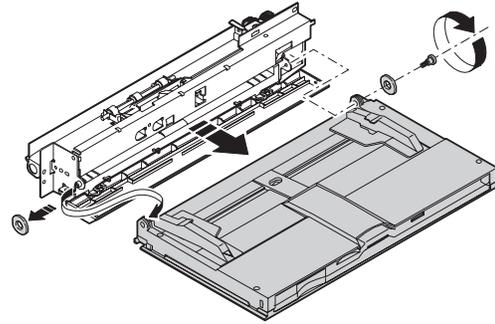
**S03/Ua08/P07** Separation roller

**S03/Ua08/P08** Limiter spring

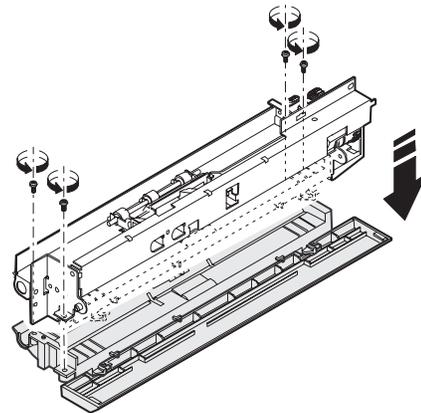
**S03/Ua08/P09** Transport roller

**S03/Ua08/P10** Gear

1) Remove the screw, and remove the manual paper feed tray unit. [S03/Ua09]

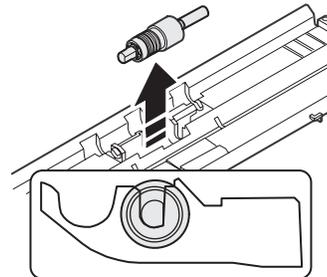


2) Remove four screws, and remove the paper guide.



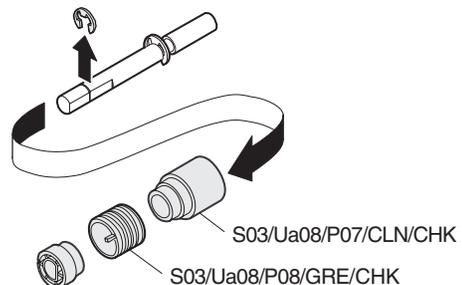
3) Remove the separation roller.

\* When assembling, engage the D-cut section with the groove.

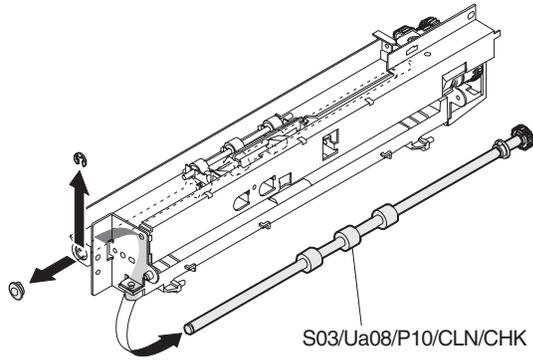


4) Remove the E-ring, and remove the separation roller, the separation limiter spring, and the limiter spring boss. [S03/Ua08/P07], [S03/Ua08/P08], [S03/Ua08/P09]

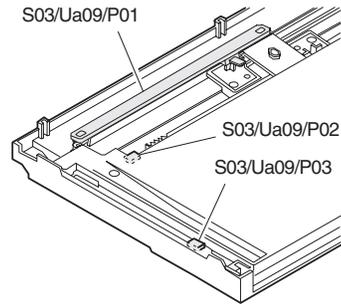
\* Clean the roller with alcohol.  
\* Apply oil to the limiter spring.



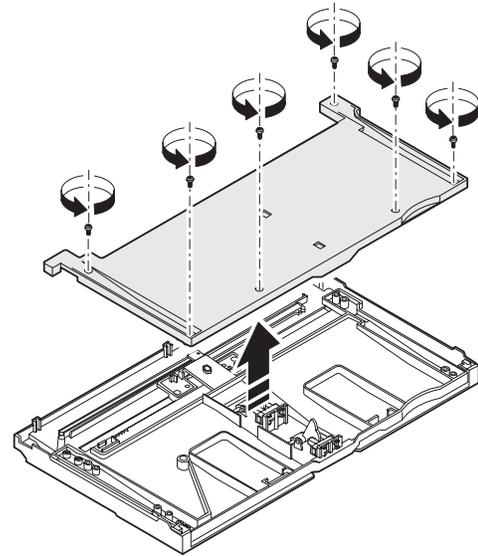
- 5) Remove the E-ring, and remove the bearing.
  - 6) Remove the transport roller. [S03/Ua08/P10]
- \* Clean the roller with alcohol.



\* Apply grease to each gear.



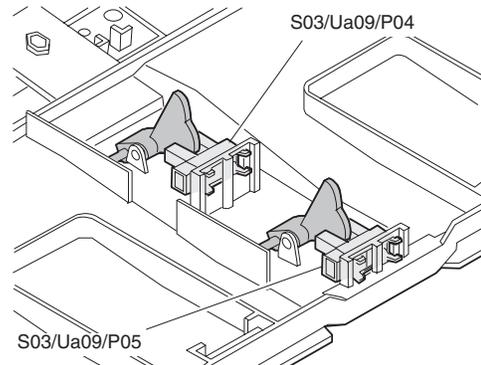
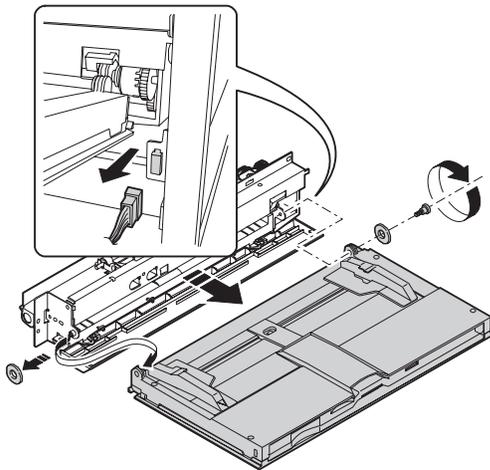
- 7) Remove six screws, and remove the manual paper feed tray 2 lower.



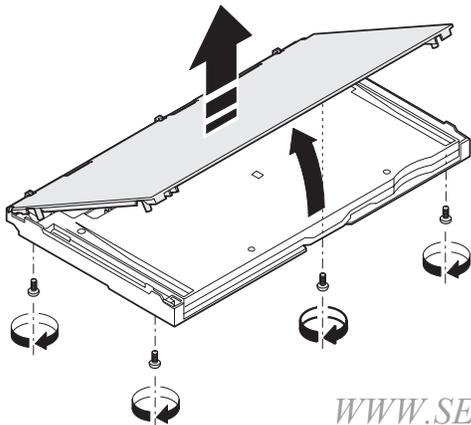
### S03/Ua09 Manual paper feed tray unit

- S03/Ua09/P01 Paper width sensor
- S03/Ua09/P02 Tray SW-L
- S03/Ua09/P03 Tray SW-S
- S03/Ua09/P04 Paper length detector 1
- S03/Ua09/P05 Paper length detector 2

- 1) Remove the upper cabinet right. [S01/P09]
- 2) Remove the right cabinet upper. [S01/P11]
- 3) Remove the connector.
- 4) Remove the screw.
- 5) Remove the multi tray.



- 6) Remove four screws, and remove the manual paper feed tray 1 lower.

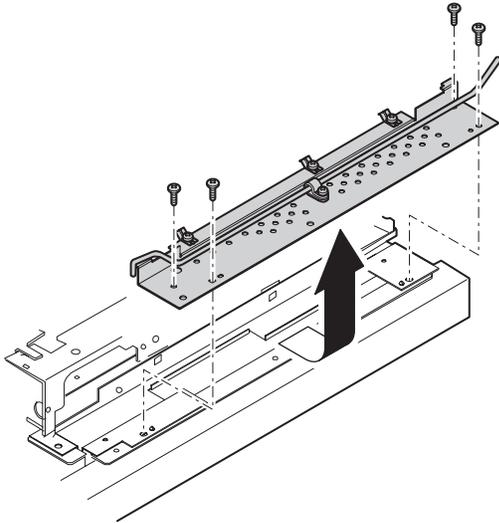


### S04 Scanner (reading) section

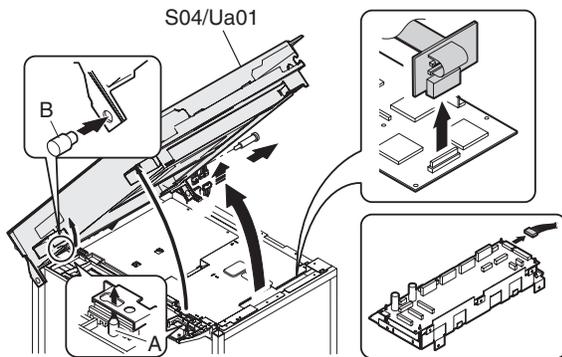
- 1) Remove the original cover. [S01/P01]
- 2) Remove the rear cabinet upper. [S01/P02]
- 3) Remove the glass holder right. [S01/P05]
- 4) Remove the glass holder left. [S01/P06]
- 5) Remove the table glass. [S01/P07]
- 6) Remove the shading glass AS. [S01/P08]
- 7) Remove the operation unit. [S02/Ua01]
- 8) Remove the toner hopper unit. [S06/Ua01]

## S04/Ua01 Scanner unit

- 1) Remove the screw, and remove the scanner fixing plate.

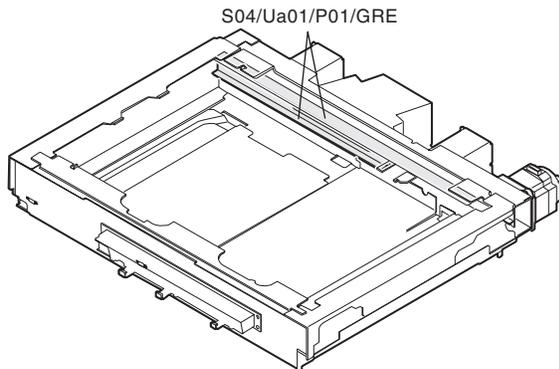


- 2) Disconnect the connector from the connector PWB.
- 3) Disconnect the connector and the grounding pin.
- 4) Lift the scanner unit (S04/Ua01) so that it is disengaged from the positioning boss (A), and remove it from the fulcrum shaft (B).



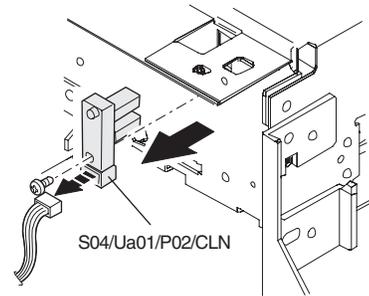
## S04/Ua01/P01 Scanner rail R

- \* Apply grease to the scanner rail R (S04/Ua01/P01).



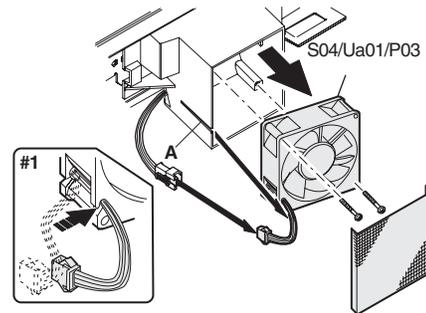
## S04/Ua01/P02 Home position sensor

- 1) Remove the screw and the connector, and remove the home position sensor (S04/Ua01/P02).
- \* Clean the home position sensor (S04/Ua01/P02).



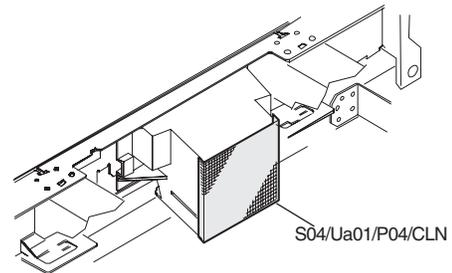
## S04/Ua01/P03 Cooling fan

- 1) Remove the filter. [S04/Ua01/P04]
- 2) Remove the connector.
- 3) Remove the screw, and remove the cooling fan (S04/Ua01/P03).



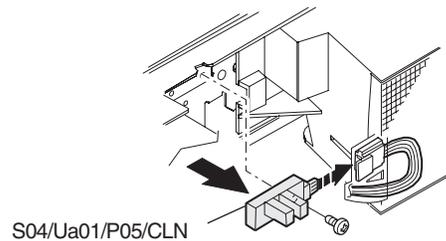
## S04/Ua01/P04 Filter

- \* Clean the filter (S04/Ua01/P04)



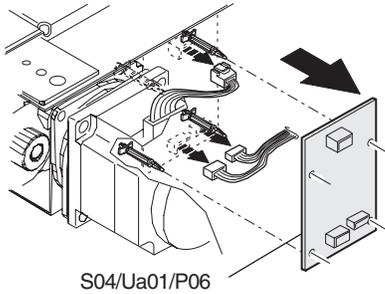
## S04/Ua01/P05 OC cover open sensor

- 1) Remove the screw, and remove the OC cover open sensor (S04/Ua01/P05).
- \* Clean the photo sensor (S04/Ua01/P05).

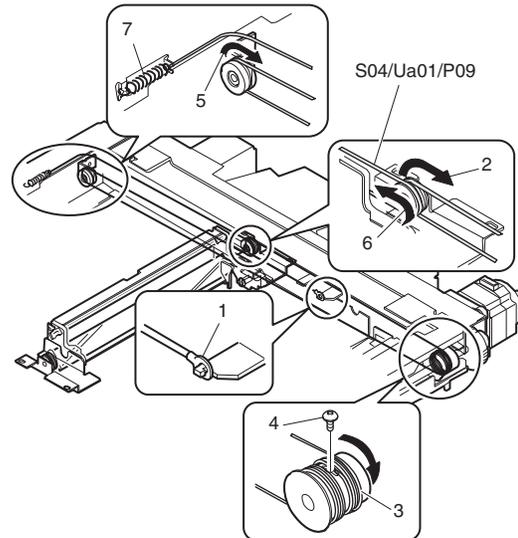


### S04/Ua01/P06 Scanner motor control PWB

- 1) Remove the connector, and remove the scanner motor control PWB (S04/Ua01/P06) from the PWB supporter.

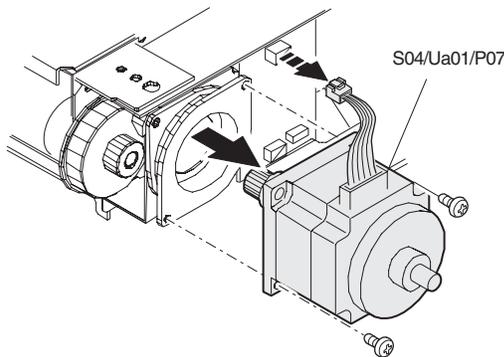


- 8) Hang the spring hook (7) on the scanner unit.



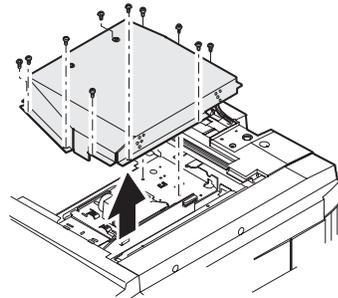
### S04/Ua01/P07 Scanner motor

- 1) Remove the connector.
- 2) Remove the screw, and remove the scanner motor (S04/Ua01/P07).



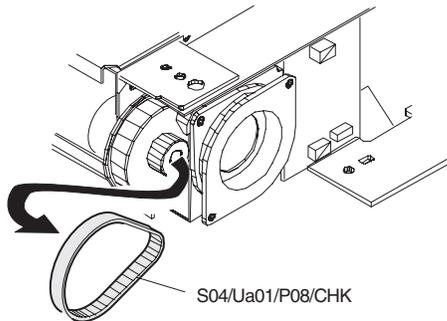
### S04/Ua01/P10 CCD power PWB

- 1) Remove the screw, and remove the dark box cover.

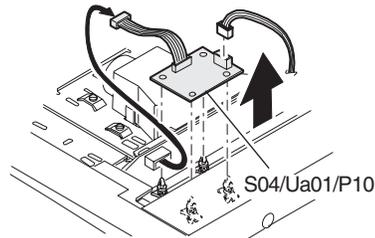


### S04/Ua01/P08 MB drive belt

- 1) Remove the MB drive belt (S04/Ua01/P08).
  - \* Check the MB drive belt (S04/Ua01/P08).



- 2) Remove the connector, and remove the CCD power PWB (S04/Ua01/P10) from the PWB supporter.



### S04/Ua01/P09 MB wire

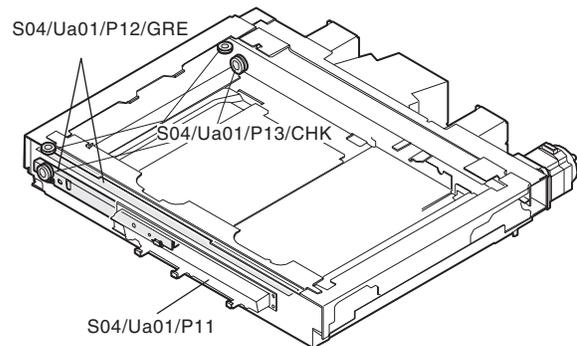
- \* Check the MB wire (S04/Ua01/P09).
- 1) Remove the scanner base wire (S04/Ua01/P09).
    - \* Assembly procedures (Stretching the scanner base wire)
  - 2) Hang the scanner base wire fixture on the scanner unit hook (1).
  - 3) Pass the wire through the No. 2/3 mirror base unit and the groove (3) on the outside of the double pulley.
  - 4) Hold so that the winding pulley groove comes upside, and wind the wire 7 times.
  - 5) Insert the 8th turn of the wire into the winding pulley groove (4) and fix it with the screw (4).
  - 6) Pass the wire under the No. 2/3 mirror base unit and wind around the wire pulley (5).
  - 7) Pass the wire through the No. 2/3 mirror base unit and the groove inside the double pulley (6).

### S04/Ua01/P11 Original size sensor PWB

### S04/Ua01/P12 Scanner rail F

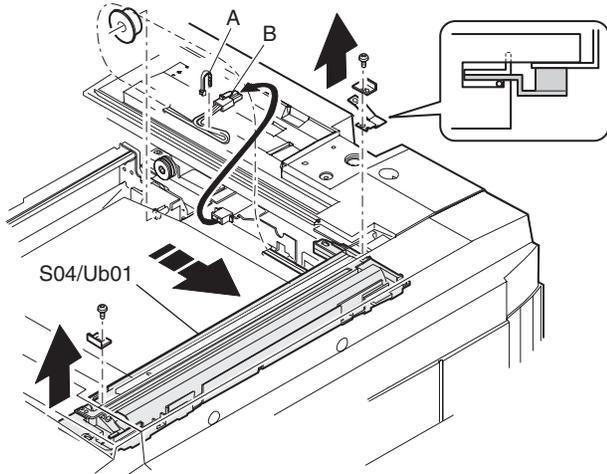
### S04/Ua01/P13 BM wire pulley

- \* Apply grease to the scanner rail F.

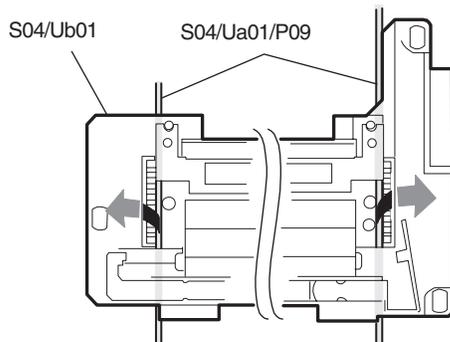


## S04/Ub01 Scanner unit A

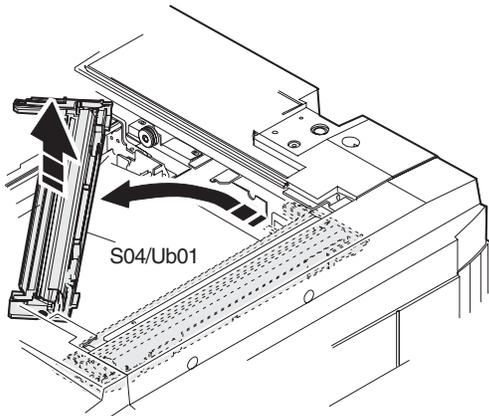
- 1) Manually shift the scanner unit A (S04/Ub01) until it makes contact with the paper entry side.
  - 2) Remove the screw from the scanner unit notch section, and remove the wire fixing plates (2 pcs.) and the lower slide material.
  - 3) Remove the snap band (A), and remove the connector (B).
- \* When attaching the lower sliding member, attach it so that it is in contact with the bottom of the rail R.



- 4) Remove the scanner base wire (S04/Ua01/P09) from the scanner unit A.

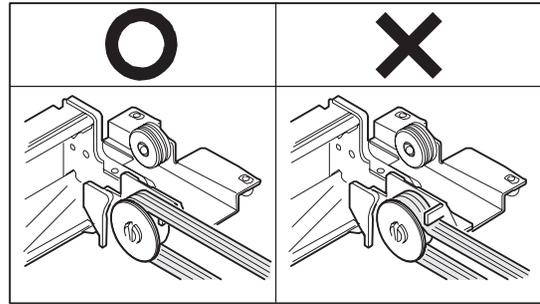


- 5) Turn the scanner lamp unit (S04/Ub01) and remove it.

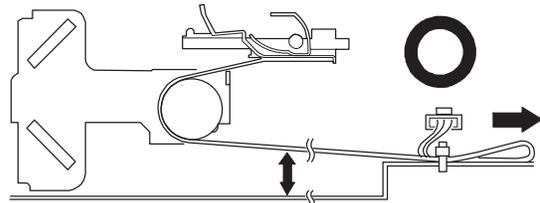


### <Note for attaching the scanner lamp cable>

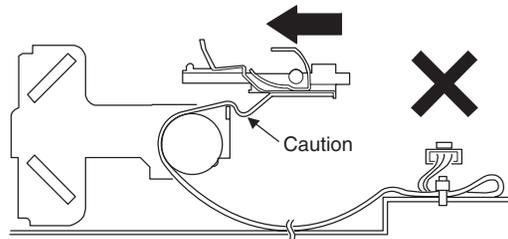
- \* Place the scanner lamp cable on the cable guide.



- \* Fix the scanner cable so that when the scanner unit is shifted fully to the left, the scanner lamp cable is not in contact with the scanner unit chassis.



- In the above procedure, check that the scanner lamp cable is not deformed when the scanner units A and B approach close to each other.

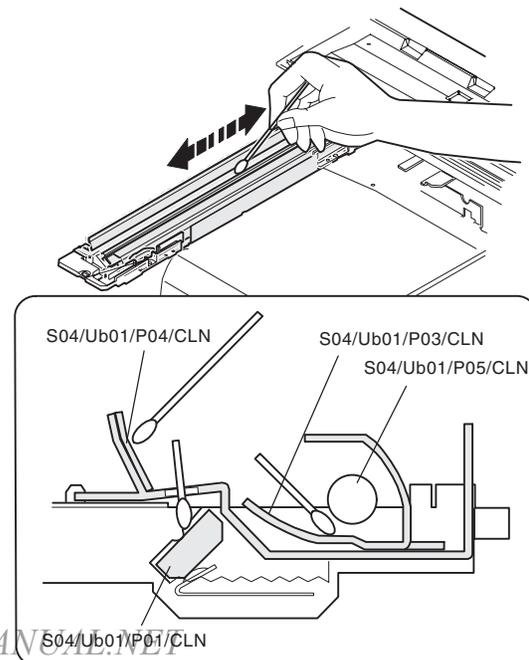


**S04/Ub01/P01** No. 1 mirror

**S04/Ub01/P03** Reflector

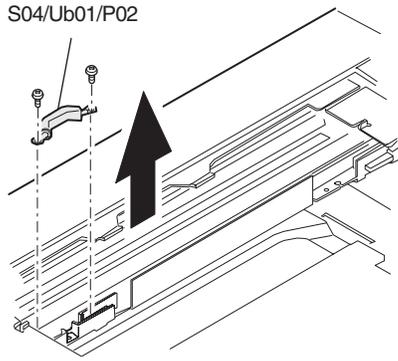
**S04/Ub01/P04** Sub reflector

- \* Clean No. 1 mirror, the reflector, the sub reflector, and the scanner lamp with alcohol as shown below.



**S04/Ub01/P02 Temperature fuse**

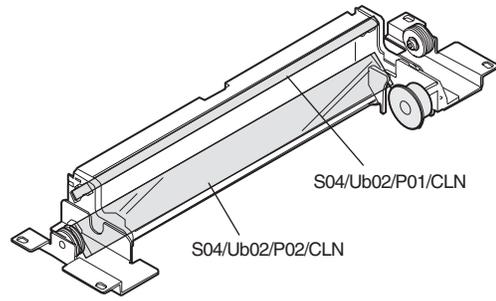
1) Remove the temperature fuse (S04/Ub01/P02).



**S04/Ub02/P01 No. 2 mirror**

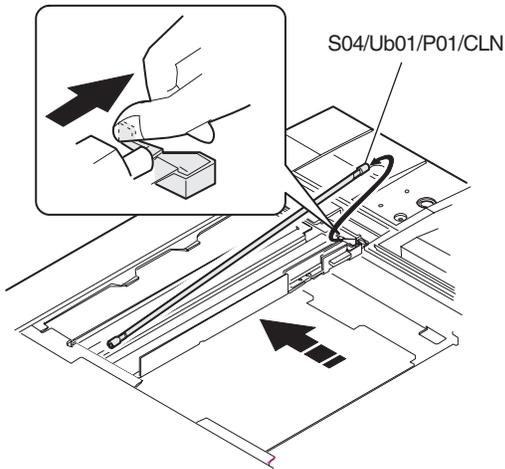
**S04/Ub02/P02 No. 3 mirror**

\* Clean No. 2 mirror (S04/Ub02/P01) and No. 3 mirror (S04/Ub02/P02) with alcohol.



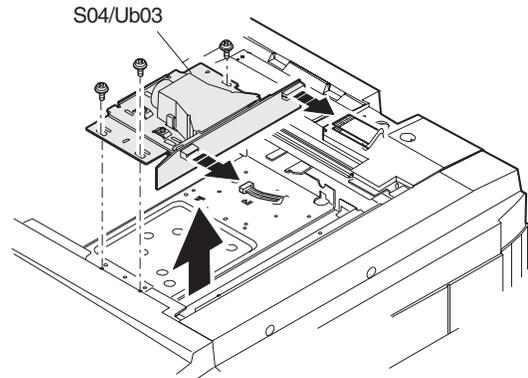
**S04/Ub01/P05 Scanner lamp**

1) Pull the lamp spring and remove the scanner lamp(S04/Ub01/P05).



**S04/Ub03 CCD unit**

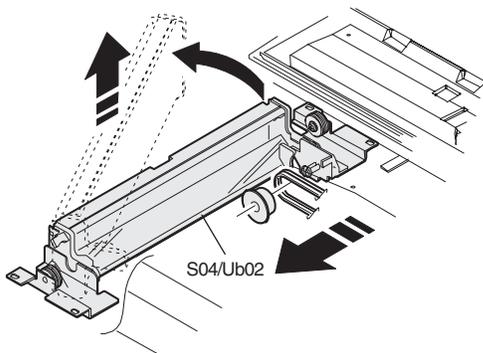
- 1) Remove the dark box cover. [S04/Ua01/P10]
- 2) Remove the flat cable and the connector.
- 3) Remove the red screw and the CCD unit (S04/Ub03).



(Note) Do not disassemble the CCD PWB and the lens. Do not touch the red screw.

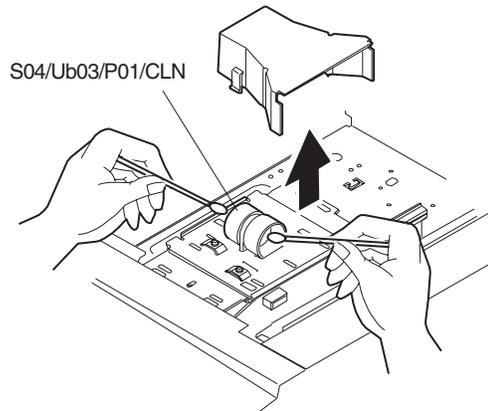
**S04/Ub02 Scanner unit B**

- 1) Remove the scanner base wire. [S04/Ua01/P09]
- 2) Turn and remove the scanner unit B (S04/Ub02).



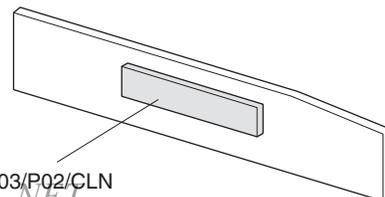
**S04/Ub03/P01 CCD lens**

\* Clean the CCD lens with absolute alcohol.



**S04/Ub03/P02 CCD unit**

\* Clean the CCD surface with absolute alcohol.

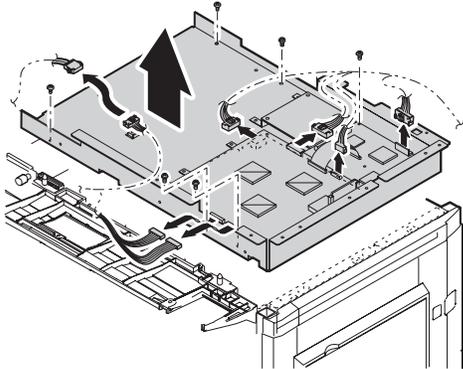


## S05 Scanner (writing) section

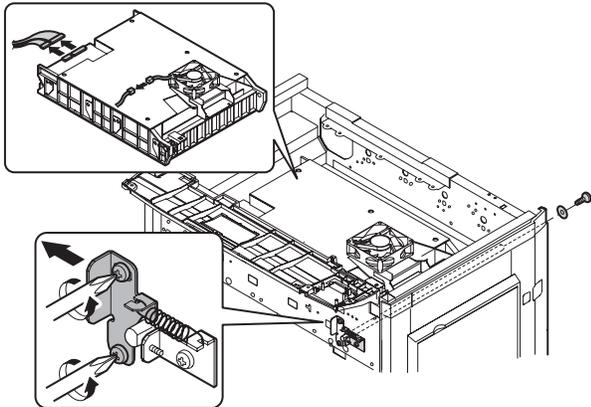
- 1) Remove the rear cabinet upper. [S01/P02]
- 2) Remove the hopper unit. [S06/Ua01]
- 3) Open the scanner unit, and remove the ICU cover. [S10/P01]

### S05/Ua01 LSU unit

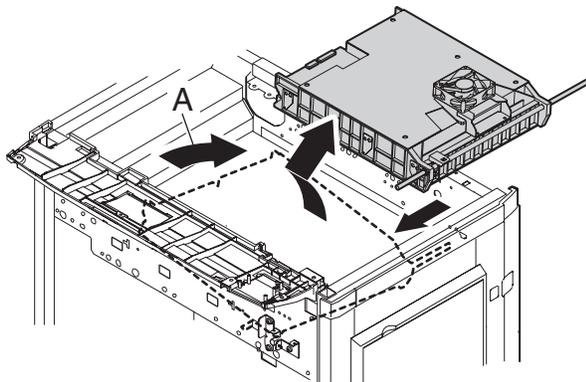
- 1) Remove the screw and disconnect the connector, and remove the ICU mounting plate.



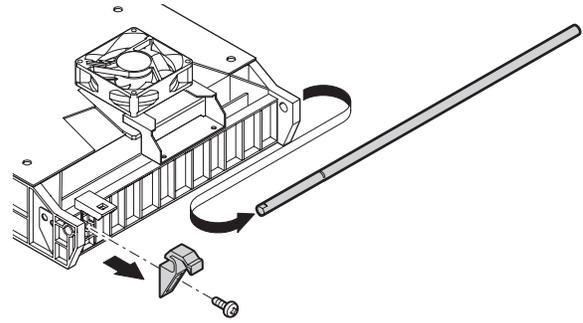
- 2) Loosen two screws, slide the LSU adjustment plate in the arrow direction, and fix the screw. Remove the LSU shaft fixing screw and the washer on the rear side. Disconnect the connector.



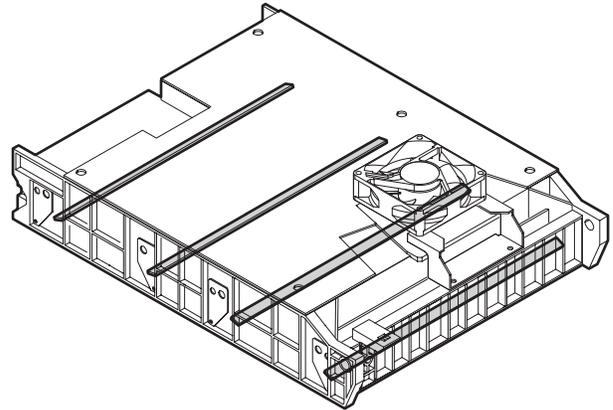
- 3) Slide the LSU to the front side and tilt it in the arrow direction of A. Lift the rear side of the LSU to remove.



- 4) Remove the screw, and remove the LSU fixing block. Remove the LSU shaft.

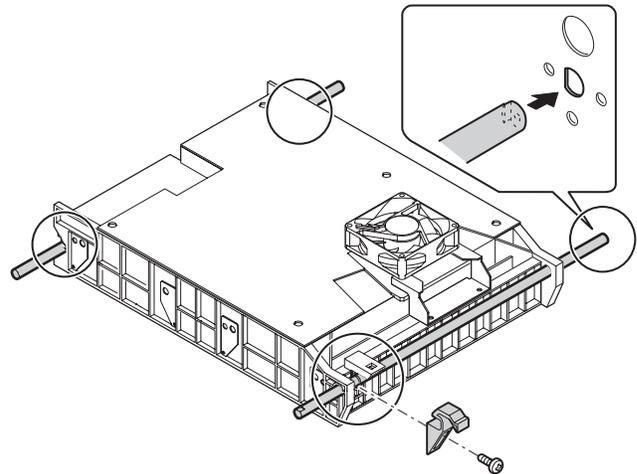


- \* Clean the filter (S05/Ua01/P01) with cleaning cloth (UKOG-0289FCZZ) (Dry clean only. Do not use liquid.)



#### <Note for assembly>

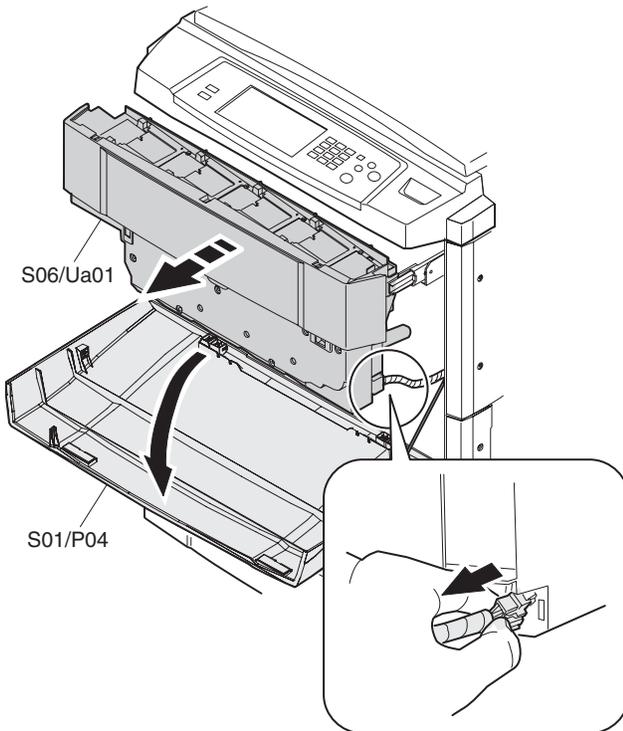
- \* Engage the operating shaft with the U-shape groove on Y side.
- \* Install so that the operating shaft BK is engaged with the hole on the rear side.
- \* Install so that the LSU fixing block is engaged with the groove in the shaft.
- \* After installing the LSU, execute SIM64-1 to check and adjust the image skew. (For details, refer to page 7-6.)



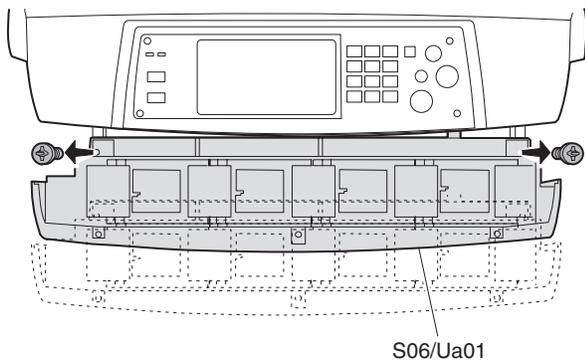
## S06 Image process section

### S06/Ua01 Toner hopper unit

- 1) Open the front cabinet (S01/P04), and pull out the hopper unit (S06/Ua01).
- 2) Remove the connector.



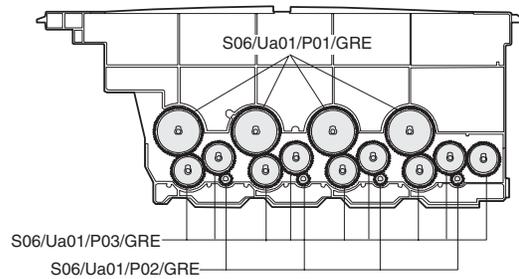
- 3) Remove the blue screw, and remove the hopper unit (S06/Ua01).



S06/Ua01/P01 Gear

S06/Ua01/P02 Gear

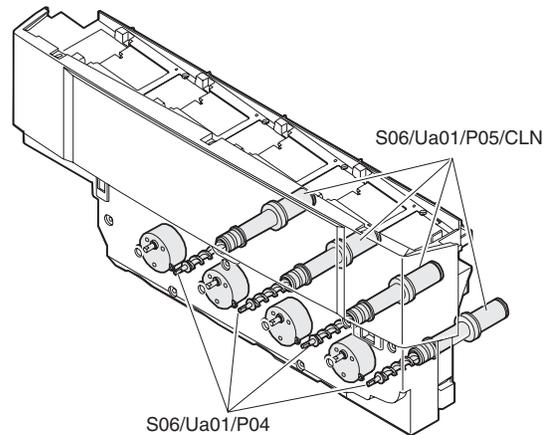
S06/Ua01/P03 Gear



S06/Ua01/P04 Toner transport screw

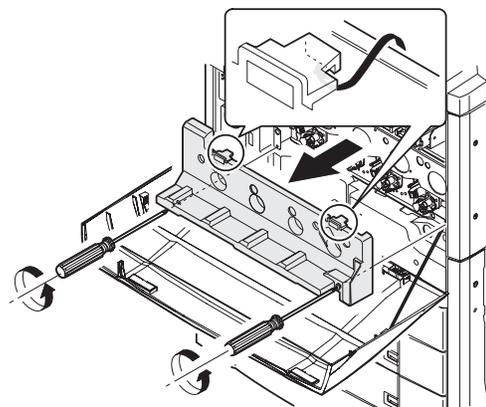
S06/Ua01/P05 Pipe shutter

\* Clean the pipe shutter.

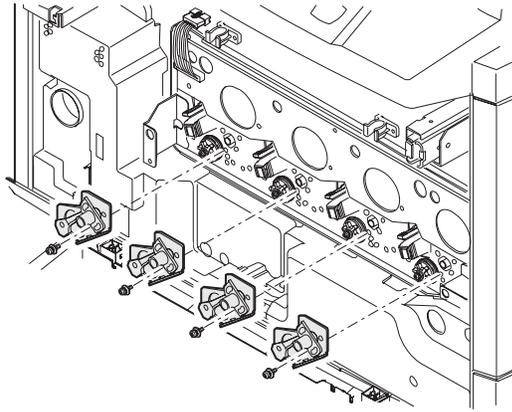


### S06/Ua02 Process frame unit

- 1) Open the front cover. [S01/P04]
- 2) Remove the hopper unit. [S06/Ua01]
- 3) Loosen the blue screw, and remove the process frame cover.

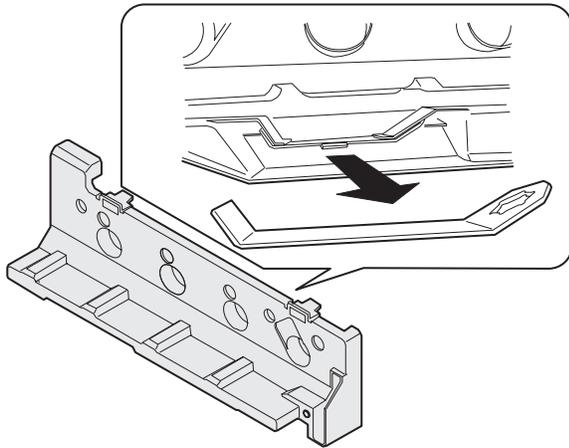


4) Remove the blue screw, and remove the DSD holder.

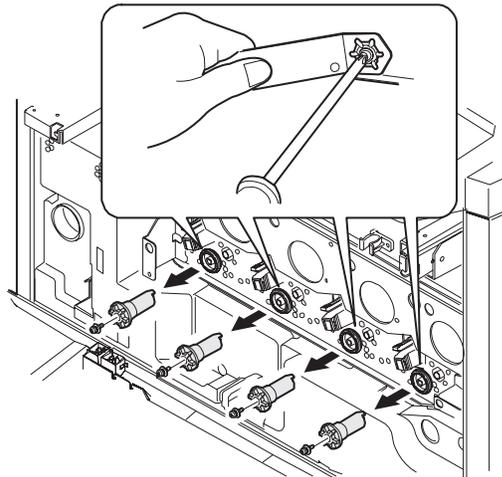


(Note) Do not loosen or remove the red screw.

5) Remove the special tool from the back of the process cover.



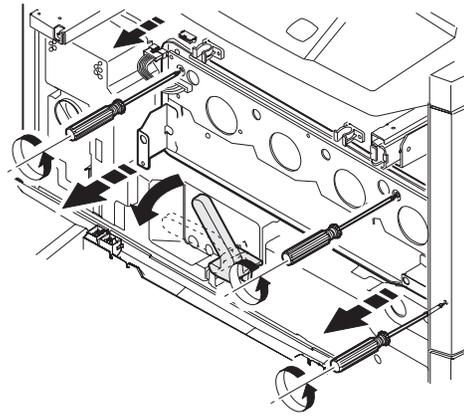
6) Fix the drum holder with the special tool and remove the blue screw.



7) Remove the connector, and loosen the blue screw.

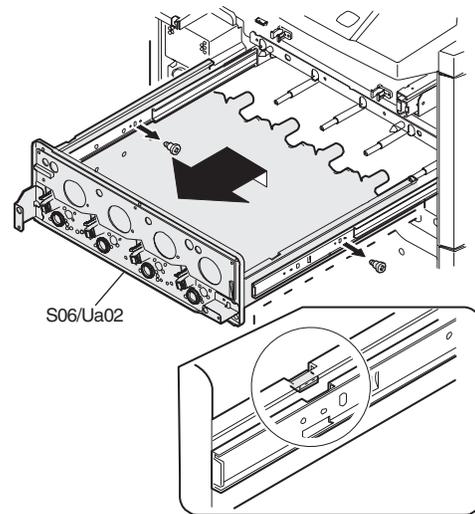
8) Move the lift lever down.

9) Pull out the process frame unit in the arrow direction.



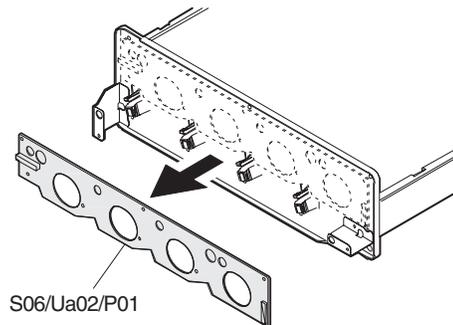
10) Remove the step screw.

11) Lift and remove the process frame (S06/Ua02) from the rail notch section.



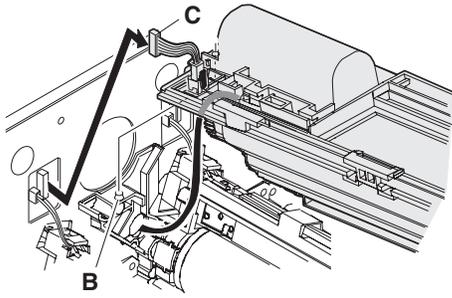
#### **S06/Ua02/P01 Process control PWB**

- 1) Open the front cover. [S01/P04]
- 2) Remove the hopper unit. [S06/Ua01]
- 3) Remove the developer unit and the connector.
- 4) Remove the drum unit connector.
- 5) Remove the process control PWB from the PWB supporter.

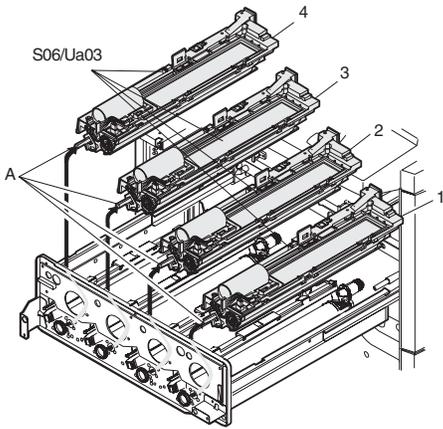


#### **S06/Ua03 Developing unit**

- 1) Open the front cover. [S01/P04]
- 2) Remove the hopper unit. [S06/Ua01]
- 3) Remove the process frame cover.
- 4) Pull out the process frame unit.
- 5) Remove the connector.

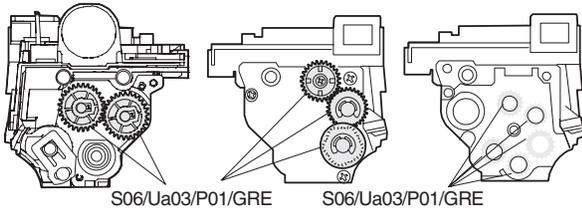


- 6) Remove each developer unit (S06/Ua03).  
 Note: 1 (Black), 2 (Cyan), 3 (Magenta), 4 (Yellow)



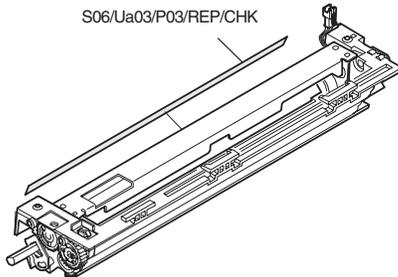
**S06/Ua03/P01 Gear**

- \* Apply grease to the gear (S06/Ua03/P01).

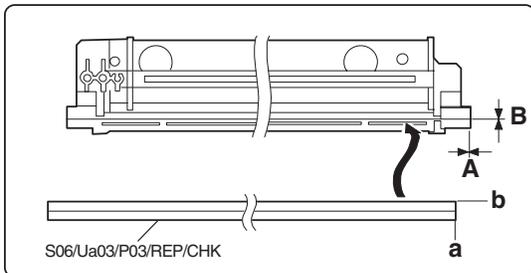


**S06/Ua03/P02 DV seal**

- 1) Remove the DV seal (S06/Ua03/P02).



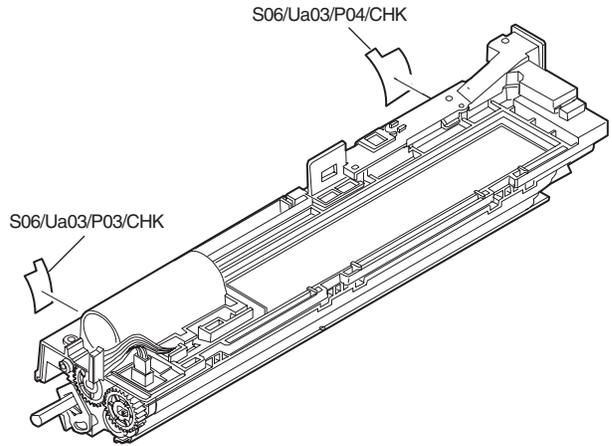
The attachment reference is as shown below.



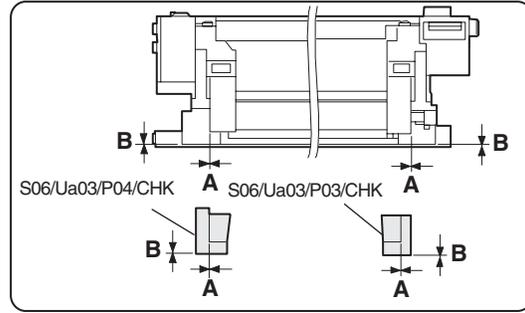
**S06/Ua03/P03 DV side sheet F**

**S06/Ua03/P04 DV side sheet R**

- 1) Remove the DV side sheet F (S06/Ua03/P03) and DV side sheet R (S06/Ua03/P04).



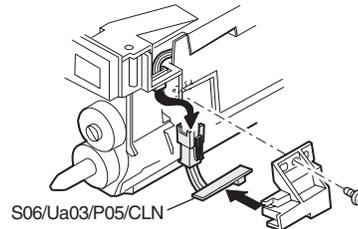
The attachment reference is as shown below.



**S06/Ua03/P05 Drum mark sensor**

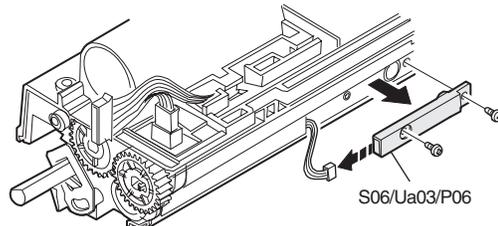
- 1) Remove the screw and the connector, and remove the drum mark sensor unit.

- \* Clean the drum mark sensor (S06/Ua03/P05/CLN).



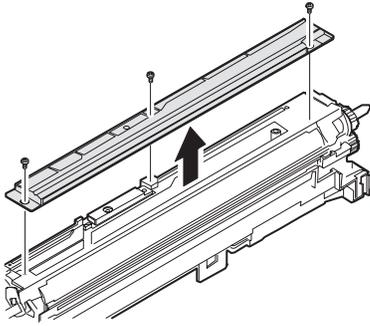
**S06/Ua03/P06 ATC sensor (Black)**

- 1) Remove the screw and the connector, and remove the ATC sensor (Black) (S06/Ua03/P06).

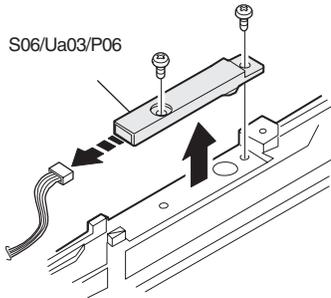


### S06/Ua03/P06 ATC sensor (Cyan/Magenta/Yellow)

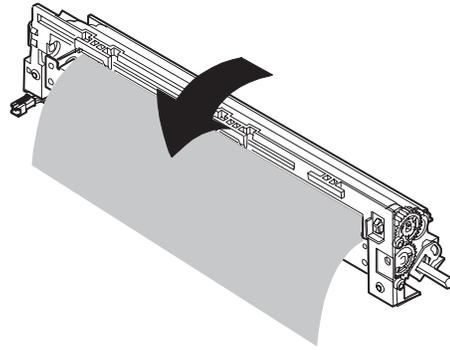
1) Remove the screw, and remove the ATC sensor cover.



2) Remove the screw and the connector, and remove the ATC sensor (Color) (S06/Ua03/P06).

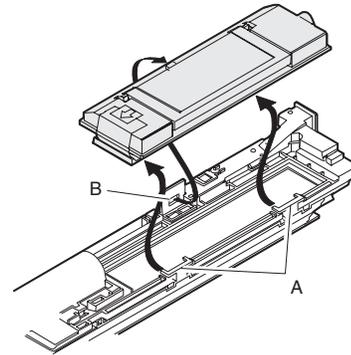


3) Turn the developer unit on its back, and remove waste developer.



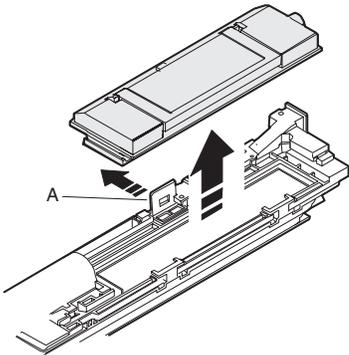
4) Attach the upper cover.

5) Hang a new developer cartridge on the pawl (A) and insert it into section (B) to fix.

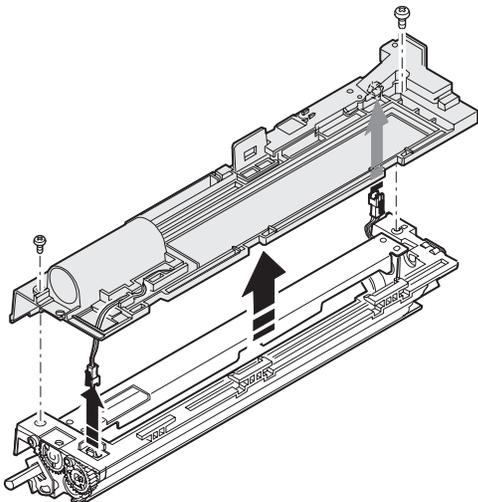


### S06/Ua03/P07 Developer replacement

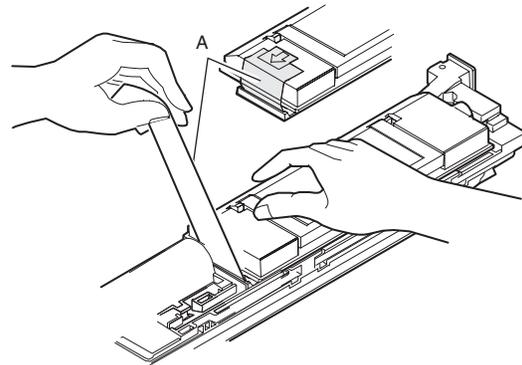
1) Open section A in the arrow direction, and remove the waste developer cartridge.



2) Remove the screw, and remove the upper cover.



6) Remove the seal (A).

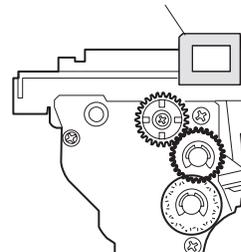


- \* Set the toner concentration reference control level with SIM 25-2.
- \* Clear the developer counter with SIM 24-5.
- \* Execute SIM 44-27 to return the half tone correction data to the default level.

### S06/Ua03/P08 Duct

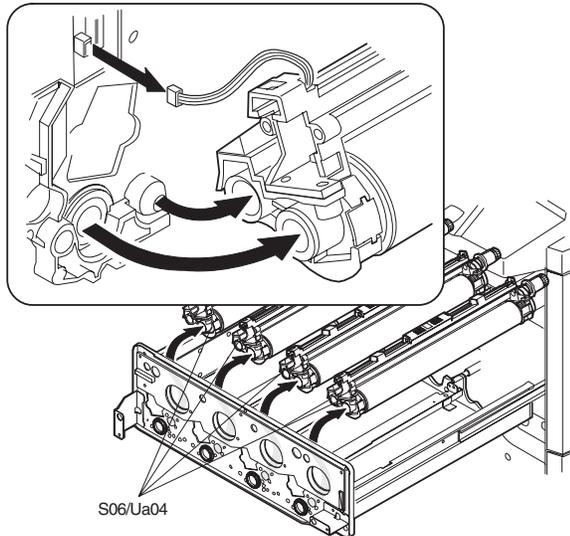
Clean the duct.

S06/Ua03/P08/CLN



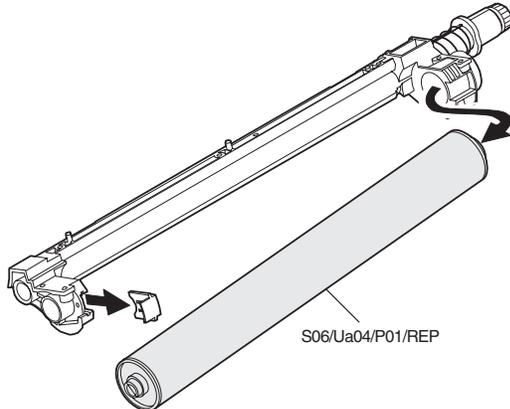
### S06/Ua04 OPC drum unit

- 1) Open the front cover. [S01/P04]
- 2) Remove the hopper unit. [S06/Ua01]
- 3) Remove the process frame cover.
- 4) Pull out the process frame unit. [S06/Ua02]
- 5) Remove the MC unit. [S06/Ua05]
- 6) Remove the developing unit. [S06/Ua03]
- 7) Pull out the connector, and remove the OPC drum unit (S06/Ua04).



### S06/Ua04/P01 OPC drum

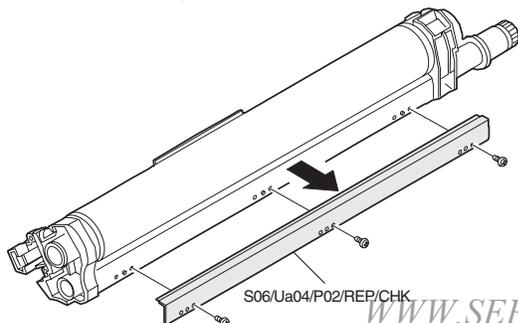
- 1) Remove the drum stopper, and remove the OPC drum (S06/Ua04/P01).



- \* Clear the OPC drum counter with SIM 24-7.
- \* Execute SIM 44-27 to return the half tone correction data to the default level.

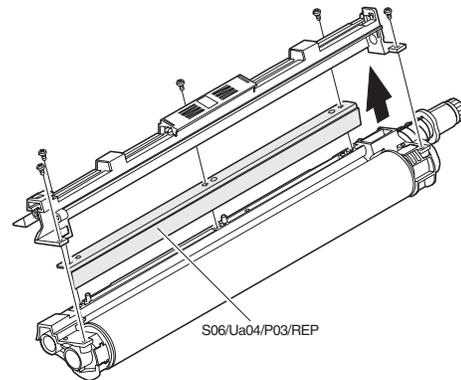
### S06/Ua04/P02 Toner reception seal

- 1) Remove the screw, and remove the toner reception seal (S06/Ua04/P02/REP/CHK).



### S06/Ua04/P03 Cleaning blade

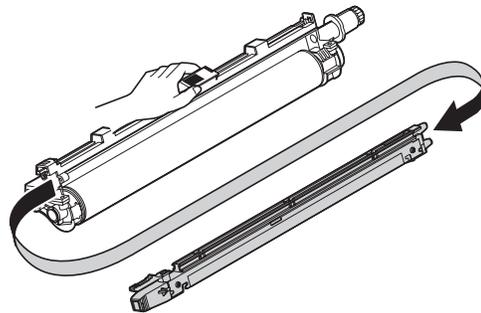
- 1) Remove the screw, and remove the DL PWB holder.
- 2) Remove the cleaning blade (S06/Ua04/P03/REP).



#### (Apply stearic acid method)

Always perform this procedure when replacing the drum and the blade.

- 1) Pull out the main charger.

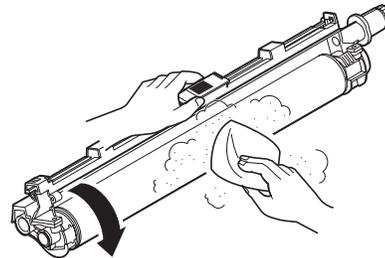


- 2) Rotate the drum and apply stearic acid (UKOG-0312FCZZ) to the drum surface.

Rotate the drum and apply stearic acid to the drum surface evenly.

Reference of application amount:

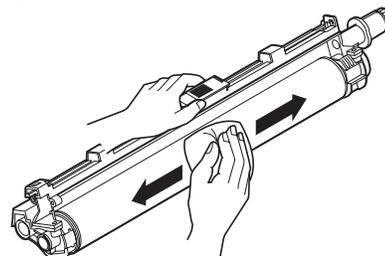
Apply four times in the drum shaft direction. Rotate the drum 120 degrees and apply four times. Repeat rotating and applying by three sets. (12 times of application in total)



- 3) Rub stearic acid over the drum surface.

Rubbing procedure:

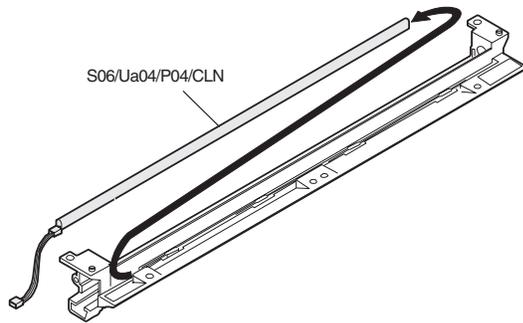
Apply in the drum shaft direction. Rotate the drum and apply. (Repeat rotating and applying by three sets) (Use a force of about 200g.)



- \* Do not touch the drum surface (paper pass section) directly.
- \* Use care not to scratch the drum surface.

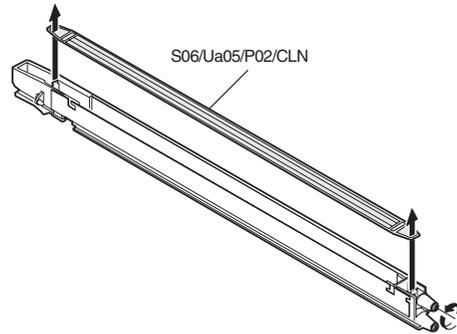
### S06/Ua04/P04 DL PWB unit

- 1) Turn back the DL PWB holder and pull out the DL PWB unit (S06/Ua04/P04/CLN).
- \* Clean the DL PWB unit.



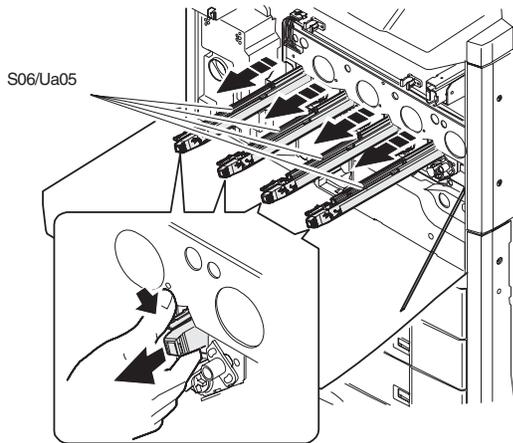
### S06/Ua05/P02 MC grid

- 1) Loosen the screw, and remove the MC grid (S06/Ua05/P02).
- \* Clean the MC grid.



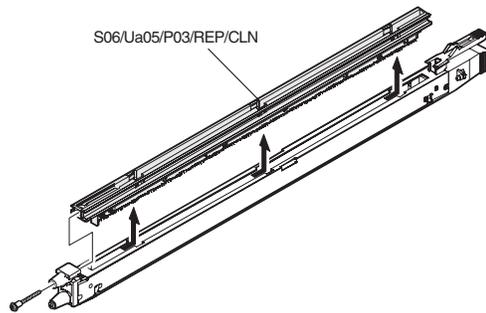
### S06/Ua05 MC unit

- 1) Open the front cover. [S01/P04]
- 2) Remove the hopper unit. [S06/Ua01]
- 3) Remove the process frame cover.
- 4) Hold the MC unit hook section, and remove the MC unit (S06/Ua05).



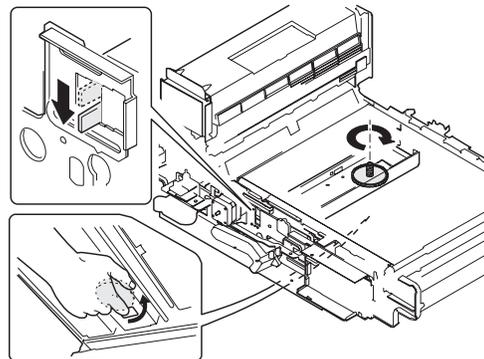
### S06/Ua05/P03 Charging plate

- 1) Remove the screw, and remove the charging plate (S06/Ua05/P03).
- \* Clean the charging plate.



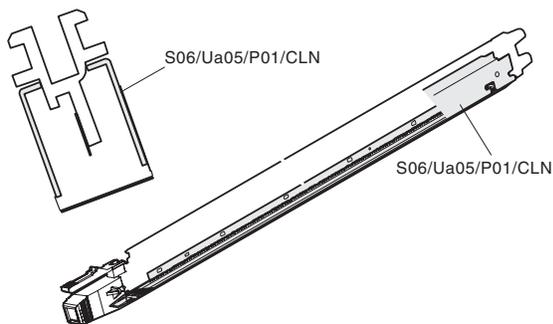
### S06/Ua06 Transfer unit

- 1) Move down the transfer unit. There are following two ways. Select either one.
- \* Manually turn the lift motor gear to move down the transfer unit.
  - \* Execute SIM 6-1 "BELTd" to move down the transfer unit.

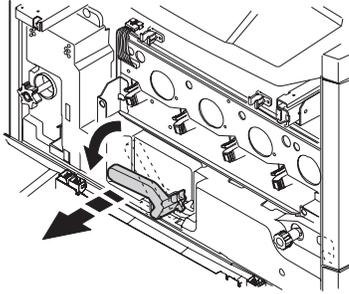


### S06/Ua05/P01 MC case

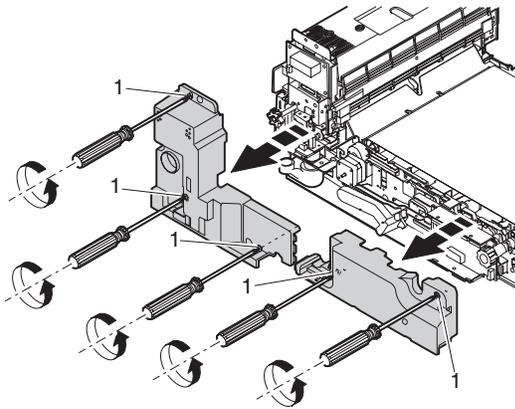
- \* Clean the MC case.



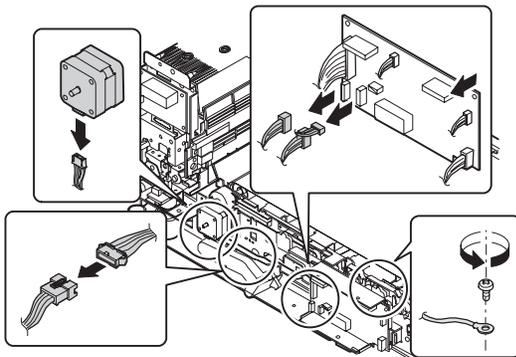
- 2) Open the front cover. [S01/P04]
- 3) Remove the hopper unit. [S06/Ua01]
- 4) Remove the process frame cover.
- 5) Tilt down the transfer lift handle and pull out the transfer unit toward you.



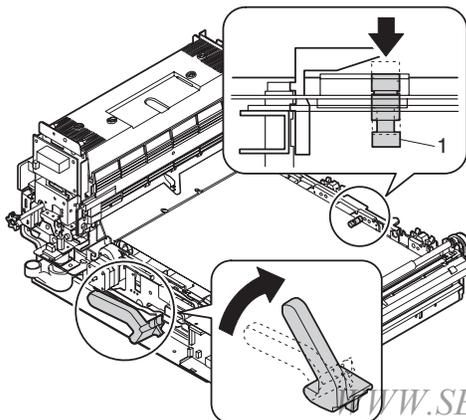
- 6) Remove the screw (1), and remove the spring and the fusing knob.
- 7) Loosen the screw (2), and remove the transfer cover and the fusing cover.



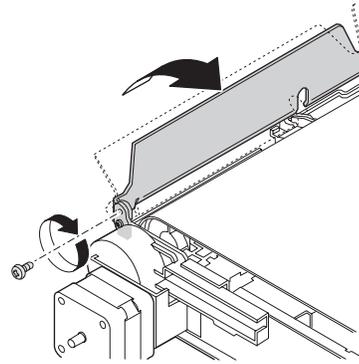
- 8) Remove the connector.



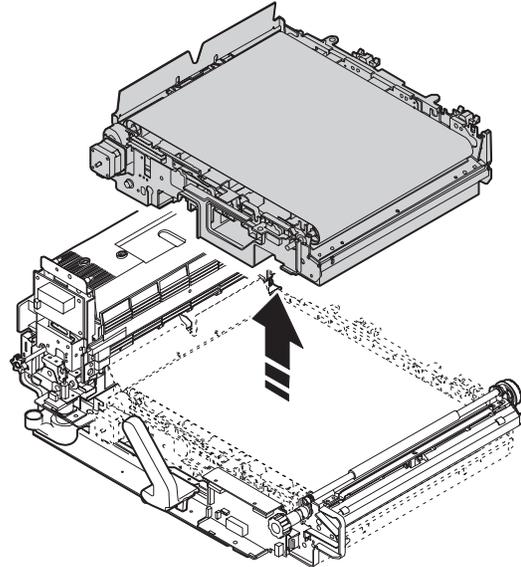
- 9) While pushing the frame lock section (1), raise the transfer lift handle.



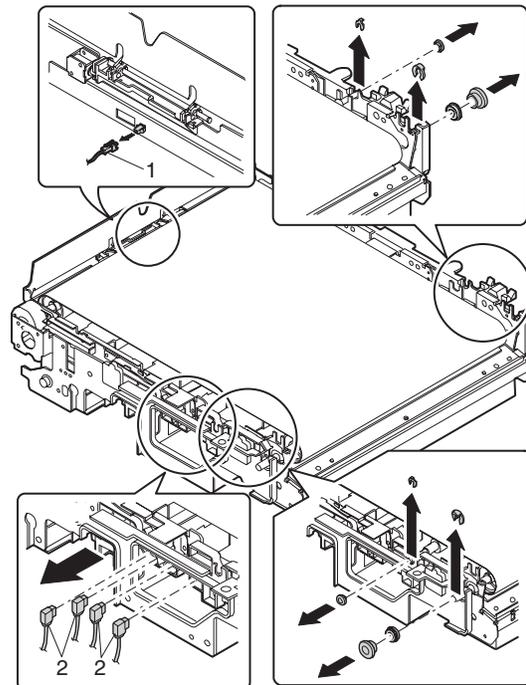
- 10) Raise the fusing front paper guide and fix it with a screw.



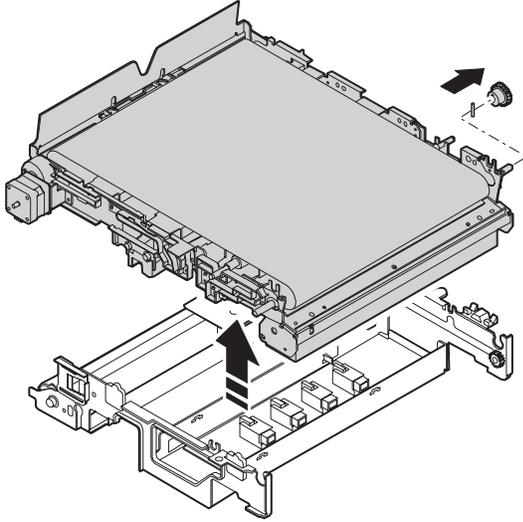
- 11) Remove the transfer unit.



- 12) Remove the connector (1) and four connectors (2).
- 13) Remove the stoppers, and remove the bearings.

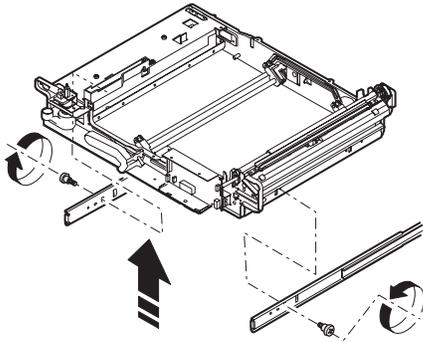


14) Remove the transfer inner unit.



15) Remove the fusing unit.

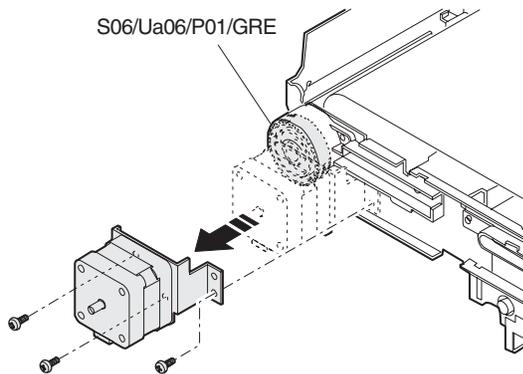
16) Remove the transfer outer unit (S06/Ub03).



**S06/Ua06/P01 Transfer belt drive gear**

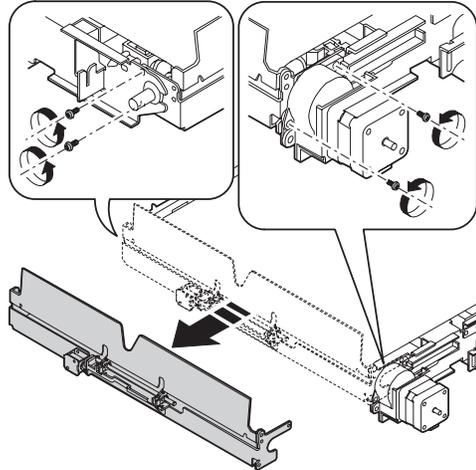
1) Remove the screw, and remove the belt drive motor unit.

\* Apply grease to the belt drive gear (S06/Ua06/P01).

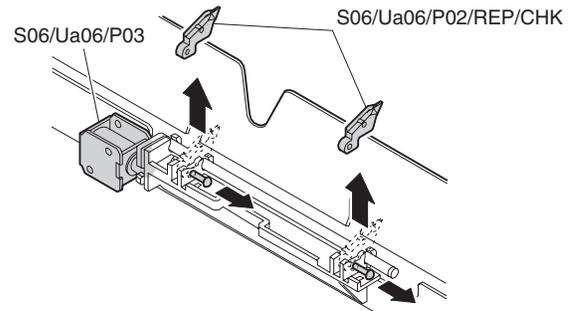


**S06/Ua06/P03 Transfer separation pawl solenoid**

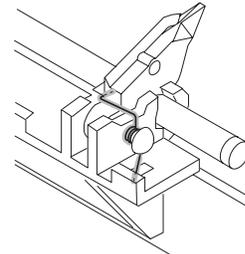
1) Remove the screw, and remove the transfer frame connecting plate unit.



2) Pull out the separation pawl pin, and remove the transfer separation pawl (S06/Ua06/P02).



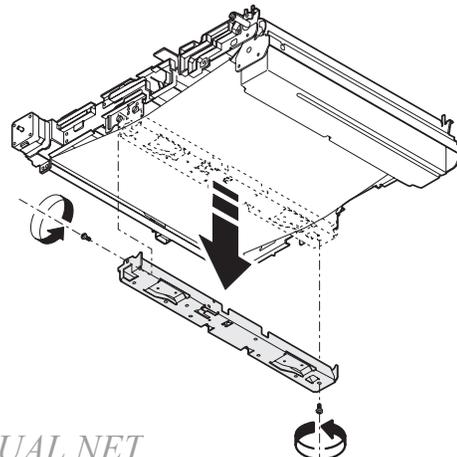
\* When assembling, be careful of the installing position of the separation pawl spring.



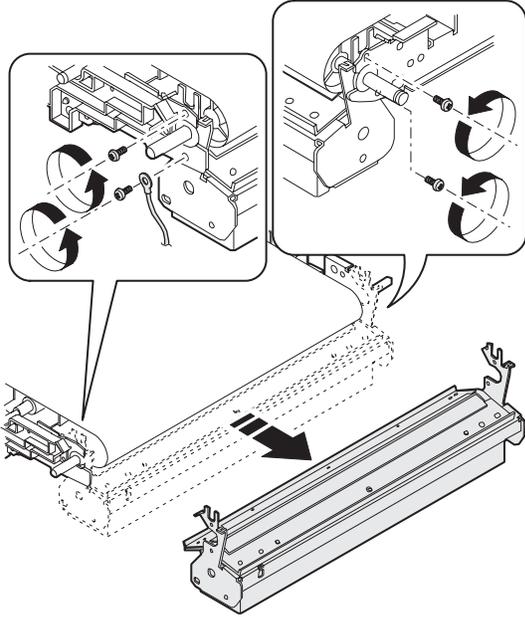
**S06/Ua06/P04 Belt drive roller**

1) Remove the transfer frame connecting plate unit.

2) Remove the screw, and remove the sensor unit.



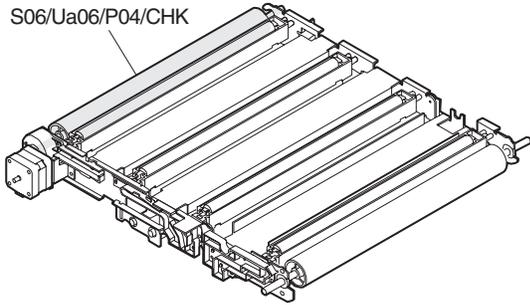
3) Remove four screws, and remove the waste toner tank unit.



4) Remove the transfer belt. [S06/Ua06/P14]

\* Check the belt drive roller (S06/Ua06/P04).

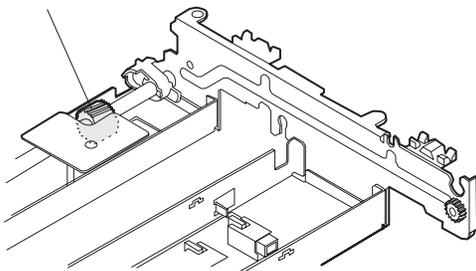
S06/Ua06/P04/CHK



**S06/Ua06/P05 Gear (30T)**

\* Apply grease to the gear (30T) (S06/Ua06/P05).

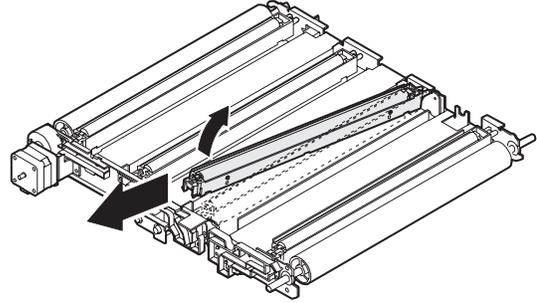
S06/Ua06/P05/GRE



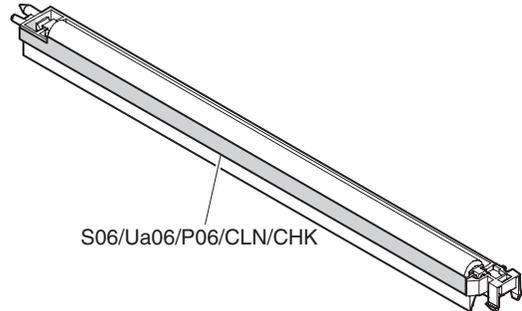
**S06/Ua06/P06 Transfer discharge sheet**

**S06/Ua06/P07 Transfer roller**

- 1) Remove the transfer roller connecting plate.
- 2) Remove the image density sensor unit. [S06/Ua06/P10]
- 3) Remove the waste toner tank unit. [S06/Ua06/P15]
- 4) Remove the transfer belt. [S06/Ua06/P14]
- 5) Remove the transfer belt holder.



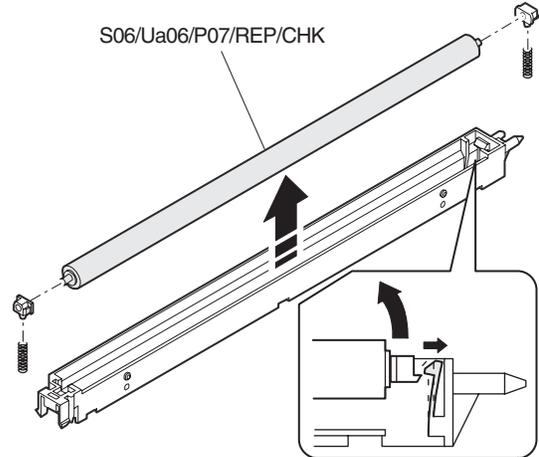
\* Check and clean the transfer discharge sheet (S06/Ua06/P06).



S06/Ua06/P06/CLN/CHK

\* Remove the pawl and the transfer roller (S06/Ua06/P07).

S06/Ua06/P07/REP/CHK

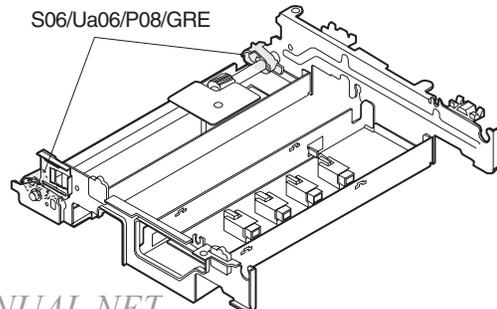


**S06/Ua06/P08 Lift cam**

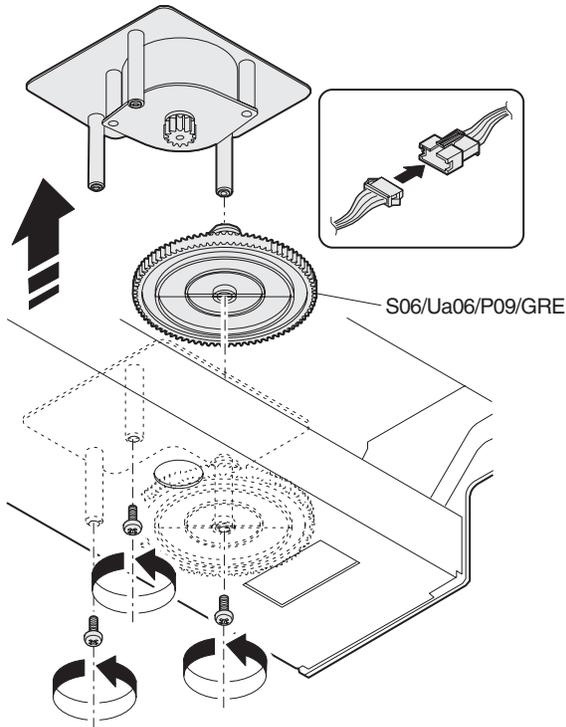
**S06/Ua06/P09 Idle gear**

\* Apply grease to the lift cam (S06/Ua06/P08).

S06/Ua06/P08/GRE

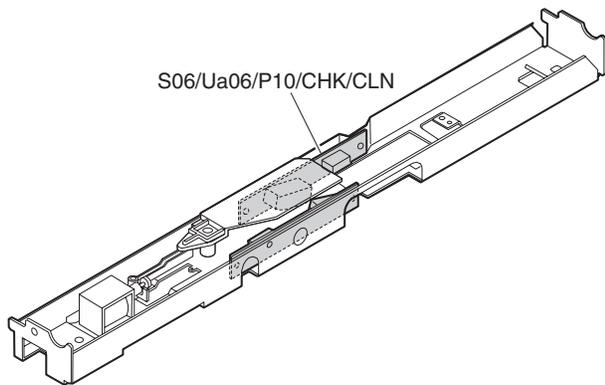


- 1) Remove the connector.
  - 2) Remove three screws on the bottom, 2nd remove the transfer belt lift up motor unit, and the idle gear (S06/Ua06/P09).
- \* Apply grease to the idle gear 1/84 (S06/Ua01/P09).



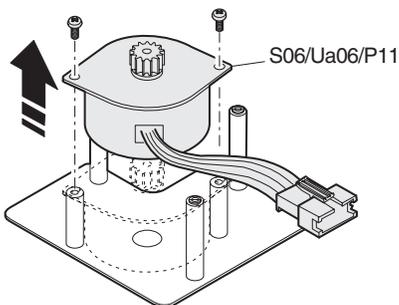
#### S06/Ua06/P10 Image density sensor

- 1) Remove the transfer frame connecting plate unit.
  - 2) Remove the sensor unit.
- \* Check and clean the image density sensor (S06/Ua06/P10).



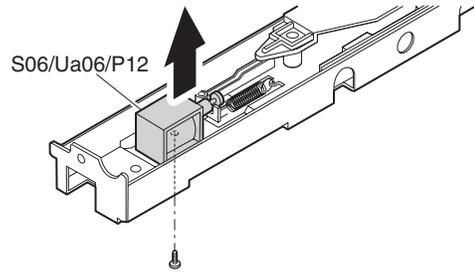
#### S06/Ua06/P11 Transfer belt lift motor

- 1) Remove the transfer belt lift motor unit.
- 2) Remove the screw, and remove the transfer belt lift motor (S06/Ua06/P11).



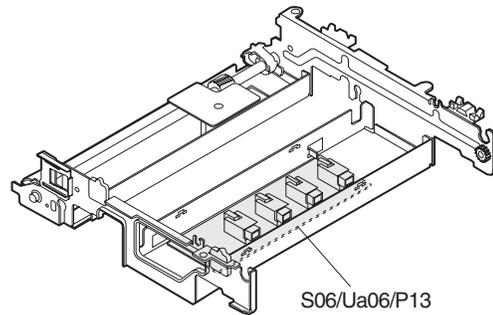
#### S06/Ua06/P12 Image density sensor solenoid

- 1) Remove the transfer frame connecting plate unit.
- 2) Remove the sensor unit.
- 3) Remove the screw, and remove the image density sensor solenoid (S06/Ua06/P12)



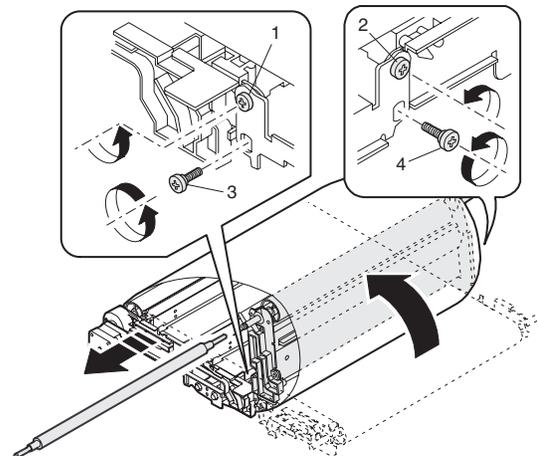
#### S06/Ua06/P13 High voltage power PWB (TC)

- 1) Remove the high voltage power PWB (TC) (S06/Ua06/P13)

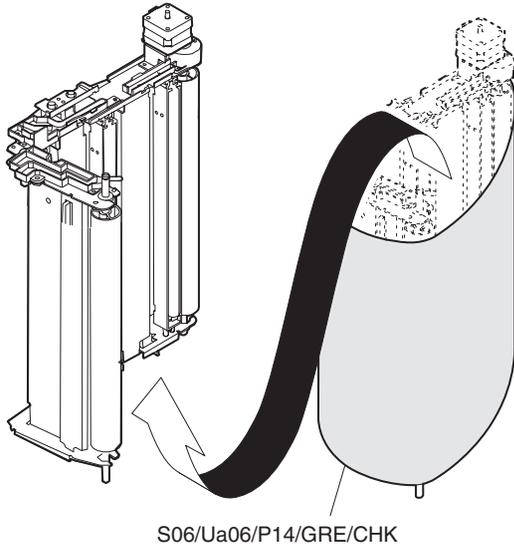


#### S06/Ua06/P14 Transfer belt

- 1) Remove the transfer frame connecting plate unit.
- 2) Remove the image density sensor unit.
- 3) Remove the waste toner tank unit. [S06/Ua06/P15]
- 4) Loosen the screws (1) (2), and remove the screws (3) (4).
- 5) Remove the transfer pressure roller.
- 6) Fold the transfer belt frame upward.

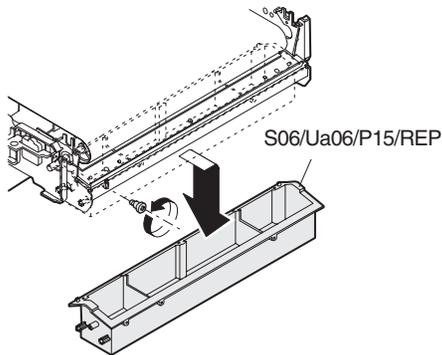


- 7) Put the transfer belt frame straight, and remove the transfer belt (S06/Ua06/P14).



**S06/Ua06/P15 Waste toner tank**

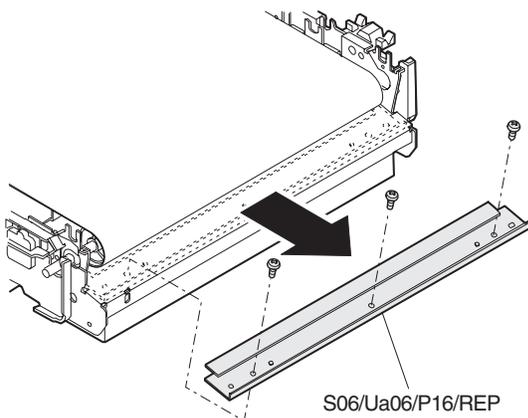
- 1) Remove the screw, and remove the waste toner tank (S06/Ua06/P15).



\* Clear the waste toner counter with SIM 22-8.

**S06/Ua06/P16 Transfer belt cleaning blade**

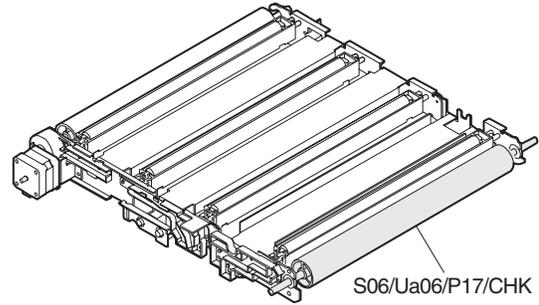
- 1) Remove the waste toner tank. [S06/Ua06/P15]  
 2) Remove the screw, and remove the transfer belt cleaning blade (S06/Ua06/P16).



When replacing the cleaning blade, apply starting powder (UKOG-0123FCZZ) to the transfer belt cleaner surface after cleaning.

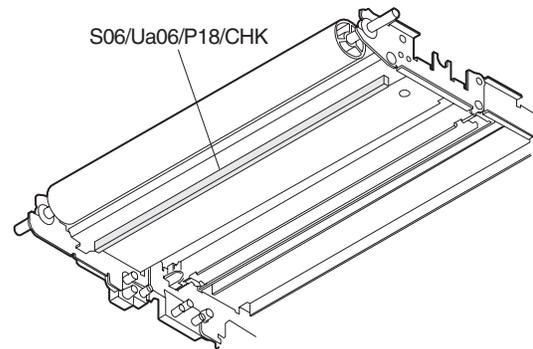
**S06/Ua06/P17 Transfer belt idle roller**

- 1) Remove the transfer frame connecting plate unit.  
 2) Remove the image density sensor unit.  
 3) Remove the waste toner tank unit. [S06/Ua06/P15]  
 4) Remove the transfer belt. [S06/Ua06/P14]  
 \* Check the belt drive roller (S06/Ua01/P17).



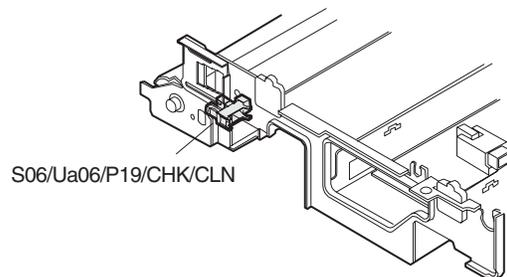
**S06/Ua06/P18 Transfer belt cleaner**

- 1) Remove the transfer frame connecting plate unit.  
 2) Remove the image density sensor unit.  
 3) Remove the waste toner tank unit. [S06/Ua06/P15]  
 4) Remove the transfer belt. [S06/Ua06/P14]  
 \* Check the cleaning pad (S06/Ua01/P18).



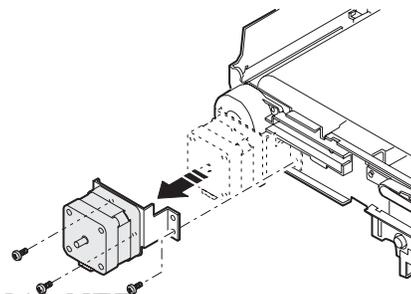
**S06/Ua06/P19 Transfer unit sensor**

- \* Clean the transfer unit sensor (S06/Ua01/P19).

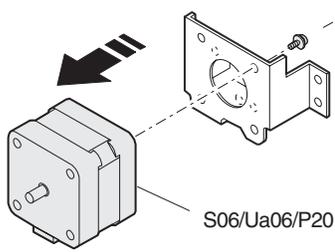


**S06/Ua06/P20 Belt drive motor**

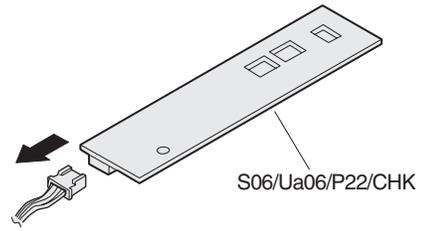
- 1) Remove the belt drive motor.



- 2) Remove the screw, and remove the belt drive motor (S06/Ua06/P20).

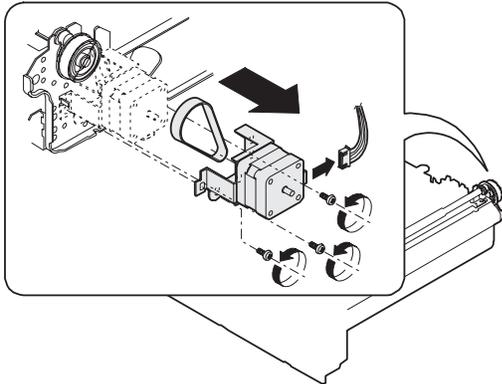


- 2) Remove the connector, and remove the humidity sensor (S06/Ua06/P22).



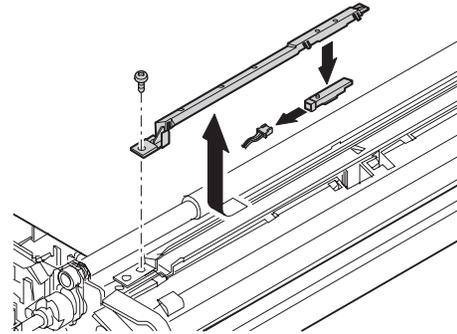
**S06/Ua06/P21 RR motor**

- 1) Remove the connector.
- 2) Remove the screw, and remove the RR motor unit and the timing belt.



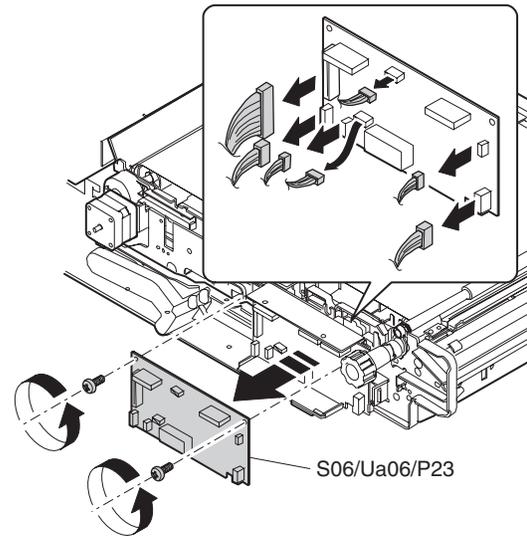
(Paper feed detector)

- 1) Remove the screw and the sensor holder. Disconnect the connector and the paper feed detector.

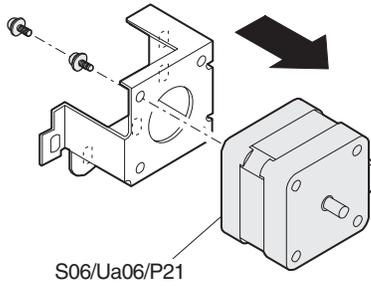


**S06/Ua06/P23 PCU sub PWB**

- 1) Remove the PCU sub PWB (S06/Ua06/P23).

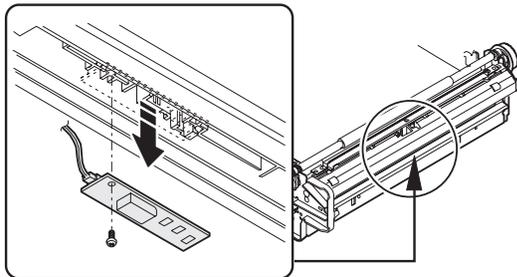


- 3) Remove the screw, and remove the RR motor (S06/Ua06/P21).



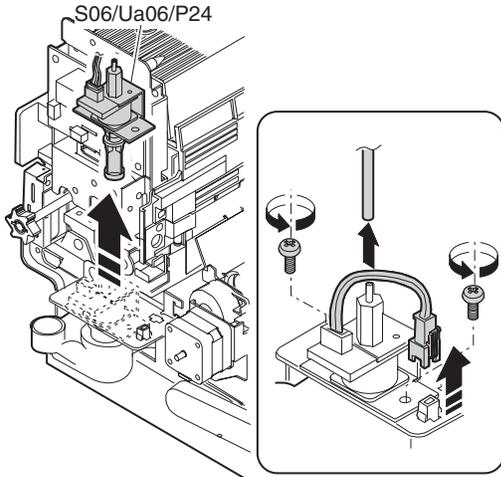
**S06/Ua06/P22 Humidity sensor**

- 1) Remove the screw, and remove the humidity sensor.



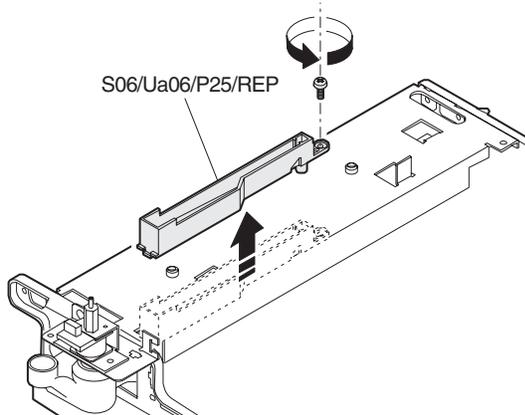
### S06/Ua06/P24 Oil pump

- 1) Remove the screw, the connector, and the oil tube, and remove the oil pump (S06/Ua06/P24).



### S06/Ua06/P25 Oil filter unit

- 1) Remove the fusing unit.
- 2) Remove the screw, and remove the oil filter (S06/Ua06/P25).



### S06/Ua07 Waste toner unit

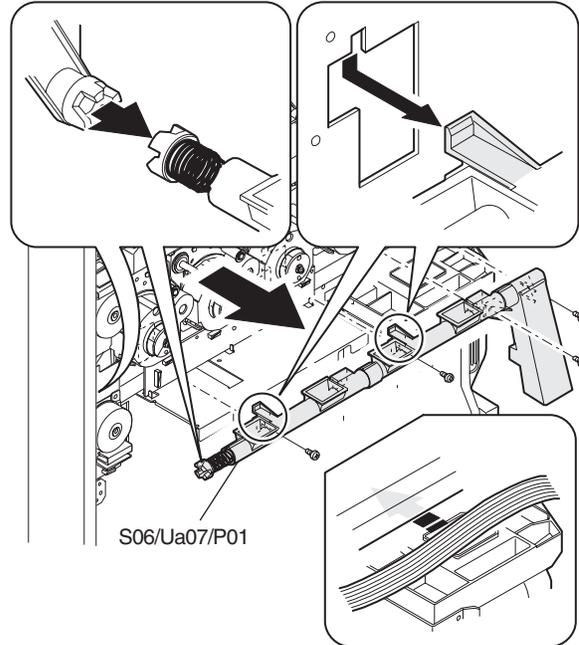
- 1) Remove the rear cabinet upper. [S01/P02]
- 2) Remove the rear cabinet lower. [S01/P03]
- 3) Remove the flywheel.

### S06/Ua07/P01 Waste toner transport unit

- 4) Remove the waste toner transport unit fixing screw, and remove the developing drive BK unit coupling and the pawl. Remove the waste toner transport unit.

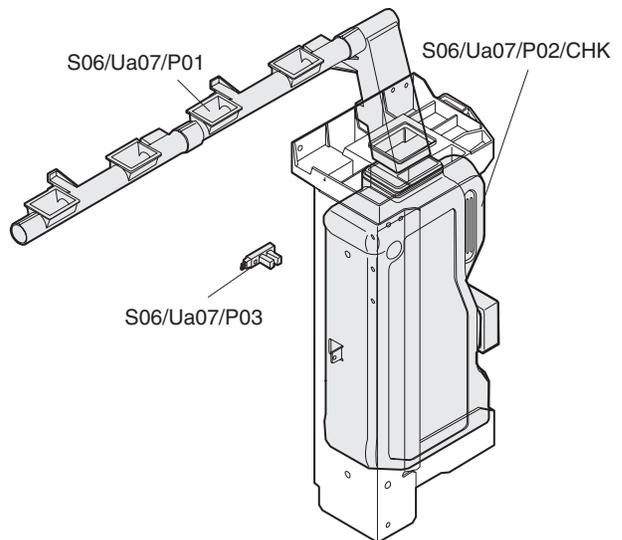
\* **Note for assembly**

Place the unit under the square pipe so as not to pinch the main harness.



### S06/Ua07/P02 Waste toner bottle

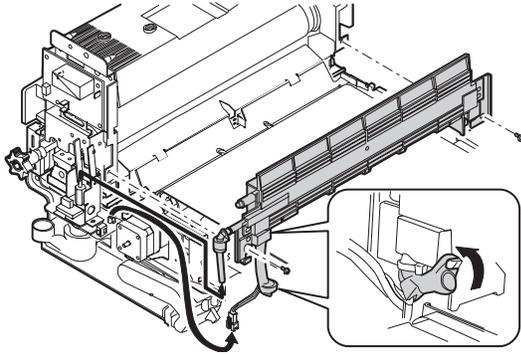
### S06/Ua07/P03 Waste toner full sensor



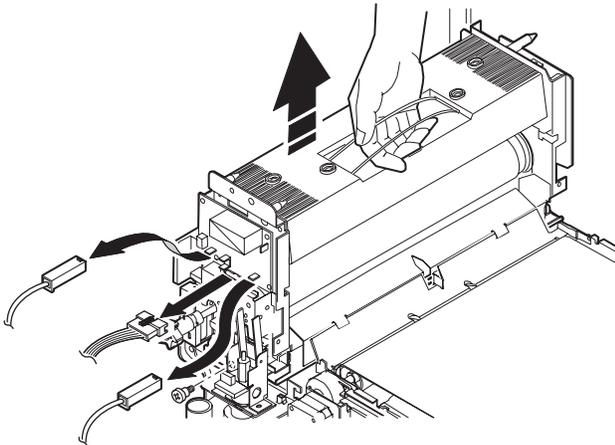
## S07 Fusing/paper exit section

### S07/Ua01 Fusing unit

- 1) Open the front cover. [S01/P04]
- 2) Remove the hopper unit. [S06/Ua01]
- 3) Remove the process frame cover. [S06/Ua02]
- 4) Pull out the fusing/transfer unit. [S06/Ua06]
- 5) Remove the fusing front cover. [S06/U06]
- 6) Disconnect the oil pump and the pipe, and hang the pipe on the hook.
- 7) Remove the connector.



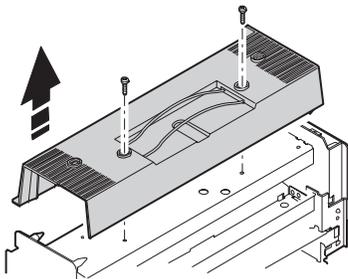
- 8) Remove the step screw and the connector, and remove the fusing unit (S07/U01).



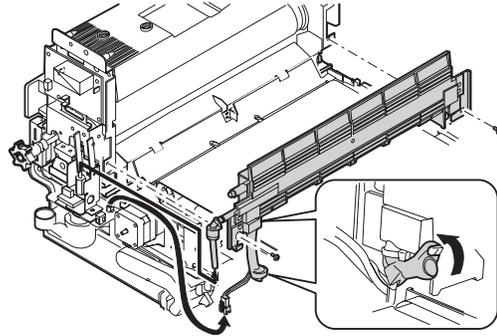
(Note) When a strong external pressure is applied to the fusing unit which is installed to the machine, the oil pipe may come off from the oil pump section. Be careful of it.

### S07/Ua01/P01 Thermistor (upper)

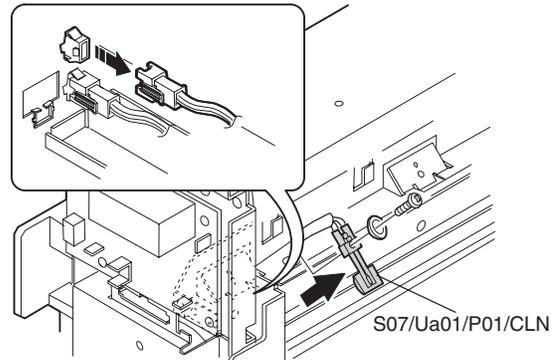
- 1) Remove the screw, and remove the fusing upper cover.



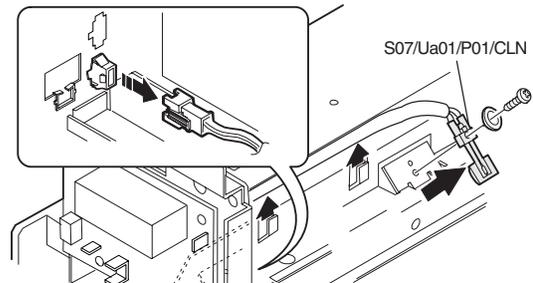
- 2) Remove the oil applying unit.



- 3) Remove the Thermistor (upper) (S07/Ua01/P01/CLN).  
\* Clean with alcohol.

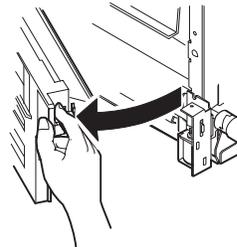


- 4) Remove the Thermistor (lower) (S07/Ua01/P01/CLN).  
\* Clean with alcohol.

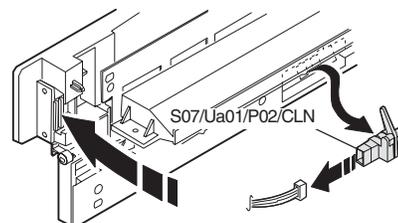


### S07/Ua01/P02 Duplex paper exit detector

- 1) Open the paper exit transport guide.



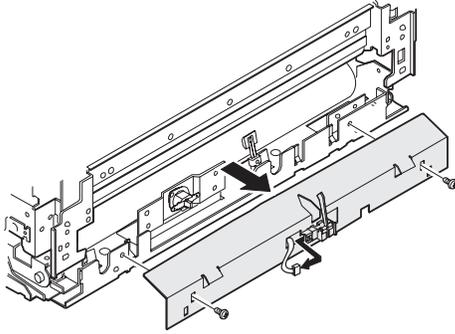
- 2) Remove the connector, and remove the duplex paper exit detector (S07/Ua01/P02/CLN).



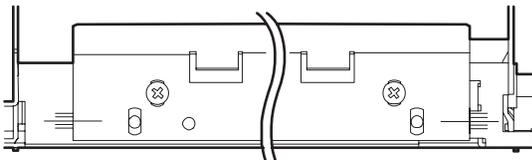
\* Clean the detector.

### S07/Ua01/P03 Thermistor (lower)

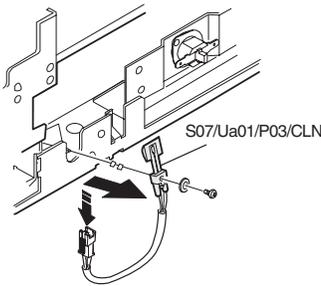
- 1) Remove the fusing upper cover.
- 2) Remove the screw, the washer, and the connector.
- 3) Remove the screw and the connector, and remove the fusing front paper guide unit.



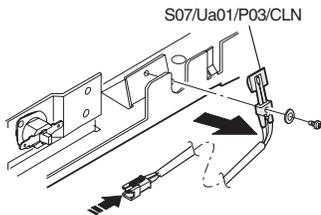
Fusing front paper guide installing position:  
Install so that the line mark of the fusing front paper guide comes at the center of the mark on the fusing unit.



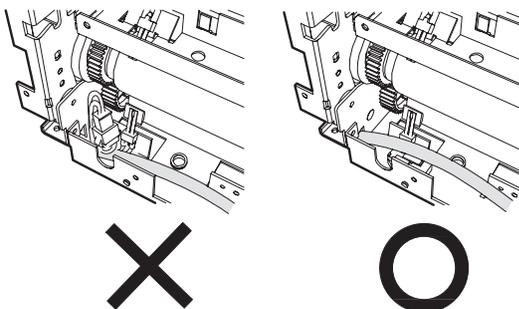
- 4) Remove the detection Thermistor (lower) (S07/Ua01/P03/CLN).  
\* Clean with alcohol.



- 5) Remove the Thermistor pair (lower) (S07/Ua01/P03/CLN).  
\* Clean with alcohol.

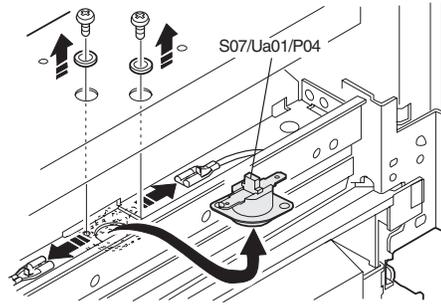


(Note) Fix the thermistor so that the thermistor harness is way from the drive section (gear).

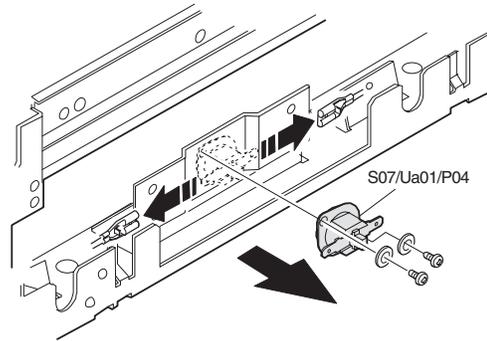


### S07/Ua01/P04 Thermostat

- 1) Remove the fusing upper cover.
- 2) Remove the screw and the connector, and remove the thermostat (upper) (S07/Ua01/P04).

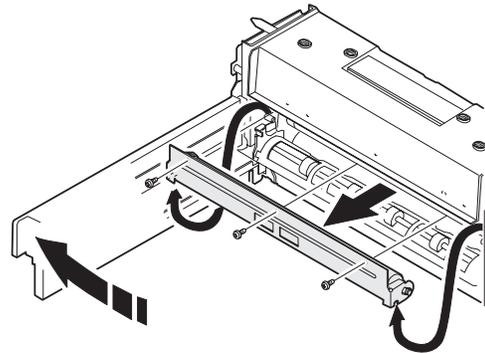


- 3) Remove the fusing front paper guide unit.
- 4) Remove the screw and the connector, and remove the thermostat (lower) (S07/Ua01/P04).

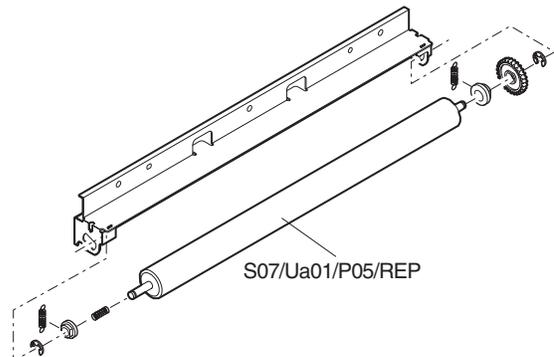


### S07/Ua01/P05 Upper cleaning roller

- 1) Open the paper exit/transport mechanism.
- 2) Remove the screw, and remove the upper cleaning roller unit.

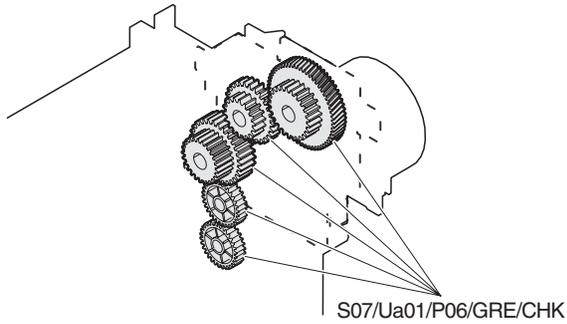


- 3) Remove the parts, and remove the upper cleaning roller (S07/Ua01/P05/REP).



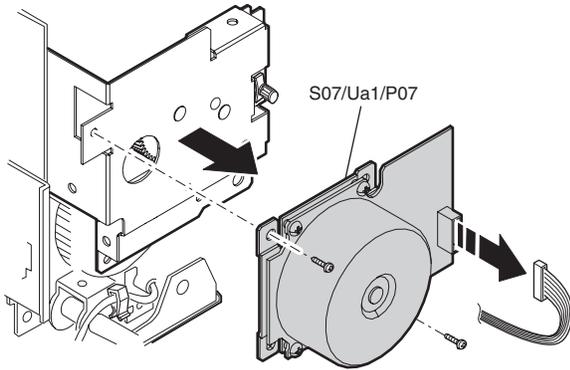
### S07/Ua01/P06 Gear

\* Apply grease to the gear.



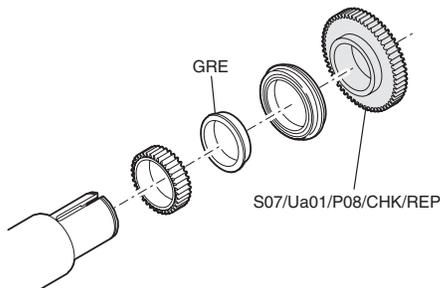
### S07/Ua01/P07 Fusing drive motor

1) Remove the screw and the connector, and remove the fusing drive motor (S07/Ua01/P07).



### S07/Ua01/P08 Upper heat roller gear R

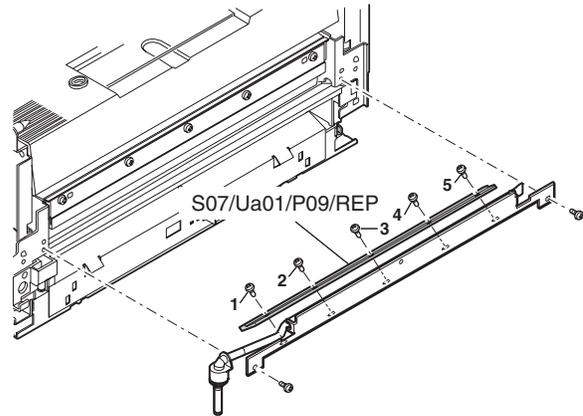
1) Remove the upper heat roller unit. [S07/Ua01/P13]  
\* Apply grease to the inside of the collar.



\* Replace the whole unit of the upper heat roller unit.

### S07/Ua01/P09 Oil applying felt

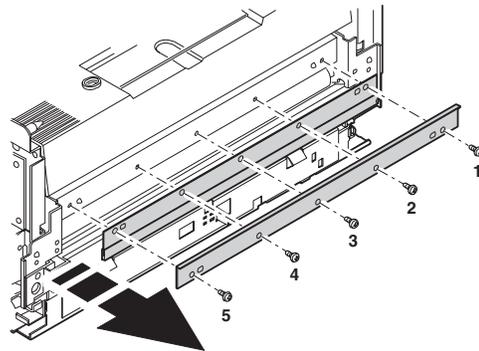
- 1) Remove the fusing front cover.
- 2) Remove the screw, the pipe holder, and the oil applying felt unit.
- 3) Remove the screw, and remove the oil applying felt (S07/Ua01/P09/REP).



\* When assembling, tighten the screws in the sequence of numbering.

### S07/Ua01/P10 Oil applying blade

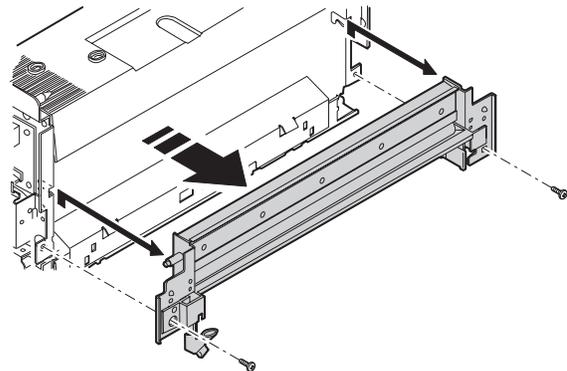
- 1) Remove the screw, and remove the oil applying blade (S07/Ua01/P10/REP).



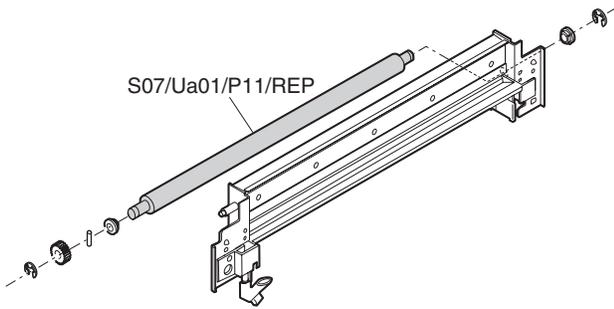
\* When assembling, tighten the screws in the sequence of numbering.

### S07/Ua01/P11 Oil applying roller

- 1) Remove the screw, and remove the oil applying unit.

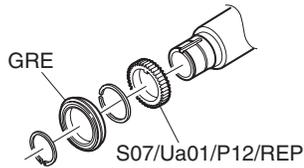


- Remove the oil applying roller.



**S07/Ua01/P12 Upper heat roller gear F**

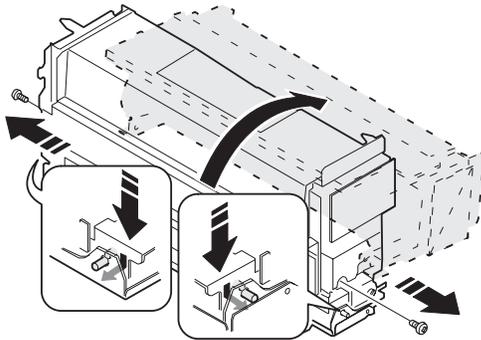
- Remove the upper heat roller unit. [S07/Ua01/P13]
  - \* Apply grease to the inside of the collar.



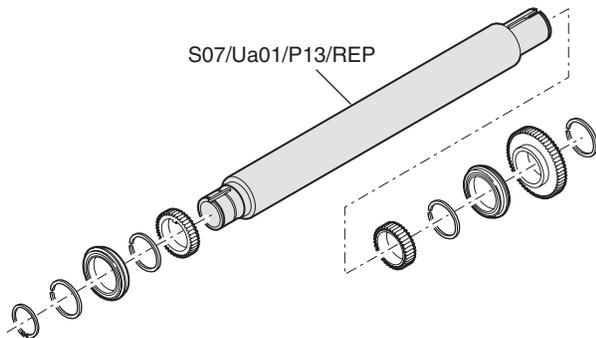
- \* Replace the whole unit of the upper heat roller unit.

**S07/Ua01/P13 Upper heat roller**

- Remove the heater lamps. [S07/Ua01/P14], [S07/Ua01/P18]
- Remove the step screw and the connector, and release the pressure. Remove the fixing screws of the upper/lower fusing units, then remove the upper/lower fusing units upward/downward.



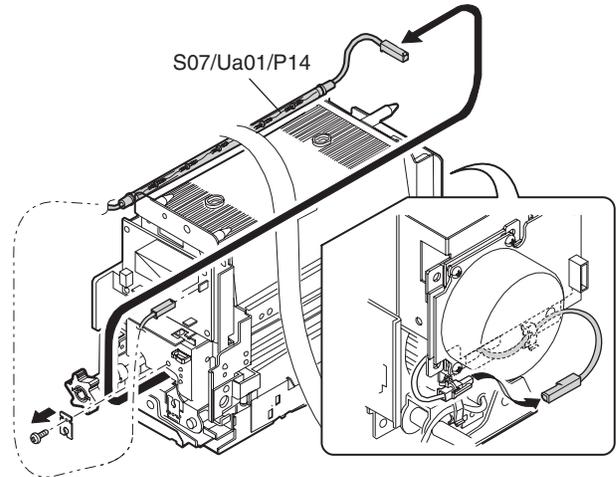
- Remove the parts, and remove the upper heat roller (S07/Ua01/P13/REP).



- \* Replace the whole unit of the lower heat roller unit.

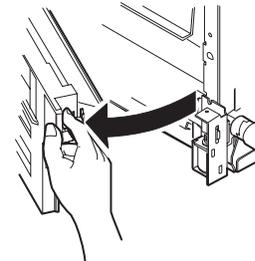
**S07/Ua01/P14 Upper heater lamp**

- Remove the lamp holders and the connector.
- Remove the upper heater lamp.

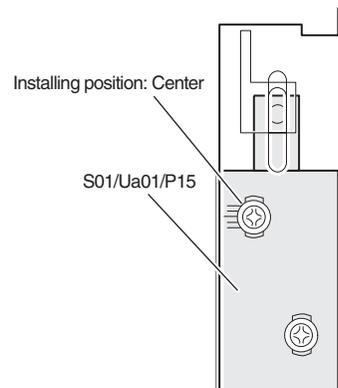
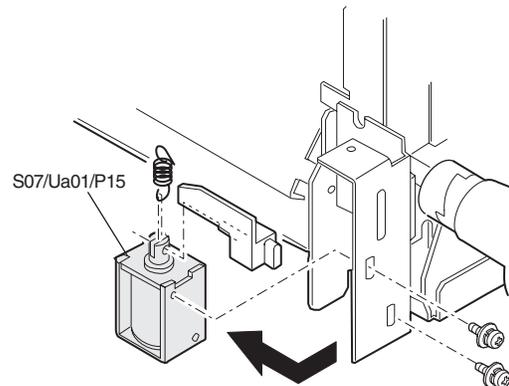


**S07/Ua01/P15 Duplex gate solenoid**

- Open the paper exit/transport guide.

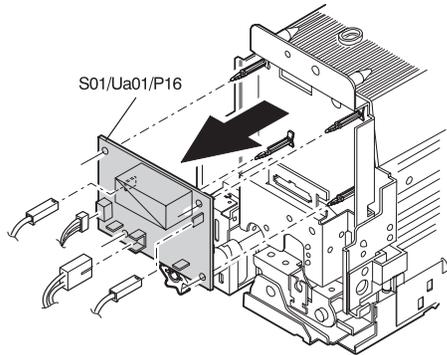


- Remove the screw and the spring, and remove the duplex gate solenoid.



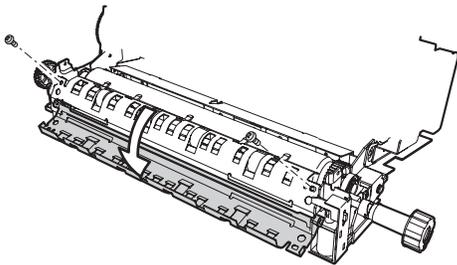
**S07/Ua01/P16 Heater lamp control PWB (AC sub PWB)**

- 1) Remove the connector, and remove the heater lamp control PWB (AC sub PWB) (S07/Ua01/P16).

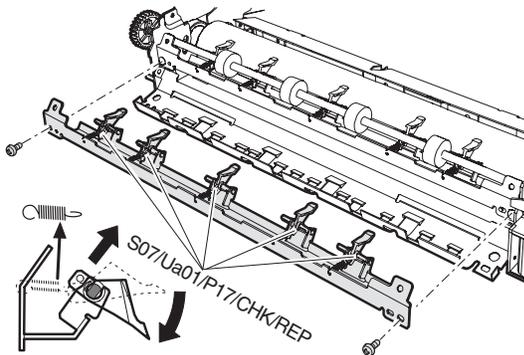


**S07/Ua01/P17 Lower separation pawl**

- 1) Open the upper and the lower fusing units.
- 2) Open the lower separation pawl unit (paper guide).

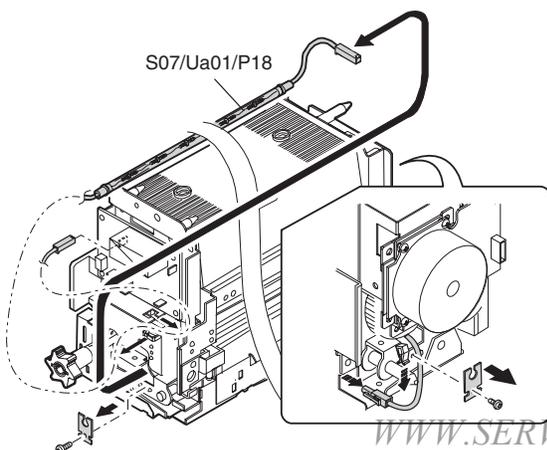


- 3) Remove the spring, and remove the lower separation pawl (S07/Ua01/P17/CHK/REP).



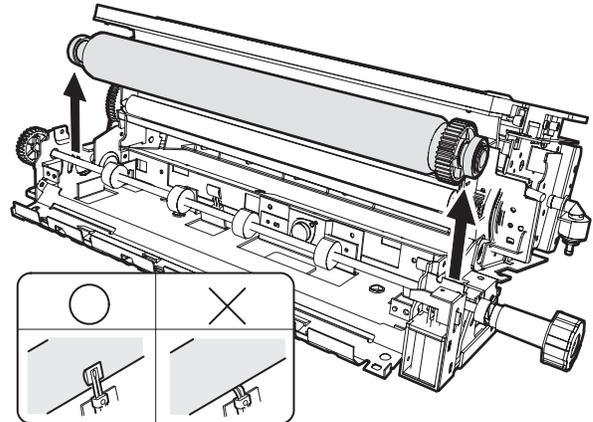
**S07/Ua01/P18 Lower heater lamp**

- 1) Remove the lamp holders and the connectors.
- 2) Pull out the lower heat lamp.

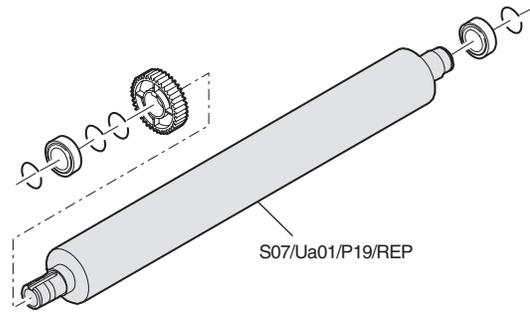


**S07/Ua01/P19 Lower heat roller**

- 1) Remove the heater lamps. [S07/Ua01/P14], [S07/Ua01/P18]
- 2) Open the upper and the lower fusing units.
- 3) Remove the lower separation pawl unit (paper guide), and remove the lower heat roller unit.



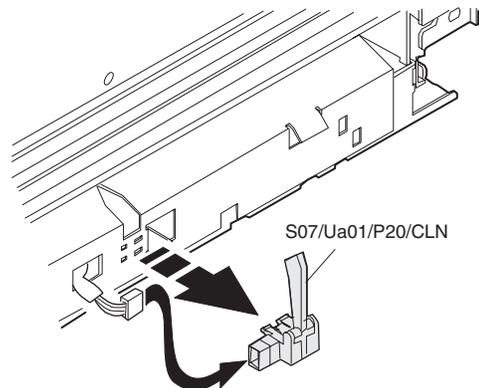
- 4) Remove the parts, and remove the lower heat roller.



\* Replace the whole unit of the lower heat roller unit.

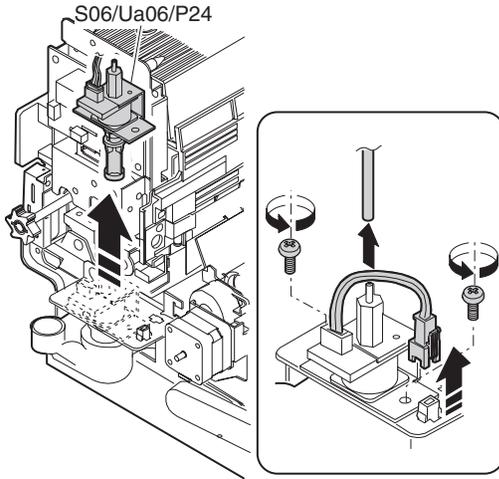
**S07/Ua01/P20 Paper entry detector**

- 1) Remove the connector, and remove the paper entry detector (S07/Ua01/P20).
- \* Clean the detector.



### S07/Ua01/P21 Oil pump

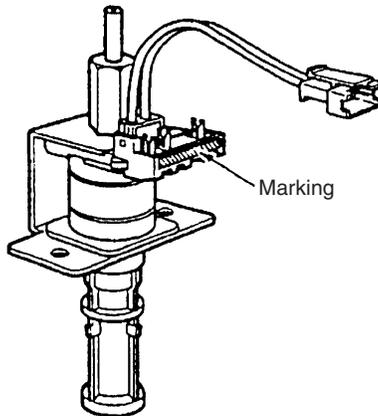
Clean and remove oil attached on the external surfaces.



Clean the oil filter attached to the oil pump suction port with waste cloth.

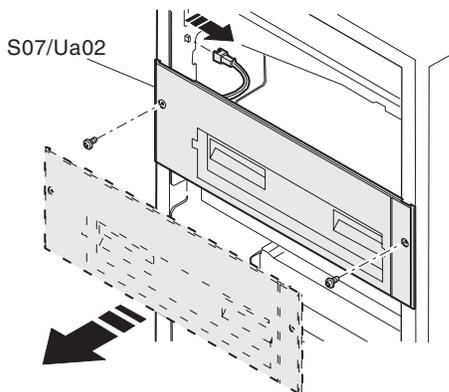
If the oil filter is clogged, oil is not sufficiently supplied to the heat roller, causing a trouble.

- When installing (replacing) this pump, set the pump operation value of Sim 43-7 referring to the marking color shown in the illustration below.



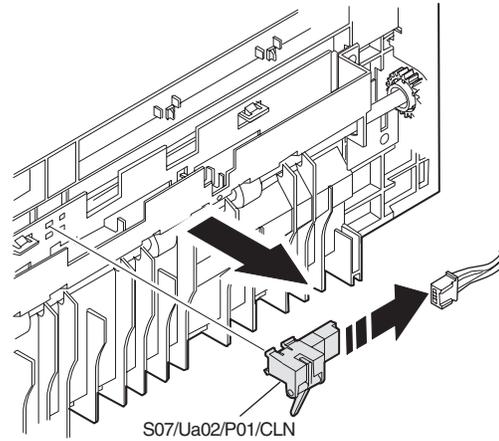
### S07/Ua02 Paper exit unit

- 1) Remove the screw and the connector, and remove the paper exit unit (S07/Ua02).



### S07/Ua02/P01 Paper exit detector

- 1) Remove the paper exit unit. [S07/Ua02]
  - 2) Remove the connector, and remove the paper exit detector (S07/Ua02/P01/CLN).
- \* Clean it.

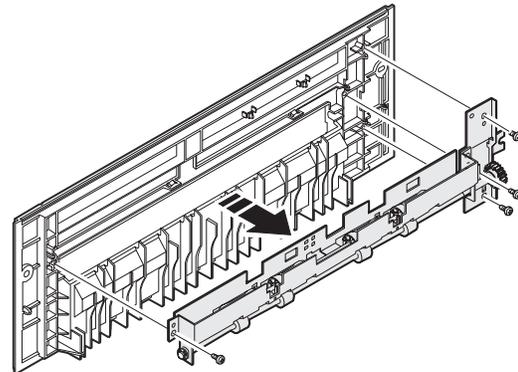


### S07/Ua02/P02 Paper exit roller

### S07/Ua02/P03 Gear

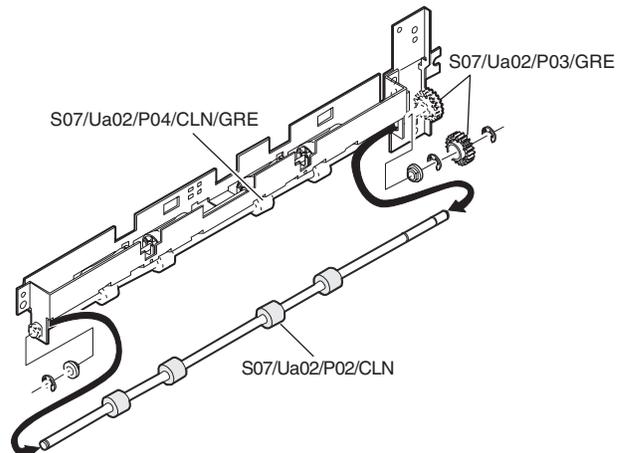
### S07/Ua02/P04 Paper exit idle roller

- 1) Remove the paper exit unit. [S07/Ua02]
- 2) Remove the screw, and remove the paper exit roller unit.



- 3) Remove the parts, and remove the paper exit roller (S07/Ua02/P02/CLN).

\* Clean with alcohol.



\* Apply grease to the gear (S07/Ua02/P03/GRE) and the inside of the paper exit idle roller (S07/Ua02/P04/CLN/GRE).

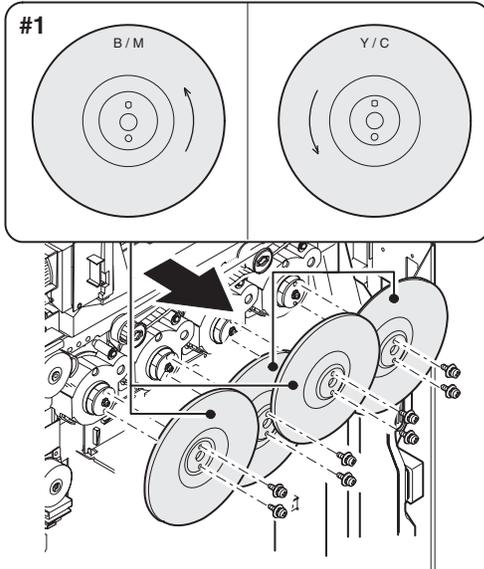
## S08 Drive section

### S08/Ua01 OPC drum drive unit

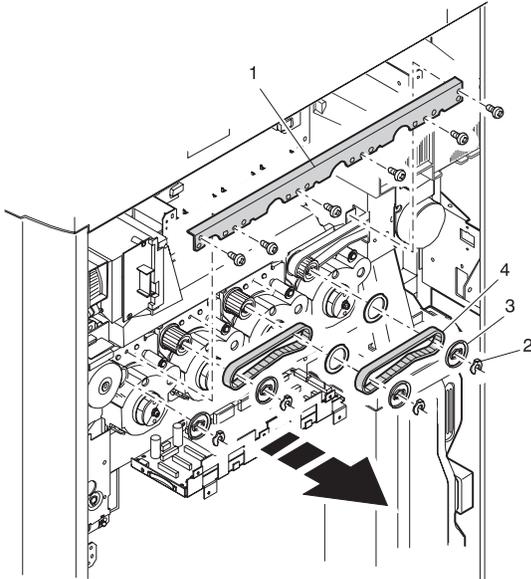
- 1) Remove the rear cabinet upper. [S01/P02]
- 2) Remove the rear cabinet lower. [S01/P03]
- 3) Remove the screw, and remove the flywheel.

#### \* Assembly procedure

- (#1) For the 1st and 3rd from the left end, attach so that the mark of M/K comes to the front surface. For the 2nd from the left end, attach so that the mark of Y/C comes to the front surface.



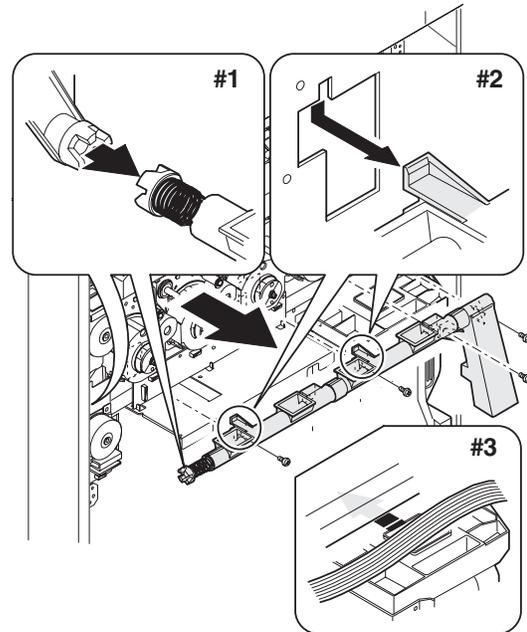
- 4) Remove the screw, and remove the drive unit connection stay (1).
- 5) Remove the E-ring (2), and remove the flange (3) and the development connection belt (3).



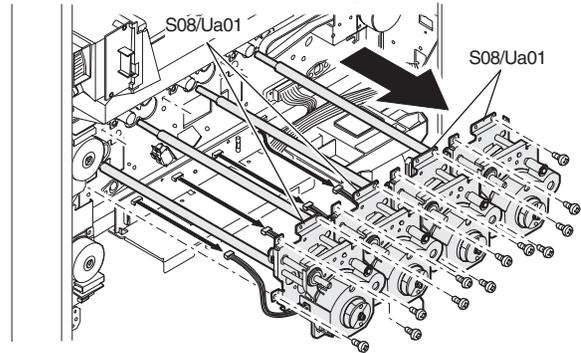
- 6) Remove the waste toner transport unit fixing screw, and remove the development drive BK unit coupling (#1).

#### \* Note for assembly

Place the unit under the square hole so as not to pinch the main harness.



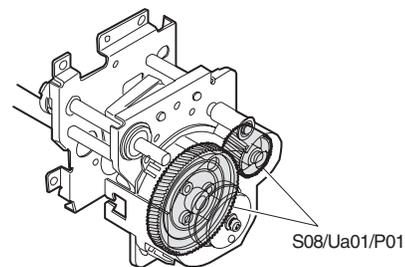
- 7) Remove the screw and the connector.
- 8) Remove the OPC drum drive unit (S08/Ua01).



### S08/Ua01/P01 OPC drum drive motor

#### S08/Ua01/P02 Gear

- 1) Remove the motor from the OPC drum drive unit.

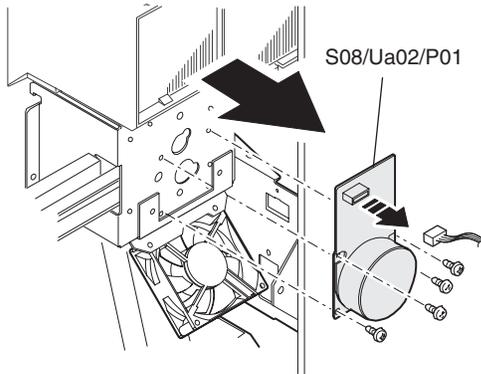


\* Apply grease to the gear.

(Note) Do not disassemble this unit.

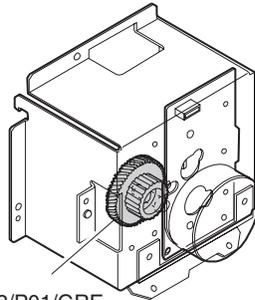
## S08/Ua02 Development drive unit (Color)

- 1) Remove the rear cabinet upper. [S01/P02]
- 2) Remove the rear cabinet lower. [S01/P03]
- 3) Remove the connector.
- 4) Remove the screw, and remove the development drive motor (S08/Ua02/P01).



## S08/Ua02/P01 Gear

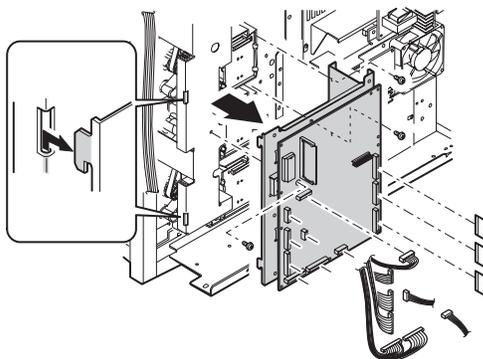
- \* Apply grease to the gear.



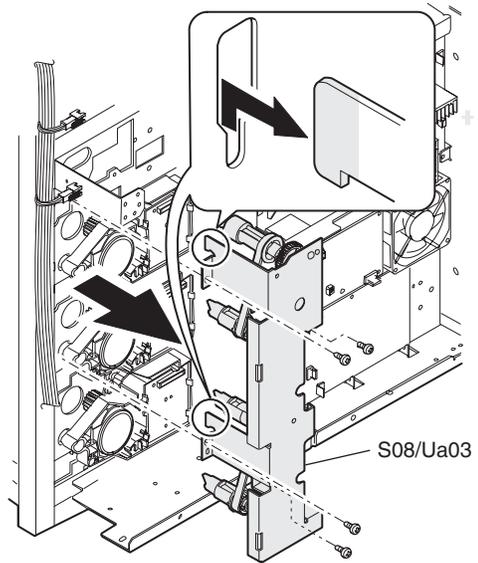
S08/Ua02/P01/GRE

## S08/Ua03 Paper feed drive unit

- 1) Remove the rear cabinet upper. [S01/P02]
- 2) Remove the rear cabinet lower. [S01/P03]
- 3) Remove the screw, and remove the PCU main PWB unit.



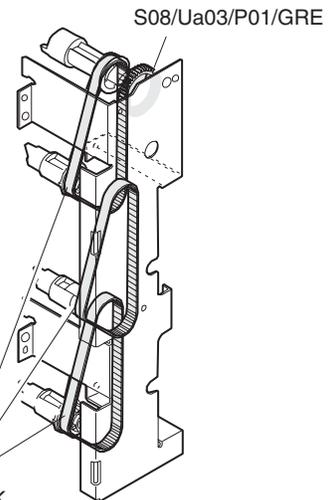
- 4) Remove the screw, and remove the paper feed drive unit (S08/Ua03).



## S08/Ua03/P01 Gear

## S08/Ua03/P02 Belt

- \* Apply grease to the gear.
- \* Check the belt.

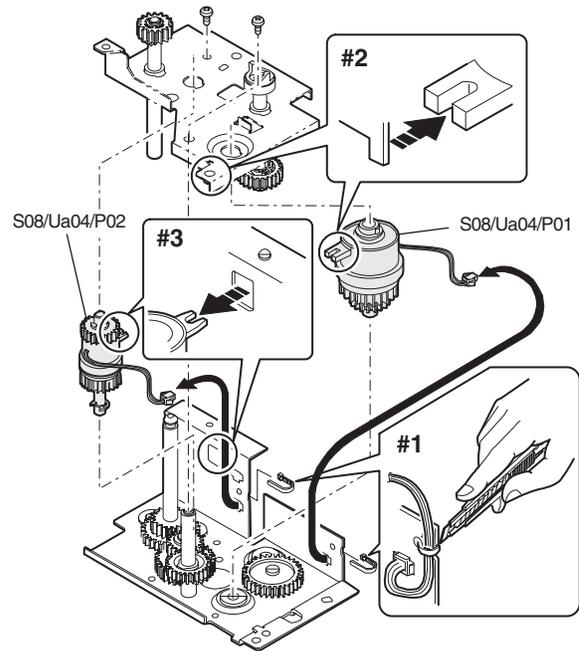
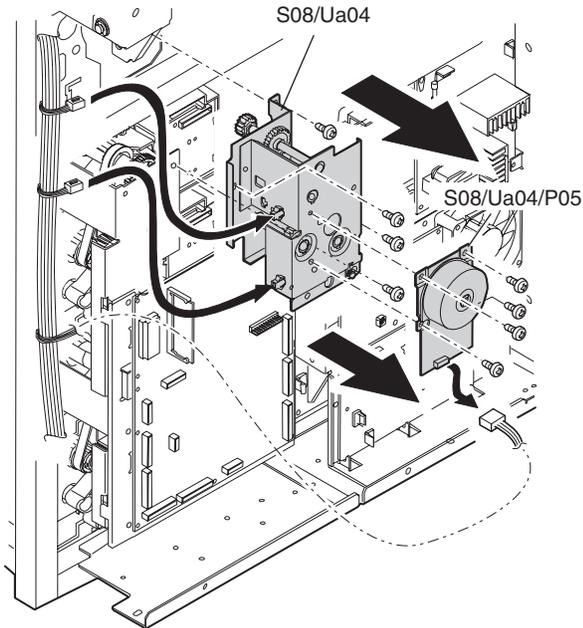


S08/Ua03/P02/CHK

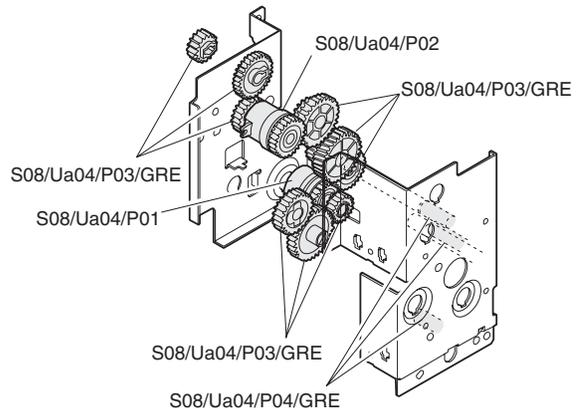
## S08/Ua04 Paper feed drive unit

### S08/Ua04/P05 Paper feed motor

- 1) Remove the rear cabinet upper. [S01/P02]
- 2) Remove the rear cabinet lower. [S01/P03]
- 3) Remove the screw and the flat cable, and remove the paper feed motor (S08/Ua04/P05).
- 4) Remove the screw and the connector, and remove the paper feed drive unit (S08/Ua04).



\* Apply grease to the gear and the shaft.



### S08/Ua04/P01 Manual paper feed clutch

### S08/Ua04/P02 Paper feed clutch

### S08/Ua04/P03 Gear

### S08/Ua04/P04 Shaft

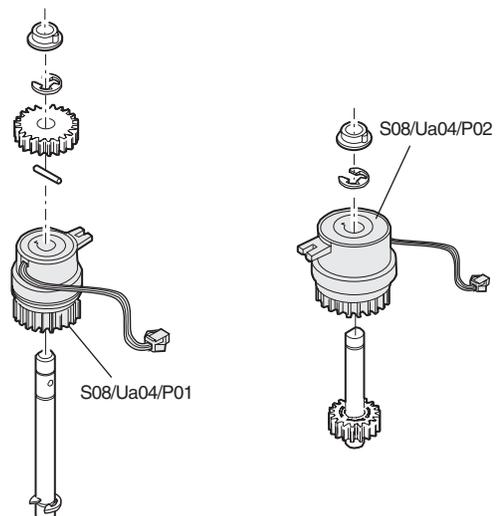
- 1) Remove the screw, and separate the frame.
- 2) Cut the binding band (#1).
- 3) Remove the connectors, and remove the manual paper feed clutch (S08/Ua04/P01) and the paper feed clutch (S08/Ua04/P02).

#### \* Note for assembly

Insert the manual paper feed clutch (S08/Ua04/P01) into the pawl section (#2).

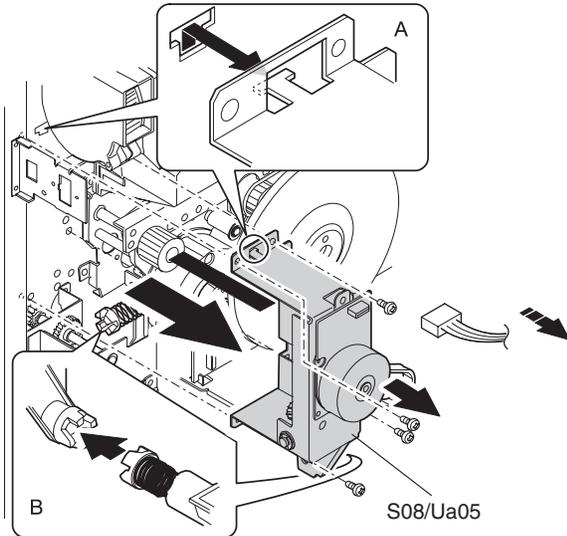
Insert the paper feed clutch (S08/Ua04/P02) into the square hole (#3).

- 4) Disengage the pawl of the manual paper feed clutch (S08/Ua04/P01) and remove it.
- 5) Pull out the paper feed clutch (S08/Ua04/P02).



## S08/Ua05 Development drive unit (Black)

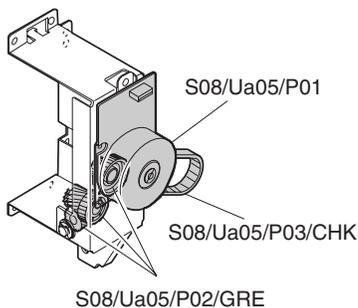
- 1) Remove the rear cabinet upper. [S01/P02]
- 2) Remove the rear cabinet lower. [S01/P03]
- 3) Remove the flat cable.
- 4) Remove the screw and the belt, and remove the development drive unit (Black) (S08/Ua05).
  - \* Disengage from the notch section of the chassis (A).
  - \* Remove the coupling of the development drive from the coupling of the waste toner transport unit (B).



### S08/Ua05/P01 Motor

### S08/Ua05/P02 Gear

### S08/Ua05/P03 Belt



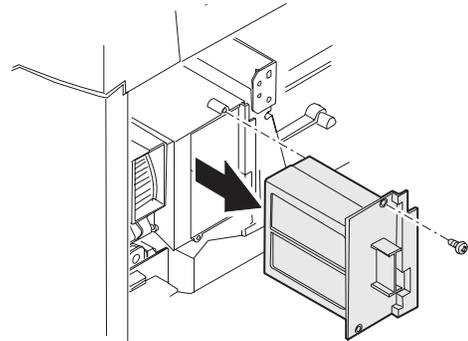
- \* Apply grease to the gear.
- \* Check the belt.

## S09 Filter

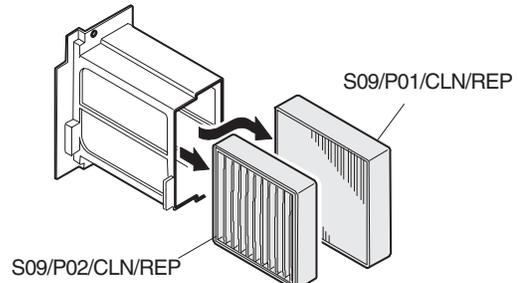
### S11/P01 Ozone filter

### S11/P02 Toner duct filter

- 1) Remove the rear cabinet upper. [S01/P02]
- 2) Remove the rear cabinet lower. [S01/P03]
- 3) Remove the filter box cover.

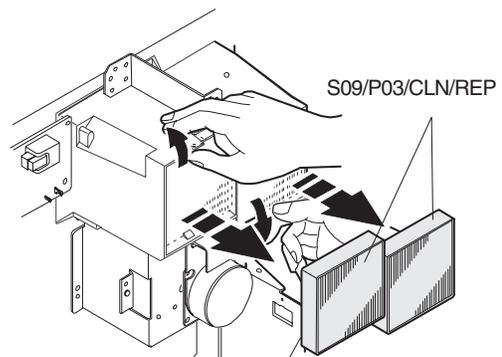


- 4) Remove the ozone filter (S09/P01), and the toner duct filter (S09/P02).
  - \* Clean the filter.



### S09/P03 Process ozone filter

- 1) Remove the rear cabinet upper. [S01/P02]
- 2) Remove the rear cabinet lower. [S01/P03]
- 3) Remove the process ozone filter (S09/P01) from the process cooling fan unit.
  - \* Clean the filter.



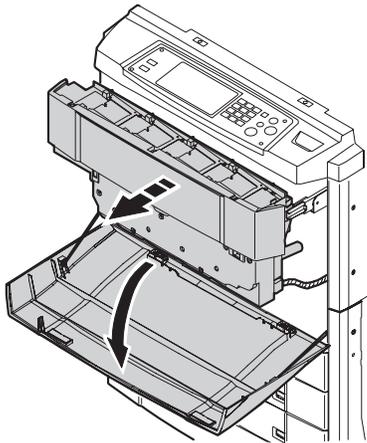
# S10 PWB

S10/P01 ICU main PWB

S10/P02 ICU image PWB

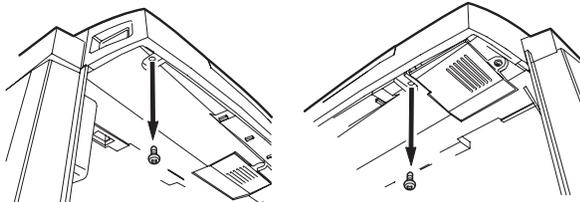
S10/P03 ICU scan PWB

1) Remove the operation unit.

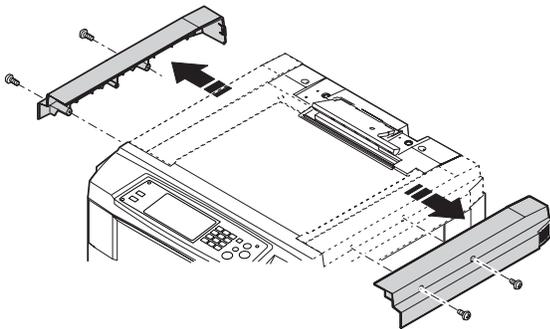


Left side

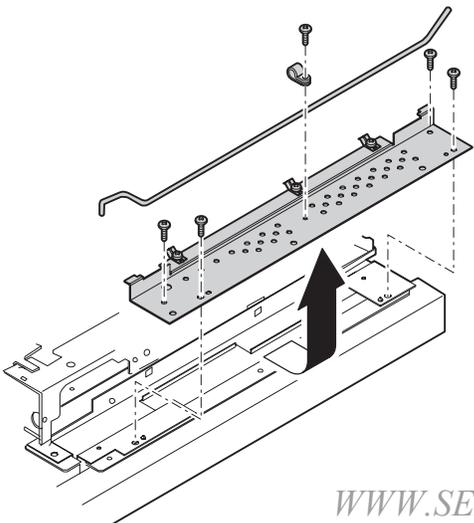
Right side



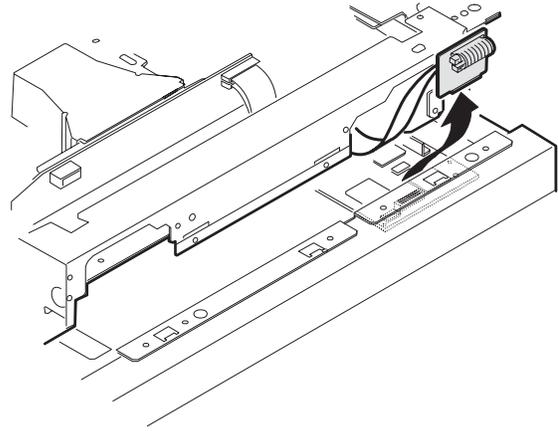
2) Remove the left and right upper cabinet.



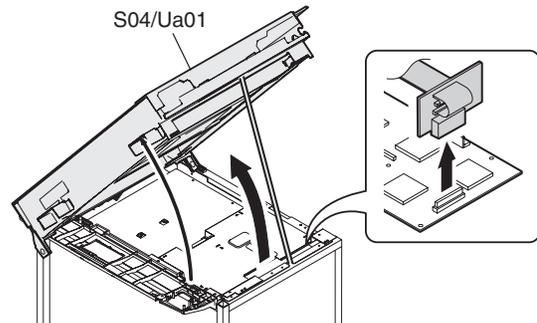
3) Remove the ICU PWB shield plate.



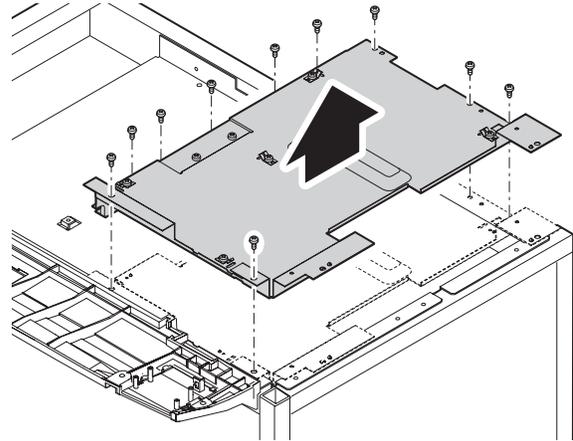
4) Remove the CCD flat cable connector.



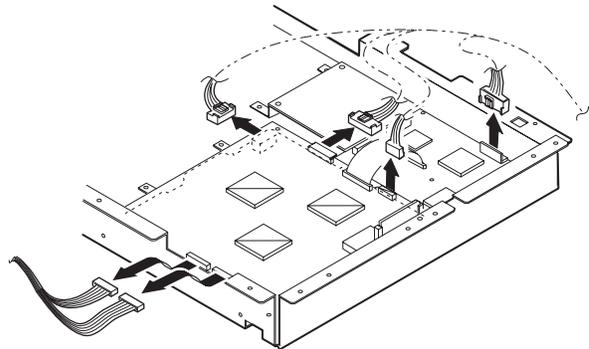
5) Open the scanner (reading) unit and fix it with the hold shaft.

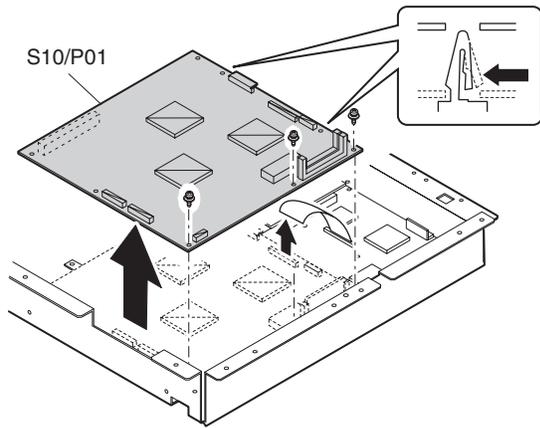


6) Remove the screw, and remove the ICU cover.



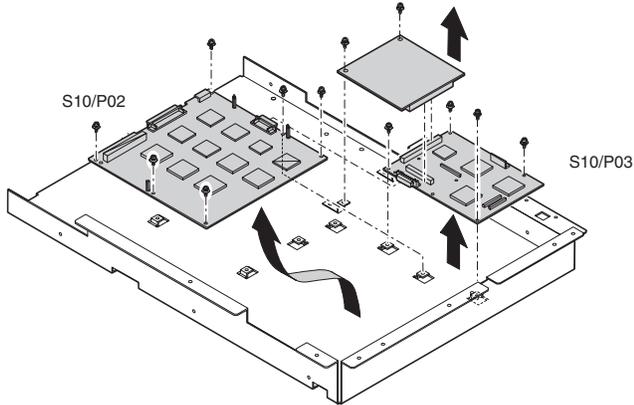
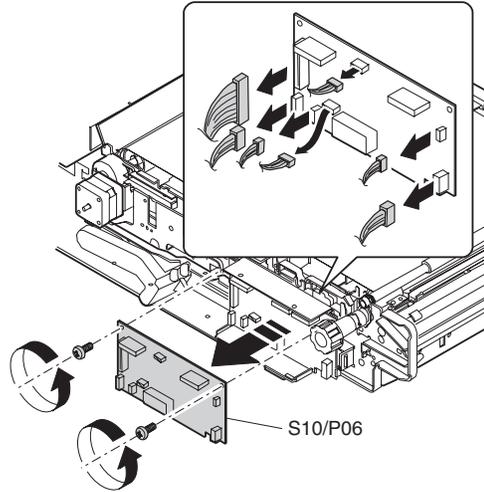
7) Remove the ICU main PWB, the ICU image PWB, the ICU scan PWB, and the CRT PWB.





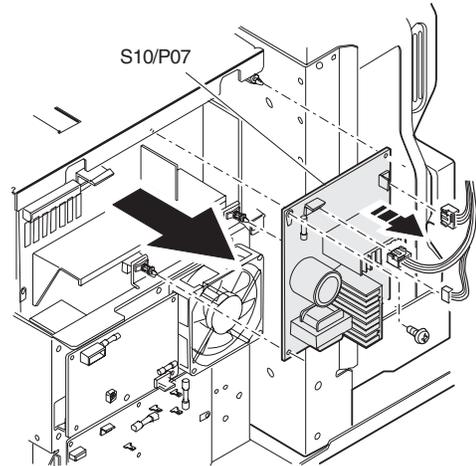
### S10/P06 PCU sub PWB

- 1) Remove the transfer cover and the fusing cover. [S06/Ua06]
- 2) Remove the PCU sub PWB.



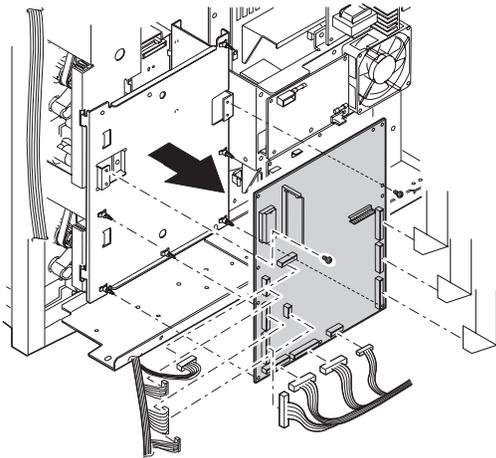
### S10/P07 Scanner lamp control PWB

- 1) Remove the rear cabinet upper. [S01/P02]
- 2) Remove the rear cabinet lower. [S01/P03]
- 3) Remove the screw and the connector, and remove the scanner lamp control PWB.



### S10/P04 PCU main PWB

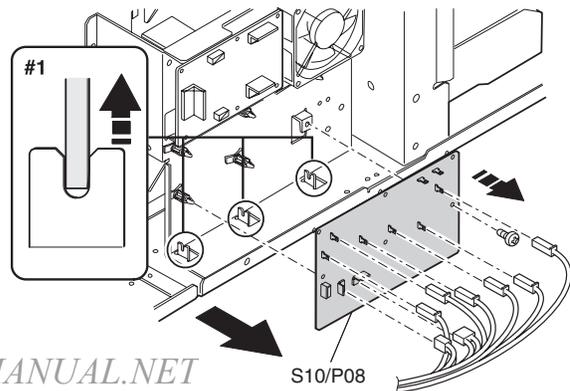
- 1) Remove the rear cabinet upper. [S01/P02]
- 2) Remove the rear cabinet lower. [S01/P03]
- 3) Remove the screw and the connector, and remove the PCU main PWB.



### S10/P08 AC main power PWB

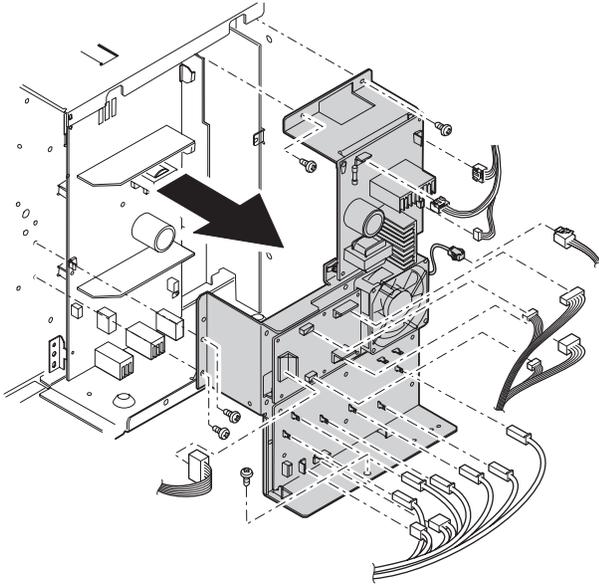
- 1) Remove the rear cabinet upper. [S01/P02]
- 2) Remove the rear cabinet lower. [S01/P03]
- 3) Remove the screw and the connector, and remove the AC main power PWB.

Remove it from the notch section (#1) of the frame.

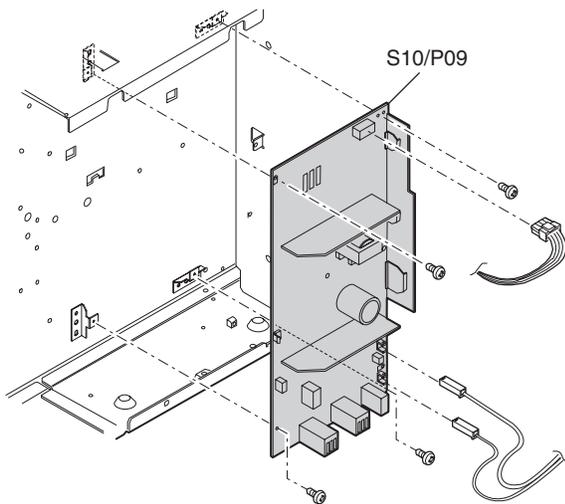


### S10/P09 DC power PWB

- 1) Remove the rear cabinet upper. [S01/P02]
- 2) Remove the rear cabinet lower. [S01/P03]
- 3) Remove the screw and the connector, and remove the AC power unit.

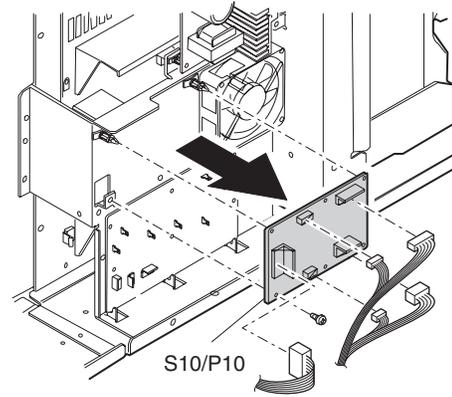


- 4) Remove the screw and the connector, and remove the DC power PWB.



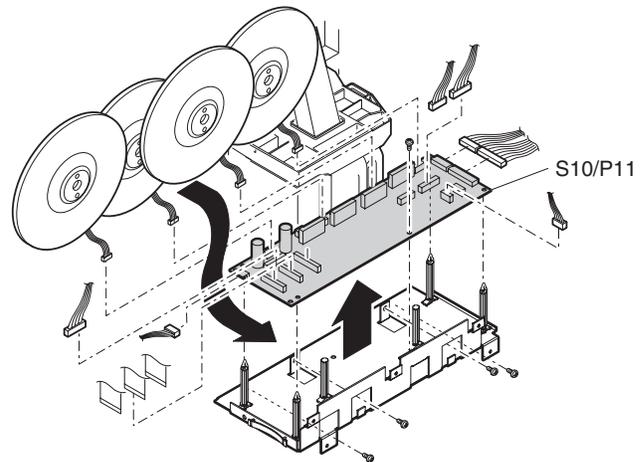
### S10/P10 Power control PWB

- 1) Remove the rear cabinet upper. [S01/P02]
- 2) Remove the rear cabinet lower. [S01/P03]
- 3) Remove the screw and the connector, and remove the power control PWB.



### S10/P11 OPC drum drive/Signal interface PWB

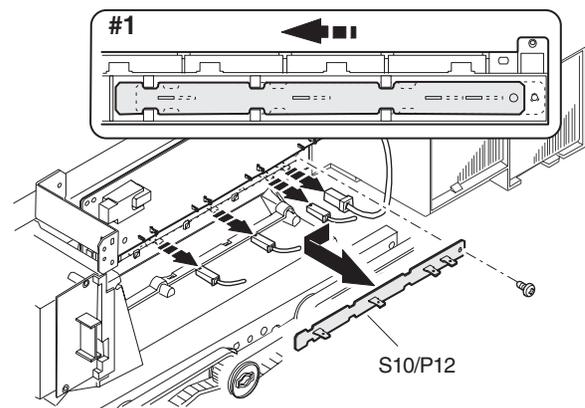
- 1) Remove the rear cabinet upper. [S01/P02]
- 2) Remove the rear cabinet lower. [S01/P03]
- 3) Remove the connector, and remove the connector PWB.



### S10/P12 High voltage power interface PWB

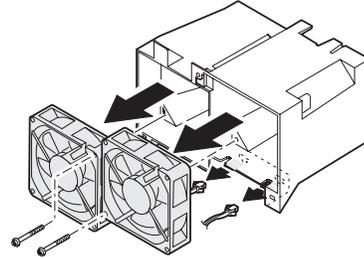
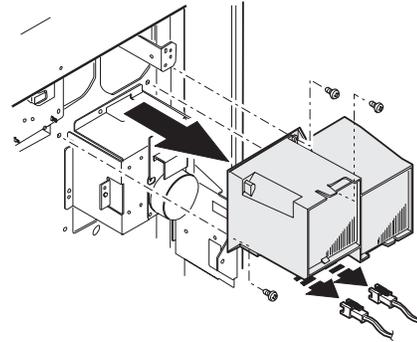
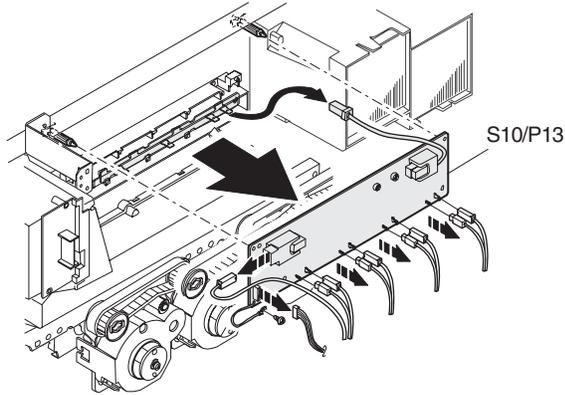
- 1) Remove the rear cabinet upper. [S01/P02]
- 2) Remove the rear cabinet lower. [S01/P03]
- 3) Remove the screw and the connector, and remove the high voltage power interface PWB.

Slide the MC branch PWB (#1) to the left to remove it from the high voltage PWB mounting plate.



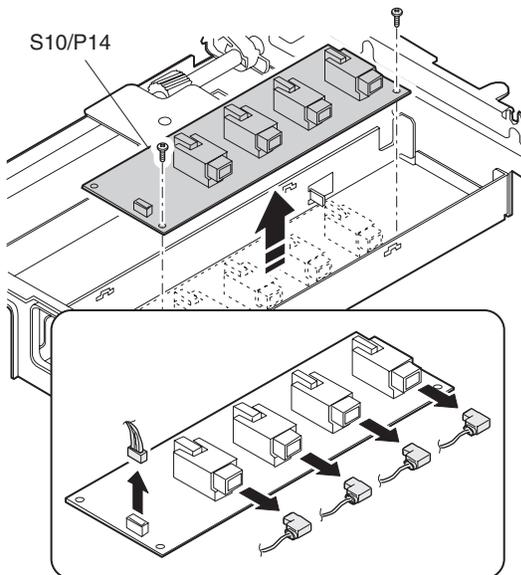
### **S10/P13 High voltage power PWB (Main charger/Developing bias)**

- 1) Remove the rear cabinet upper. [S01/P02]
- 2) Remove the rear cabinet lower. [S01/P03]
- 3) Remove the screw and the connector, and remove the high voltage power PWB (main charger. Developing bias).



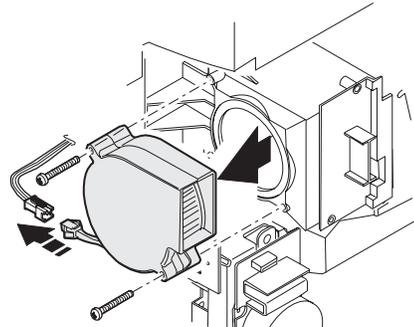
### **S10/P14 High voltage power PWB (Transfer charger)**

- 1) Remove the transfer inner unit. [S06/Ua06]
- 2) Remove the high voltage power PWB (transfer charger).



### **S11/P04 Process exhaust fan motor**

- 1) Remove the rear cabinet upper. [S01/P02]
- 2) Remove the rear cabinet lower. [S01/P03]
- 3) Remove the screw and the connector, and remove the process exhaust fan motor (S11/P04).



### **Power cooling fan motor**

- 1) Remove the rear cabinet upper.
- 2) Remove the rear cabinet lower.
- 3) Remove the screw and the connector, and remove the power cooling fan motor.

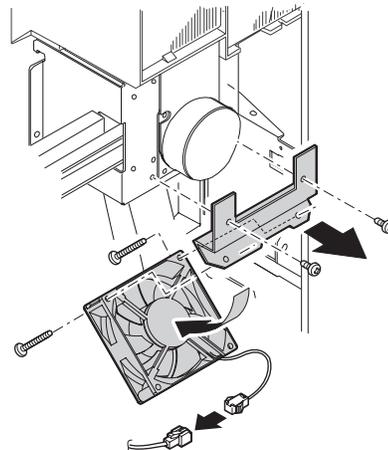
## **S11 Fan motor**

### **S11/P01 Scanner (reading) cooling fan motor**

### **S11/P02 Scanner (writing) cooling fan motor**

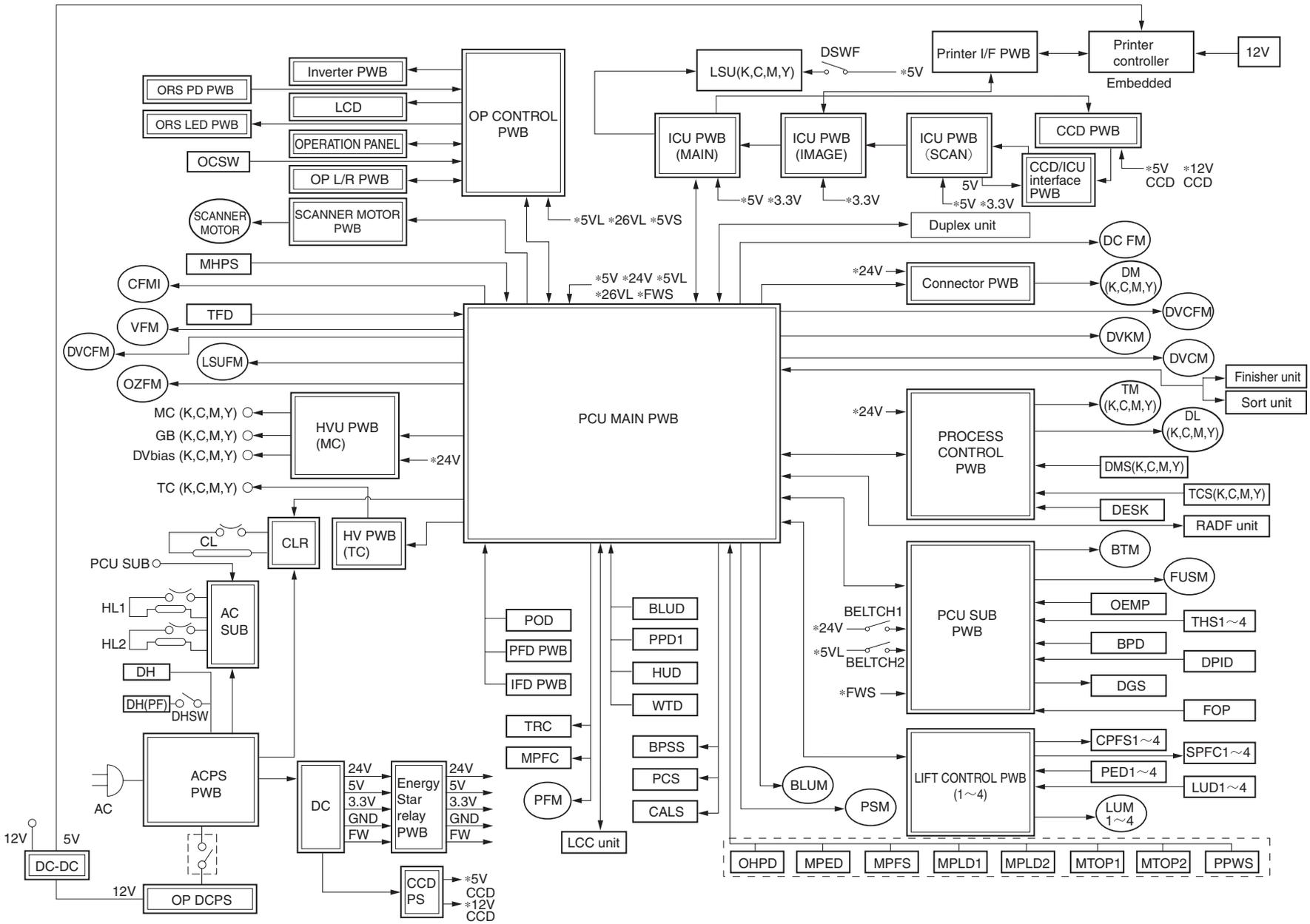
### **S11/P03 Fusing exhaust fan motor**

- 1) Remove the rear cabinet upper. [S01/P02]
- 2) Remove the rear cabinet lower. [S01/P03]
- 3) Remove the screw and the connector, and remove the scanner (writing) cooling fan motor (S11/P02) and the fusing exhaust fan motor (S11/P03).



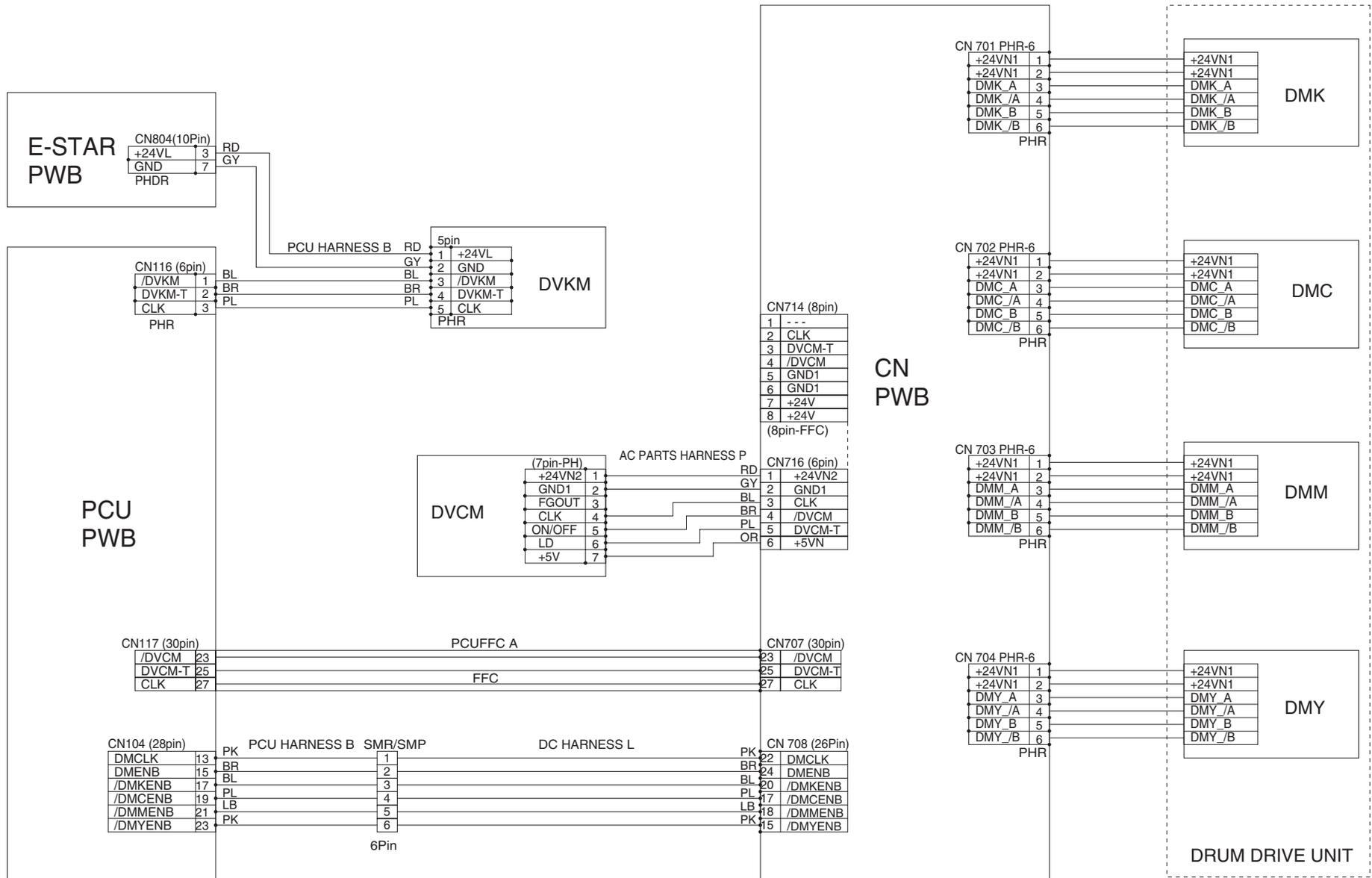
# [12] BLOCK DIAGRAM

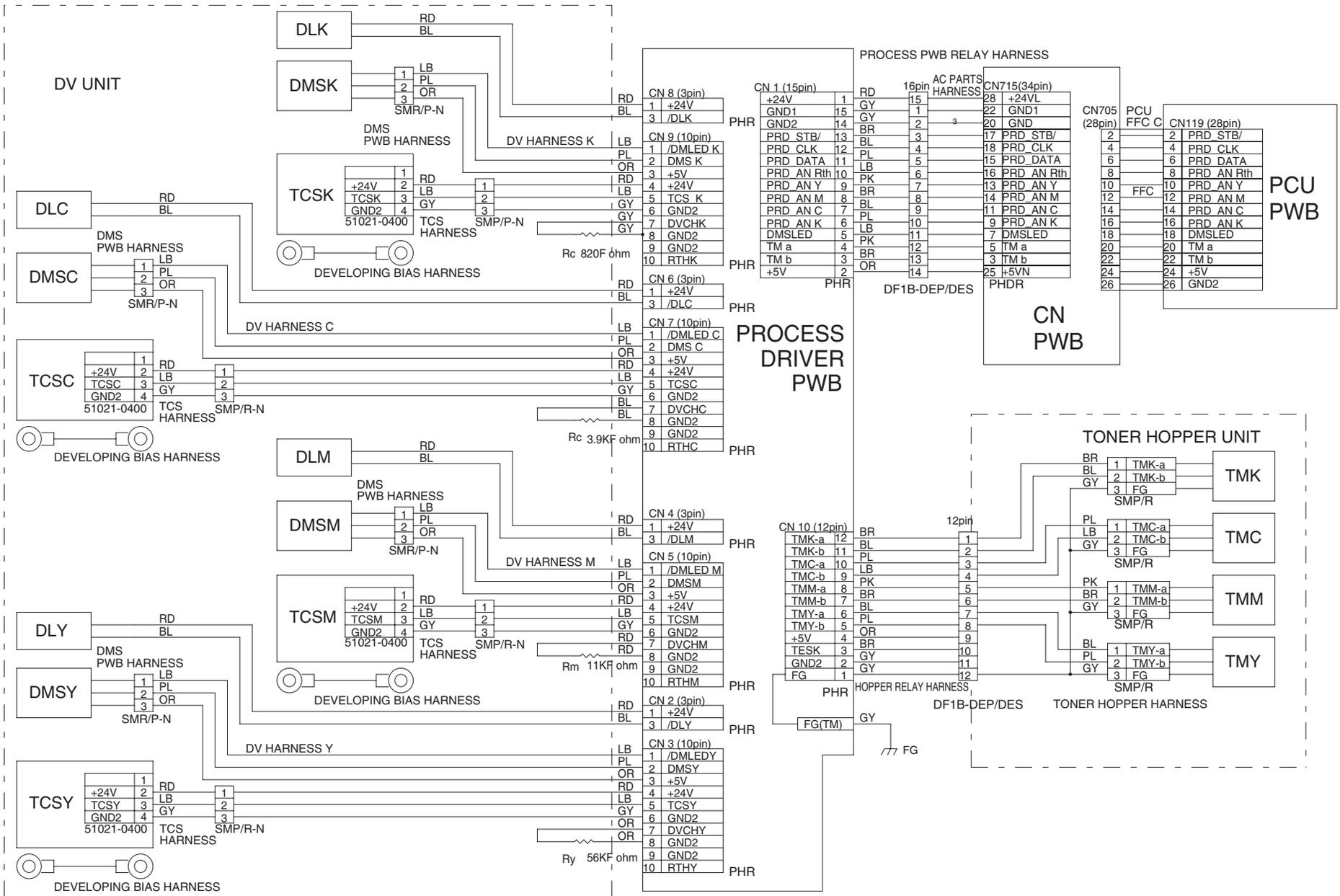
## 1. Overall block diagram



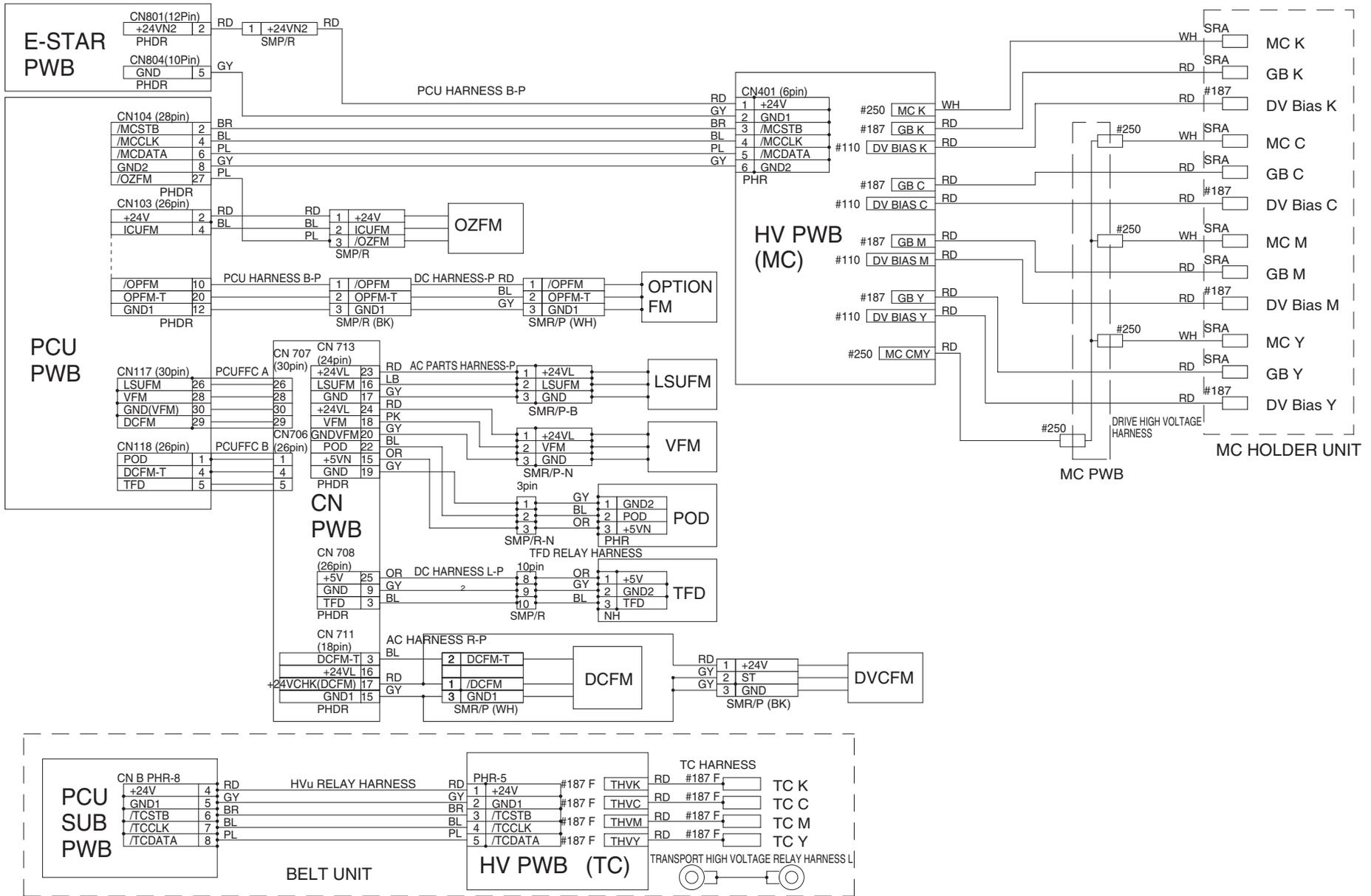




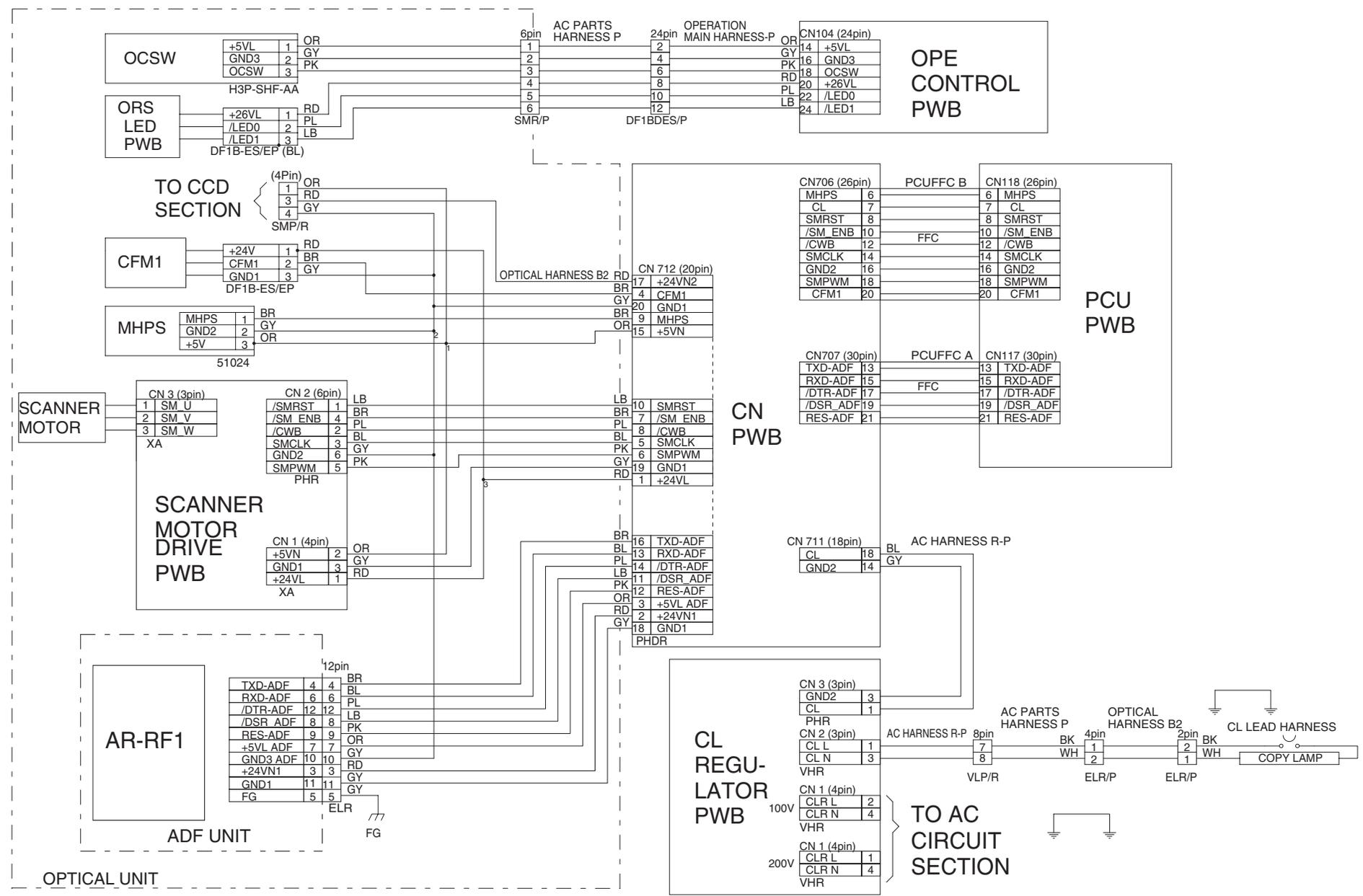


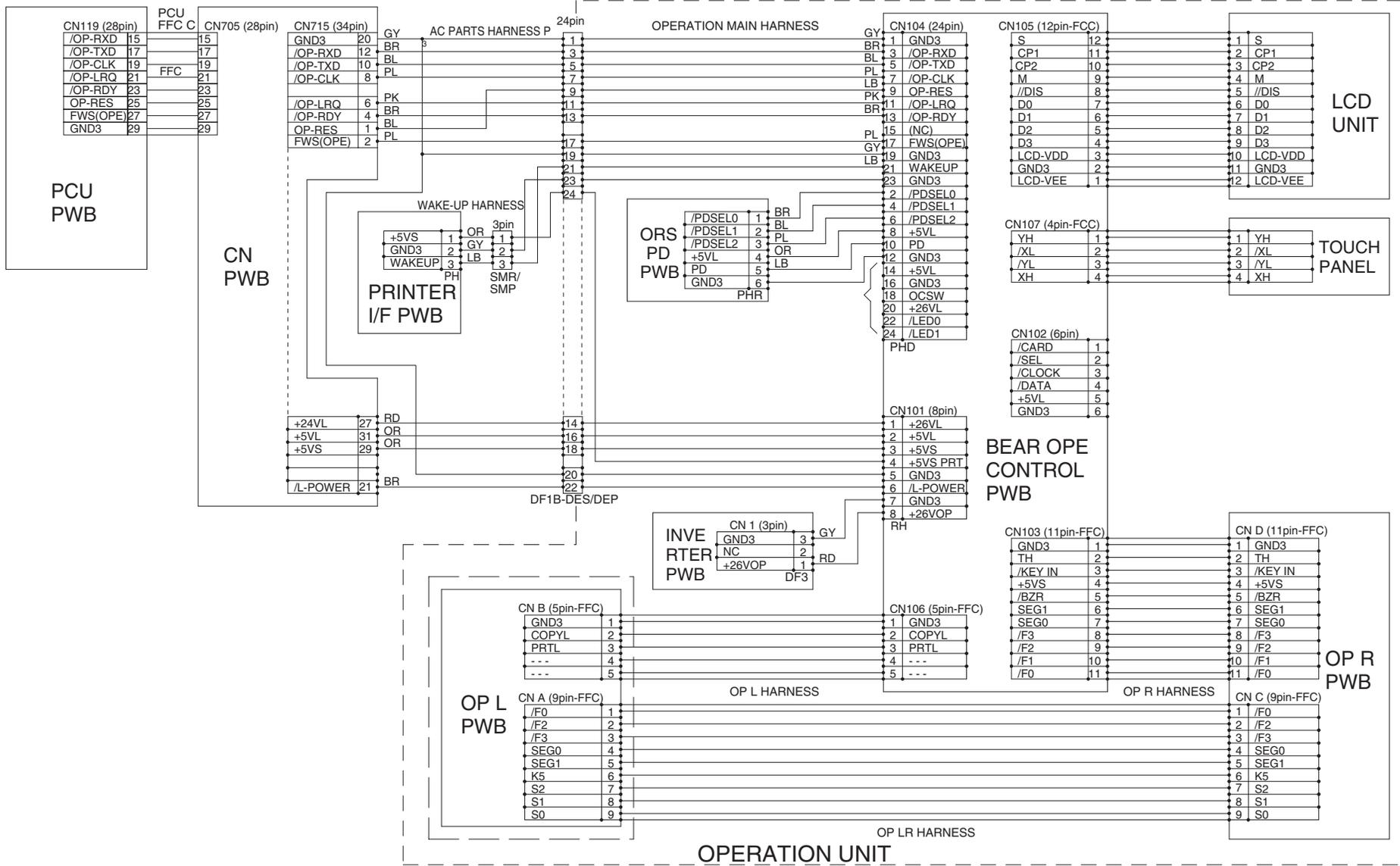


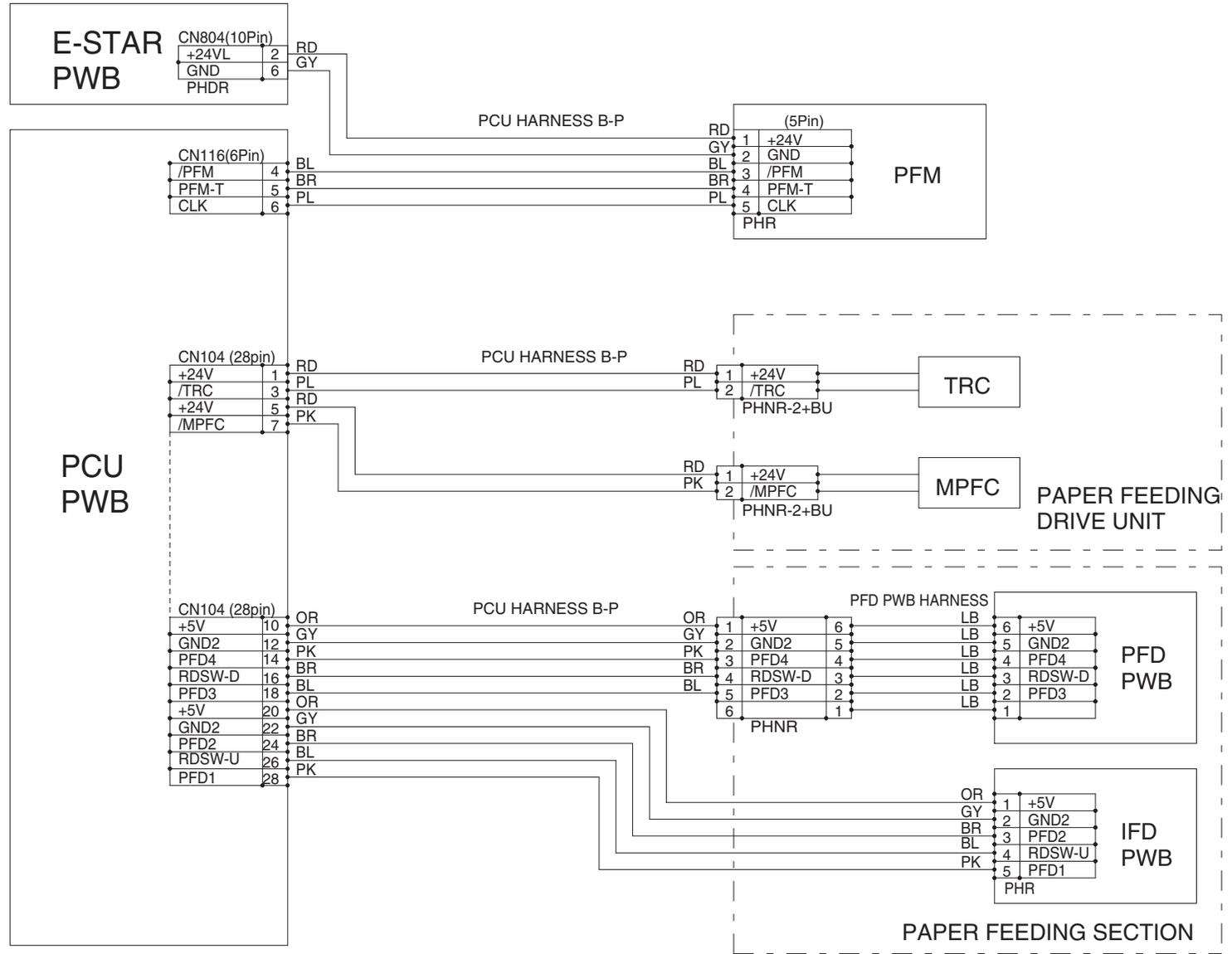
AR-C330 ACTUAL WIRING CHART 13 - 4

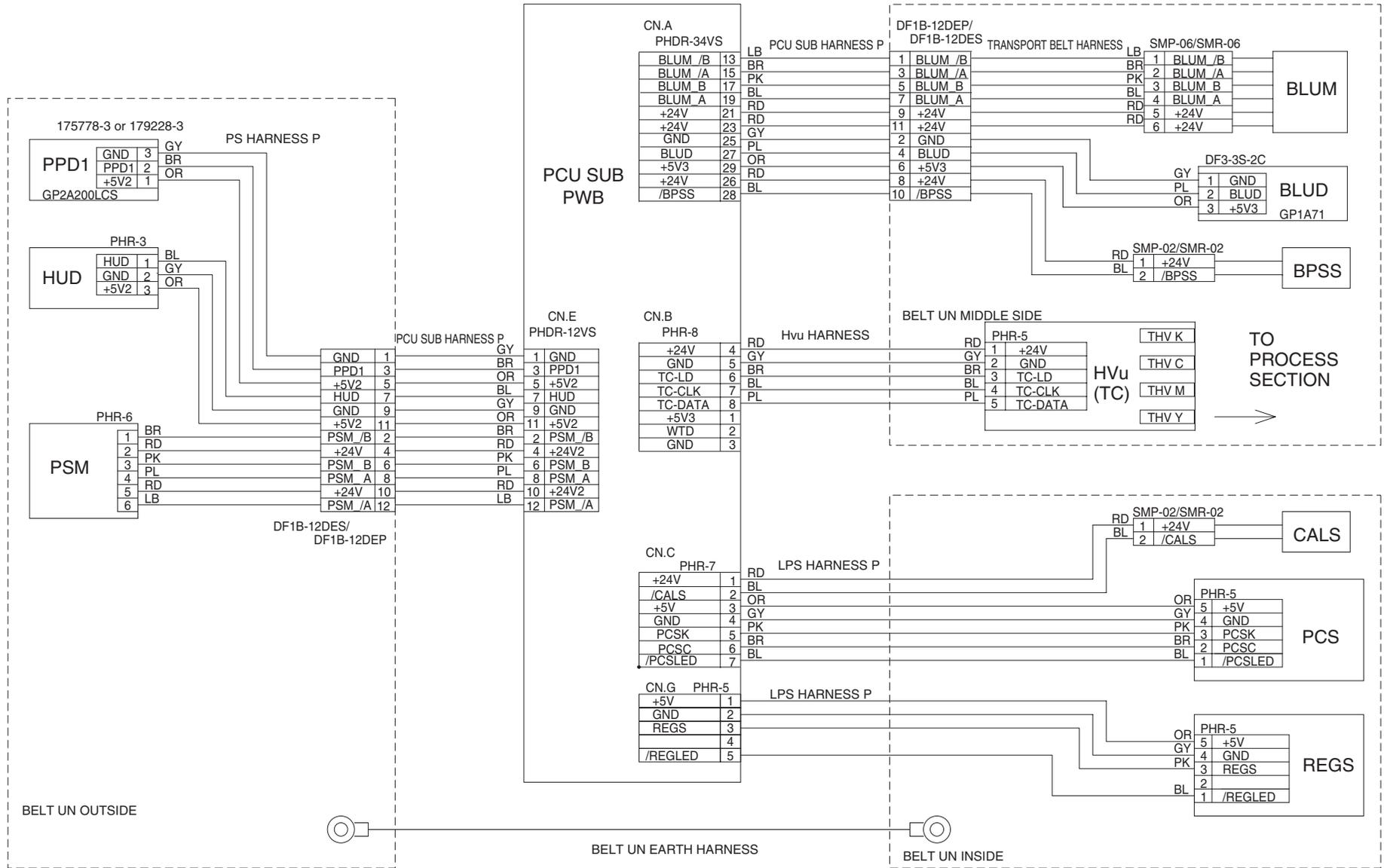


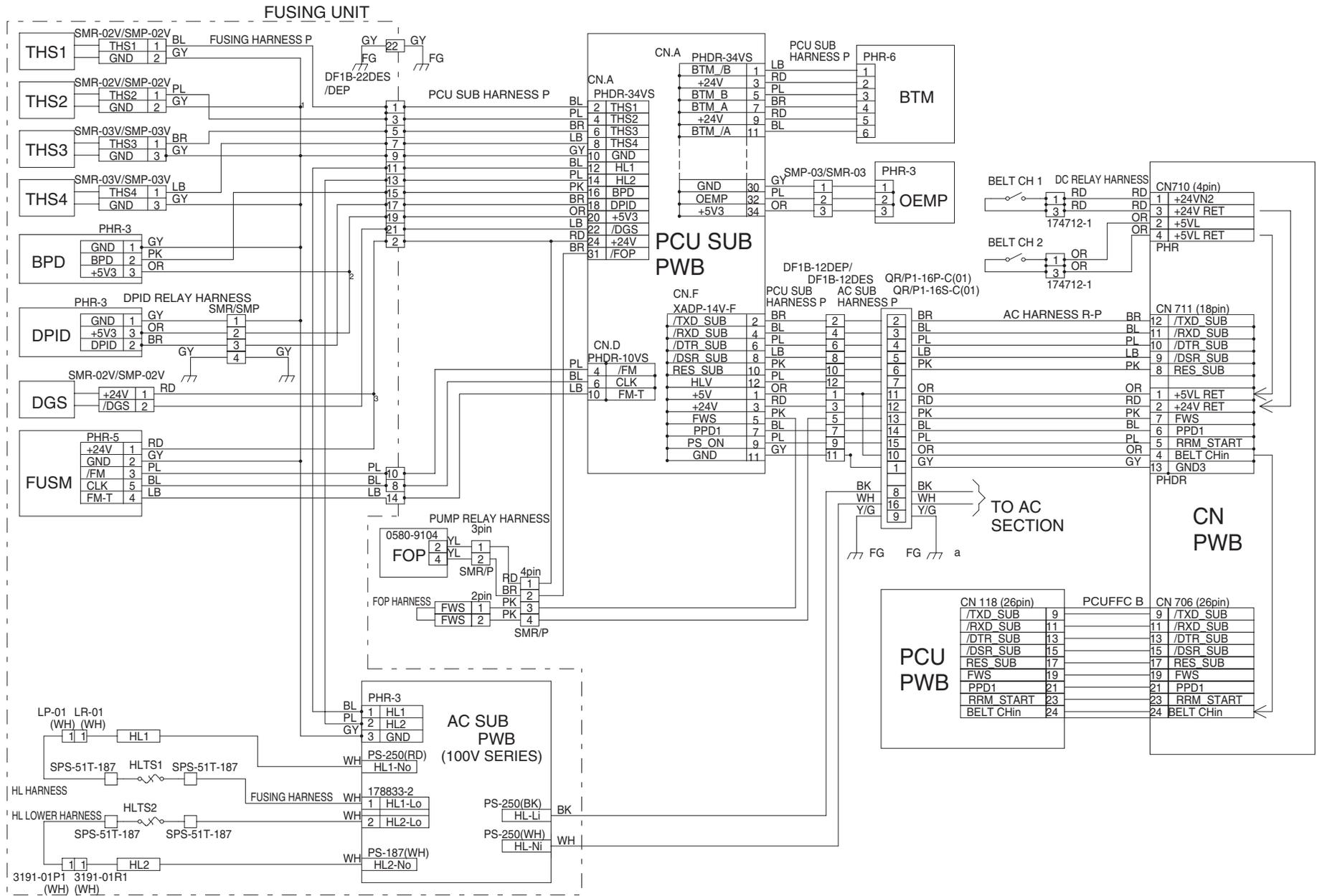
AR-C330 ACTUAL WIRING CHART 13 - 5



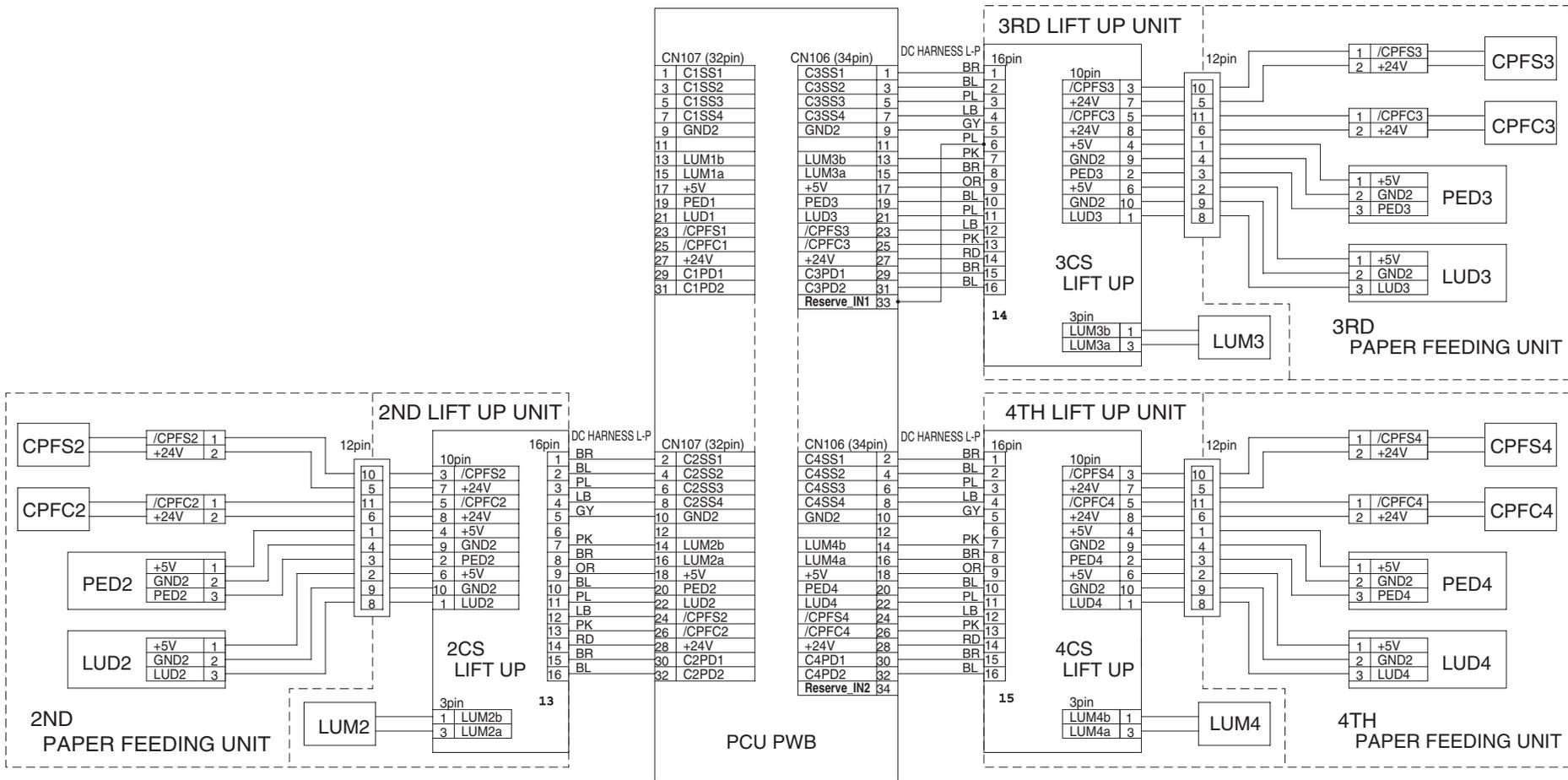


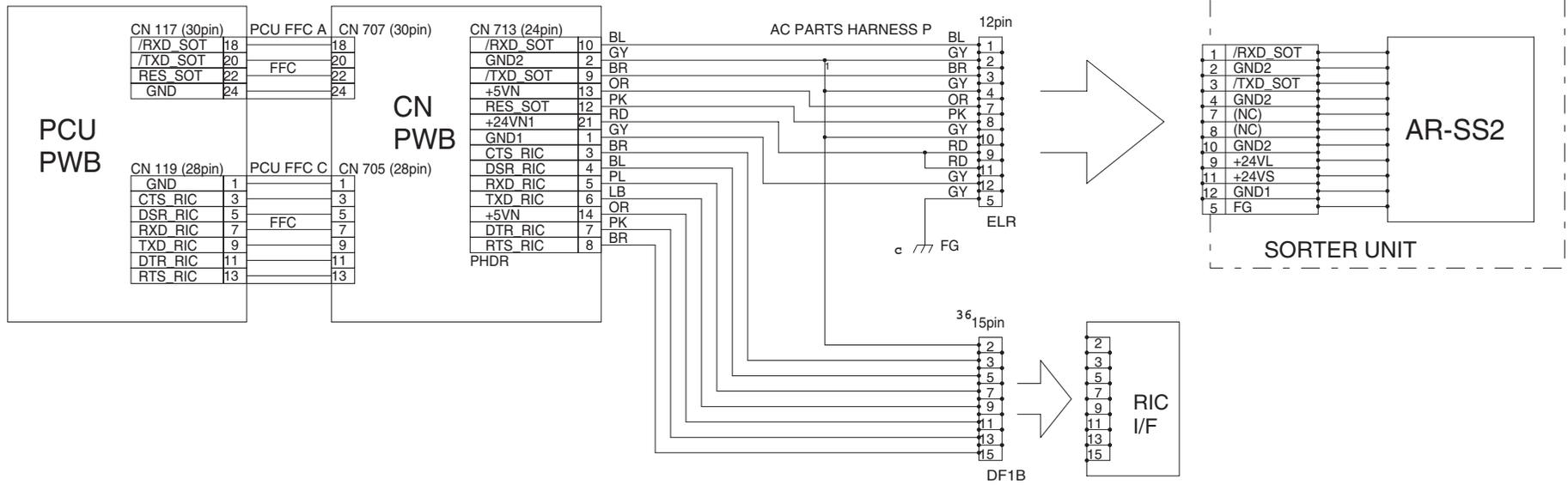


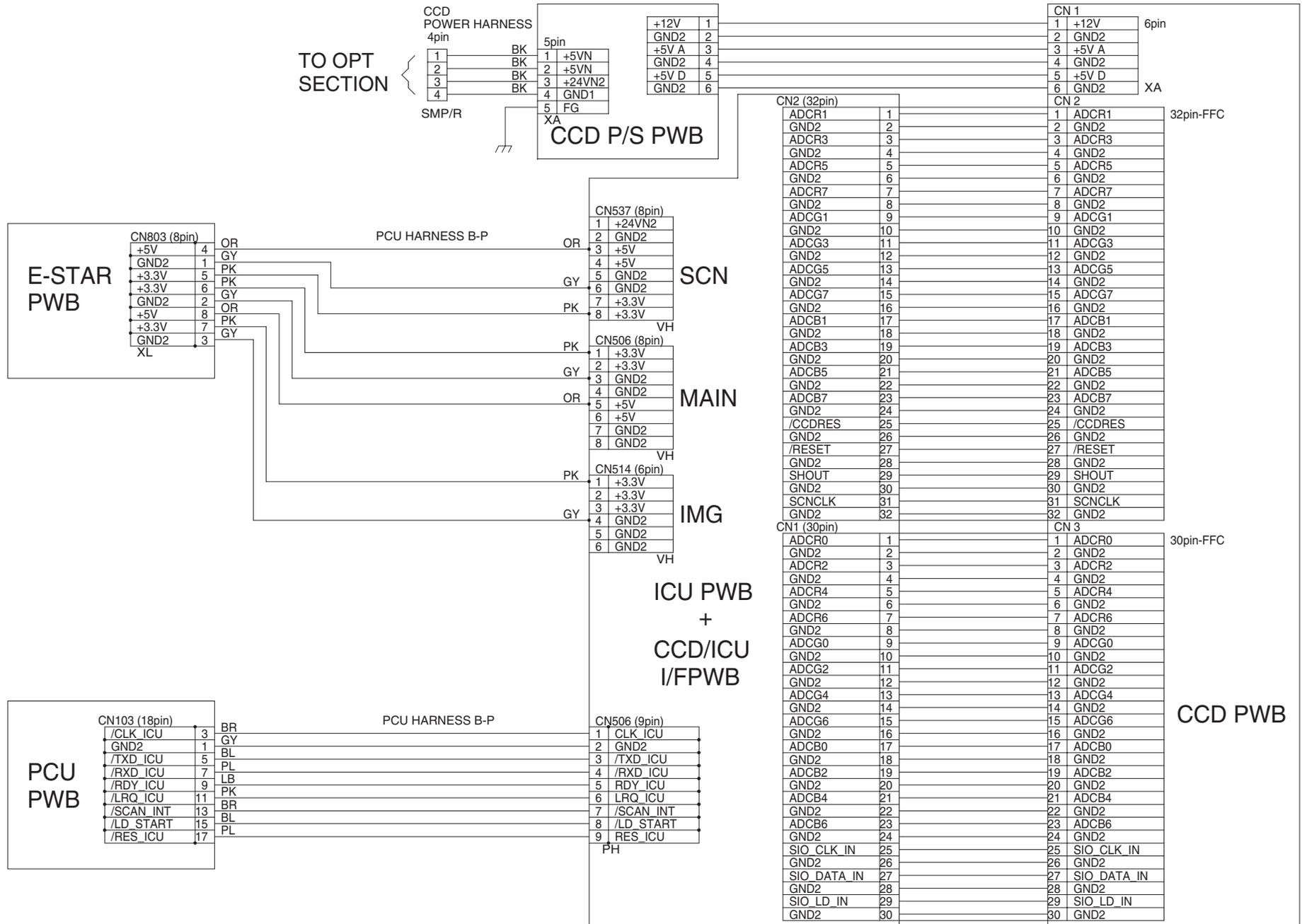


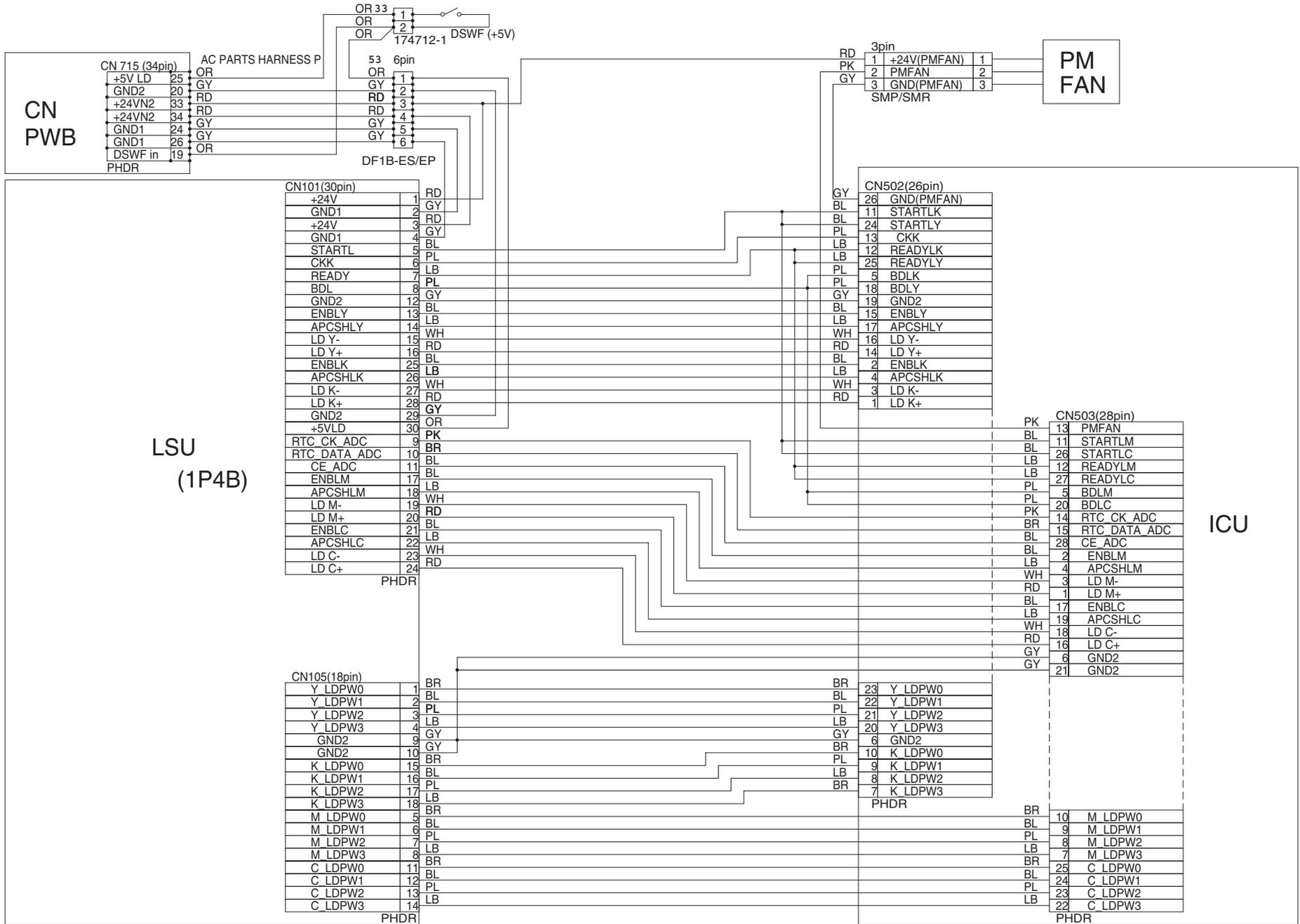


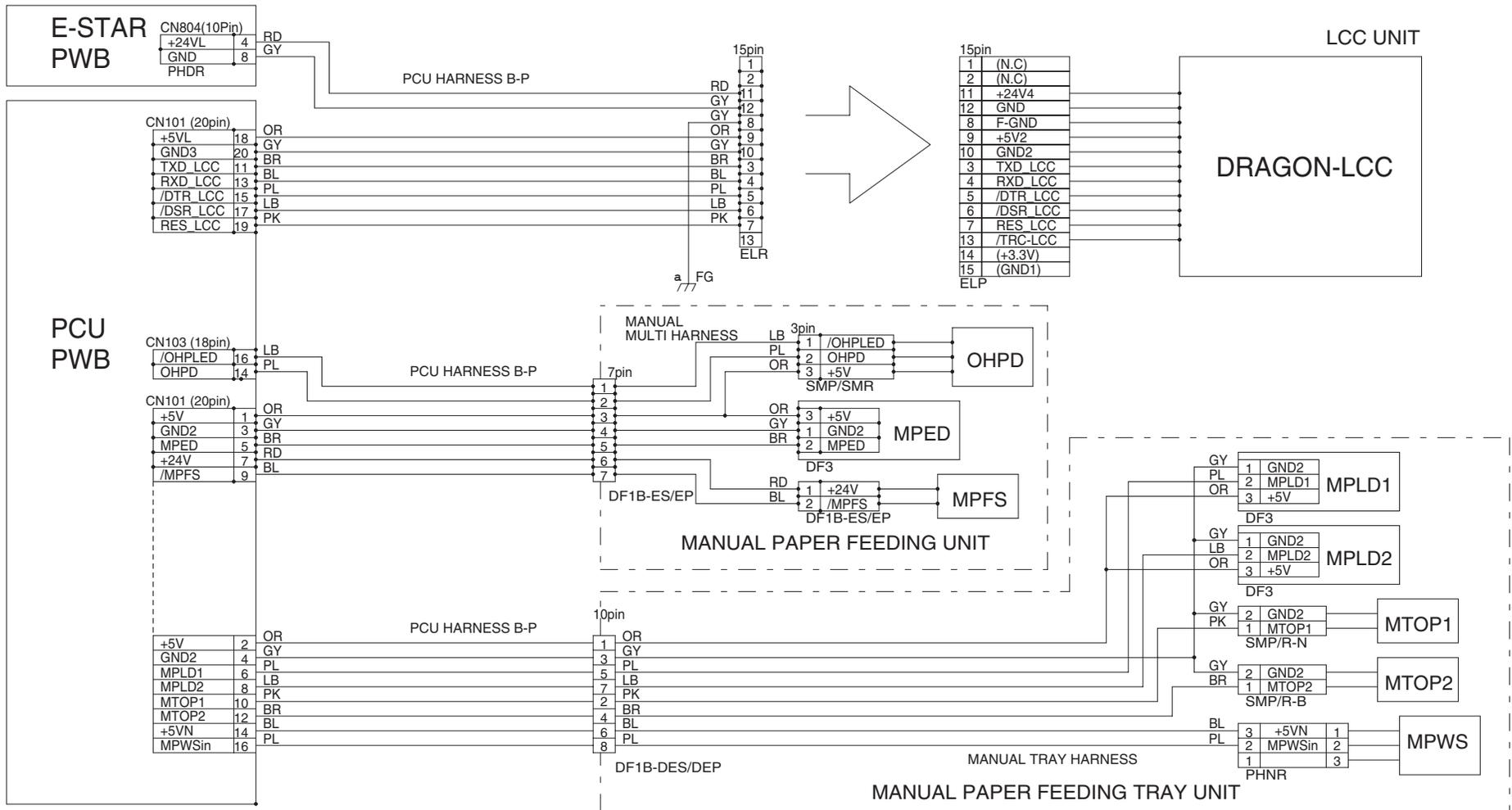


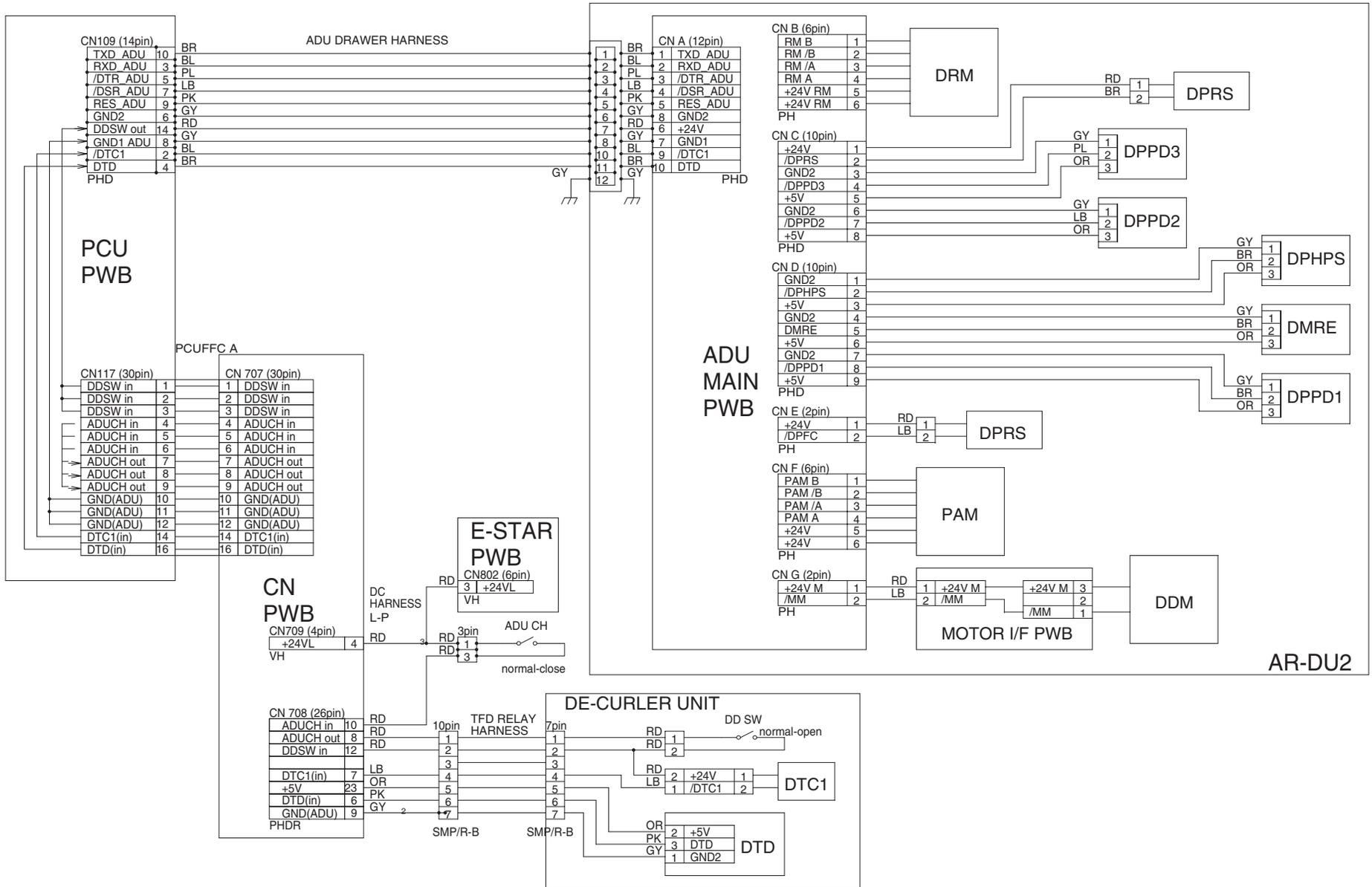


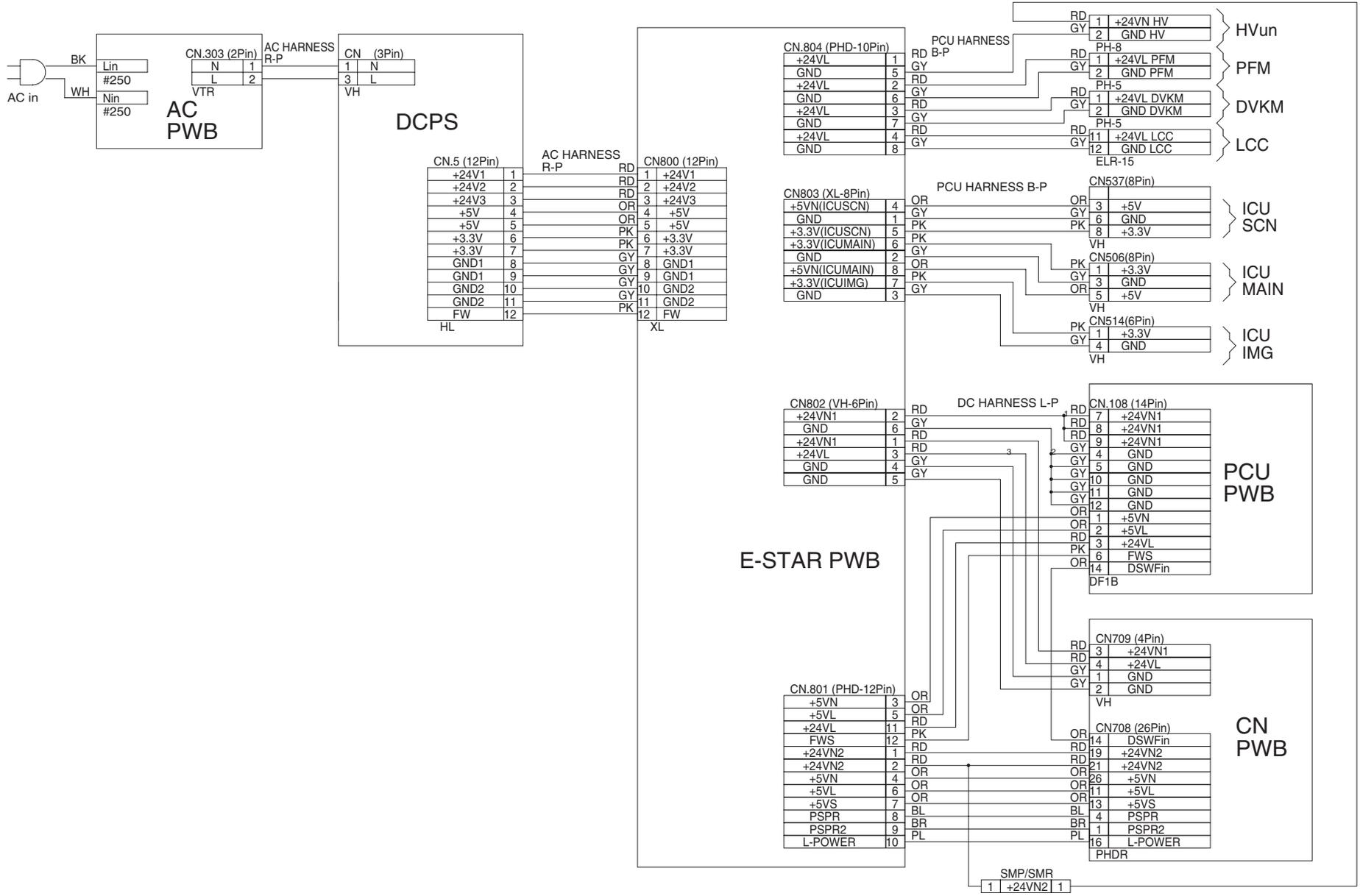


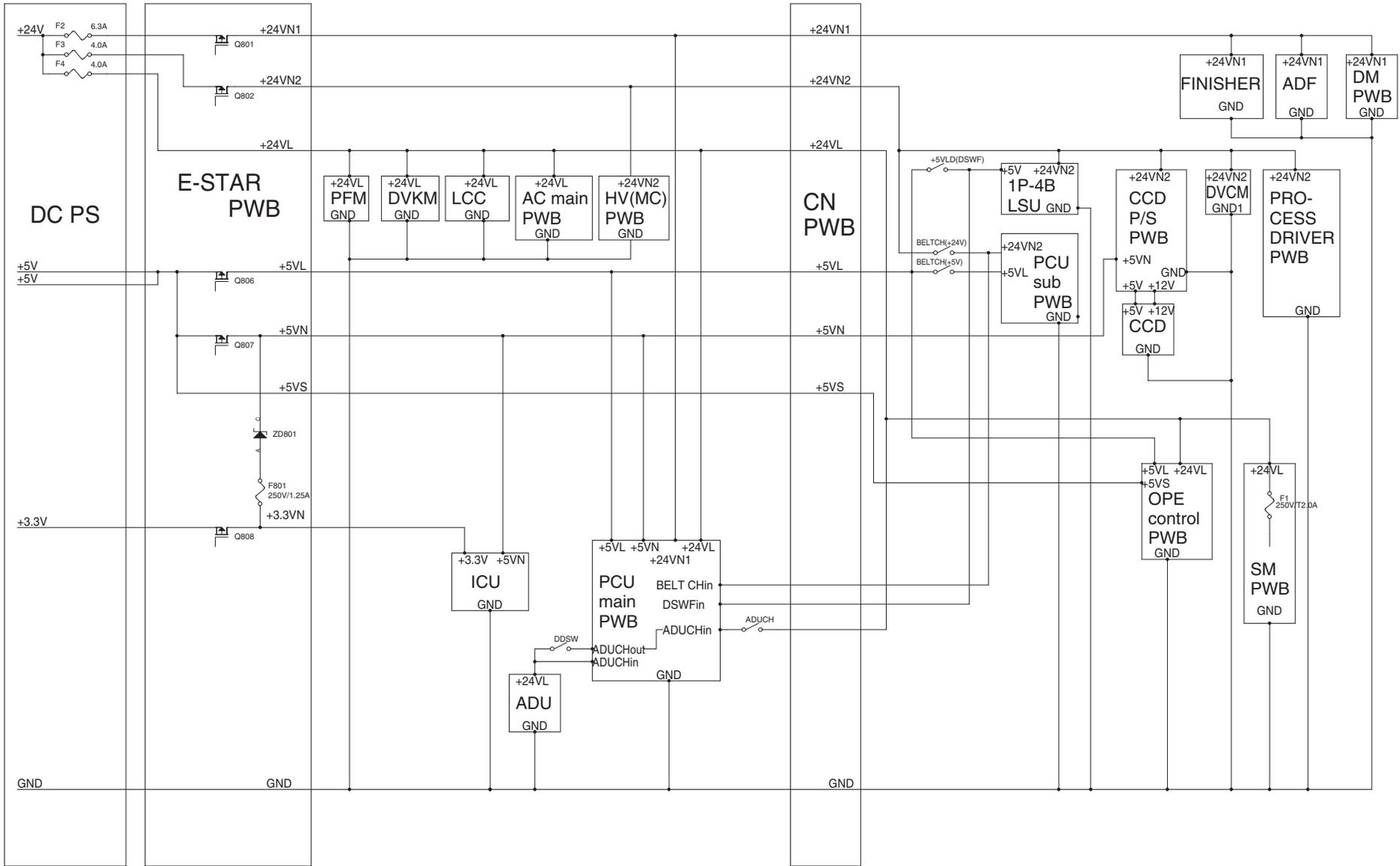


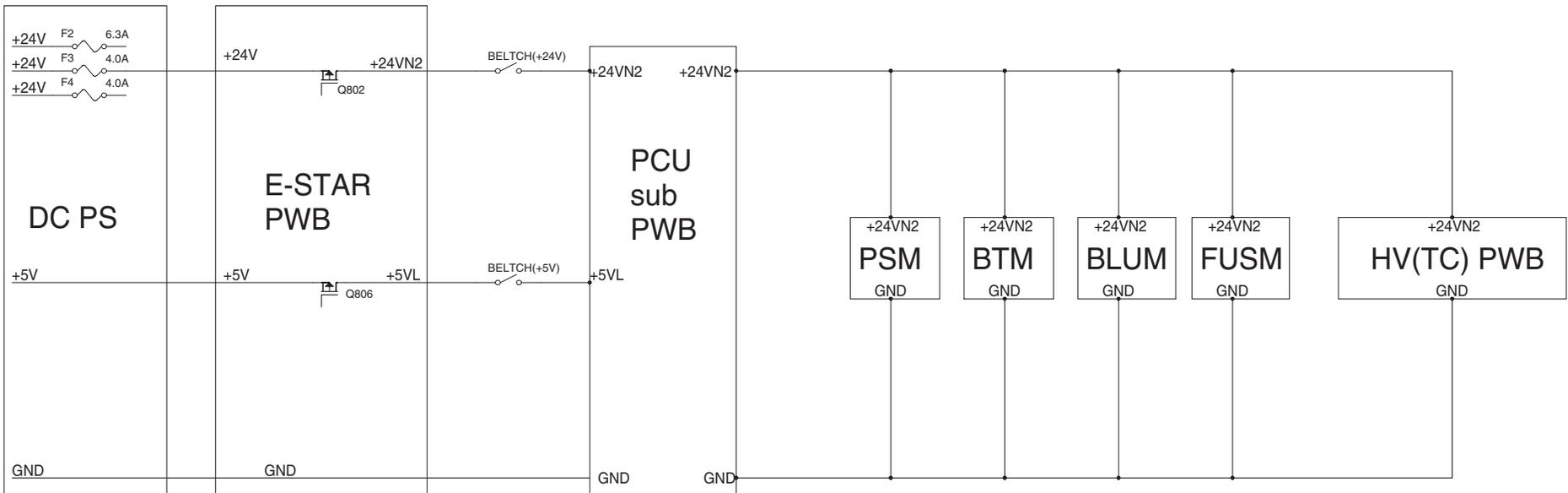












# [14] OTHERS

## [Flash ROM Version Up]

### 1. Outline

#### A. Target Flash ROM for version up

The following three kinds of flash ROM's are used in the AR-C330, and versions of the flash ROM's are revised.

Flash ROM kind	Capacity
PCU MAIN PWB Flash ROM	16Mbit
ICU MAIN PWB Flash ROM	16Mbit x 2
Flash ROM for operation control PWB	16Mbit x 2

#### B. When version up of Flash ROM is required

In the following cases, version up of Flash ROM is required.

- 1) In order to improve the performance.
- 2) When installing a new spare part Flash ROM to the machine for repair.
- 3) When installing a new repair spare parts PWB unit which has a Flash ROM in it to the machine.
- 4) When the program in a Flash ROM has some troubles and must be corrected.

#### C. Flash ROM version up method

There are following two methods of Flash ROM version up.

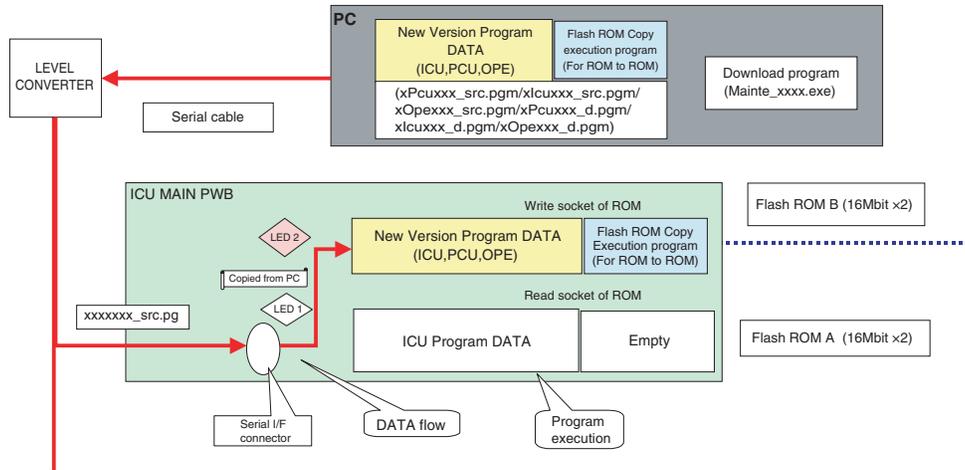
- 1) By using a computer and the ICU MAIN PWB, the program data of Flash ROM is written from the computer to the Flash ROM of the ICU MAIN PWB. (It takes normally 5 to 7 minutes.) This method has the following two variations:
  - a) All data in the PWB programs and the Flash ROM copy (ROM-ROM) program are written: (Making of the source ROM)  
In this method, the Flash ROM on the writing side needs capacity of 16Mbit x 2. (In order to make a source ROM, the capacity of the Flash ROM must be as shown above.)
  - b) Only each PWB program is written.
- 2) Two Flash ROM sockets on the ICU MAIN PWB are used to copy the program in the source ROM to another Flash ROM. (It normally takes 30 to 60 sec.)  
In this method, the Flash ROM (source ROM) made by the method of using a computer and writing the program to the Flash ROM is required.

#### (NOTE)

To make version up of several Flash ROM's of several machines, the method of 1)-a (Making a source ROM and copying it to Flash ROM's) is more effective.

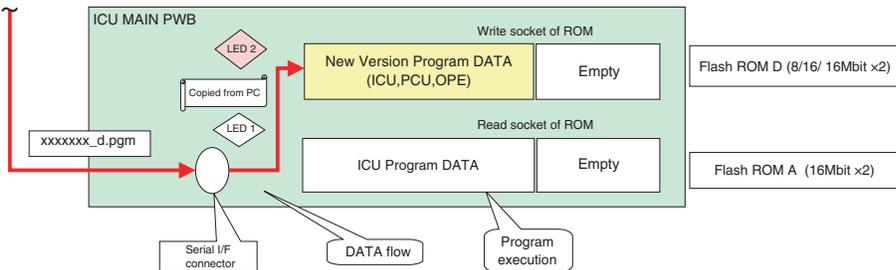
(1)-a Method of writing the program data from a PC to the ICU MAIN PWB Flash ROM (Making of source ROM)

The program for each PWB and the Flash ROM copy program are copied into the Flash ROM on the Write side socket.



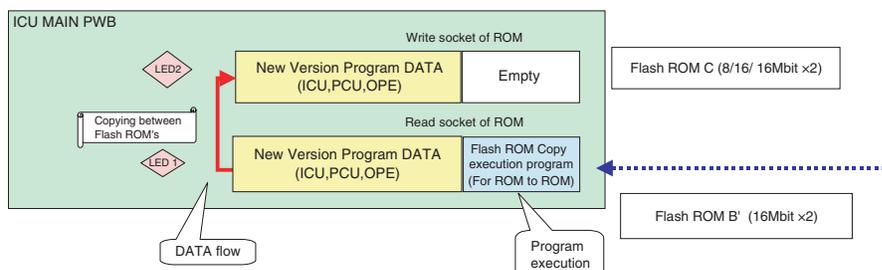
(1)-b Method of writing the program data from a PC to the ICU MAIN PWB Flash ROM

The program for each PWB is copied to the Flash ROM on the Write socket.



(2) Method of copying with two Flash ROM sockets on the ICU MAIN PWB

The program for each PWB in the Flash ROM (source ROM) on the Read socket is copied to the Flash ROM (target ROM) on the Write socket.



### Relationship between copy (write) method and copy contents

(1)-a Method of writing the program data from a PC to the Flash ROM on the ICU MAIN PWB. (Making of the source ROM)  
The program for each PWB and the Flash ROM copy program are copied to the Flash ROM connected to the Write socket.

PC side		Write side Flash ROM (Flash ROM B)					NOTE
Content	File name	Name	Capacity	Copied content			
Program for PCU MAIN PWB Flash ROM	Program for Flash ROM copy (ROM – ROM)	"xPcuxxx_src.pgm"	For PCU MAIN PWB Flash ROM	16Mbit x 2	Program for PCU MAIN PWB Flash ROM	Program for Flash ROM copy (ROM – ROM)	The ICU MAIN PWB Flash ROM with the copy (write) program in it must be connected to the Read side Flash ROM socket. When shipping from the factory, the copy (write) program is provided for use.
Program for ICU MAIN PWB Flash ROM	Program for Flash ROM copy (ROM – ROM)	"xlcuxxx_src.pgm"	For ICU MAIN PWB Flash ROM	16Mbit x 2	Program for ICU MAIN PWB Flash ROM	Program for Flash ROM copy (ROM – ROM)	By this method, a Flash ROM to execute copying is made with two Flash ROM sockets on the ICU MAIN PWB.
Program for operation control PWB Flash ROM	Program for Flash ROM copy (ROM – ROM)	"xOpexxx_src.pgm"	For Flash ROM copy (ROM – ROM)	16Mbit x 2	Program for operation control PWB Flash ROM	Program for Flash ROM copy (ROM – ROM)	ICU MAIN PWB Flash ROM (Version 5.06 or later)/(PCU MAIN PWB Flash ROM (Version 5.03 or later) are required.

(1)-b Method of writing the program data from PC to the ICU MAIN PWB Flash ROM  
The program for each PWB is copied to the Flash ROM in the Write socket.

PC side		Write side Flash ROM (Flash ROM D)					NOTE
Content	File name	Name	Capacity	Copied content			
Program for PCU MAIN PWB Flash ROM		"xpcuxxx_d.pgm"	For PCU MAIN PWB Flash ROM	16Mbit	Program for PCU MAIN PWB Flash ROM		The ICU MAIN PWB Flash ROM with the copy (write) program in it must be connected to the Read side Flash ROM socket. When shipping from the factory, the copy (write) program is provided for use.
Program for ICU MAIN PWB Flash ROM		"xlcuxxx_d.pgm"	For ICU MAIN PWB Flash ROM	16Mbit x 2	Program for ICU MAIN PWB Flash ROM		
Program for operation control PWB Flash ROM		"xOpexxx_d.pgm"	For operation control PWB Flash ROM	16Mbit x 2	Program for operation control PWB Flash ROM		ICU MAIN PWB Flash ROM (Version 5.06 or later)/(PCU MAIN PWB Flash ROM (Version 5.03 or later) are required.

(2) Method of copying with two Flash ROM sockets on the ICU MAIN PWB  
The program for each PWB in the Flash ROM (Source ROM) on the Read side Flash ROM socket is copied to a Flash ROM on the Write side socket.

Read side Flash ROM (Flash ROM B)(* 1)		Write side Flash ROM(Flash ROM C)					NOTE
Capacity	Content		Kind of Flash ROM	Capacity	Copied content		
16Mbit x 2	Program for PCU MAIN PWB Flash ROM	Program for Flash ROM copy (ROM – ROM)	For PCU MAIN PWB Flash ROM	16Mbit	Program for PCU MAIN PWB Flash ROM		The Flash ROM on the Read side is the source ROM for PCU MAIN PWB, which was made by writing the program data from PC to the Flash ROM.
16Mbit x 2	Program for ICU MAIN PWB Flash ROM	Program for Flash ROM copy (ROM – ROM)	For ICU MAIN PWB Flash ROM	16Mbit x 2	Program for ICU MAIN PWB Flash ROM		The Flash ROM on the Read side is the source ROM for ICU MAIN PWB, which was made by writing the program data from PC to the Flash ROM.
16Mbit x 2	Program for operation control PWB Flash ROM	Program for Flash ROM copy (ROM – ROM)	For operation control PWB Flash ROM	16Mbit x 2	Program for operation control PWB Flash ROM		The Flash ROM on the Read side is the source ROM for operation control PWB, which was made by writing the program data from PC to the Flash ROM.

\*1: This Flash ROM was made by writing the program data from PC to the ICU MAIN PWB Flash ROM.

## 2. Precautions

### (1) Flash ROM version

For this procedure, the Flash ROM of the following version must be installed to the machine.

- \* ICU MAIN PWB Flash ROM (Version 5.06 or later)
- \* PCU MAIN PWB Flash ROM (Version 5.03 or later)

### (2) Relationship between each ROM and version up

When making version up of ROM, check the combination with the version of ROM installed to the other PWB including options.

In some combination of ROM versions, the machine may not operate normally. If all the ROM's are of the latest versions, there is no problem.

PWB to which the ROM is installed	ROM kind
PCU MAIN PWB	Flash ROM
ICU MAIN PWB	Flash ROM
Operation control PWB	Flash ROM
PCU SUB PWB	EPROM
Sorter (AR-SS2) control PWB	EPROM
RADF (AR-RF1) control PWB	EPROM
Duplex control PWB	EPROM
Large capacity paper feed unit (AR-LC9) control PWB	EPROM
Finisher (AR-FN4) control PWB	EPROM

## 3. Necessary items for version up (copy) of Flash ROM

### Necessary items for Flash ROM version up

- (1)-a Method of writing the program data from a PC to the Flash ROM on the ICU MAIN PWB. (Making of the source ROM)  
The program for each PWB and the Flash ROM copy program are copied to a Flash ROM on the Write socket.

Necessary items	NOTE
Level converter	UKOG-0002QSZZ (with serial cable)/ UKOG-0003QSZZ (without serial cable)
PC	Windows 95/98 operating environment
Download program file	Software to write the program data from a PC to the Flash ROM (Mainte_xxxx.exe)
(PCU MAIN PWB Flash ROM program/Flash ROM copy (ROM to ROM) program) file	"xPcuxxx_src.pgm"
(ICU MAIN PWB Flash ROM program/Flash ROM copy (ROM to ROM) program) file	"xlcuxxx_src.pgm"
(Operation control PWB Flash ROM program/Flash ROM copy (ROM to ROM) program) file	"xOpexxx_src.pgm"
ICU MAIN PWB Flash ROM (including the program for MAIN ICU PWB and the Flash ROM copy (PC – ROM) program) (16Mbit x 2) (Flash ROM A)	Flash ROM which has the function of writing the program data into the Flash ROM on the ICU MAIN PWB ((ICU MAIN PWB Flash ROM (Version 5.06 or later) and PCU MAIN PWB Flash ROM (Version 5.03 or later) are required.)
Writing Flash ROM (16Mbit x 2) (Flash ROM B)	Flash ROM to make a source ROM

- (1)-b Method of writing the program data from a PC to the ICU MAIN PWB Flash ROM.

The program for each PWB is copied to the Flash ROM on the Write side socket.

Necessary items	NOTE
Level converter	UKOG-0002QSZZ (with serial cable)/ UKOG-0003QSZZ (without serial cable)
PC	Windows 95/98 operating environment
Download program file	Software to write the program data from a PC to the Flash ROM (Mainte_xxxx.exe)
PCU MAIN PWB Flash ROM program file	"xPcuxxx_d.pgm"
ICU MAIN PWB Flash ROM program file	"xlcuxxx_d.pgm"
Operation control PWB Flash ROM program file	"xOpexxx_d.pgm"
Flash ROM for ICU MAIN PWB (including the program for MAIN ICU PWB and the Flash ROM copy (PC – ROM) program) (16Mbit x 2) (Flash ROM A)	Flash ROM which has the function of writing the program data into the Flash ROM on the ICU MAIN PWB ((ICU MAIN PWB Flash ROM (Version 5.06 or later) and PCU MAIN PWB Flash ROM (Version 5.03 or later) are required.)
Writing Flash ROM (16Mbit x 2 / 16Mbit/8Mbit) (Flash ROM C)	The type (capacity) of Flash ROM is determined depending on the kind of Flash ROM (in the PCU PWB, in the ICU PWB, or in the operation control PWB).

- (2) Method of copying with two Flash ROM sockets on the ICU MAIN PWB

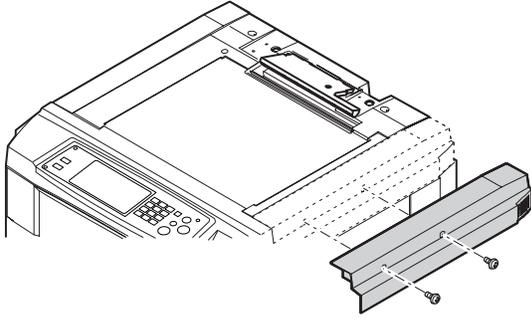
The program for each PWB in the Flash ROM (source ROM) on the Read side Flash ROM socket is copied to the Flash ROM on the Write side socket.

Necessary item	NOTE
Flash ROM including the program for MAIN ICU PWB and the Flash ROM copy (ROM–ROM) program (Flash ROM B') (16Mbit x 2)	Flash ROM made by writing the program data from PC to the Flash ROM (16Mbit x 2)
Flash ROM including the program for PCU MAIN PWB and the Flash ROM copy (ROM–ROM) program (Flash ROM B') (16Mbit x 2)	Flash ROM made by writing the program data from PC to the Flash ROM (16Mbit x 2)
Flash ROM including the program for operation control PWB and the Flash ROM copy (ROM–ROM) program (Flash ROM B') (16Mbit x 2)	Flash ROM made by writing the program data from PC to the Flash ROM (16Mbit x 2)
Writing Flash ROM (16Mbit x 2 / 16Mbit/8Mbit) (Flash ROM C)	The type (capacity) of Flash ROM is determined depending on the kind of Flash ROM (in the PCU PWB, in the ICU PWB, or in the operation control PWB).

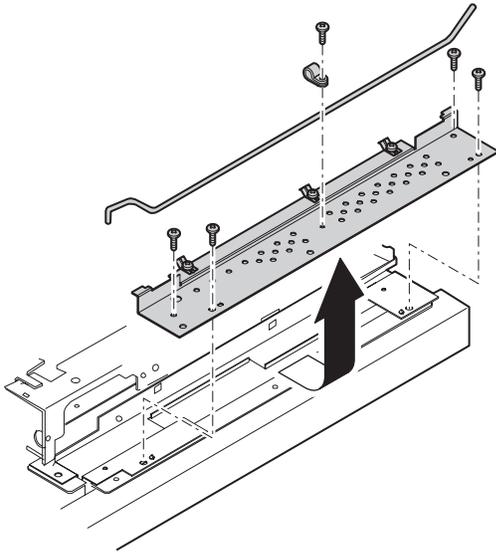
## 4. Flash ROM version up procedure

### (Preliminary procedure)

- 1) Remove the right upper cabinet of the machine. (2 screws)

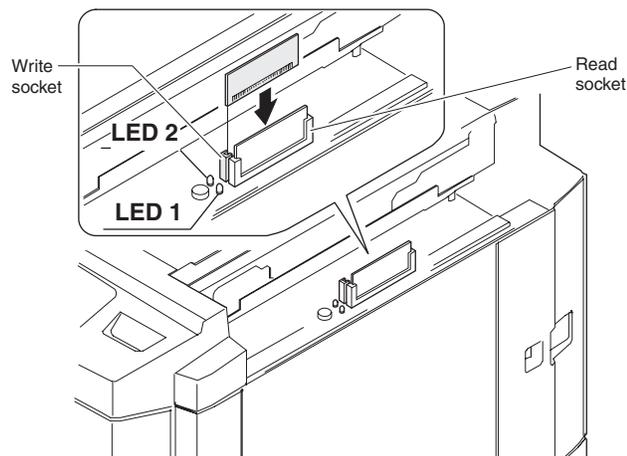


- 2) Remove the shield plate and the stopper shaft. (5 screws)

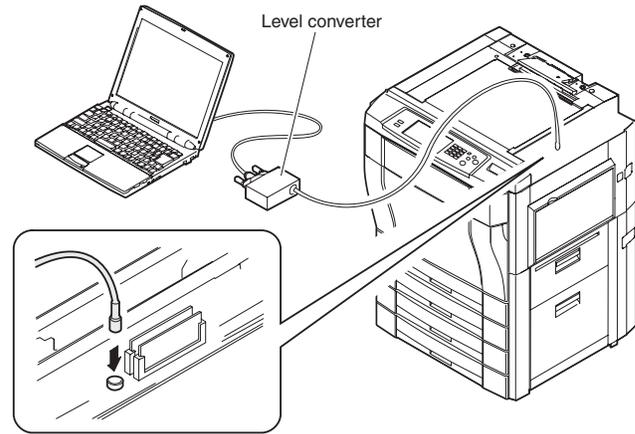


### A. By using a computer and the ICU MAIN PWB, the program data of Flash ROM is written from the computer to the Flash FOM of the ICU MAIN PWB.

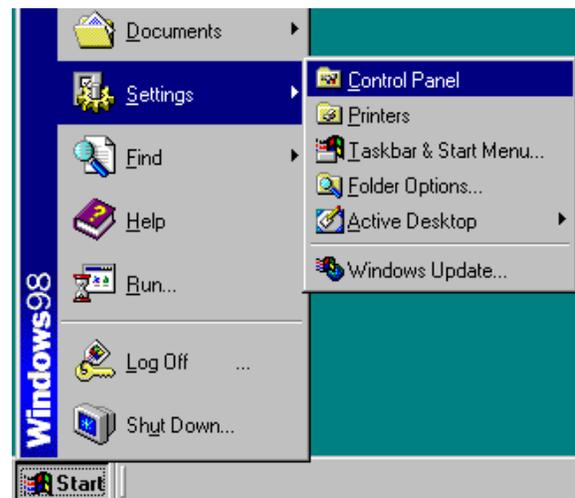
- 1) Check that the power of the machine is turned off. Install the Flash ROM which is to be upgraded (copied) to the write socket of the ICU MAIN PWB.



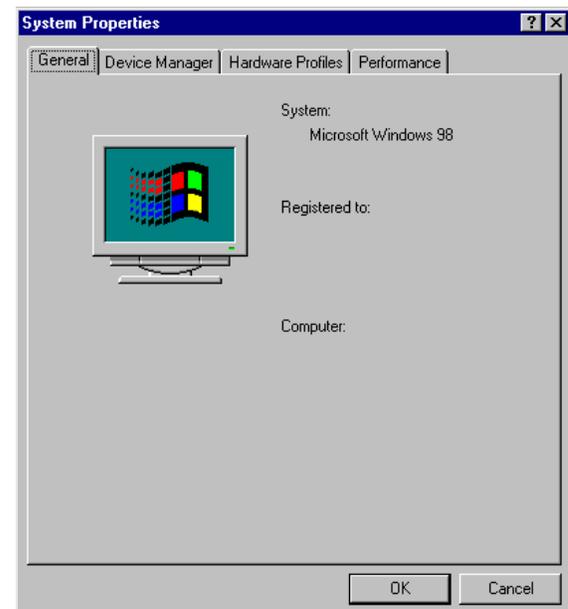
- 2) Connect the personal computer and the level converter.



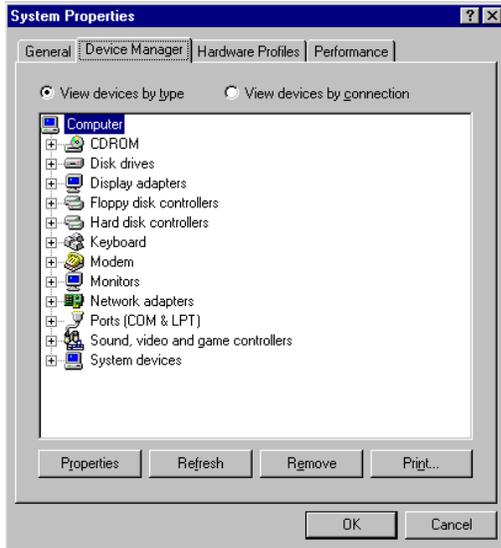
- 3) Connect the serial I/F connector on the ICU-MAIN PWB with the level converter.
- 4) Turn on the personal computer, and start the Windows.
- 5) Turn on the power of the machine.
- 6) Set the data communication speed of the computer.
  - 1 - From Start → Setup → Program, select "Control panel."



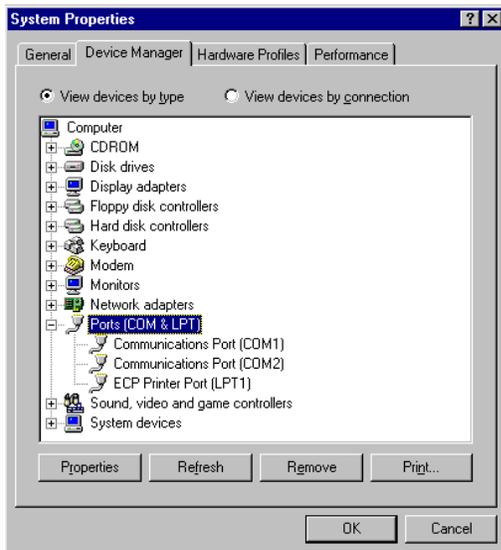
- 2 - Click "System."



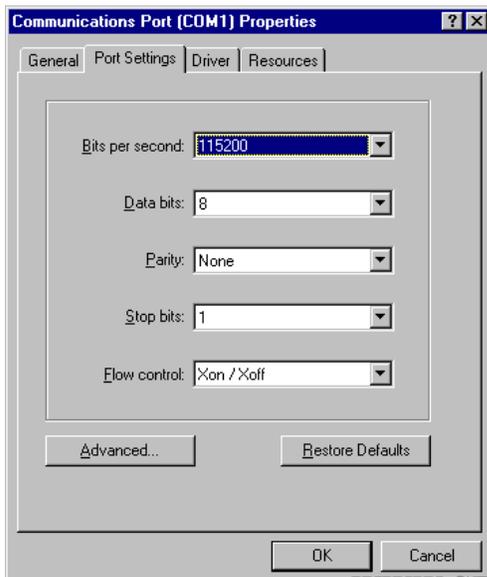
- 3 - Open the "Device manager" tab.



- 4 - Open "Port (COM/LPT)."



- 5 - Select and double-click the "communication port (COM\*)" which is used.



- 6 - Open the "Port setup" tab, and enter "115200" in the column of bit/sec.

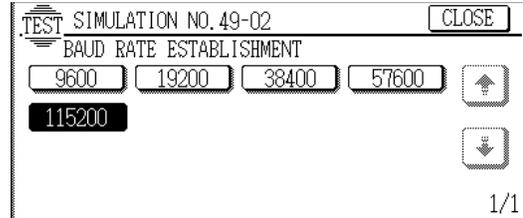
If the above communication speed cannot be set, select and set one of the following speeds.

9600/19200/38400/57600

- 7 - Close the communication speed setup menu.

7) Set the data communication speed on the machine side. This setup must be the same as the setup on the computer side.

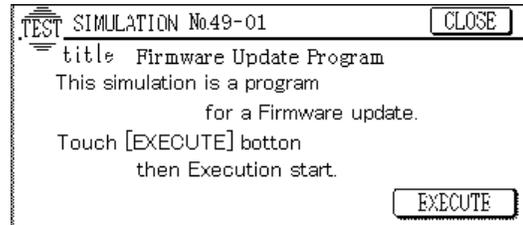
- 1 - Enter the simulation 49-2 mode.



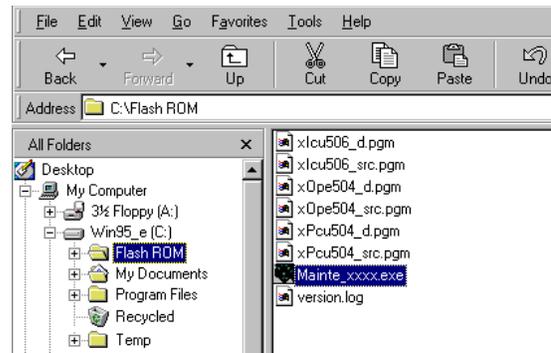
- 2 - Press the communication speed key which is the same as the set speed in procedure 8). (The set communication speed is highlighted.)

- 3 - Cancel the simulation 49-2.

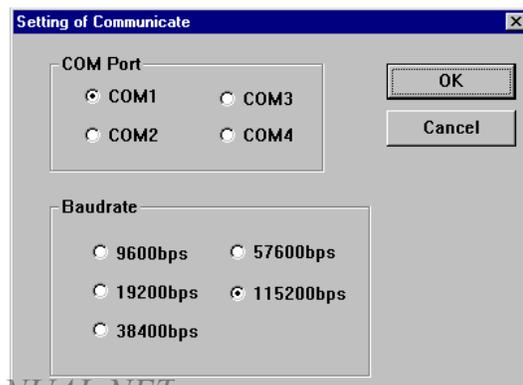
8) Enter the simulation 49-1 mode, and press the EXECUTE key. (The unit enters the download (Flash ROM writing) mode.)



9) Start the download program on the personal computer. (Double-click Mainte\_xxxx.exe file.)

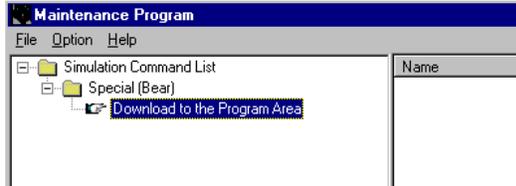


10) Select the communication setup from the option menu. (Set to the communication speed which is the same as the speed set in procedure 6) and 7).

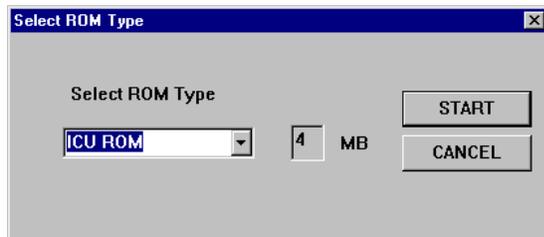


- 11) Select the data file which is to be copied (written) to the Flash ROM installed to the ICU MAIN PWB Write socket in procedure 1).

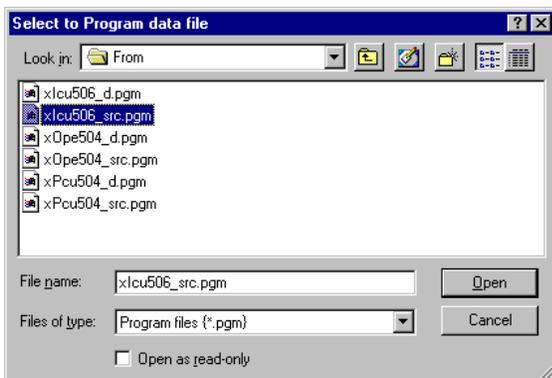
– 1 – Double-click the Simulation Command List holder.



- 2 – Double-click the Special (Bear) holder.
- 3 – Double-click the File Program Download.
- 4 – The message of "Program Download OK ?" is displayed. Press the OK button.
- 5 – Select the data (PWB name) to be written and click the START button.



– 6 – Select the data to be written and click the OPEN button.



With the above procedure, downloading (writing to the Flash ROM) is started.

**(NOTE)** Selection of data files to be written determines whether a source ROM (which includes the latest version program and the Flash ROM copy program) or a ROM which has only the latest version program is made.

- 12) Confirm that downloading (copying to the Flash ROM) is completed on the computer display and on the LCD display. It normally takes 5 to 7 minutes to copy (write) to the Flash ROM.

When downloading is normally completed, the following indications are shown.

- \* The Read and Write LED's on the ICU MAIN PWB are turned off.
- \* "THE PROGRAM WAS COMPLETE" is displayed on the LCD.

- 13) Cancel the simulation 49-1 and turn off the power of the machine.

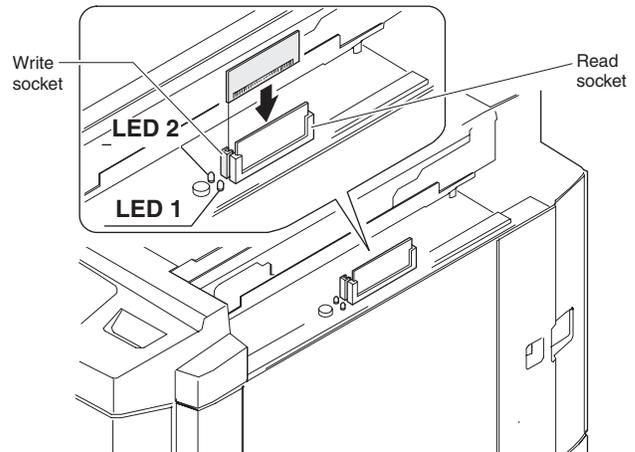
**(NOTE)** If the Flash ROM is removed from or installed to the machine with the machine power ON, the Flash ROM may be destroyed. Be sure to turn off the power of the machine before removing or installing the Flash ROM.

- 14) Remove the Flash ROM (which was upgraded) installed to the ICU MAIN PWB Write socket in procedure 1).

When another Flash ROM is to be upgraded, install it to the ICU MAIN PWB Write socket and turn on the power, and perform procedures 11) through 14).

## B. Method using two Flash ROM sockets on the ICU MAIN PWB to copy between Flash ROM's

- 1) Check that the power of the machine is OFF. Install the Flash ROM (of either of ICU MAIN PWB, PCU MAIN PWB, or operation control PWB) to the ICU MAIN PWB Write socket.



- 2) Install the source Flash ROM (which has the program data of either of ICU MAIN PWB, PCU MAIN PWB, or operation control PWB) to the ICU MAIN PWB Read socket.
- 3) Turn on the power of the machine. Copying is started. When copying is completed, the Read and the Write LED's on the ICU MAIN PWB are turned off. It normally takes 30 to 60 sec to copy (write) to the Flash ROM.
- 4) Turn off the power of the machine, and remove the Flash ROM's from the Read and the Write sockets.

### (After work)

- 1) Installed the copied Flash ROM to the specified PWB.
- 2) Turn on the power of the machine and check that the machine operates normally.
- 3) Use the simulation 22-5 to check each ROM version.
- 4) Install the shield plate and the stopper shift. (3 screws)
- 5) Attach the right upper cabinet of the machine. (2 screws)

### (NOTE)

The monitor displays before and after and during the Flash ROM version up (copy) operation are shown below. If the Flash ROM version up operation is not completed normally or if the Flash ROM is not installed to the socket properly, a trouble code is displayed. In that case, perform the countermeasures shown in the table below.

- (1) ICU MAIN PWB monitor LED lighting specification

The monitor LED status during copy (write) operation of PC to Flash ROM and Flash ROM to Flash ROM is shown below. Since, in the copy mode of Flash ROM to Flash ROM, the machine status is indicated only with the monitor LED, there are many monitor LED lighting patterns. While in the copy mode of PC to Flash ROM, the machine status is indicated on the operation panel or on the PC monitor display, there are less monitor LED lighting patterns.

Copy (write) mode	LED1 (Read)		LED2 (Write)		Operating status	Content	Remedies
	ON	Blink	ON	Blink			
Flash ROM to Flash ROM			○		When turning on the power	A target Flash ROM is attached to the Write socket when the power is turned on.	
				○		No target Flash ROM is attached to the Write socket when the power is turned on.	Insert a target Flash ROM into the Write socket.
	○		○		Copy program start	The capacity of the target Flash ROM is proper.	
	○			○		The capacity of the target Flash ROM is not proper.	Insert a Flash ROM of the required capacity into the Write socket.
	○		○		Flash ROM Erase	During normal ERASE operation of Flash ROM to be written	
				○	Abnormal end of ERASE operation of the target Flash ROM.	Restart the machine or replace the target Flash ROM.	
		○	○		When writing data	During data transmission	
		○	○			When writing is normally completed	
		○		○		When writing is not normally completed	Restart the machine or replace the target Flash ROM.
	○		○		When verifying	When verifying	
	○		○			Normal completion of verify	
	○			○		Abnormal end of verify	Restart the machine or replace the target Flash ROM.
					Write complete	When writing of all ROM's is completed.	
PC to Flash ROM			○		When executing simulation	When checking insertion of a target Flash ROM, insertion of a Flash ROM is detected.	
			○			When checking insertion of a target Flash ROM, insertion of a Flash ROM is not detected.	Insert a target Flash ROM into the Write socket.
		○	○		When downloading from PC (Except during execution of ERASE)	Downloading from PC is normally executed.	
		○		○		Downloading from PC is failed (in Nack transmission).	Execute download again.
		○	○			Downloading from PC is normally completed.	
	○		○		Flash ROM Erase	ERASE operation of the target Flash ROM is normally executed.	
				○		Abnormal end of ERASE operation of Flash ROM to be written	Restart the machine or replace the target Flash ROM.
		○		○	When writing data	Abnormal end of writing (abnormal writing into Flash ROM)	Restart the machine or replace the target Flash ROM.
	○		○		When verifying	When verifying	
	○		○			Verifying is normally completed.	
○			○	Abnormal end of verifying		Restart the machine or replace the target Flash ROM.	
				Write complete	When writing of all Flash ROM's is completed.		

(2) Operation panel display specifications (Simulation 49-1)

The operation panel display status in the copy mode of PC to Flash ROM mode is shown below.

Display message	Operation/Content	Countermeasures
NOW EXECUTING ●●●	The simulation is started.	
THIS COPIER IS NOT CONNECTED TO PC.	The cable is not connected.	After turning off the power of the copier, check the connection again.
FLASH ROM ISNT INSERTED INTO A CONNECTOR.	No target Flash ROM is inserted into the socket.	After turning off the power of the copier, insert the Flash ROM.
WAITING FOR START OF SOFTWARE ON THE PC.	Waiting for start of Flash ROM writing software on the PC.	Start the software to write into the Flash ROM on the PC.
COPIER SIDES WERE IN PREPARATION.	Waiting for start of PC software and Flash ROM Erase is not completed.	
COPIER SIDES WERE READY.	Waiting for start of PC software and Flash ROM Erase is completed.	
UNSUCCESSFUL IN THE DELETION IN FLASH ROM.	Erase of the target Flash ROM was failed.	Retry or replace the Flash ROM.
WRITE ERROR AROSE.	Copy (Write) of the target Flash ROM was failed.	Retry or replace the Flash ROM.
VERIFY ERROR.	Verify of the target Flash ROM was failed.	Retry or replace the Flash ROM.
NOW DOWN LOADING ●●●	Downloading of data	
TRANSMISSIN ERROR.	Data transmission was failed.	Retry data transmission or retry simulation.
THE PROGRAM WAS COMPLETE.		
THIS SIMULATION DOES NOT WORK IN THIS ROM VERSION.	Displayed when the ICU Flash ROM does not conform to this simulation.	ICU Flash ROM Version UP
NOW FLASH WRITING	Transfer data defreezing state display (10% unit)	

When the machine power is turned off during data transmission, the PC starts data transmission again from the beginning.

## [List of adjustment/setup values]

Simulation Code		Content/Item	Set range	Default	NOTE	Data store location		
Main	Sub							
07	01	Aging setup	A: Aging	ON/OFF	OFF	The setup data are not stored.		
			B: JAM detection ON/OFF setup	ON/OFF	OFF			
			C: Fusing ON/OFF setup	ON/OFF	OFF			
			D: Warm-up ON/OFF setup	ON/OFF	OFF			
			E: Aging intermittent ON/OFF setup	ON/OFF	OFF			
			F: Developing unit detection ON/OFF setup	ON/OFF	OFF			
			G: Oil check ON/OFF setup	ON/OFF	OFF			
08	01	Developing bias output voltage adjustment	A: (Black)	0 – 700	325	EEPROM (PCU PWB)		
			B: (Cyan)	0 – 700	325			
			C: (Magenta)	0 – 700	325			
			D: (Yellow)	0 – 700	325			
	02	Charging/Grid setup	A: (Black)	200 – 900	485	EEPROM (PCU PWB)		
			B: (Cyan)	200 – 900	495			
			C: (Magenta)	200 – 900	495			
D: (Yellow)			200 – 900	495				
21	01	Maintenance cycle setup	Maintenance timing (Print quantity)	0 – 6	4	0. 5K 1. 10K 2. 15K 3. 20K 4. 40K 5. 80K 6. FREE	EEPROM (PCU PWB)	
24	05	Reset the developer counter [YMCK]	Select the color (Black, Cyan, Magenta, Yellow)		0		EEPROM (PCU PWB)	
	07	Reset the OPC drum correction counter	Select the color (Black, Cyan, Magenta, Yellow)		0		EEPROM (PCU PWB)	
25	02	Toner concentration reference control level	(Black)	0 – 255	128	The adjustment value cannot be entered directly	EEPROM (PCU PWB)	
			(Cyan)	0 – 255	128			
			(Magenta)	0 – 255	128			
			(Yellow)	0 – 255	128			
26	01	Option setup	RADF	Option/None	None	EEPROM (PCU PWB)		
			SORTER/FINISHER	Option (Sorter)/Option (Finisher)/None	None			
			PRINTER	Option/None	None			
	02	Tray/size setup	LCC paper size	0 – 3	0	EEPROM (PCU PWB)		
			8.5" x 13" paper size detection	0 – 1	0			
			Manual paper feed paper display type	0 – 2	1			
	03	03	Auditor mode setup	Auditor mode	1 – 3	1	1. P10 2. AR-EC1 3. VENDOR (Mode 1 – 3)	EEPROM (PCU PWB)
	05	05	Counter mode setup	A: B/W (A3/A3 Wide/11 x 17) copy (total)	1 – 2	2	EEPROM (PCU PWB)	
				B: Color (A3/A3 Wide/11 x 17) copy (total)	1 – 2	2		
				C: B/W (A3/A3 Wide/11 x 17) copy (maintenance)	1 – 2	2		
D: Color (A3/A3 Wide/11 x 17) copy (maintenance)				1 – 2	2			
E: B/W (A3/A3 Wide/11 x 17) copy (developer)				1 – 2	2			
F: Color (A3/A3 Wide/11 x 17) copy (developer)				1 – 2	2			
06	06	Destination setup	Destination	1 – 9	1	EEPROM (PCU PWB)		
18	18	Toner save mode setup	A: Toner save mode	0 – 1	0	Japan, UK	EEPROM (PCU PWB)	
22	22	Language setup	Language			ENG. (US) / ENG. (UK) / Japanese / German / French / Dutch / Italian / Danish / Finnish / Spanish / Swedish / Norweg	EEPROM (PCU PWB)	
28	28	AC power voltage setup	AC power voltage	120 / 230	120	The set value (default) differs depending on the destination.	EEPROM (PCU PWB)	
30	30	CE mark conformity control inhibition	A: CE mark set value	0 – 1	0	The set value (default) differs depending on the destination.	EEPROM (PCU PWB)	

Simulation Code		Content/Item	Set range	Default	NOTE	Data store location	
Main	Sub						
26	32	Fan motor RPM setup	A: VFM	0 – 100	15		EEPROM (PCU PWB)
			B: VFM(HEAT)	0 – 100	15		
			C: CFM1	0 – 100	0		
			D: LSUFM	0 – 100	15		
			E: DCFM	0 – 100	0		
	35	Trouble memory mode setup	A: Trouble memory mode	0 – 1	0		EEPROM (PCU PWB)
52	Non-print paper (insertion paper, cover paper) count up YES/NO setup	A: Count up YES/NO	0 – 1	1		EEPROM (PCU PWB)	
53	User auto color calibration (Copy color balance/density auto adjustment) YES/NO setup	A: YES/NO	0 – 1	1		EEPROM (PCU PWB)	
55	Select the gamma characteristics in the color copy mode	ENABLE/DISABLE	ON/OFF	*	The default value differs depending on the destination.	EEPROM (ICU PWB)	
56	Disabling of paper type setting	Disable/Enable of paper type setting value	0 – 1	0		EEPROM (PCU PWB)	
27	01	PC/MODEM communication trouble (U7-00) detection YES/NO setup	A: PC/MODEM communication trouble (U7-00) detection YES/NO	0 – 1	0		EEPROM (PCU PWB)
	02	Host computer/Modem number setup	Host computer/MODEM number				EEPROM (PCU PWB)
	03	Machine/Host computer MODEM ID number setup	Machine/Host computer modem ID number				EEPROM (PCU PWB)
	05	Tag number setup	Tag number				EEPROM (PCU PWB)
	06	Manual service call Enable/Disable setup	A: Manual service call YES/NO	0 – 1	0		EEPROM (PCU PWB)
29	04	Printer mode fee-charging setup		0 – 4	0		EEPROM (PCU PWB)
40	02	Manual feed tray paper width detection level adjustment	A: Paper guide max. position level			The adjustment value cannot be entered directly.	EEPROM (PCU PWB)
			B: Paper guide min. position level				
	05	OHP sensor detection level adjustment				The adjustment value cannot be entered directly.	EEPROM (PCU PWB)
06	OHP sensor adjustment parameter set up	A: OHP sheet use Enable/Disable setup	0 – 1	1		EEPROM (PCU PWB)	
		B: OHP sensor adjustment target level	0 – 255	200			
		C: OHP paper judgement reference level	0 – 255	120			
41	02	Original size sensor adjustment	Adjustment value (PD1 – 7)	0 – 255	128	The adjustment value cannot be entered directly.	EEPROM (PCU PWB)
43	01	Fusing temperature setup	A: Normal mode control temperature (HL1)	70 – 200	170	The set value (default) differs depending on the destination. Refer to the details of SIM 43-01.	EEPROM (PCU PWB)
			B: Normal mode control temperature (HL2)	70 – 200	125		
			C: Ready state control temperature (H1)	70 – 200	182 (U.S.A, Canada, Inch) 177 (Europe, UK, AB-A)		
			D: Ready state control temperature (H2)	70 – 200	152 (U.S.A, Canada, Inch) 147 (Europe, UK, AB-A)		
			E: Energy save mode control temperature (HL1)	70 – 200	146		
			F: Control temperature (HL1) when resetting to B/W from preheat	70 – 200	158		
			G: Heavy paper 1 mode control temperature (HL1)	70 – 210	185		
			H: Heavy paper 1 mode control temperature (HL2)	70 – 200	155		
			I: Heavy paper 2 mode control temperature (HL1)	70 – 210	200		
			J: Heavy paper 2 mode control temperature (HL2)	70 – 200	155		
			K: OHP mode control temperature (HL1)	70 – 200	185		
			L: OHP mode control temperature (HL2)	70 – 200	175		

Simulation Code		Content/Item	Set range	Default	NOTE	Data store location	
Main	Sub						
43	07	Fusing oil pump operation setup	A: Pump ON time	5 – 50	12	EEPROM (PCU PWB)	
			B: Pump interval time	17 – 250	130		
44	01	Image density correction (Process control) operation mode setup	Operation mode		All ON	EEPROM (PCU PWB)	
	04	Image density correction (Process control) target level setup	A: Color image density sensor	0 – 200	102	EEPROM (PCU PWB)	
			B: Black image density sensor	0 – 200	133		
			C: Target density level (Yellow)	0 – 200	90		
			D: Target density level (Magenta)	0 – 200	100		
			E: Target density level (Cyan)	0 – 200	83		
			F: Target density level (Black)	0 – 200	22		
	05	Image density correction (Process control) initial developing bias voltage setup	A: (Black)	0 – 700	325	EEPROM (PCU PWB)	
			B: (Cyan)	0 – 700	325		
			C: (Magenta)	0 – 700	325		
			D: (Yellow)	0 – 700	325		
	06	Image forming section correction (Process control) forcible execution				The adjustment value cannot be entered directly.	EEPROM (PCU PWB)
	13	Image density sensor sense level adjustment	Sensor LED level	0 – 255	128	The adjustment value cannot be entered directly.	EEPROM (PCU PWB)
			Dark voltage level	0 – 255	30		
			Calibration sheet sense level	0 – 255	102		
Calibration plate sense level			0 – 255	80			
20	OPC drum phase adjustment (Old)	A: Print mode	1 – 3	3	The set up data is not stored.	EEPROM (PCU PWB)	
		B: Cyan OPC drum phase	0 – 330	60			
		C: Magenta OPC drum phase	0 – 330	120			
		D: Yellow OPC drum phase	0 – 330	180			
		E: Paper (Paper tray)	1 – 6	5			The set up data is not stored.
21	Half tone image correction initial setup	Initial setup data	0 – 255	–	The set up data cannot be entered directly.	EEPROM (ICU PWB)	
23	Image density sensor sense position adjustment	Adjustment value	40 – 60	50	The adjustment value cannot be entered directly.	EEPROM (ICU PWB)	
26	Half tone image correction forcible execution	Correction data	1 – 1999	1000	The correction data cannot be entered directly.	EEPROM (ICU PWB)	
27	Half tone image correction data reset	Correction data	1 – 1999	1000		EEPROM (ICU PWB)	
30	Transfer voltage adjustment (New)	A: Normal (Face) print (Black)	51 – 255	178	EEPROM (PCU PWB)		
		B: Back print (Black)	51 – 255	178			
		C: OHP print (Black)	51 – 255	204			
		D: Thick paper print (Black)	51 – 255	204			
		A: Normal (Face) print (Cyan)	51 – 255	162			
		B: Back print (Cyan)	51 – 255	162			
		C: OHP print (Cyan)	51 – 255	209			
		D: Thick paper print (Cyan)	51 – 255	187			
		A: Normal (Face) print (Magenta)	51 – 255	123			
		B: Back print (Magenta)	51 – 255	123			
		C: OHP print (Magenta)	51 – 255	167			
		D: Thick paper print (Magenta)	51 – 255	138			
		A: Normal (Face) print (Yellow)	51 – 255	123			
		B: Back print (Yellow)	51 – 255	123			
		C: OHP print (Yellow)	51 – 255	182			
		D: Thick paper print (Yellow)	51 – 255	138			
31	OPC drum phase adjustment (New)	A: Print mode	1 – 3		EEPROM (PCU PWB)		
		B: Cyan OPC drum phase	0 – 359	45			
		C: Magenta OPC drum phase	0 – 359	135			
		D: Yellow OPC drum phase	0 – 359	180			
		E: Paper (Paper tray)	1 – 6				

Simulation Code		Content/Item	Set range	Default	NOTE	Data store location
Main	Sub					
46	01	Copy density adjustment (Color mode)	A: Text printed photo mode	1 – 99	50	EEPROM (ICU PWB)
			B: Text photo mode	1 – 99	50	
			C: Text mode	1 – 99	50	
			D: Printed photo mode	1 – 99	50	
			E: Photo mode	1 – 99	50	
			F: Map mode	1 – 99	50	
			G: Text printed photo mode (Copy document mode)	1 – 99	46	
			H: Text mode (Copy document mode)	1 – 99	46	
	02	Copy density adjustment (Black/white mode)	A: Text printed photo, Auto pre-scan mode	1 – 99	50	
			B: Text printed photo, Auto mode	1 – 99	50	
			C: Text printed photo, Manual mode	1 – 99	50	
			D: Text photo, Auto pre-scan mode	1 – 99	50	
			E: Text photo, Auto mode	1 – 99	50	
			F: Text photo, Manual mode	1 – 99	50	
			G: Text, Auto pre-scan mode	1 – 99	50	
			H: Text, Auto mode	1 – 99	50	
06	Shading correction reference value setup	A: CCD odd number offset (Blue)	0 – 255	150		
		B: CCD Even number offset (Blue)	0 – 255	150		
		C: CCD odd number gain (Blue)	0 – 255	150		
		D: CCD even number gain (Blue)	0 – 255	150		
		A: CCD odd number offset (Green)	0 – 255	150		
		B: CCD even number offset (Green)	0 – 255	150		
		C: CCD odd number gain (Green)	0 – 255	130		
		D: CCD even number gain (Green)	0 – 255	130		
		A: CCD odd number offset (Red)	0 – 255	150		
		B: CCD Even number offset (Red)	0 – 255	150		
		C: .CCD odd number gain (Red)	0 – 255	160		
		D: CCD odd number gain (Red)	0 – 255	160		
		10	Copy color balance, density adjustment (Color, copy document mode)	A – O: Copy document mode black density 1 – 15	1 – 999	500
				A – O: Copy document mode cyan density 1 – 15	1 – 999	500
				A – O: Copy document mode magenta density 1 – 15	1 – 999	500
				A – O: Copy document mode yellow density 1 – 15	1 – 999	500
11	Copy color balance, density adjustment (Color, Text mode)	A – O: Black density 1 – 15	1 – 999	500		
		A – O: Cyan density 1 – 15	1 – 999	500		
		A – O: Magenta density 1 – 15	1 – 999	500		
		A – O: Yellow density 1 – 15	1 – 999	500		
12	Copy color balance, density adjustment (Color, Text printed photo/Printed photo mode)	A – O: Text printed photo/Printed photo black density 1 – 15	1 – 999	500		
		A – O: Text printed photo/Printed photo cyan density 1 – 15	1 – 999	500		
		A – O: Text printed photo/Printed photo magenta density 1 – 15	1 – 999	500		
		A – O: Text printed photo/Printed photo yellow density 1 – 15	1 – 999	500		
13	Copy color balance, density adjustment (Color, Text photo/Photo mode)	A – O: Text photo/Photo black density 1 – 15	1 – 999	500		
		A – O: Text photo/Photo cyan density 1 – 15	1 – 999	500		
		A – O: Text photo/Photo magenta density 1 – 15	1 – 999	500		
		A – O: Text photo/Photo yellow density 1 – 15	1 – 999	500		
14	Copy color balance, density adjustment (Color, Map mode)	A – O: Black density 1 – 15	1 – 999	500		
		A – O: Cyan density 1 – 15	1 – 999	500		
		A – O: Magenta density 1 – 15	1 – 999	500		
		A – O: Yellow density 1 – 15	1 – 999	500		
15	Copy density adjustment (Monochrome, Copy document mode mode)	A – O: Black B/W density 1 – 15	1 – 999	500	EEPROM (ICU PWB)	
16	Copy density adjustment (Monochrome, Text mode)	A – O: Black B/W density 1 – 15	1 – 999	500	EEPROM (ICU PWB)	

Simulation Code		Content/Item	Set range	Default	NOTE	Data store location	
Main	Sub						
46	17	Copy density adjustment (Color, Text printed photo, Printed Photo mode)	A – O: Black B/W density 1 – 15	1 – 999	500		EEPROM (ICU PWB)
	18	Copy density adjustment (Monochrome, Text photo/ Photo mode)	A – O: Black B/W density 1 – 15	1 – 999	500		EEPROM (ICU PWB)
	19	Copy density adjustment (Monochrome, Map mode)	A – O: Black B/W density 1 – 15	1 – 999	500		EEPROM (ICU PWB)
	20	Print (printer engine) copy color balance/density (gamma) adjustment (manual adjustment)	A – O: Black density 1 – 15	1 – 999	500	Without print	EEPROM (ICU PWB)
			A – O: Cyan density 1 – 15	1 – 999	500		
			A – O: Magenta density 1 – 15	1 – 999	500		
			A – O: Yellow density 1 – 15	1 – 999	500		
	21	Print (printer engine) copy color balance/density (gamma) adjustment (manual adjustment)	A – O: Black density 1 – 15	1 – 999	500	With print	EEPROM (ICU PWB)
			A – O: Cyan density 1 – 15	1 – 999	500		
			A – O: Magenta density 1 – 15	1 – 999	500		
			A – O: Yellow density 1 – 15	1 – 999	500		
	23	Half tone high density correction setup		ON/OFF	OFF		EEPROM (ICU PWB)
	24	Print (printer engine) copy color balance/density (gamma) adjustment (auto adjustment)				The adjustment value cannot be entered directly.	EEPROM (ICU PWB)
	25	Copy color balance adjustment (Mono color copy mode)	C (RED)	0 – 255	0		EEPROM (ICU PWB)
			C (GREEN)	0 – 255	255		
			C (BLUE)	0 – 255	255		
			C (PURPLE)	0 – 255	148		
			C (ORANGE)	0 – 255	38		
			C (BROWN)	0 – 255	131		
			M (RED)	0 – 255	255		
			M (GREEN)	0 – 255	0		
			M (BLUE)	0 – 255	255		
			M (PURPLE)	0 – 255	238		
			M (ORANGE)	0 – 255	140		
			M (BROWN)	0 – 255	255		
			Y (RED)	0 – 255	255		
			Y (GREEN)	0 – 255	255		
Y (BLUE)			0 – 255	0			
Y (PURPLE)			0 – 255	105			
Y (ORANGE)	0 – 255	255					
Y (BROWN)	0 – 255	229					
26	Copy color balance default setup (Mono color copy mode)	C (RED)	0 – 255	0		EEPROM (ICU PWB)	
		C (GREEN)	0 – 255	255			
		C (BLUE)	0 – 255	255			
		C (PURPLE)	0 – 255	148			
		C (ORANGE)	0 – 255	38			
		C (BROWN)	0 – 255	131			
		M (RED)	0 – 255	255			
		M (GREEN)	0 – 255	0			
		M (BLUE)	0 – 255	255			
		M (PURPLE)	0 – 255	238			
		M (ORANGE)	0 – 255	140			
		M (BROWN)	0 – 255	255			
		Y (RED)	0 – 255	255			
		Y (GREEN)	0 – 255	255			
		Y (BLUE)	0 – 255	0			
		Y (PURPLE)	0 – 255	105			
Y (ORANGE)	0 – 255	255					
Y (BROWN)	0 – 255	229					
27	Black toner component image gamma adjustment	A: Color mode	0 – 100	70		EEPROM (ICU PWB)	
		B: Monochrome mode	0 – 100	50			
48	01	Copy magnification ratio adjustment	A: Sub scanning direction copy magnification ratio adjustment	1 – 30	15		EEPROM (PCU PWB)
		B: Main scanning direction copy magnification ratio adjustment	1 – 99	50			

Simulation Code		Content/Item	Set range	Default	NOTE	Data store location	
Main	Sub						
48	06	Motor RPM adjustment	A: Resist motor speed	1 – 99	55	The set value (default) differs depending on the destination.	EEPROM (PCU PWB)
			B: Transfer belt speed	1 – 99	51		
			C: Fusing rotation speed (greater than B4)	1 – 99	55		
			D: Fusing rotation speed (smaller than B4)	1 – 99	45		
			E: Drum motor speed (Black/White)	1 – 99	42		
			F: Drum motor speed (Color)	1 – 99	40		
			G: Paper feed transfer motor speed	1 – 99	50		
			H: Developing motor (Black/White)	1 – 99	50		
			I: Developing motor (Color)	1 – 99	58		
50	01	Copy lead edge adjustment	A: RRC-A (Distance between MHP and the image lead edge)	0 – 99	50		EEPROM (PCU PWB)
			B: RRC-B (Resist roller ON timing)	0 – 99	50		
			C: DEN-A (Lead edge void quantity)	0 – 99	40		
			D: DEN-B (Rear edge void quantity)	0 – 99	30		
			E: IMAGE LOSS (Lead edge image loss quantity)	0 – 99	40		
	02	Lead edge adjustment (Simple method)	A: L1	0 – 99	0		EEPROM (PCU PWB)
			B: L2	0 – 99	0		
			C: DEN-A (Lead edge void quantity)	0 – 99	40		
			D: DEN-B (Rear edge void quantity)	0 – 99	30		
			E: IMAGE LOSS (Lead edge image loss)	0 – 99	40		
	10	Paper image off-center adjustment	A: Manual paper feed tray	30 – 70	50		EEPROM (ICU PWB)
			B: Paper feed tray 1	20 – 80	50		
			C: Paper feed tray 2	20 – 80	50		
			D: Paper feed tray 3	20 – 80	50		
			E: Paper feed tray 4	20 – 80	50		
F: Large capacity tray (LCC)			30 – 70	50			
G: Duplex (ADU)			20 – 80	30			
H: (Black) image main scanning direction print magnification ratio			1 – 199	100			
12	Original off-center adjustment	A: Original table mode	20 – 80	50		EEPROM (ICU PWB)	
		B: RADF mode	20 – 80	50			
20	Color image registration adjustment (Main scanning direction)	A: Tandem adjustment value (Cyan)	1 – 199	100		EEPROM (ICU PWB)	
		B: Main scanning direction print magnification ratio adjustment value (Cyan)	1 – 199	100			
		C: Tandem adjustment value (Magenta)	1 – 199	100			
		D: Main scanning direction print magnification ratio adjustment value (Magenta)	1 – 199	100			
		E: Tandem adjustment value (Yellow)	1 – 199	100			
		F: Main scanning direction print magnification ratio adjustment value (Yellow)	1 – 199	100			
21	Color image registration adjustment Sub scanning direction)	A: Black → Cyan	1 – 199	100		EEPROM (ICU PWB)	
		B: .Cyan → Magenta	1 – 199	100			
		C: Magenta – Yellow	1 – 199	100			
		D: Print quantity	1 – 999	1			
		E: Paper (Paper tray)	1 – 6	3			
22	Image registration adjustment (Auto)				The adjustment value cannot be entered directly	EEPROM (ICU PWB)	
51	01	Separation pawl ON timing adjustment	A: Separation pawl operation timing	30 – 550	290		EEPROM (PCU PWB)
			B: Transfer voltage ON timing	1 – 990	300		
			C: Transfer voltage OFF timing	1 – 990	480		
51	02	Paper resist quantity adjustment	A: Manual paper feed tray	0 – 99	70		EEPROM (PCU PWB)
			B: Paper feed tray	0 – 99	70		
			C: Large capacity paper feed tray (LCC)	0 – 99	50		
			D: Duplex (ADU)	0 – 99	60		
52	01	Duplex paper stacking adjustment	A: Manual paper feed tray (Adjustment value)	0 – 99	50		EEPROM (PCU PWB)
			B: Paper feed tray 1 (Adjustment value)	0 – 99	50		
			C: Paper feed tray 2 (Adjustment value)	0 – 99	50		
			D: Paper feed tray 3 (Adjustment value)	0 – 99	50		
			E: Large capacity tray (LCC) (adjustment value)	0 – 99	50		
			F: Paper (Paper tray)	1 – 5	3		
53	01	Original stop position adjustment (RADF)	A: Face mode	0 – 15	8		EEPROM (RADF CONTROL PWB)
			B: Back mode	0 – 15	8		
53	02	Sensor adjustment (RADF)				The adjustment value cannot be entered directly	EEPROM (RADF CONTROL PWB)

Simulation Code		Content/Item	Set range	Default	NOTE	Data store location	
Main	Sub						
63	03	Scanner (CCD) gamma adjustment (correction) (Normal document mode)			The adjustment value cannot be entered directly.	EEPROM (ICU PWB)	
	05	Scanner (CCD) gamma default setup (Normal document mode)			The adjustment value cannot be entered directly.	EEPROM (ICU PWB)	
	07	Service target color balance (gamma) setup for auto color balance adjustment (SIM 46-24)			The setup data cannot be entered directly	EEPROM (ICU PWB)	
	08	Service target color balance (gamma) is set to default (standard) color balance (gamma) for auto color balance adjustment (SIM 46-24)			The setup data cannot be entered directly	EEPROM (ICU PWB)	
	09	Scanner (CCD) gamma adjustment (Correction) (Copy document mode)			The adjustment value cannot be entered directly	EEPROM (ICU PWB)	
	10	Scanner (CCD) gamma default setup (Copy document mode)			The correction data cannot be entered directly	EEPROM (ICU PWB)	
65	01	Touch panel adjustment	1. Coordinate X on the left upper of the screen		258	The adjustment value cannot be entered directly.	EEPROM (PCU PWB)
			2. Coordinate Y on the left upper of the screen		245		
			3. Coordinate X on the right upper of the screen		831		
			4. Coordinate Y on the right upper of the screen		247		
			5. Coordinate X on the left lower of the screen		257		
			6. Coordinate Y on the left lower of the screen		834		
			7. Coordinate X on the right lower of the screen		831		
			8. Coordinate Y on the right lower of the screen		828		

## [Necessary works when replacing the PWB or in case of memory trouble]

The EEPROM of the following PWB includes all the setup and adjustment data.

When replacing the PWB or in case of memory trouble, therefore, the memory data must be replaced or reentered.

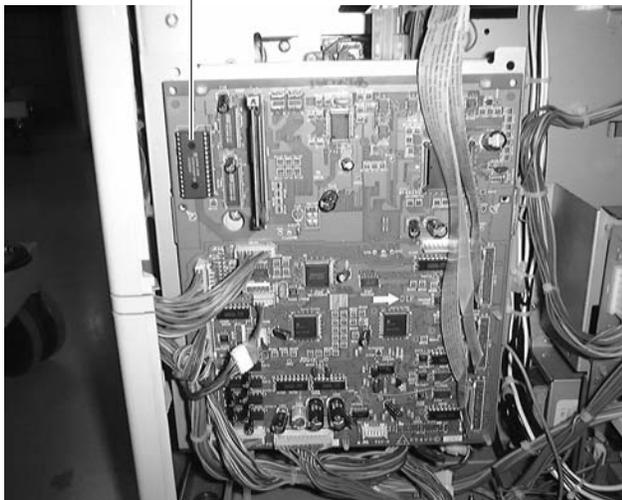
\* EEPROM on PCU MAIN PWB (Stores the setup and adjustment data of the engine section mainly.)

\* EEPROM on ICU MAIN PWB (Stores the setup and adjustment data related to image process mainly.)

(Case 1) Works after replacing PCU MAIN PWB (without memory trouble)

- 1) Remove the EEPROM from the defective PCU MAIN PWB.
- 2) Install the EEPROM removed in the above procedure to a new PCU MAIN PWB.

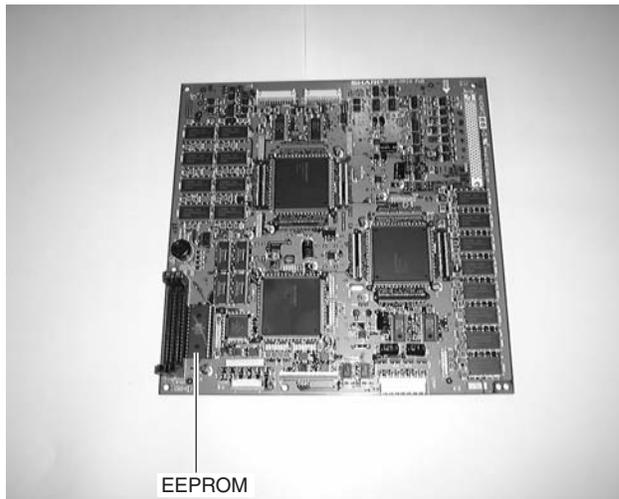
EEPROM



PCU MAIN PWB

(Case 2) Works after replacing ICU MAIN PWB (without memory trouble)

- 1) Remove the EEPROM from the defective ICU MAIN PWB.
- 2) Install the EEPROM removed in the above procedure to a new ICU MAIN PWB.



ICU MAIN PWB

(Case 3) Work in case of memory trouble (U2)

Refer to the adjustment and setup values recorded before occurrence of the trouble and reenter the adjustment and setup values by simulations.

The items which must be reentered are listed on the adjustment and setup value list in the Service Manual.

(Note) Always record the adjustment and setup data for the use in case of memory trouble (U2). SIM 22-6 allows to print the most adjustment and setup data. Since, however, this adjustment and setup value list printed by the simulation does not include all the items, refer to the adjustment and setup value list in the Service Manual in the reentry procedure. Also note that all the items cannot be entered with keys. Some items require actual adjustment procedures for storing the data.

Occurrence of memory trouble (U2-30) means destruction of the machine serial number data in the EEPROM on the PCU MAIN PWB and the EEPROM on the ICU MAIN PWB.

Therefore, the machine serial number must be entered both to the EEPROM on the PCU MAIN PWB and to the EEPROM on the ICU MAIN PWB.

Since, however, reentry of the machine serial number cannot be performed with normal simulations. In this case, inquire of the local manager for reentry of the machine serial number.

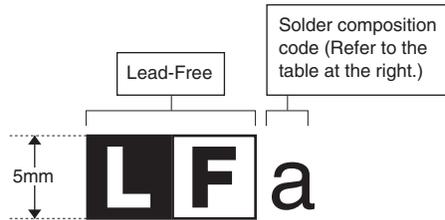




# LEAD-FREE SOLDER

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

## Example:



<Solder composition code of lead-free solder>

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

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

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

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

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

## (2) NOTE FOR SOLDERING WORK

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

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

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

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

### CAUTION FOR BATTERY REPLACEMENT

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

(English) Caution !  
Danger of explosion if battery is incorrectly replaced.  
Replace only with the same or equivalent type  
recommended by the manufacturer.

Dispose of used batteries according to manufacturer's instructions.

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

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

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

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

### CAUTION FOR BATTERY DISPOSAL

(For USA, CANADA)

"BATTERY DISPOSAL"

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

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

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