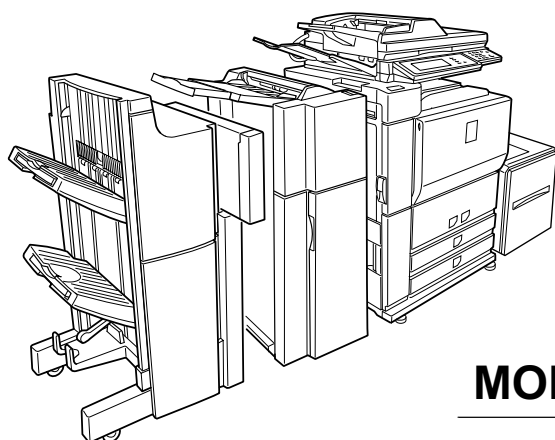


SHARP SERVICE MANUAL

CODE: 00ZMXM700/S2E



DIGITAL MULTIFUNCTIONAL SYSTEM

MX-M550N/M550U
MX-M620N/M620U
MODEL MX-M700N/M700U

CONTENTS

NOTE FOR SERVICING

- [1] PRODUCT OUTLINE 1-1
- [2] SPECIFICATIONS 2-1
- [3] CONSUMABLE PARTS 3-1
- [4] UNPACKING AND INSTALLATION
 - * For unpacking and installation, refer to the installation manual (00ZAR700//I1E).
- [5] EXTERNAL VIEW AND INTERNAL STRUCTURE 5-1
- [6] ADJUSTMENTS 6-1
- [7] SIMULATION 7-1
- [8] SELF DIAG AND TROUBLE CODE . 8-1
- [9] MAINTENANCE 9-1
- [10] ROM VERSION-UP10-1
- [11] ELECTRICAL SECTION.....11-1
- [12] OTHERS.....12-1

● DETAILS OF EACH SECTION

- [A] EXTERNAL OUTFIT A-1
- [B] OPERATION PANEL B-1
- [C] DSPF SECTION C-1
- [D] SCANNER SECTION D-1
- [E] MANUAL PAPER FEED SECTION.. E-1
- [F] TRAY PAPER FEED SECTION ... F-1
- [G] PAPER TRANSPORT SECTION .. G-1
- [H] DUPLEX SECTION H-1
- [i] LSU SECTION i-1
- [J] PHOTOCONDUCTOR SECTION.. J-1
- [K] TONER SUPPLY SECTION K-1
- [L] DEVELOPING SECTION L-1
- [M] TRANSFER SECTION M-1
- [N] FUSING SECTION N-1
- [O] PAPER EXIT SECTION O-1
- [P] DRIVE SECTION P-1
- [Q] PWB SECTION..... Q-1
- [R] FAN AND FILTER SECTION R-1
- [S] SENSOR, SWITCH SECTION S-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.

SHARP CORPORATION

WWW.SERVICE-MANUAL.NET

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 The contents are subject to change without notice.

CONTENTS

NOTE FOR SERVICING

1. Precautions for servicing i
2. Warning for servicing i
3. Installing site recommendations i

[1] PRODUCT OUTLINE

1. Different points of MX-M550/620/700 series from AR-M550/620/700 series 1- 1
2. Main Features 1- 1
3. Features 1- 1
4. CONFIGURATION 1- 4

[2] SPECIFICATIONS

1. Basic specifications 2- 1
2. Functional specifications 2- 4
3. Environmental conditions 2- 11

[3] CONSUMABLE PARTS

1. Supply system table 3- 1
2. Maintenance parts list 3- 2

[4] UNPACKING AND INSTALLATION

- * For unpacking and installation, refer to the installation manual (00ZAR700/I1E).

[5] EXTERNAL VIEW AND INTERNAL STRUCTURE

1. Identification of each section and functions 5- 1

[6] ADJUSTMENTS

1. General 6- 1
2. Outline 6- 1
3. Adjustment item list 6- 1
4. Details of adjustment 6- 2

[7] SIMULATION

1. Adjustment value/Simulation and storage data 7- 1
2. General 7- 2
3. List of simulation codes 7- 4
4. Details of simulation 7- 8

[8] SELF DIAG AND TROUBLE CODE

1. Self diag 8- 1
2. Trouble code list 8- 4
3. Details of trouble code 8- 6

[9] MAINTENANCE

1. Maintenance system table 9- 1
2. Details of maintenance 9- 4
3. Other related items 9- 13

[10] ROM VERSION-UP

1. General 10- 1
2. Precautions 10- 2
3. Necessary items for Flash ROM version-up 10- 2
4. Flash ROM version-up method 10- 2
5. Turning OFF the power during the version-up procedure 10- 5
6. Version-up procedure flowchart 10- 5

[11] ELECTRICAL SECTION

1. Block diagram 11- 1
2. Power line chart 11- 5
3. Actual wiring chart 11- 8
4. Signal name list 11- 18

[12] OTHERS

1. System settings 12- 1
2. Web setting service mode 12- 8
3. Paper JAM code 12- 10

● DETAILS OF EACH SECTION

[A] EXTERNAL OUTFIT A - 1

[B] OPERATION PANEL

1. Electrical and mechanism relation diagram B - 1
2. Operational descriptions B - 2
3. Disassembly and assembly B - 2

[C] DSPF SECTION

1. Electrical and mechanism relation diagram C - 1
2. Operational descriptions C - 5
3. Disassembly and assembly C - 6
4. Maintenance C - 19

[D] SCANNER SECTION

1. Electrical and mechanism relation diagram D - 1
2. Operational descriptions D - 2
3. Disassembly and assembly D - 4
4. Maintenance D - 11

[E] MANUAL PAPER FEED SECTION

1. Electrical and mechanism relation diagram E - 1
2. Operational descriptions E - 2
3. Disassembly and assembly E - 2
4. Maintenance E - 8

[F] TRAY PAPER FEED SECTION

1. Electrical and mechanism relation diagram F - 1
2. Operational descriptions F - 5
3. Disassembly and assembly F - 8
4. Maintenance F - 17

[G] PAPER TRANSPORT SECTION

1. Electrical and mechanism relation diagram G - 1
2. Operational descriptions G - 5
3. Disassembly and assembly G - 5
4. Maintenance G - 14

[H] DUPLEX SECTION

1. Electrical and mechanism relation diagram H - 1
2. Operational descriptions H - 2
3. Disassembly and assembly H - 4
4. Maintenance H - 12

[I] LSU SECTION

1. Electrical and mechanism relation diagram i - 1
2. Operational descriptions i - 2
3. Disassembly and assembly i - 2

[J] PHOTOCONDUCTOR SECTION

1. Electrical and mechanism relation diagram J - 1
2. Operational descriptions J - 3
3. Disassembly and assembly J - 4
4. Maintenance J - 9

[K] TONER SUPPLY SECTION

1. Electrical and mechanism relation diagram K - 1
2. Operational descriptions K - 2
3. Disassembly and assembly K - 3
4. Maintenance K - 4

[L] DEVELOPING SECTION

1. Electrical and mechanism relation diagram L - 1
2. Operational descriptions L - 2
3. Disassembly and assembly L - 2
4. Maintenance L - 5

[M] TRANSFER SECTION

1. Electrical and mechanism relation diagram M - 1
2. Operational descriptions M - 2
3. Disassembly and assembly M - 3
4. Maintenance M - 5

CONTENTS

[N] FUSING SECTION

1. Electrical and mechanism relation diagram N - 1
2. Operational descriptions N - 2
3. Disassembly and assembly N - 3
4. Maintenance N - 12

[O] PAPER EXIT SECTION

1. Electrical and mechanism relation diagram O - 1
2. Operational descriptions O - 2
3. Disassembly and assembly O - 2
4. Maintenance O - 7

[P] DRIVE SECTION

1. Disassembly and assembly P - 1
2. Maintenance P - 14

[Q] PWB SECTION

1. Disassembly and assembly Q - 1

[R] FAN AND FILTER SECTION

1. Disassembly and assembly R - 1
2. Maintenance R - 6

[S] SENSOR, SWITCH SECTION

1. Disassembly and assembly S - 1

NOTE FOR SERVICING

This Service Manual uses some symbols to assure safe operation. Please understand the meanings of photographs before servicing.

⚠ **WARNING:** If this WARNING should be ignored, a serious danger to life or a serious injury could result.

⚠ **CAUTION:** If this CAUTION should be ignored, an injury or a damage to properties could result.

1. Precautions for servicing

- 1) When servicing, disconnect the power plug, the printer cable, the network cable, and the telephone line from the machine, except when performing the communication test, etc.
It may cause an injury or an electric shock.
- 2) There is a high temperature area inside the machine. Use an extreme care when servicing.
It may cause a burn.
- 3) There is a high voltage section inside the machine which may cause an electric shock. Be careful when servicing.
- 4) Do not disassemble the laser unit. Do not insert a reflective material such as a screwdriver in the laser beam path.
It may damage eyes by reflection of laser beams.
- 5) When servicing with the machine operating, be careful not to squeeze your hands by the chain, the belt, the gear, and other driving sections.
- 6) Do not leave the machine with the cabinet disassembled.
Do not allow any person other than a serviceman to touch inside the machine. It may cause an electric shock, a burn, or an injury.
- 7) When servicing, do not breathe toner, developer, and ink excessively. Do not get them in the eyes.
If toner, developer, or ink enters your eyes, wash it away with water immediately, and consult a doctor if necessary.
- 8) The machine has got sharp edges inside. Be careful not to damage fingers when servicing.
- 9) Do not throw toner or a toner cartridge in a fire. Otherwise, toner may pop and burn you.
- 10) When replacing the lithium battery of the PWB, use a specified one only.
If a battery of different specification is used, it may be broken, causing breakdown or malfunction of the machine.
- 11) When carrying a unit with PWB or electronic parts installed to it, be sure to put it in an anti-static-electricity bag.
It may cause a breakdown or malfunctions.

2. Warning for servicing

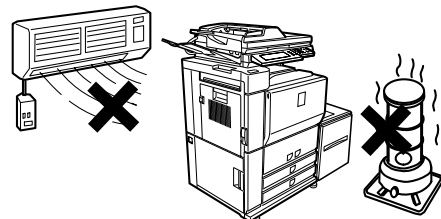
- 1) Be sure to connect the power cord only to a power outlet that meets the specified voltage and current requirements.
Avoid complex wiring, which may lead to a fire or an electric shock.
It may cause a fire or an electric shock.
- 2) If there is any abnormality such as a smoke or an abnormal smell, interrupt the job and disconnect the power plug.
It may cause a fire or an electric shock.
- 3) Be sure to connect the grounding wire. If an electric leakage occurs without grounding, a fire or an electric shock may result.
To protect the machine and the power unit from lightning, grounding must be made.

- 4) When connecting the grounding wire, never connect it to the following points.
It may cause an explosion, a fire or an electric shock.
 - Gas tube
 - Lightning conductor
 - A water pipe or a water faucet, which is not recognized as a grounding object by the authorities.
 - Grounding wire for telephone line
- 5) Do not damage, break, or work the power cord.
Do not put heavy objects on the power cable. Do not bend it forcibly or do not pull it extremely.
It may cause a fire or an electric shock.
- 6) Keep the power cable away from a heat source.
Do not insert the power plug with dust on it into a power outlet.
It may cause a fire or an electric shock.
- 7) Do not put a receptacle with water in it or a metal piece which may drop inside the machine.
It may cause a fire or an electric shock.
- 8) With wet or oily hands, do not touch the power plug, do not insert the telephone line jack, do not operate the machine, or do not perform servicing.
It may cause an electric shock.

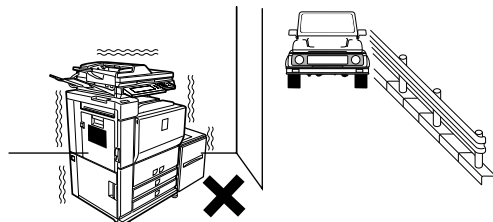
3. Installing site recommendations

Do not install the machine at the following sites.

- 1) **Place of high temperature, high humidity, low temperature, low humidity, place under an extreme change in temperature and humidity.**
Paper may get damp and form dew inside the machine, causing paper jam or copy dirt.
For operating and storing conditions, refer to the specifications described later.

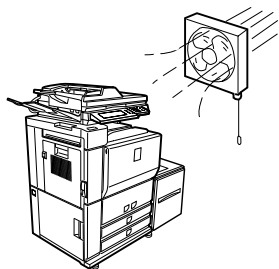


- 2) **Places of too much vibrations**
It may cause a breakdown.



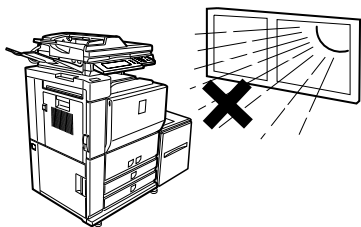
3) **Poorly ventilated areas**

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



4) **Place of direct sunlight.**

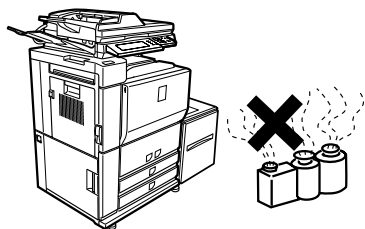
Plastic parts and ink may be deformed, discolored, or may undergo qualitative change. It may cause a breakdown or copy dirt.



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

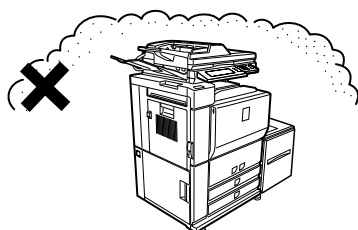
The organic photoconductor (OPC) drum used in the machine may undergo qualitative change due to organic gases such as ammonium.

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



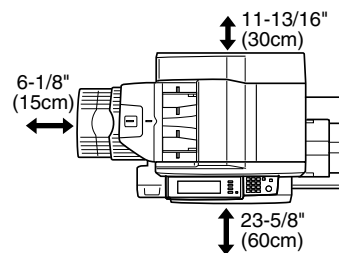
6) **Place of too much dust**

When dust enters the machine, it may affect the operation of the machine.



7) **Place too close to a wall**

All machines require clean intake and exhaust of air. If the intake and exhaust of air are not proper, failure of the machine will occur.



8) **Unstable or uneven surfaces**

Placement of the machine will affect performance.

An unstable machine may fall over and cause an injury.

Use the proper optional desk unit. When using the optional desk, be sure to lock the adjusters and casters.

[1] PRODUCT OUTLINE

1. Different points of MX-M550/620/700 series from AR-M550/620/700 series

- Adopted new operation panel with 8.9 inch LCD
- Added web roller and motor for web roller in Fusing section
- Added firmware version-up using USB device by Sim 49-1
- Eliminated parallel port

2. Main Features

A. Single Pass Duplex Scanner

- Max. 76 cpm for duplex scanning
- Best-in-class 150-sheet feeder

B. Security Solution

- Data encryption + data clear with random number
- Network security

C. New Toner

- Higher density/Finer particles

D. Inner Output

- Separate copy output pages from printer output pages

E. Enhance the solutions such as document filing and other features.

F. Design for High Reliability

- Robust frame designed by highly accurate CAE analysis

G. Improved Performance

- Network Tandem Copy/Print
- High-speed Processor
- New high-speed ASIC

H. Fax feature

For replacement of mid/low speed devices (up to area)

I. Large Capacity Finisher

Finisher capacity: 4,000-sheet

3. Features

A. High reliability

(1) Improved Image Quality/Paper Transport

Full-Grip Path Design

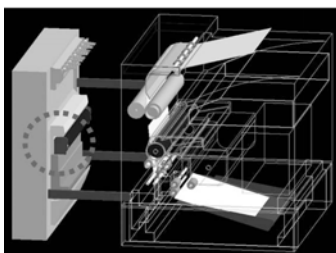
Stable paper feeding realized by rollers that firmly grip paper

Small-Diameter Belt Transfer System

With reduced effect to paper types, drum paper release is stabilized and transfer efficiency is improved

Easier Paper Jam Fixation with Open Paper Path

Jammed paper on vertical paper path can be easily removed by opening the left side cover, which shortens time to fix paper jam



(2) Strengthened Frame Structure

Highly Rigid Frame

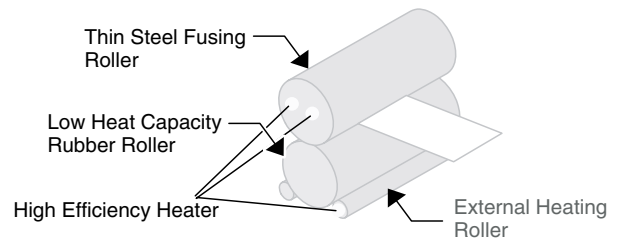
Improved stability with less machine distortion, and both rigidity and lightweight been achieved.

(3) Energy Saving with Unique External Heat Roller Fusing System

Newly Developed External Heating System

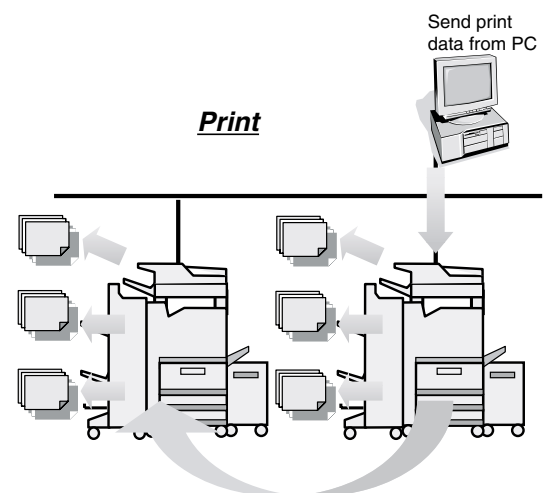
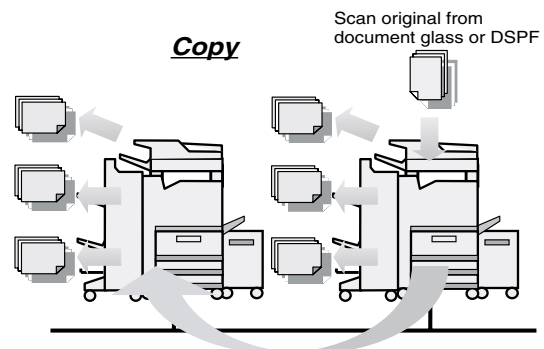
- 1) High reliability with stabilized fusing ability
- 2) Shortened warm up time before start copying
- 3) Achievement of energy efficiency that clears 2006 Rationalization in Energy Use Law

External Heat Roller Fusing System



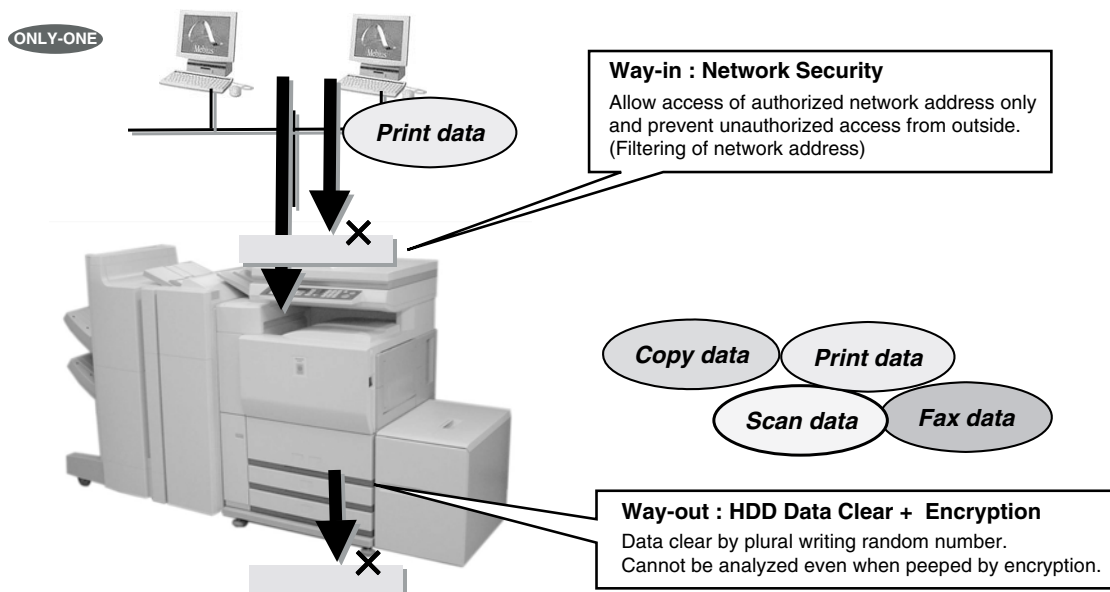
B. Network tandem

With Network tandem function, users can output one job on two network connected engines. Productivity of large-volume copying/printing can be dramatically improved by high-speed output of up to 110cpm (55cpm model), 124cpm (62cpm model) and 140cpm (70cpm model).

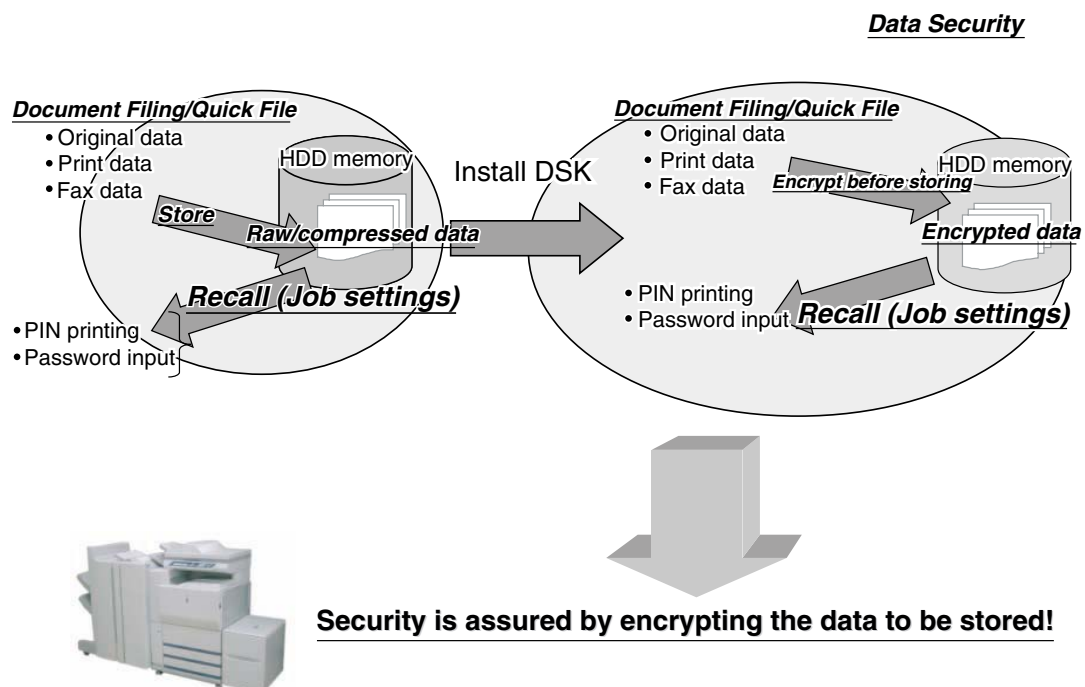


* Users can use the function simply by connecting the engines to network. This means no Tandem Kit (Connection cable) necessary.

C. 2-Way Security Solution

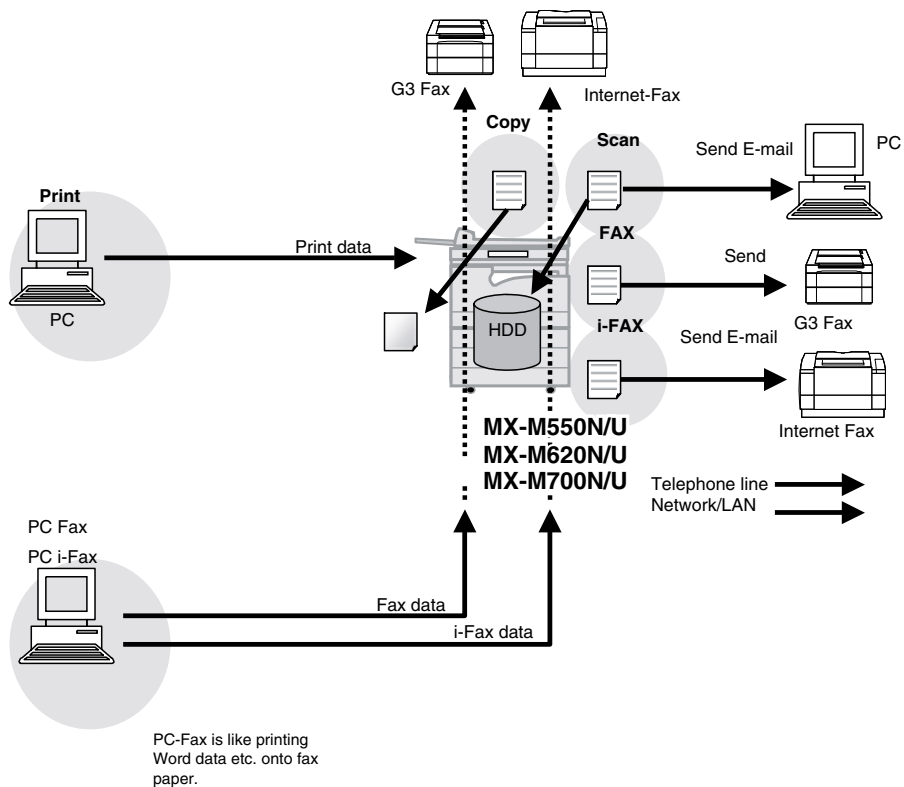


(1) Data Security coexisting with Document Filing

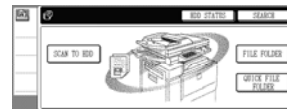


D. Document Filing

Document filing is a function that enables users to share and reuse data stored in the engine's HDD by digitalizing various information sent/scanned from printer, fax, PC or MFP that are connected by network.



<Document Filing initial screen>



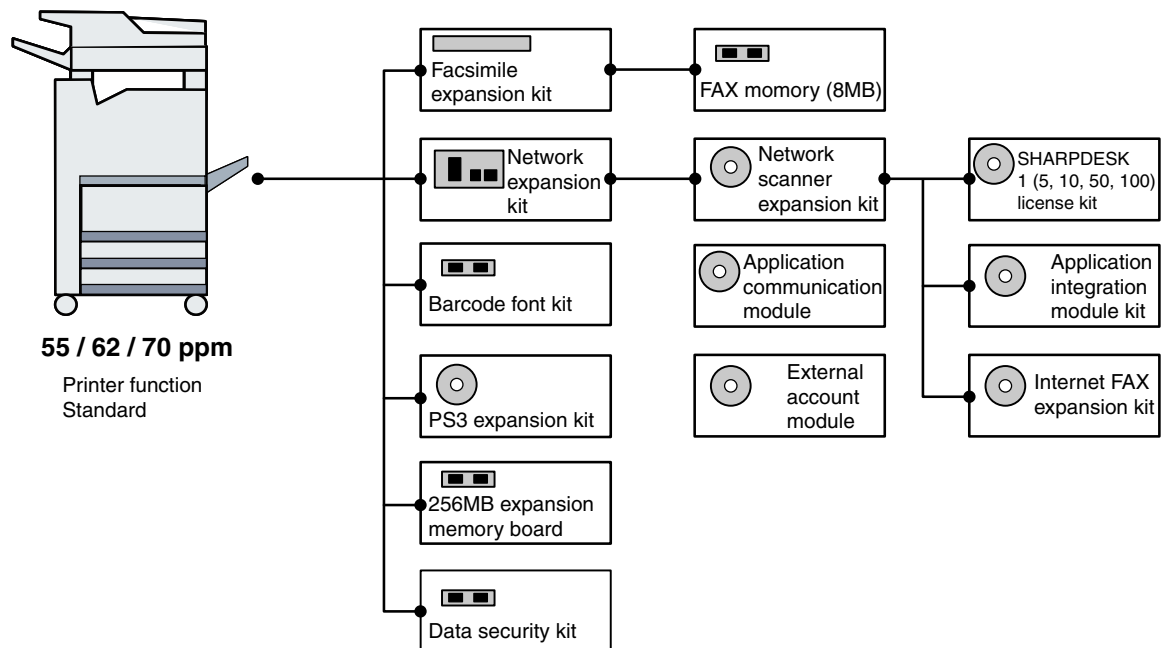
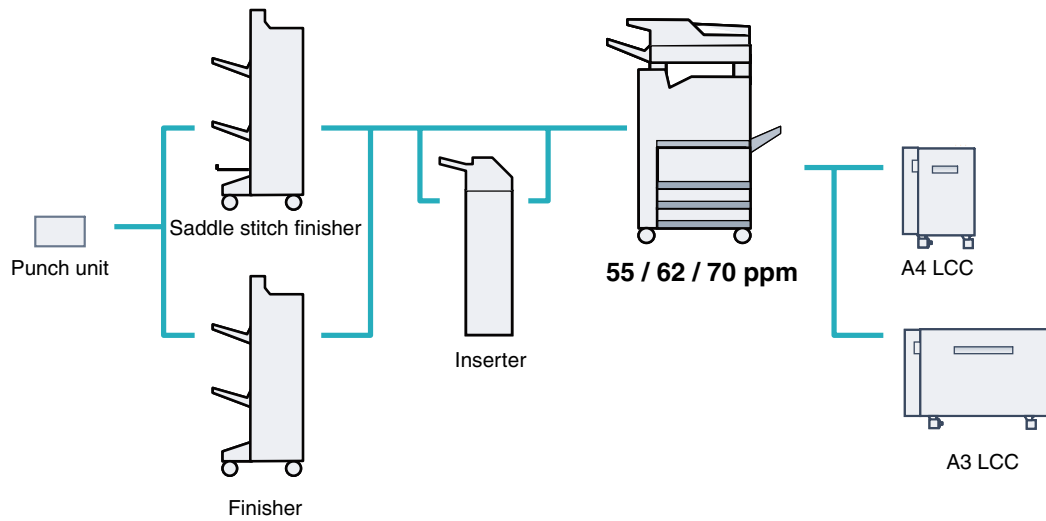
<List of data stored in Main folder>

FILE NAME	USER NAME	DATE	1/1
Basic operation	User Name 1	2005/12/30	
operation_000	User Name 2	2005/12/30	
Product_info	User Name 3	2005/12/30	
ALL FILES			

4. CONFIGURATION

A. Main unit and option lineup

(1) Option lineup

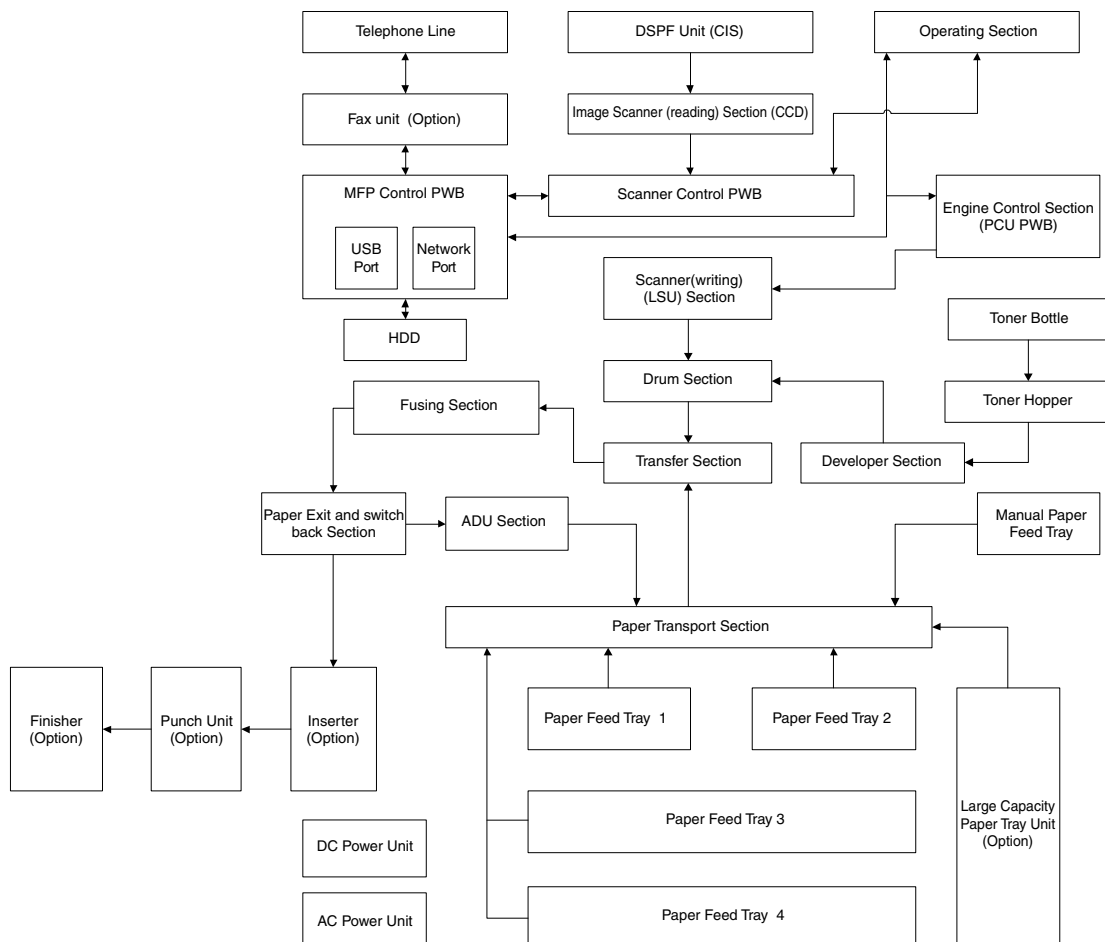


(2) Option combinations

STD: Standard provision OPT: Installable × : Not installable

Section	Option	Machine model		Remarks	Product key
	Item	Copier model	Network printer		
		MX-M550U/ M620U/M700U	MX-M550N/ M620N/M700N		
Paper feed system	Large capacity tray (AR-LC6)	OPT	OPT	(A4 / 8.5 × 11)	
	Large capacity tray (AR-LC7)	OPT	OPT	(A3 / 11 × 17)	
Paper exit system	Finisher (AR-F15)	OPT	OPT		
	Saddle stitch finisher (AR-F16)	OPT	OPT		
	Inserter (AR-CF2)	OPT	OPT		
	Punch module (AR-PN4A)	OPT	OPT	(2 holes)	
	Punch module (AR-PN4B)	OPT	OPT	(3 holes)	
	Punch module (AR-PN4C)	OPT	OPT	(4 holes)	
	Punch module (AR-PN4D)	OPT	OPT	(4 holes, wide)	
Electrical system (Printer controller)	Printer expansion kit	STD	STD		
	Network expansion kit (MX-NBX1)	OPT	STD		Yes
	Expansion memory (AR-SM5)	OPT	OPT	(256MB)	
	PS3 expansion kit (MX-PKX1)	OPT	OPT		Yes
	Barcode font kit (AR-PF1)	OPT	OPT		
Software	Network scanner expansion kit (MX-NSX1)	OPT	OPT		Yes
	Sharpdesk 1 license kit (MX-USX1)	OPT	OPT		
	Sharpdesk 5 license kit (MX-USX5)	OPT	OPT		
	Sharpdesk 10 license kit (MX-US10)	OPT	OPT		
	Sharpdesk 50 license kit (MX-UX50)	OPT	OPT		
	Sharpdesk 100 license kit (MX-USA0)	OPT	OPT		
FAX system	Internet FAX expansion kit (MX-FWX1)	OPT	OPT		Yes
	Facsimile expansion kit (AR-FX8)	OPT	OPT		
	FAX expansion memory (8MB) (AR-MM9)	OPT	OPT		
Other options	Application integration module kit (MX-AMX1)	OPT	OPT		Yes
	Application communication module (MX-AMX2)	OPT	OPT		Yes
	External account module (MX-AMX3)	OPT	OPT		Yes

B. Block diagram



[2] SPECIFICATIONS

1. Basic specifications

A. Base engine

(1) Type

Type	Console
Copy mode	Monochrome digital (Electronic photo graphic)

(2) Engine speed (ppm)

Paper size	55ppm	62ppm	70ppm
A4, 8.5 × 11	55ppm	62ppm	70ppm
A4R, 8.5 × 11R	40ppm	45ppm	48ppm
A5R/5.5 × 8.5R	40ppm	45ppm	48ppm
5.5 × 8.5-R	40ppm	45ppm	48ppm
B5	55ppm	62ppm	70ppm
B5R, 7.25 × 10.5-R	40ppm	45ppm	48ppm
B4/8.5 × 14	35ppm	39ppm	45ppm
A3/11 × 17	30ppm	34ppm	39ppm
Extra	30ppm	34ppm	39ppm
Postcard	Since the next paper is fed after completion of paper exit outside the machine, it depends on the machine composition.		

(3) Engine composition

Photoconductor kind	OPC (Drum diameter: φ80mm)
Copying method	Electronic photo (Laser)
Developing system	Dry, 2-component magnetic brush development
Charging system	Charged saw-tooth method
Transfer system	Static electricity transfer (Transfer belt method)
Cleaning system	Counter blade
Fusing system	Heat roller
Fused cleaning system	WEB cleaning method
Toner supply method	Toner supply by the front cover open
Waste toner disposal	Toner cartridge collection (No toner recycling system)

(4) Engine resolution

Resolution (Writing)	Copy : 600 × 600dpi Printer: PCL: 600 × 600dpi, 300 × 300dpi PS : 600 × 600dpi
Smoothing	Copy: None Printer: Model of 55/62 sheets: Equivalent to 1200dpi × 600dpi (PCL/PS) Model of 70 sheets : None
Gradation	[Writing] 2 gradations

(5) Warmup

After turned on	120 seconds or less
Pre-heat	YES

(6) Jam recovery time

Jam recovery time	Approx. 30 sec. (After leaving the machine with the side cover open for 60sec, in the standard condition and the polygon stop conditions.)
-------------------	--

(7) Printable area

A3	289 × 412mm	11 × 17	271 × 424mm
B4	242 × 356mm	8.5 × 14	208 × 348mm
A4	202 × 289mm	8.5 × 13	208 × 322mm
B5	174 × 249mm	8.5 × 11	208 × 271mm
A5	140 × 202mm	5.5 × 8.5	132 × 208mm
7.25 × 10.5	183 × 259mm	8K	262 × 382mm
Postcard	92 × 140mm	16K	187 × 262mm

(8) Image defect

a. Void area/Image loss

Void area/Image loss	Lead edge: 40mm or less Rear edge: 4.0mm or less FR total : 8.0mm or less
----------------------	---

(9) Power source

	100V series	200V series
Voltage	100 to 127V	200 to 240V
Current	55 ppm	16A
	62 ppm	16A
	70 ppm	16A
Frequency	50/60Hz	
Power source code	Dedicated outlet	
Power switch	2 switches (Primary switch: in the front cover; Secondary switch: on side of the main unit)	

(10) Power consumption

	100V series	200V series
Low power consumption mode	55 ppm : max. 261.75W 62 ppm : max. 288.7W 70 ppm : max. 319.5W	
Maximum rated power consumption	1.80KW (*)	1.84KW (*)
Reset time from low power mode	30 sec.	
Power consumption in the off mode	95W or less	
Shift time to off mode	90 min.	

* : With full options

(11) Dimensions

Outer dimensions	728 × 679 × 1050mm (Height: Floor to Glass surface) 728 × 679 × 1192mm (Height: Floor to SPF top)
Footprint	728 (W) × 679 (D) mm

(12) Weight

Main unit	Approx. 185kg / 408lbs
-----------	------------------------

(13) Dimensions occupied by Machine

Main unit	1264 × 679 × 1192mm
Main unit + A4-LCC installed	1340 × 679 × 1192mm
Main unit + finisher/ Saddle finisher installed	1797 × 679 × 1192mm
Main unit + A4-LCC + finisher/ Saddle finisher installed	1873 × 679 × 1192mm
Main unit + Interter + Finisher/ Saddle finisher	2079 × 679 × 1192mm
Main unit + A4-LCC + Interter + Finisher/Saddle finisher installed	2155 × 679 × 1192mm
Main unit + A3-LCC installed	1660 × 679 × 1192mm
Main unit + A3-LCC + finisher/ Saddle finisher installed	2193 × 679 × 1192mm
Main unit + A3-LCC + interter + finisher/ Saddle finisher installed	2475 × 679 × 1192mm

B. Paper feed, paper transport, and paper exit section

(1) [Paper feed section]

Type	4-stage paper feed tray (Parallel LCC + 2 tray + Multi manual paper feed)
Paper feed method	Paper is fed from the above by the front loading system.
Dehumidification heater	Service parts

(2) Paper feed tray of the main unit

a. Tray1 (Left tray in the parallel LCC)

Paper size	Paper size change method	Paper type setting	Paper size setting when shipping	Allowable paper type and weight for paper feed	Paper capacity (Standard paper)	Paper type	Paper remaining detection	Tray lift time	
								Up	Down
AB (Europe, SCA): A4, 8.5 × 11 AB (Other): A4, 8.5 × 11 Inch: 8.5 × 11, A4 (Supported by the guide change and the software setting)	Size setting by user	YES	Inch: 8.5 × 11 AB: A4	Plain paper: 60 to 105g/m ² (16 to 28lbs)	800 sheets (80g/m ²)	Normal paper, printed paper, recycled paper, letterhead, punched paper, color paper	Enable (Paper empty and 3 steps)	Within 12sec (*)	Free fall

* Time required from tray insertion to empty detection when paper is empty.

b. Tray2 (Right tray in the parallel LCC)

Paper size	Paper size change method	Paper type setting	Paper size setting when shipping	Allowable paper type and weight for paper feed	Paper capacity (Standard paper)	Paper type	Paper remaining detection	Tray lift time	
								Up	Down
AB (Europe, SCA): A4, 8.5 × 11 AB (Other): A4, B5, 8.5 × 11 Inch: 8.5 × 11, A4 (Supported by the guide change and the software setting)	A4: User can change 8.5 × 11: User can change B5: Size setting by serviceman (B5 available through bolt fixing and setting by serviceman)	YES	Inch: 8.5 × 11 AB: A4 (16K is not supported)	Plain paper: 60 to 105g/m ² (16 to 28lbs)	1200 sheets (80g/m ²)	Normal paper, printed paper, recycled paper, letterhead, punched paper, color paper	Enable (Paper empty and 3 steps)	Within 12sec (*)	Free fall

* : Time required from tray insertion to empty detection when paper is empty.

c. Tray3 (multi-purpose tray)

Paper size	Paper size change method	Paper type setting	Paper size setting when shipping	Allowable paper type and weight for paper feed	Paper capacity		Paper type	Paper remaining detection
					Normal paper	OHP		
Auto AB: A3, B4, A4, A4R, B5, B5R, A5R, 8.5 × 13 Auto inch: 11 × 17, 8.5 × 14, 8.5 × 11, 8.5 × 11R, 7.25 × 10.5R, 5.5 × 8.5R Manual: 8K, 16K, 16KR Special size :[Vertical] 139 to 297mm (5.5 to 11-5/8) :[Horizontal] 139 to 431mm (5.5 to 17) (Tab paper is of A4; limited to tab width 12mm to 20mm/8.5 × 11; tab width 6.1mm to 17mm.)	Guide adjustment by user	YES	Shipped with the paper guide width at Max.	Plain paper: 60 to 105g/m ² (16 to 28lbs) Thick paper: 106 to 128g/m ² (29 to 34lbs) 176g/m ² (65lbs) Cover 205g/m ² (110lbs) Index(*)	500 sheets (80g/m ²)	40 sheets	Normal paper, printed paper, recycled paper, letterhead, punched paper, color paper, label paper, thick paper, OHP, tab paper	Enable (Paper empty and 3 steps)

* 105g/m² or above, A4/8.5 × 11 or less. For 128g/m² or above, horizontal feed only.

d. Tray 4 (500 sheets paper feed tray)

Paper size	Paper size change method	Paper type setting	Paper size setting when shipping	Allowable paper type and weight for paper feed	Paper capacity (Standard paper)	Paper type	Paper empty detection
Auto AB: A3, B4, A4, A4R, B5, B5R, 8.5 × 13 Auto inch: 11 × 17, 8.5 × 14, 8.5 × 11, 8.5 × 11R, 7.25 × 10.5R Manual: 8K, 16K, 16KR Custom size: None	Guide adjustment by user	YES	Shipped with the paper guide width at Max.	Plain paper: 60 to 105g/m ² (16 to 28lbs) Thick paper: 106 to 128g/m ² (29 to 34lbs) 176g/m ² (65lbs) Cover 205g/m ² (110lbs) Index (*1), (*2)	500 sheets (80g/m ²)	Normal paper, recycled paper, printed paper, letterhead, punched paper, color paper, thick paper	Enable (Paper empty and 3 steps)

* 1: 105g/m² or above, A4/8.5 × 11 or less. For 128g/m² or above, horizontal feed only.

* 2: For multi copy and back surface copy, single feed only.

(3) Bypass tray

Paper size	Paper size change method	Paper type setting	Allowable paper type and weight for paper feed	Paper capacity (Standard paper)	Paper type	Paper empty detection
Auto AB: A3, B4, A4, A4R, B5, B5R, A5R, 8.5 × 13, Postcard Auto inch: 11 × 17, 8.5 × 14, 8.5 × 13, 8.5 × 11, 8.5 × 11R, 7.25 × 10.5R, 5.5 × 8.5R Manual: 8K, 16K, 16KR Custom size: [Vertical] 100 to 297mm (3.9 to 11-5/8) [Horizontal] 139 to 432mm (5.5 to 17)	Guide adjustment by user	YES	Thin paper: 52 to 59g/m ² (14 to 15lbs) (single feed only) Plain paper: 60 to 105g/m ² (16 to 28lbs) Thick paper: 106 to 128g/m ² (29 to 34lbs) 176g/m ² (65 - lbs) Cover 205g/m ² (110lbs) Index (*)	Plain paper: 100 sheets (standard paper: 80g/m ²) Postcard: 20 sheets OHP: 20 sheets	Normal paper, recycled paper, printed paper, punched paper, color paper, letterhead, thin paper, label paper, thick paper, OHP, tab paper (tab width 20mm or less), Postcard	YES

* 105g/m² or above, A4/8.5 × 11 or less. For 128g/m² or above, horizontal feed only.

(4) Duplex

System	Non stack system
Paper size	A3, B4, A4, A4R, B5, B5R, A5R, 8K, 16K, 16KR, 11 × 17, 8.5 × 14, 8.5 × 13.4, 8.5 × 13, 8.5 × 11, 8.5 × 11R, 8.5 × 5.5R, 7.25 × 10.5R
Type and weight of paper which can be passed	Plain paper: 60 to 105g/m ² (16 to 28lbs) Thick paper: 106 to 128g/m ² (29 to 34lbs) 176g/m ² (65 - lbs) Cover 205g/m ² (110lbs) Index
Paper type	Plain paper, printed paper, recycled paper, letterhead, punched paper, color paper, thick paper

(5) Paper exit size / type

Paper exit position/system	Main unit top surface face-down paper exit
Paper exit capacity	250 sheets (80g/m ² paper)
Paper exit paper size/kind	All kinds of paper which can be fed
Remaining paper detection	None
Paper exit paper full detection	Provided

C. Scanner section

(1) Resolution/Gradation

copy mode							
Platen	Magnification ratio			25 to 99	Normal ratio	101 to 171	172 to 400
	Scan resolution (dpi)			600 × 600	600 × 600	600 × 600	600 × (600 × 2)
DSPF	Magnification ratio			25 to 99	Normal ratio	101 to 117	118 to 200
	Scan resolution (dpi)	When in single copy		600 × 367	600 × 367	600 × 367	600 × 600
		SPF duplex (front) CCD		600 × 600	600 × 600	600x (600 × 2)	600x (600 × 2)
		SPF duplex (back) CIS		600 × 300	600 × 300	600 × 600	600 × 600
When in the Fax send mode and the scanner FAX broadcast mode							
Select mode			Standard	Fine text	Super fine test	Ultra fine text	600dpi send (*)
Input and send resolution (dpi)	Input resolution: OC		600 × 600	600 × 600	600 × 600	600 × 600	
	Input resolution: DSPF simplex		600 × 367	600 × 367	600 × 367	600 × 367	
	Input resolution: DSPF duplex (front) CCD		600 × 600	600 × 600	600 × 600	600 × 600	
	Input resolution: DSPF duplex (back) CIS		600 × 300	600 × 300	600 × 300	600 × 300	
	Transmission resolution	FAX	203.2 × 97.8	203.2 × 195.6	203.2 × 391	406.4 × 391	—
		Internet FAX	200 × 100	200 × 200	200 × 400	400 × 400	600 × 600
Scanner mode							
Select mode			200 × 200	300 × 300	400 × 400	600 × 600	
Input and send resolution (dpi)	Input resolution: OC		600 × 600	600 × 600	600 × 600	600 × 600	
	Input resolution: DSPF simplex		600 × 367	600 × 367	600 × 367	600 × 367	
	Input resolution: DSPF duplex (front) CCD		600 × 600	600 × 600	600 × 600	600 × 600	
	Input resolution: DSPF duplex (back) CIS		600 × 300	600 × 300	600 × 300	600 × 300	
	Transmission resolution		200 × 200	300 × 300	400 × 400	600 × 600	
Exposure lamp		None-electrode xenon lamp (Front), LED (Back)					
Scanning		256 gradations (8bit)					
Printing		2 gradations (1bit)					

* Except for FAX sending

(2) Document table

Scanning area	297 × 431.8mm
Original standard position	Left bottom reference
Detection	Provided
detection size	Automatic detection (Supported by changeover of the software destination of one kind of the detection unit.)
Inch series-1	11 × 17, 8.5 × 14, 8.5 × 11, 8.5 × 11R, 5.5 × 8.5
Inch series-2	11 × 17, 8.5 × 13, 8.5 × 11, 8.5 × 11R, 5.5 × 8.5
AB series-1	A3, B4, A4, A4R, B5, B5R, A5
AB series-2	A3, A4, A4R, B5, B5R, A5, 216 × 330
AB series-3	B4, A4, A4R, A5, 8K, 16K, 16KR
Manual setting fixed size input:	Min. : 64 × 64 to Max.297 × 432mm
Manual detection size setting	Provided
Dehumidification heater (Scanner section)	Service parts

(3) Automatic document feeder

Type	DSPF: Duplex surface scan and feed unit	
Scan speed	When in single copy	When in duplex copy
Copy	65 sheets/min (600 × 300 dpi, 1bit)	76 pages/min (600 × 300dpi, 1bit)
Fax	46 sheets/min (Normal text, 1bit)	48 sheets/min (Normal text, 1bit)
Scanner	59 sheets/min (200 × 200dpi, 1bit)	67 sheets/min (200 × 200dpi, 1bit)
Internet FAX	46 sheets/min (200 × 100dpi, 1bit)	48 sheets/min (200 × 100dpi, 1bit)
Original standard position	Center reference	
Document size	Automatic detection Inch series-1: 11 × 17, 8.5 × 14, 8.5 × 11, 8.5 × 11R, 8.5 × 5.5, A4 Inch series-2 : 11 × 17, 8.5 × 13, 8.5 × 11, 8.5 × 11R, 8.5 × 5.5, A4 AB series-1/-2: A3, B4, A4, A4R, B5, B5R, A5, 8.5 × 11, 8.5 × 13 AB series-3 : 8K, A4, A4R, B4, 16K, 16KR, A5, 8.5 × 13 Mix paper feed (Same series, same width paper) enabled Manual setting Min. 64 × 64 to Max.297 × 432mm (Scan position: Center reference)	
Document weight	50 to 128g/m ² 14 to 34lbs, 65 lbs Cover (Equivalent of 176g/m ²), 110 lbs Index (Equivalent of 205g/m ²)	
Max. loading capacity of documents	Max. 150 sheets (80g/m ²) or Max. 19.5mm	

D. Fuser section

(1) Type

System	Heat roller pressure system
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2. Functional specifications

A. Copy functions

(1) Copy speed (Continuous copy speed) (cpm)

a. Tray 1 to 4, LCC (Reduction/Normal/Enlargement)

Copy mode	Paper size	55ppm	62ppm	70ppm
Original table mode	A4, 8.5 × 11	55	62	70
	A4R, 8.5 × 11R	40	45	48
	A5R/5.5 × 8.5R, 5.5 × 8.5-R	40	45	48
	B5	55	62	70
	B5R, 7.25 × 10.5-R	40	45	48
	B4/8.5 × 14	35	39	45
	A3/11 × 17	30	34	39
	Extra	30	34	39
	Postcard	Since the next paper is fed after completion of paper exit outside the machine, it depends on the machine composition.		

(2) First copy time

Original Cover /DSPF	55ppm	62ppm	70ppm
Original Cover	4.0 seconds or less	3.5 seconds or less	3.5 seconds or less
DSPF	6.2 seconds or less	5.7 seconds or less	5.7 seconds or less

* Measurement conditions: Feeding A4/8.5 × 11 paper from the main unit tray. Polygon in rotation.

(3) Job speed

a. BLI standards

	55ppm	62ppm	70ppm
S to S	50.1cpm (91%)	56.4cpm (91%)	63.0cpm (90%)
S to D	49.0cpm (89%)	53.3cpm (86%)	58.8cpm (84%)
D to D	51.7cpm (94%)	57.0cpm (92%)	63.0cpm (90%)

* S to S: A4/8 × 11 documents 10 sheets, copy 5 sets

* S to D: A4/8 × 11 documents 10 sheets, copy 5 sets

* D to D: A4/8 × 11 documents 10 sheets (20 pages), copy 5 sets

(4) Continuous copy

Multi max. quantity	999 sheets
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(5) Resolution

Scan resolution	600 × 600dpi
Writing resolution	600 × 600dpi

(6) Copy document

Document size	Max. A3
Document type	Sheet/Book original

(7) Copy magnification ratio

Copy magnification ratio	AB series: 25%, 50%, 70%, 81%, 86%, 100%, 115%, 122%, 141%, 200%, 400% Inch series: 25%, 50%, 64%, 77%, 100%, 121%, 129%, 200%, 400%
Zoom	25 to 400% (25 to 200% for DSPF)
Preset magnification ratio	4

(8) Density, copy image quality processing

Exposure mode	Binary: Text (auto/manual), Text/Photo, photo, auto
Number of manual steps	9 steps
Toner save mode	Provided

(9) Paper size

Paper type	Standard size		Standard size
	Min.	Max.	
AB series	A6 (A6R) Postcard	A3	A3, B4, A4, A4R, B5, B5R, A5R, 8K, 16K, 16KR, Postcard
Inch series	8.5 × 5.5	11 × 17	11 × 17, 8.5 × 14, 8.5 × 13, 8.5 × 11, 8.5 × 11R, 7.25 × 10.5R, 5.5 × 8.5R

(10) Copy functions

Function (Special function)	Automatic paper selection	Yes
	Automatic magnification ratio selection	Yes
	Vertical/horizontal independent magnification ratio	Yes
	Paper type select	Yes
	Auto tray switching	Yes
	Rotation copy	Yes
	Electronic sort	Yes
	Rotation sort	Yes (Europe, SCA, Dealer area)
	Job reservation	Yes (99 items)
	Program call/register	Yes (10 items)
	Document filing	Yes
	Preheat function	Yes (Conditions set up by system setting)
	Auto power shut off function	Yes (Conditions set up by system setting)
	User management (Dept. management)	Yes (500 users)
	Process control	Yes
	Indefinite document size input	Yes
	Indefinite paper size input	Yes (Tray 3/manual paper feed)
	Mixed document feeder	Yes (MIX only)
	Binding margin	Yes (Left/Right)
	Border erase/Center erase	Yes (Border/Center/Border+Center)
	2 in 1	Yes
	Tandem copy	Yes (Network interface is required)
	Cover/Insert paper/Tab insert paper	Yes
	OHP insert paper	Yes
	Tab copy	Yes
	2in1/4in1	Yes (Centering provided)
	Card shot	Yes (Centering provided)
	Center binding	Yes (Centering provided)
	Book copy	Yes
	Duplex copy system switch	Yes
	Large volume document mode	Yes (Max. 10000 sheets) Magnification ratio/ Density/ Paper can be changed for every bundle.
	Black-white reversion	Yes (except UK)
	Mirror image	Yes
	Date print	Yes
	Stamp	Yes
	Page print	Yes
	Character print	Yes

B. Image send function

(1) Mode

Scanner	Scan to E-mail Scan to Desktop (Scan data send without depending on the IP address under the DHCP environment) Scan to FTP Scan to Folder (SMB) Scan to e-mail with Meta Scan to Desktop with Meta Scan to FTP with Meta Scan to SMB with Meta
Fax	Fax Fax to E-mail (inbound Routing) Fax to FTP/Desktop/SMB/E-mail (Document Admin)
Internet Fax	Internet Fax (Supported full mode) Internet Fax to E-mail (inbound routing) Internet Fax to FTP/Desktop/SMB/E-mail (Document Admin) (*)

* Conforming to PC-FAX/PC-internet fax

(2) Image send function (Push from the main unit)

a. Support system

Item	Scanner	Internet Fax
Corresponding server/protocol	SMTP FTP(TCP/IP) SMB	POP server SMTP server ESMTP server

SMTP, POP3 and FTP support SSL. (Web support)

b. Support image

Item	Scanner	Internet Fax	Fax
File format	TIFF, PDF	TIFF-FX (TIFF-F)	—
Compression system	<ul style="list-style-type: none"> Non-compression G3 (1-dimensional) = MH (Modified Huffman) G4 = MMR (Modified MR) 	MH, MMR	MH, MR, MMR, JBIG

c. Image process

Item	Scanner	Internet Fax	Fax
half tone reproduction	Equivalent of 256 steps		
Density adjustment	Auto + 5 steps		
Image quality selection	Half tone ON/OFF		
Resolution (depends on file format/ transmission method)	200 × 200dpi	Standard (200 × 100dpi) (middle tone not allowed)	Standard (203.2 × 97.8dpi) (middle tone not allowed)
		Fine (200 × 200dpi)	Fine (203.2 × 195.6dpi)
	300 × 300 dpi	Super fine (200 × 400dpi)	Super fine (203.2 × 391dpi)
	400 × 400 dpi	Ultra fine (400 × 400dpi)	Ultra fine (406.4 × 391dpi)
	600 × 600 dpi	600 × 600dpi	—

d. Address specification

Item	Scanner	Internet Fax	Fax
Address specification	Specified by one-touch, group, or direct address input. Input from the soft keyboard (Scanner/Internet FAX) Input the 10-key (Fax) Selection from LDAP server Resend Quick		
Setting of default address	No		
Number of One-touch address key registration	Max. total 999 items (of which 200 items can be assigned to FTP, desktop and/or SMB)		
Inbound Routing List	50 items		
Inbound routing addresses	1000 items		
Sender Number/ Address Registration (Inbound Routing)	500 items		
Number of Group (1 key) address registration	Number of Group (1 key) address registration : Max. 500 items		
Program	8 items		
Direct address input	Input from the soft keyboard		Entry by 10-key, # key, * key
Chain dial	—		Yes (pause key)
Resend	Call up nearest address which are specified as a single destination		
Shortcut for address selection (quick key)	Use the 10-key to call up registered numbers of addresses.		
CC/BCC sending	Yes	—	
Item name	Selective/direct entry from the list		—
File name	Selective/direct entry from the list		—
Return mail address	—	(1 default address fixed as sender name)	(1 default address fixed as sender name)
Sender name	Yes (Selective from the list/direct entry from the list/ selection from LDAP server)	No	
Transmission message (message body)	—		
Mail footer preset	—		

e. Multiple address specification

Item	Scanner	Internet Fax	Fax
Address specification	Specification by one-touch/group/direct address input. *		
No. of registration items of direct address input *	Group, interface broadcasting total max: 5,000 items		
Broadcast send	Yes (Broadcast send is disabled for FTP/Desktop/SMB)	Yes	
Sequential send request	—	Yes	

* Direct address input: 10-key other than one-touch, and soft keyboard input

- When broadcasting including FAX, the resolution is that of FAX.

- When broadcasting of the internet FAX and the scanner, the resolution is that of the internet FAX.
- The compression type when broadcasting depends on the conforming of the system setting.

f. Send function

Item		Scanner	Internet Fax	Fax
Memory transmission		— When the upper limit value is set, memory send is performed.	Yes	
Onhook		—	Yes	
Quick online send		—	Yes	
Direct transmission		—	Only in Onhook	
Automatic reduction send		—	Yes (A3→B4, A3→A4, B4→A4)	
Rotation send		Yes (Manual)	Yes (Auto)	
Zoom send		Yes (Zooming of standard size to standard size only. (There are combinations that cannot be rotated.))		
Recall mode	Error	—	Yes	
	Busy	—	—	Yes
		The conditions of recall number and time can be set with the system setting.		
Book document send		Yes		
Long document send		Yes (Max.800mm)		
File division send		Yes	—	
Send size limit		Yes		—
Stamp function		Yes		
No. of registration items of senders		Max. 999 items		
Address Confirmation Function (Prevention of mis-send)		—		Yes (Soft switch)

g. Receive function

Item	Internet Fax	Fax
Automatic reception	Yes	
Manual reception	Yes	
Memory reception	Yes	
Fixed size reduction reception	Yes	
Specified size zoom reception	—	
Rotation reception	Yes	
Division reception	Yes (Conditions are set by the system.)	
Duplex reception	Yes (Conditions are set by the system.)	
2 in 1 reception	—	
Domain/Address specification receive enable	Yes (50 items)	—
Domain/Address specification receive disable	Yes (50 items)	—
Certain rejection number setting	—	Yes (50 items)
External telephone connection remote	—	Yes
Answering telephone connection	—	No (PAT countermeasure)
Transfer function when output is disable	Yes	
Automatic boot mode	Yes	

h. Report/list function

Item	Scanner	Internet Fax	Fax
Communication record table	Yes		
Communication result table	NO	Yes	
Address/ Telephone number table	Yes		
Group table	Yes		
Sender table	Yes (Sender registration table)	Yes (Described on the system setting list.)	
Program table	Yes		
Memory box table	—		Yes (FAX mode only)
Memory contents clear notification table	— (May be outputted in case of an error.)		
Receivable/ rejection number list	—		Yes
Receivable/ Rejection address list	Yes		—
Transfer-to-email table list	Yes		
Transfer-to-administrator list	Yes		
Web setting list	Yes		

i. Other functions

Item	Scanner	Internet Fax	Fax
Time specification	Yes		
Poling receive	—		Yes
Bulletin board send	—		Yes
Cover function	—		NO
Sender print	—	Yes	
Page division	Yes		
Page connection	NO		
Confidential data (Remote machine)	—		Yes (F code system)
Relay broadcast indication	—		Yes (F code system)
Send message	NO		
Edge erase	Yes		
Center erase	Yes		
2 in 1	Yes		
Card shot	Yes		
Send to PC	—	PC-iFAX	PC-FAX
Linearized PDF	Corresponds by Net Scan Tool	—	—

j. Record size

Item	Internet Fax	Fax
Max. record width	293mm	
Record size	A3 to A5/11 x 17 to 5.5 x 8.5	

k. F code communication

Item	Fax
Sub address	Yes (Max. 20 digits)
Pass code	Yes (Max. 20 digits)

C. Printer function

(1) Platform

- IBM PC/AT compatible machine
- Macintosh

(2) Support OS

OS		Custom PCL5e/6 SPDL2	Custom PS	PPD	GPD
Windows	98	Yes	Yes	Yes	No
	Me	Yes	Yes	Yes	No
	NT 4.0 SP5 or later	Yes	Yes	Yes	No
	2000	Yes	Yes	Yes	No
	XP	Yes	Yes	Yes	No
	Server2003	Yes	Yes	Yes	No
	Server2003 x64	No	No	No	Yes
	XP x64	No	No	No	Yes
Mac	9.0 to 9.2.2	No	No	Yes	No
	X 10.1.5	No	No	Yes	No
	X 10.2.8	No	No	Yes	No
	X 10.3.9	No	No	Yes	No
	X 10.4 - X 10.4.7	No	No	Yes	No

(3) Command system

Command system	
PCL5e, PCL6 compatible	Standard
PS3 compatible	Option (PS expansion kit)

(4) Built-in fonts

Bitmap fonts	1 kind of font
PCL5 Latin font	80 PCL Latin fonts (SPDL) Standard built-in fonts
PCL Kanji font	Option (2 ACT Fonts)
PS Latin font	136 Type 1 Latin fonts Auxiliary to the PS expansion kit
Bar code font	Option

- The printing system is provided with one bitmap font compatible with HP and 80 European outline fonts for PCL.
- In addition to this, when the PS expansion kit is installed, it is provided with 136 European outline fonts for PS and 5 Japanese outline fonts.

(5) Support print channel

Support print channel	NetWare environment PSERVER/RPRINT LPR IPP PAP : EtherTalk (AppleTalk) FTP FTP Pull Print NetBEUI Raw Port (Port 9100) USB 2.0 HTTP (WEB Submit Print) POP3 (E-mail To Print)
USB	USB 1.1: Windows98/98SE/Me/2000/XP only USB 2.0: Windows 2000/XP only
For NetWare environment PSERVER/RPRINT	Print channel in PSERVER/PRINT mode to be used in netware environment
LPR	UNIX LPR/LPD command-compatible print channel
IPP	Print channel in compliance with IPP1.0
PAP: EtherTalk (AppleTalk)	Print channel used in the Macintosh environment
FTP	Function to print receive data by use of the builtin FTP server.
NetBEUI	Microsoft NetBEUI compatible print channel
Port9100	Supports 9100 TCP port (Raw Port).
WEB Submit Print	This channel is used to set and print directly the files on the network by Web Page.

E-mail To Print	This channel is used to print only an attached file directly when an E-mail with an attached file is received.
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- IPP, and HTTP supports SSL.

(6) Command compatibility

PCL5e compatible	PCL5e is aimed to provide compatibility with HP LaserJet 4050.
PCL6 compatible	PCL6 is aimed to provide compatibility with HP LaserJet 4050.
PostScript compatible	PostScript is aimed to provide compatibility with Adobe PostScript.

(7) Environment setting

Setting item	Outline
Default setting	Basic setting of printing such as the number of copies and printing direction.
PCL setting	PCL symbol setting and font setting
PS setting	Setting of print enable/disable in a PS error

(8) Print function

Functions	Content	PCL6/5e	PS (OPTION)
Multiple Pamphlet	Two or more center bindings are collected into one.	Yes	Yes
Barcode font	Compatible with JetCAPS BarDIMM emulation. True type font for barcode usable in PCL5e.	Yes (5e only)	No
Network tandem print	Two main units are connected in network and printing can be made by the linkage of the two main unit.	Yes	Yes
Windows Cluster Print	Even if one Windows server is down, the mirror server will execute the interrupted print job instead of the down server.	Yes	Yes (Windows only)
PDF/TIFF direct print	PDF/TIFF files can be printed without the printer drivers. (1) Print of an attached file of an e-mail (2) Print from the FTP server (3) Print from the setting file on the Web page	Yes (PDF is No)	Yes
E-Mail To Print	When an e-mail with an attached file is received, only the attached file is printed directly.	Yes	Yes
PULL print from front panel	The FTP server is checked from the front panel and only the specified file is pull-printed (direct print).	Yes	Yes
USB PULL print	The FTP server is checked from the front panel and only the specified file is pull-printed (direct print).	No	No
SMB PULL print	The file folder on the network is checked from the front panel, and the specified file is pull-printed.	No	No
FTP PUSH print	Data are transferred from the client PC to the MFP server, and direct print is executed.	Yes	Yes
Print by setting the file on the Web Page. [Web Submit Print]	A file on the network is set on the Web page, and direct print is executed.	Yes	Yes
ROP	One RIP process allows to print two or more copies.	Yes	Yes
Conforming to multi access	RIP process can be executed during printing. Printing can be executed during scanning.	Yes	Yes
Setting of the paper direction for duplex print of letterhead paper and punched paper	For letterhead and punching sheet which has attribute of front and back, duplex print can be made in the proper front and back and proper page sequence.	Yes	Yes
Manual specification type/Size detection enable setting	When the set value of the manual tray type on the main unit differs from that on the driver side, the set value of the printer driver has priority over the set value on the main unit and printing is made.	Yes	Yes
Management of setting environment under the terminal server control	Under the meta-frame environment (under the auto print create environment), the print setting of each client is saved. (In order to avoid the trouble of having to set at every login.)	Yes	Yes (Windows only)
Driver delivery function	The administrator can distribute the driver to each client by PAU4.	Yes	Yes (Windows only)
Form overlay	The form is downloaded to the main unit in advance, and only the data are sent to the main unit, where data are loaded into the form to be printed.	Yes (5e only)	Yes
Conforming to Planet Press	Supports the Objectif Lune PlanetPress (which performs mapping between the downloaded form and the variable data in the printer).	No	Yes (Windows only)
Management of blind Web Page by the password	In order to block access to the address of a blind Web Page.	Yes	Yes
Bonjour for Macintosh environment	The technology developed by Apple for detecting and connecting peripheral devices on the network automatically Without setting by the user, the computer, the peripheral devices, and the software can be dynamically connected in network. (OS X 10.3 and later)	No	Yes
Document control print	The pattern is printed on paper. (When the data security kit is installed)	No	No
Missing-prevention marking	The paper edge is marked in order to judge paper missing.	No	No
Layout print	The layout supported for various print purposes can be made.	No	No
No-line binding	To prevent against bulge at the end when binding pages, center binding is executed for small lot of pages.	No	No
Chapter division	A white sheet is automatically inserted so that the head page of each chapter comes on the odd (or even) page.	No	No

(9) Windows driver function

a. Frequently used functions

Functions	PCL5e	PCL6	PS	PPD (*)
Number of copies	1 to 999			
Print direction	Vertical/Horizontal			
Duplex print	Simplex print, duplex print (Left/Upper/Right binding)			Simplex print, duplex print (Long side/Short side binding)
Center binding	Invoice on Letter, Letter on Ledger, A5 on A4, A4 on A3, B5 on B4, Letter on Letter, Ledger on Ledger, A4 on A4, A3 on A3, B4 on B4			Windows2000, XP: Yes Other OS: No
Binding direction	Left/Upper/Right			Long side/Short side
N-up	2/4/6/8/9/16			WindowsNT 4.0: — Windows2000, XP: 2/4/6/9/16 Other OS: 2/4
N-up direction	[2-Up]: Left to Right / Right to Left [4, 6, 8, 9, 16-Up]: Right, and Down / Down, and Right Left, and Down / Down, and Left			
N-up frame line	Yes/No			Yes (Always prints border line)

* For printing, the PS driver bundled in Windows is required.

b. Paper feed system

Functions	PCL5e	PCL6	PS	PPD (*)
Paper size	A3/B4/A4/B5/A5/Postcard/Ledger/Legal/Foolscap/Letter/Executive/Invoice/8K/16K			
Paper type	Normal paper, letterhead, printed paper, punched paper, recycled paper, color paper, label sheet, thick paper, OHP, tab paper			
User definition type	7 types			
Paper feed system	Auto paper feed, Tray 1/2/3/4/5, manual feed			
Cover paper/Back cover page	Yes/No Setting of Duplex/Simplex/No print			—
Cover paper	Yes			
Insert paper	Yes			—
OHP insert paper	No/Yes (White paper) Yes (Printed paper)			—

* For printing, the PS driver bundled in Windows is required.

c. Paper exit method

Functions	PCL5e	PCL6	PS	PPD (*)
Paper exit destination setting	<ul style="list-style-type: none"> Center tray Finisher → Tray 1 Finisher → Tray 2 Saddle stitch finisher → Tray 1 Saddle stitch finisher → Tray 2 Saddle stitch finisher → Saddle stitch tray 			
Staple	Finisher <ul style="list-style-type: none"> No staple 1 position 2 positions Saddle stitch finisher <ul style="list-style-type: none"> No staple 1 position 2 positions 			
Offset	Yes (every time)			

* For printing, the PS driver bundled in Windows is required.

d. Image quality

Function	PCL5e	PCL6	PS	PPD (*)
Resolution	600/300dpi		600dpi	
Halftone	—	(55ppm/ 62ppm) Yes/No (70ppm) —	Screen Frequency 8.0 to 360.0 in 0.1 steps Screen angle 0.0 to 360.0 in 0.1 steps	
Graphic mode selection	Raster HP-GL2	Raster vector	—	
Smoothing	55/62ppm: Yes 70ppm : No			
Toner save	Yes/No			
Ultra fine photo	55/62ppm: Yes 70ppm : No			
Black-white reversion	—		Yes/No	
Mirror image	—		Horizontal /Vertical	Horizontal
Zoom	—			25 to 400%
Fit page	Yes/No			—

* For printing, the PS driver bundled in Windows is required.

e. Font

Function	PCL5e	PCL6	PS	PPD (*)
Usable built-in fonts	80 fonts Category 3 and 4 In font chapter		136 fonts Category 1In font chapter 5 Japanese fonts Category 2 In font chapter	(For Windows NT4.0) Traditional 35 Latin fonts Category 1 In font chapter (For Other OS) 136 Latin fonts Category 1 In font chapter 5 Japanese fonts Category 2 In font chapter
Download system which can be selected	Bitmap, TrueType, Graphics		Bitmap, Type 1, TrueType	

f. Other functions

Function	PCL5e	PCL6	PS	PPD (*)
Units composition setting	Yes			
Watermark	Yes			Yes (Limitations on functions)
Overlay	Yes			—
Print hold	Yes			—
Job retention	Yes			—
Sample print	Yes			—
Print department management	Yes			—
User setting	Yes			—
Option auto setting	Yes			—
Job complete notification	Yes			—
Tandem print	Yes			—
Carbon print	Yes			—
Enlargement continuous copy	—			
Vertical/horizontal independent magnification ratio	—		Yes	—
Cover insertion +center binding	Yes			—
Document filing	Yes			—

* For printing, the PS driver bundled in Windows is required.

(10) Windows PPD, Macintosh PPD driver function

a. Frequently used functions

Functions	Macintosh PPD
Number of copies	1 to 999
Print direction	Vertical/Horizontal
Duplex print	Simplex print, duplex print (Left/Upper binding)
Center binding	Yes
Binding direction	Long side/Short side
N-up	2/4/6/8/16
N-up direction	Z / Reverse Z/N / Reverse N
N-up frame line	None / Single Hairline / Single Thinline / Double Hairline / Double Thinline

b. Paper feed system

Functions	Macintosh PPD
Paper size	A3, B4, A4, B5, A5, Postcard, Ledger, Legal, Foolscap, Letter, Executive, Invoice, 8K, 16K
Paper type	Normal paper, letterhead, printed paper, punched paper, recycled paper, color paper, label sheet, thick paper, OHP, tab paper
User definition type	7 types
Paper feed system	Auto paper feed, Tray 1/2/3/4/5, manual feed
Cover paper/Back cover page	Yes/No
Cover paper	Yes
Insert paper	NO
OHP insert paper	No/Yes (White paper), Yes (Printed paper)

c. Paper exit method

Function	Macintosh
Paper exit destination setting	Top tray Finisher Tray1 Tray2 Saddle stitch finisher Tray1 Tray2 Saddle stitch tray
Staple	Finisher • No staple • 1 position • 2 positions Saddle stitch finisher • No staple • 1 position • 2 positions • Saddle stitch
Offset	Yes (every time)

d. Image quality

Function	Macintosh
Resolution	600dpi
Halftone	(55ppm/62ppm) Yes/No (70ppm) —
Graphic mode selection	—
Smoothing	(55ppm/62ppm) : Yes/No (70ppm) : —
Toner save	Yes/No
Ultra fine photo	—
Black-white reversion	Yes/No
Mirror image	Horizontal/Vertical
Zoom	25 to 400%
Fit page	No

e. Font

Function	Macintosh
Usable built-in fonts	Traditional 35 PS Latin fonts Category 1 In font chapter 5 fonts Category 2 In font chapter

Function	Macintosh
Download system which can be selected	Yes (Mac OS9.x.x - LaserWriter)

f. Other functions

Function	Macintosh
Units composition setting	Yes
Watermark	Yes
Overlay	No
Print hold	Yes
Job retention	Yes (PIN code input enable)
Sample print	Yes
Print department management	Yes
User setting	—
Option auto setting	Yes
Job complete notification	—
Tandem print	Yes
Carbon print	Yes
Enlargement continuous copy	—
Vertical/horizontal independent magnification ratio	—
Cover insertion +center binding	—
Document filing	—

(11) Print performance

Model	PDL type	Word: script.doc (eng.) A total of 9 pages	Excel: xl8garyl.xls A total of 20 pages	PowerPoint: Pw4051.ppt A total of 6 pages
55ppm	PCL6	16.2 sec	33.7 sec	10.5 sec
	PCL5e	15.4 sec	32.4 sec	13.0 sec
	PS	15.8 sec	50.0 sec	13.9 sec
	ppd	14.1 sec	37.1 sec	11.6 sec
62ppm	PCL6	13.8 sec	31.4 sec	12.8 sec
	PCL5e	15.4 sec	31.5 sec	12.7 sec
	PS	15.6 sec	49.9 sec	13.9 sec
	ppd	13.4 sec	41.3 sec	12.2 sec
70ppm	PCL6	14.6 sec	31.1 sec	11.9 sec
	PCL5e	15.4 sec	30.5 sec	13.3 sec
	PS	14.6 sec	49.2 sec	13.4 sec
	ppd	14.3 sec	37.0 sec	11.0 sec

* Measurement conditions

(Windows)

PC: Pentium III 1GHz 128MB

OS: Windows XP Professional

Driver setting: Default

Software: Microsoft Office XP

(Macintosh)

PC: PowerPC G3 700MHz 256MB

D. Document filing function

(1) Basic function

Document filing capacity	16GB	
Fixed folder	Standard folder/ User folder	Max. 20000 pages or 3000 files
	Temporary folder	Max. 10000 pages or 1000 files
Number of pages for one file	Conforms to the large volume document mode. (Within the HD capacity)	
Number of folders which can be formed in the user folder	Max. 500 folders	
Number of users which can be registered	Max. 500 users	

(2) Data operation by each function

Job	Each folder in the standard folder/ user folder		Temporary folder	
	Storage of sharing	Storage of Confiden- tial	Storage of sharing	Storage of Confiden- tial
Copy	Yes	Yes	Yes	No
Printer	Yes	Yes	Yes	No
Direct print (FTP pull)	No	No	Yes	No
Direct print (FTP push)	No	No	Yes	No
Direct print (e-mail)	Yes	No	Yes	No
Direct print (Web)	No	No	Yes	No
Scan send	Yes	No	Yes	No
Scan to HDD	Yes	Yes	No	No
FAX receive	No	No	No	No
FAX send	Yes	No	Yes	No
Internet FAX receive	No	No	No	No
Internet FAX send	Yes	No	Yes	No
PC-Fax/PC-Internet Fax transmission	Yes	Yes	Yes	No
Data input	Yes	Yes	Yes	No

E. Safety and environmental standards

(1) Safety standards

Item	Standard			
	North America	Europe (Western/ North)	Australia	China / Taiwan
Safety standards	UL60950-1, CSA C22.2 No.60950-1 -03, 21CFR (Laser)	EN60950-1, IEC60950-1, IEC60825-1 (Laser)	IEC60950-1, IEC60825-1 (Laser)	
Environ- mental standards (EMC)	FCC Part 15 Class B, ICES-003 Class B	EN55022 Class B, CISPR22 Class B, EN61000-3-2, EN61000-3-3, EN55024	AS/NZS CISPR22 Class B (EN 55022 Class B)	GB9254 Class B, GB17625.1, GB/T17618, CNS13438 Class B
Line standards (When the FAX expansion board is installed.)	FCC Part 68, ICCS-03	TS103021 or TBR21, EG201120, EG201121	AS/ACIF S0002, AS/NZS 60950	GB/T3382.1, GB/T3382.2, YD/T514, YD/T589, YD/T703, YD/T965, YD/T993, PSTN01

(2) Environmental standards

Standard
International Energy Star Program MFP (EPA)
Environmental Choice Program (ECP)
Nordic swan
WEEE (The machine shipped for Europe only)
European ROHS regulations
Taiwan battery

(3) Noise

Operating	7.3B or less
Standby (Standby mode)	5.5B or less

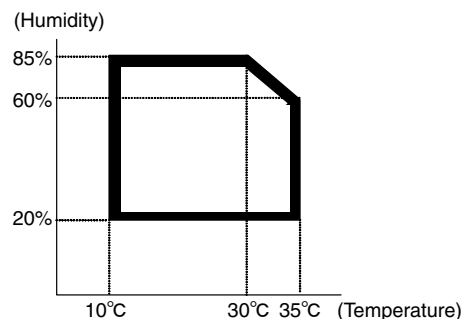
3. Environmental conditions

A. Environmental conditions for use of the main

Temperature: 10°C to 35°C

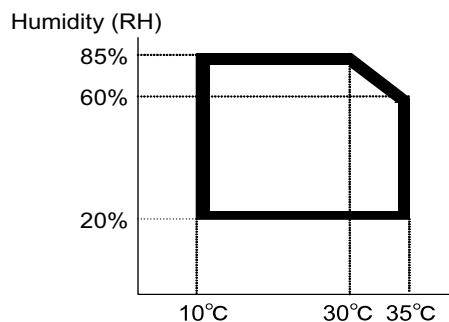
Humidity: 20 to 85% RH

Air pressure: 590 to 1013hPa (height: 0 to 2000m)

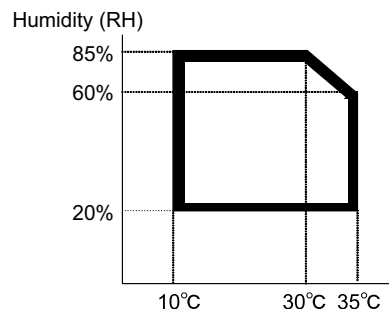


B. Environmental conditions for transit of the main unit

-20°C to 45°C (No condensation)



C. Operating environmental conditions (Supply)



D. Ambient conditions for transporting

-20°C to 45°C (No condensation)

E. Environmental conditions for storing unopened consumable parts

-10°C to 40°C (No condensation)

F. Standard storage period of unopened consumable parts

- 1) Photoconductor drum
36 months from the production month
- 2) Toner/Developer
24 months from the production month

[3] CONSUMABLE PARTS

1. Supply system table

A. U.S.A, Canada, South and Central America

No.	Part name	Content	Life	Model name	Packing	Remark
1	Toner cartridge (Black)	Toner cartridge (Black) (Toner; Net weight 1815g) With IC chip x 10	830k (83k x 10)	AR-621MTA	1	* Life setting by A4 6% document
2	Developer (Black)	Developer (Black) (Developer; Net weight 725g) x 10	62/70ppm: 1500k (150k x 2bags x 5) 55ppm: 1250k (125k x 2bags x 5)	AR-620MD	1	Two bags needed.
3	Drum	OPC drum x 1	62/70ppm: 300k 55ppm: 250k	AR-620DR	10	

B. Europe affiliates (Including East Europe, Russia)/Australia/New Zealand/UK

No.	Part name	Content	Life	Model name	Packing	Remark
1	Toner cartridge (Black)	Toner cartridge (Black) (Toner; Net weight 1815g) With IC chip x 10	830k (83k x 10)	AR-621LT	1	* Life setting by A4 6% document
2	Developer (Black)	Developer (Black) (Developer; Net weight 725g) x 10	62/70ppm: 1500k (150k x 2bags x 5) 55ppm: 1250k (125k x 2bags x 5)	AR-620LD	1	Two bags needed.
3	Drum	OPC drum x 1	62/70ppm: 300k 55ppm: 250k	AR-620DM	10	

C. Asia affiliates

No.	Part name	Content	Life	Model name	Packing	Remark
1	Toner cartridge (Black)	Toner cartridge (Black) (Toner; Net weight 1815g) With IC chip x 10	830k (83k x 10)	AR-621CT	1	* Life setting by A4 6% document
2	Developer (Black)	Developer (Black) (Developer; Net weight 725g) x 10	62/70ppm: 1500k (150k x 2bags x 5) 55ppm: 1250k (125k x 2bags x 5)	AR-620CD	1	Two bags needed.
3	Drum	OPC drum x 1	62/70ppm: 300k 55ppm: 250k	AR-620DR	10	

D. Hong Kong

No.	Part name	Content	Life	Model name	Packing	Remark
1	Toner cartridge (Black)	Toner cartridge (Black) (Toner; Net weight 1815g) With IC chip x 10	830k (83k x 10)	AR-621CT-C	1	* Life setting by A4 6% document
2	Developer (Black)	Developer (Black) (Developer; Net weight 725g) x 10	62/70ppm: 1500k (150k x 2bags x 5) 55ppm: 1250k (125k x 2bags x 5)	AR-620CD-C	1	Two bags needed.
3	Drum	OPC drum x 1	62/70ppm: 300k 55ppm: 250k	AR-620DR-C	10	

E. China

No.	Part name	Content	Life	Model name	Packing	Remark
1	Toner cartridge (Black)	Toner cartridge (Black) (Toner; Net weight 1650g) With IC chip x 1	83k (83k x 1)	AR-622ST-C	10	* Life setting by A4 6% document
2	Developer (Black)	Developer (Black) (Developer; Net weight 725g) x 1	62/70ppm: 150k	AR-620SD-C	10	Two bags needed.
3	Drum	OPC drum x 1	62/70ppm: 300k	AR-620DR-C	10	

F. Middle East/Philippine

No.	Part name	Content	Life	Model name	Packing	Remark
1	Toner cartridge (Black)	Toner cartridge (Black) (Toner; Net weight 1815g) With IC chip x 10	830k (83k x 10)	AR-621ET	1	* Life setting by A4 6% document
2	Developer (Black)	Developer (Black) (Developer; Net weight 725g) x 10	62/70ppm: 1500k (150k x 2bags x 5) 55ppm: 1250k (125k x 2bags x 5)	AR-620CD	1	Two bags needed.
3	Drum	OPC drum x 1	62/70ppm: 300k 55ppm: 250k	AR-620DR	10	

G. Taiwan

No.	Part name	Content	Life	Model name	Packing	Remark
1	Toner cartridge (Black)	Toner cartridge (Black) (Toner; Net weight 1815g) With IC chip x 10	830k (83k x 10)	AR-621ET	1	* Life setting by A4 6% document
2	Developer (Black)	Developer (Black) (Developer; Net weight 725g) x 10	62/70ppm: 1500k (150k x 2bags x 5) 55ppm: 1250k (125k x 2bags x 5)	AR-620LD	1	Two bags needed.
3	Drum	OPC drum x 1	62/70ppm: 300k 55ppm: 250k	AR-620DM	10	

2. Maintenance parts list

A. U.S.A, Canada

No.	Part name	Content	Life	Model name	Packing	Remark
1	Maintenance kit 1	Side seal F x 1 Side seal R x 1 MC cleaning unit x 1 Cleaner blade x 1 Drum separation pawl x 4 Screen grid x 1 Toner reception seal x 1 Charging plate x 1 Paper dust removal unit x 1 DV seal x 1 DV side seal F x 1 DV side seal R x 1 Toner filter x 1	300K	AR-620KA	10	
2	Maintenance kit 2	Transfer cleaning roller x 1 Transfer belt x 1 Transfer roller x 1 Transfer gear x 1	300K	AR-620KB	10	
3	Upper heat roller kit	Upper heat roller x 1 Fusing separation pawl (Upper) x 6	300K	AR-620UH	10	
4	Lower heat roller kit	Lower heat roller x 1 Fusing separation pawl (Lower) x 4	300K	AR-620LH	10	
5	Cleaner blade	Cleaner blade x 10	300K (x 10)	AR-620CB	1	AR-620CB = (AR-620BL) x 10
6	Cleaning kit	Lower CL roller DG2 x 10 CL roller SP x 20 CL roller bearing x 40 Auxiliary CL roller SP x 20 CL auxiliary roller DG x 10 Heat CL sheet base N AS x 10 Web roller DG2 x 10 Pressure roller DG2 x 10 Web bearing x 20 Pressure bearing x 20 Pressure SP x 20	300K (x 10)	MX-705CR	1	MX-705CR = (MX-705RC) x 10
7	Fusing unit	Fusing UN (Heater lamp 120V) x 1	—	MX-705FU1	1	
8	Heat roller kit	Heat roller x 1 Heat roller bearing x 2	300K	AR-620HR	10	
9	DSPF roller kit	DSPF paper feed roller x 1 DSPF pickup roller x 1 DSPF separation roller x 1	100K	AR-620DF	10	
10	Paper feed roller kit	Main unit paper feed roller x 1 Main unit paper feed pickup roller x 1 Main unit paper feed separation roller x 1	100K	AR-620RT	10	
11	Staple cartridge	Finisher staple x 3	5,000 times x 3	SF-SC11	20	Cartridge for AR-F15 (Common with the cartridge for AR-F11/F12)
12	Staple cartridge	Saddle finisher staple x 3	2,000 times x 3	AR-SC3	40	Cartridge for AR-F16 (Common with the cartridge for AR-F12)

B. Europe affiliates (Including East Europe, Russia) Australia/New Zealand/UK

No.	Part name	Content	Life	Model name	Packing	Remark
1	Maintenance kit 1	Side seal F x 1 Side seal R x 1 MC cleaning unit x 1 Cleaner blade x 1 Drum separation pawl x 4 Screen grid x 1 Toner reception seal x 1 Charging plate x 1 Paper dust removal unit x 1 DV seal x 1 DV side seal F x 1 DV side seal R x 1 Toner filter x 1	300K	AR-620KA	10	
2	Maintenance kit 2	Transfer cleaning roller x 1 Transfer belt x 1 Transfer roller x 1 Transfer gear x 1	300K	AR-620KB	10	
3	Maintenance kit 3	Upper heat roller x 1 Crimping roller EX x 1 Upper separation pawl N x 6 Lower separation pawl x 4 Heat roller x 1 Heat roller bearing x 2 Lower CL roller DG2 x 1 CL roller SP x 2 CL roller bearing x 4 Auxiliary CL roller SP x 2 CL auxiliary roller DG x 1 Heat CL sheet base N AS x 1 Web roller DG2 x 1 Pressure roller DG2 x 1 Web bearing x 2 Pressure bearing x 2 Pressure SP x 2	300K	MX-705KC	5	
4	Fusing unit	Fusing UN (Heater lamp 230V) x 1	—	MX-705FU	1	
5	DSPF roller kit	DSPF paper feed roller x 1 DSPF pickup roller x 1 DSPF separation roller x 1	100K	AR-620DF	10	
6	Paper feed roller kit	Main unit paper feed roller x 1 Main unit paper feed pickup roller x 1 Main unit paper feed separation roller x 1	100K	AR-620RT	10	
7	Staple cartridge	Finisher staple x 3	5,000 times x 3	SF-SC11	20	Cartridge for AR-F15 (Common with the cartridge for AR-F11/F12)
8	Staple cartridge	Saddle finisher staple x 3	2,000 times x 3	AR-SC3	40	Cartridge for AR-F16 (Common with the cartridge for AR-F12)

C. Middle East/Asia/South and Central America

No.	Part name	Content	Life	Model name	Packing	Remark
1	Maintenance kit 1	Side seal F x 1 Side seal R x 1 MC cleaning unit x 1 Cleaner blade x 1 Drum separation pawl x 4 Screen grid x 1 Toner reception seal x 1 Charging plate x 1 Paper dust removal unit x 1 DV seal x 1 DV side seal F x 1 DV side seal R x 1 Toner filter x 1	300K	AR-620KA	10	
2	Maintenance kit 2	Transfer cleaning roller x 1 Transfer belt x 1 Transfer roller x 1 Transfer gear x 1	300K	AR-620KB	10	
3	Maintenance kit 3	Upper heat roller x 1 Crimping roller EX x 1 Upper separation pawl N x 6 Lower separation pawl x 4 Heat roller x 1 Heat roller bearing x 2 Lower CL roller DG2 x 1 CL roller SP x 2 CL roller bearing x 4 Auxiliary CL roller SP x 2 CL auxiliary roller DG x 1 Heat CL sheet base N AS x 1 Web roller DG2 x 1 Pressure roller DG2 x 1 Web bearing x 2 Pressure bearing x 2 Pressure SP x 2	300K	MX-705KC	5	
4	Fusing unit	Fusing UN (Heater lamp 230V) x 1	—	MX-705FU	1	
5	DSPF roller kit	DSPF paper feed roller x 1 DSPF pickup roller x 1 DSPF separation roller x 1	100K	AR-620DF	10	
6	Paper feed roller kit	Main unit paper feed roller x 1 Main unit paper feed pickup roller x 1 Main unit paper feed separation roller x 1	100K	AR-620RT	10	
7	Staple cartridge	Finisher staple x 3	5,000 times x 3	SF-SC11	20	Cartridge for AR-F15 (Common with the cartridge for AR-F11/F12)
8	Staple cartridge	Saddle finisher staple x 3	2,000 times x 3	AR-SC3	40	Cartridge for AR-F16 (Common with the cartridge for AR-F12)

D. Hong Kong

No.	Part name	Content	Life	Model name	Packing	Remark
1	Maintenance kit 1	Side seal F x 1 Side seal R x 1 MC cleaning unit x 1 Cleaner blade x 1 Drum separation pawl x 4 Screen grid x 1 Toner reception seal x 1 Charging plate x 1 Paper dust removal unit x 1 DV seal x 1 DV side seal F x 1 DV side seal R x 1 Toner filter x 1	300K	AR-620KA	10	
2	Maintenance kit 2	Transfer cleaning roller x 1 Transfer belt x 1 Transfer roller x 1 Transfer gear x 1	300K	AR-620KB	10	
3	Maintenance kit 3	Upper heat roller x 1 Crimping roller EX x 1 Upper separation pawl N x 6 Lower separation pawl x 4 Heat roller x 1 Heat roller bearing x 2 Lower CL roller DG2 x 1 CL roller SP x 2 CL roller bearing x 4 Auxiliary CL roller SP x 2 CL auxiliary roller DG x 1 Heat CL sheet base N AS x 1 Web roller DG2 x 1 Pressure roller DG2 x 1 Web bearing x 2 Pressure bearing x 2 Pressure SP x 2	300K	MX-705KC	5	
4	Fusing unit	Fusing UN (Heater lamp 230V) x 1	—	MX-705FU	1	
5	DSPF roller kit	DSPF paper feed roller x 1 DSPF pickup roller x 1 DSPF separation roller x 1	100K	AR-620DF	10	
6	Paper feed roller kit	Main unit paper feed roller x 1 Main unit paper feed pickup roller x 1 Main unit paper feed separation roller x 1	100K	AR-620RT	10	
7	Staple cartridge	Finisher staple x 3	5,000 times x 3	SF-SC11	20	Cartridge for AR-F15 (Common with the cartridge for AR-F11/F12)
8	Staple cartridge	Saddle finisher staple x 3	2,000 times x 3	AR-SC3	40	Cartridge for AR-F16 (Common with the cartridge for AR-F12)

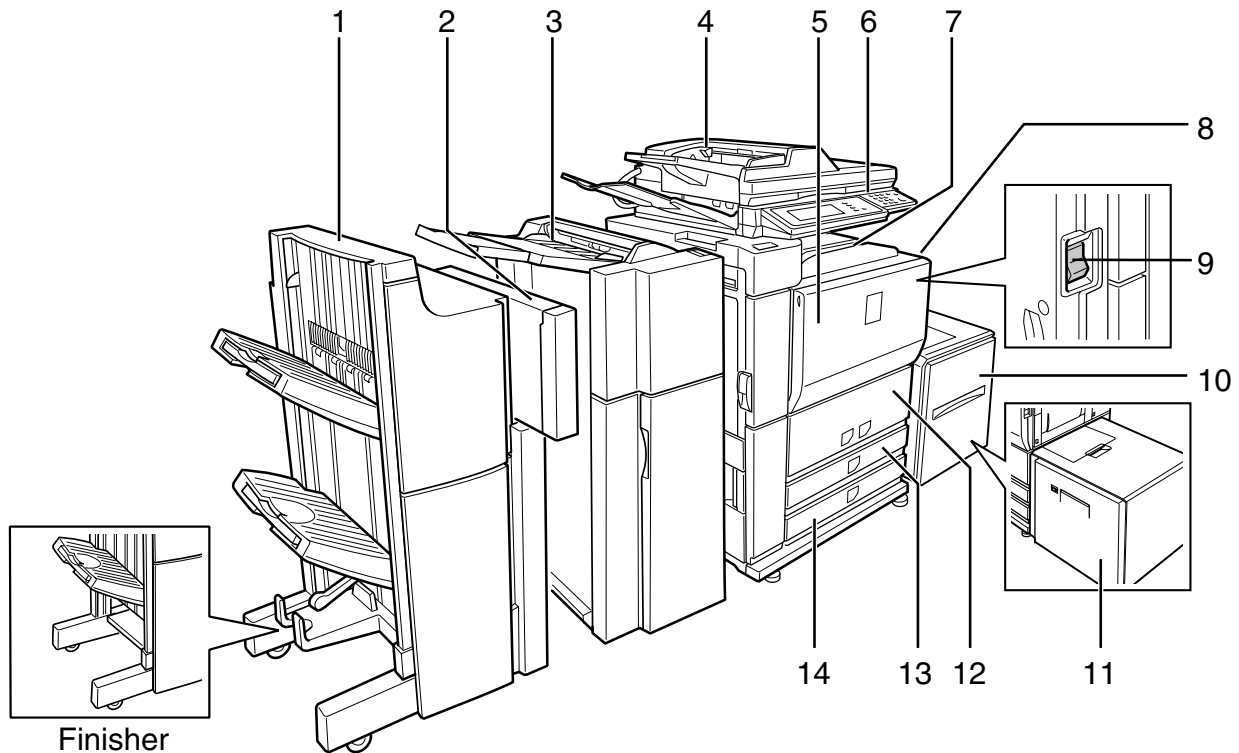
E. Taiwan

No.	Part name	Content	Life	Model name	Packing	Remark
1	Maintenance kit 1	Side seal F x 1 Side seal R x 1 MC cleaning unit x 1 Cleaner blade x 1 Drum separation pawl x 4 Screen grid x 1 Toner reception seal x 1 Charging plate x 1 Paper dust removal unit x 1 DV seal x 1 DV side seal F x 1 DV side seal R x 1 Toner filter x 1	300K	AR-620KA	10	
2	Maintenance kit 2	Transfer cleaning roller x 1 Transfer belt x 1 Transfer roller x 1 Transfer gear x 1	300K	AR-620KB	10	
3	Maintenance kit 3	Upper heat roller x 1 Crimping roller EX x 1 Upper separation pawl N x 6 Lower separation pawl x 4 Heat roller x 1 Heat roller bearing x 2 Lower CL roller DG2 x 1 CL roller SP x 2 CL roller bearing x 4 Auxiliary CL roller SP x 2 CL auxiliary roller DG x 1 Heat CL sheet base N AS x 1 Web roller DG2 x 1 Pressure roller DG2 x 1 Web bearing x 2 Pressure bearing x 2 Pressure SP x 2	300K	MX-705KC	5	
4	Fusing unit	Fusing UN (Heater lamp 100V) x 1	—	MX-705FU2	1	
5	DSPF roller kit	DSPF paper feed roller x 1 DSPF pickup roller x 1 DSPF separation roller x 1	100K	AR-620DF	10	
6	Paper feed roller kit	Main unit paper feed roller x 1 Main unit paper feed pickup roller x 1 Main unit paper feed separation roller x 1	100K	AR-620RT	10	
7	Staple cartridge	Finisher staple x 3	5,000 times x 3	SF-SC11	20	Cartridge for AR-F15 (Common with the cartridge for AR-F11/F12)
8	Staple cartridge	Saddle finisher staple x 3	2,000 times x 3	AR-SC3	40	Cartridge for AR-F16 (Common with the cartridge for AR-F12)

[5] EXTERNAL VIEW AND INTERNAL STRUCTURE

1. Identification of each section and functions

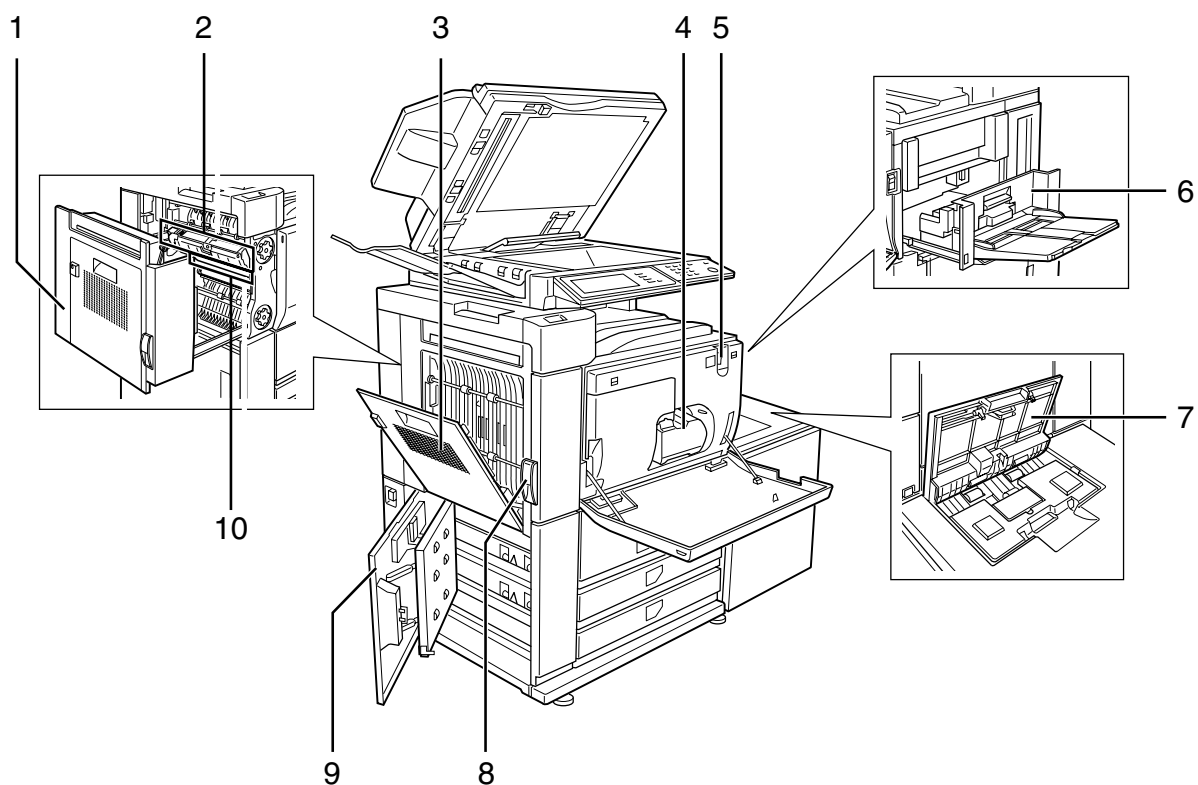
A. External view



No.	Parts		NOTE
	Name	Function/Operation	
1	Saddle stitch finisher* ¹ / Finisher* ¹	The finisher and the saddle stitch finisher include the offset function, which offsets each set of copies from the preceding set for easy separation. Each set of sorted copies can also be stapled. The saddle stitch finisher can automatically staple at the center line of a set of copies and fold the pages to create a pamphlet. A punch unit can be installed to add punch holes to copioses, and an inserter can be installed to insert blank pages at specified pages.	
2	Punch module* ¹	Adds punch holes to printed pages.	
3	Inserter* ¹	The inserter enables blank sheets or printed sheets to be added to copy and print output as covers or inserts without printing. Printed output can also be fed one set at a time from the inserter for stapling or punching without performing stapling or staple sorting finishing.	
4	Automatic document feeder	This automatically feeds and scans multiple sheet originals. Both sides of two-sided originals can be scanned at once.	
5	Front cover	Open to replace toner cartridge.	
6	Operation panel	Performs various setting, display, and simulation operations.	
7	Center tray	Finished sheets are deposited here	
8	Bypass tray	Special papers (including transparency film) and copy paper can be fed from the bypass tray.	
9	Power switch	Turns the power on and off. If the power does not come on when the power switch is turned on, check the main power switch to see if it is turned on.	
10	Paper feed tray 5 (Large capacity tray)* ¹	The large capacity tray can hold up to 3,500 sheets of commonly used (8-1/2" × 11", B5, A4) any standard paper (20 lbs. (80 g/m ²)).	
11	Paper feed tray 5 (Large capacity tray)* ¹	The large capacity tray can hold up to 3000 sheets of 20 lbs. (80 g/m ²) paper.	
12	Paper feed trays 1, 2	The trays hold paper. Approximately 800 sheets of standard 8-1/2" × 11" or A4 size paper (20 lbs. (80 g/m ²)) can be loaded in tray 1, and approximately 1200 sheets of standard 8-1/2" × 11", A4 or B5 size paper (20 lbs. (80 g/m ²)) can be loaded in tray 2.	
13	Paper feed tray 3	Tray 3 holds. Approximately 500 sheets of standard (20 lbs. (80 g/m ²)) paper can be loaded in this tray. Tabbed paper and transparencies can also be loaded.	
14	Paper feed tray 4	Tray 4 holds. Approximately 500 sheets of standard (20 lbs. (80 g/m ²)) paper can be loaded in this tray.	

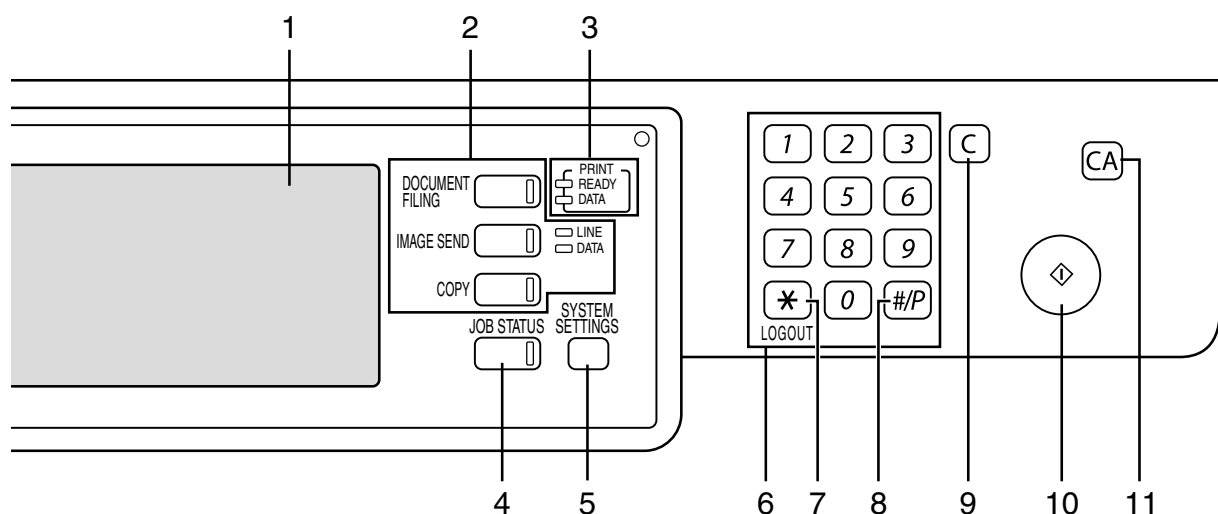
*1: 1, 2, 3, 10 and 11 are peripheral devices. For information on these devices, see the explanations of the devices in the manual.

B. Internal operation parts



No.	Parts		NOTE
	Name	Function/Operation	
1	Duplex unit	Open the cover to remove a misfeed from the fusing/duplex unit.	
2	Fusing unit	Toner images are fused here.	The fusing unit is hot. Take care in removing misfed paper.
3	Cover of the duplex unit	Open when a misfeed has occurred in the duplex unit.	
4	Toner cartridge	The toner cartridge must be replaced by the indication on the operation panel.	
5	Main power switch	Keep this switch turned on when the fax option or network scanner option is installed.	
6	Right side cover	Open when a misfeed has occurred in bypass tray or large capacity tray.	
7	Upper cover of large capacity tray	Open when a misfeed has occurred in large capacity tray.	
8	Left side cover release	Push this knob up to open the left side cover.	
9	Left cover of paper drawer	Open this cover to remove paper misfed in the tray 3 and tray 4.	
10	OPC drum	Images are formed on the photoconductive drum.	Do not touch or damage the photoconductive drum.

C. Operation, display parts



No.	Name	Parts Function/Operation	NOTE
1	Touch panel	The machine status, messages and touch keys are displayed on the panel. The document filing, copy, network scanner*1, and fax*2, Internet fax*3 functions are used by switching to the screen for the desired function. See the following page.	
2	Mode select keys and indicators	Use to change modes and the corresponding display on the touch panel. [DOCUMENT FILING] key Press to select the document filing mode. [IMAGE SEND] key/LINE indicator/DATA indicator Press to change the display to network scanner mode*1, fax mode*2 or Internet fax mode*3. [COPY] key Press to select the copy mode.	
3	PRINT mode indicators	<ul style="list-style-type: none"> READY indicator Print data can be received when this indicator is lit. DATA indicator Lights up or blinks when print data is being received. Also lights up or blinks when printing is being performed. 	
4	[JOB STATUS] key	Press to display the current job status.	
5	[SYSTEM SETTINGS] key	This is used to store, edit, and delete user names and folder names for the document filing function, and to configure the administrator settings and printer configuration settings.	
6	Numeric keys	Use to enter number values for various settings.	
7	[*] key ([LOGOUT] key)	This key is used in copy mode, document filing mode, network scanner mode*1, fax mode*2, and Internet fax mode*3.	
8	[#/P] key	This is used as a program key when using the copy function, and to dial when using the fax function*2.	
9	[C] key (Clear key)	This key is used in copy mode, document filing mode, network scanner mode*1, fax mode*2, and Internet fax mode*3.	
10	[START] key	Use this key to start copying in copy mode, scan a document in network scanner mode*1, or scan a document for transmission in fax mode*2 or Internet fax mode*3.	
11	[CA] key (Clear all key)	This key is used in copy mode, document filing mode, network scanner mode*1, fax mode*2, and Internet fax mode*3. Use the key to cancel settings and perform an operation from the initial machine state.	

*1: When the network scanner option is installed.

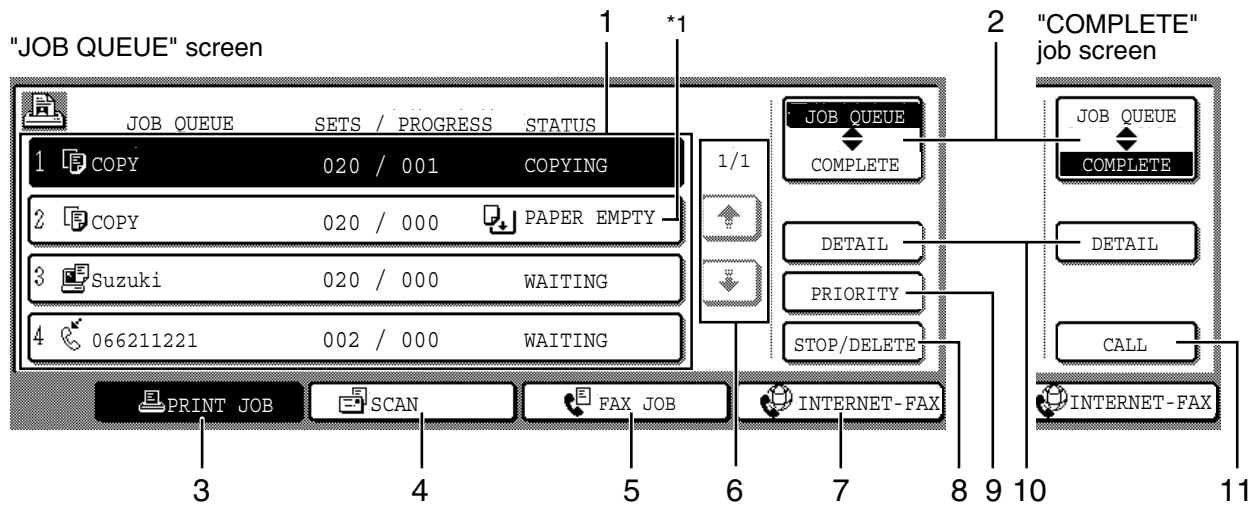
*2: When the fax option is installed.

*3: When the Internet fax option is installed.

D. Job status screen (common to print, copy, fax, network scan and internet fax)

This screen is displayed when the [JOB STATUS] key on the operation panel is pressed.

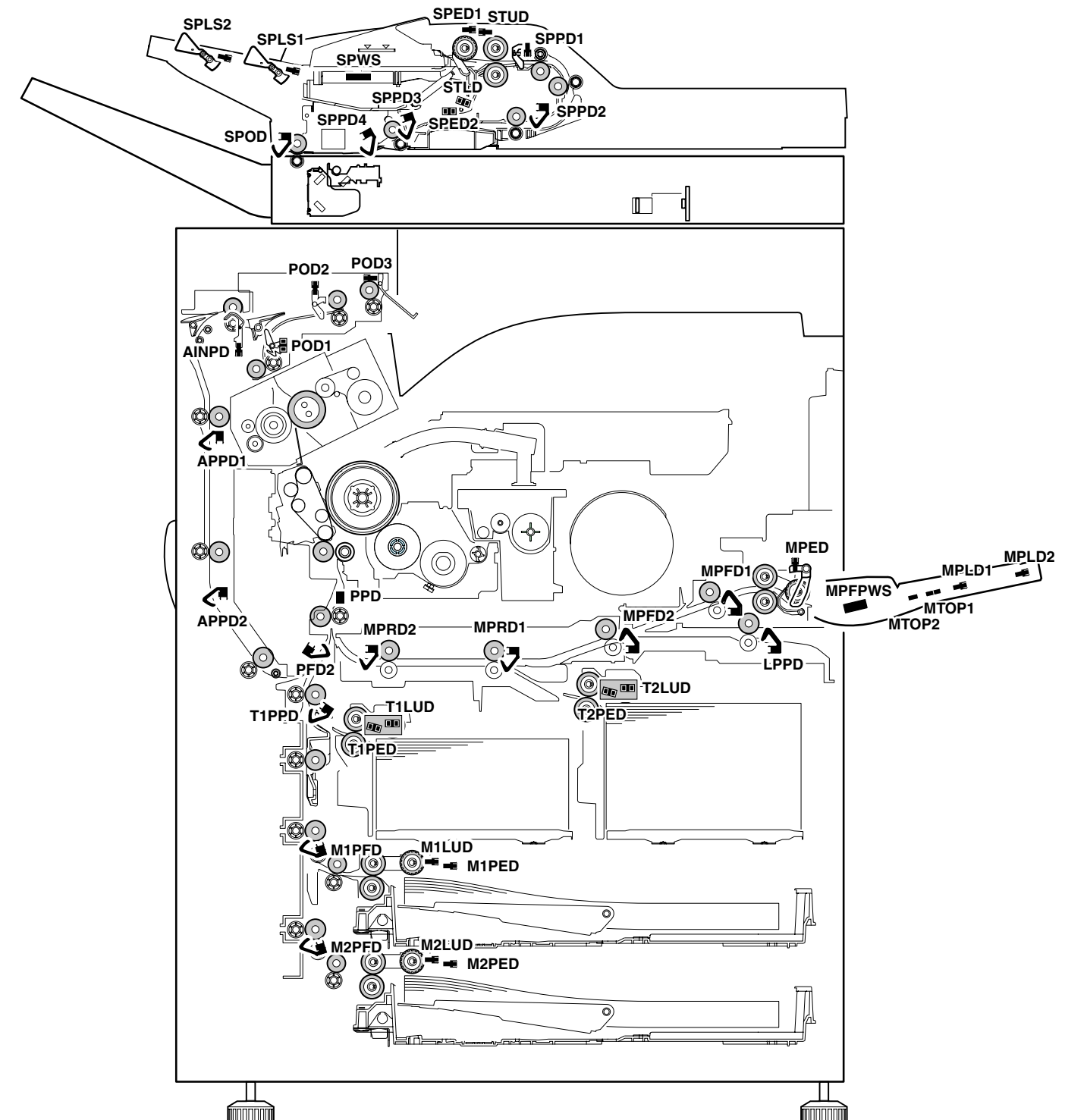
This screen can be used to display the "JOB QUEUE" (showing stored jobs and the current job) or the "COMPLETE" job list (showing finished jobs). This screen is used to check jobs, move a job to the top of the JOB QUEUE, or delete a job.



No.	(Displayed in the touch panel)		NOTE
	Name	Function/Operation	
1	Job list	<p>The displayed jobs in the job list are themselves operation keys. To cancel printing or to give a job the highest print priority, touch the relevant job key to select the job and execute the desired operation using the keys described in 8 and 9.</p> <p>This shows the current job and the jobs waiting to be run. The icons to the left of the jobs in the queue show the job mode. The document filing reprint job icon is highlighted. Note that the icon does not become highlighted during retransmission of a fax/image transmission job.</p> <div style="display: flex; justify-content: space-around;"> <div> <p>Print mode</p> <p>Scan mode</p> <p>Scan to e-mail job</p> <p>Scan to Desktop job</p> <p>Scan to Network folder job</p> </div> <div> <p>Copy mode</p> <p>Scan to FTP job</p> </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div> <p>Fax mode</p> <p>Fax send job</p> <p>PC-FAX send job</p> </div> <div> <p>Fax reception job</p> </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div> <p>Internet Fax mode</p> <p>i-Fax send job</p> <p>PC-Internet Fax send job</p> </div> <div> <p>i-Fax reception job</p> </div> </div>	<p>*1: "PAPER EMPTY" in the job status display</p> <p>When a job status display indicates "PAPER EMPTY", the specified paper size for the job is not loaded in any of the trays.</p> <p>In this case, the job will be suspended until the required paper is loaded. Other stored jobs will be printed (if possible) until the required paper is loaded.</p> <p>(Other jobs will not be printed if the paper runs out during printing.) If you need to change the paper size because the specified paper size is not available, touch the current job key to select it and then touch the [DETAIL] key described in 10.</p>
2	Mode select key	<p>This switches the job list display between "JOB QUEUE" and "COMPLETE".</p> <p>"JOB QUEUE": Shows stored jobs and the job in progress.</p> <p>"COMPLETE": Shows finished jobs.</p> <p>Files saved using the "FILE" and "QUICK FILE" functions and finished broadcast transmission jobs appear as keys in the finished job screen.</p> <p>The "FILE" or "QUICK FILE" job keys in the finished job screen can be touched, followed by the [CALL] key, to call up a finished job and print or transmit it. A finished broadcast transmission job key can be touched followed by the [DETAIL] key to check the result of the transmission.</p>	
3	[PRINT JOB] key	This displays the print job list of print mode (copying, printing, fax reception, Internet fax reception, and self printing).	
4	[SCAN] key	This displays the transmission status and finished jobs of scan mode (Scan to e-mail, Scan to FTP, and Scan to Desktop) when the network scanner option is installed.	
5	[FAX JOB] key	This displays the transmission/reception status and finished jobs of fax mode (fax and PC-Fax) when the fax option is installed.	

No.	(Displayed in the touch panel)		NOTE
	Name	Function/Operation	
6	Display switching keys	Use to switch the page of the displayed job list.	
7	[INTERNET-FAX] key	This displays the transmission/reception status and finished jobs of Internet fax mode and PC Internet fax mode when the network scanner option is installed.	
8	[STOP/DELETE] key	Use to cancel or delete the current job or delete the selected reserved job. Note that printing of received faxes and received Internet faxes cannot be canceled or deleted.	
9	[PRIORITY] key	A stored job in the "JOB QUEUE" job list can be printed ahead of all other stored jobs by selecting the job and then touching this key.	
10	[DETAIL] key	This shows detailed information on the selected job. Files saved using the "FILE" and "QUICK FILE" functions and finished broadcast transmission jobs appear as keys in the finished job screen. A Quick File in the finished job screen or the [Filing] key can be touched, followed by the [CALL] key, to call up a finished job and print or transmit it. A finished broadcast transmission job key can be touched followed by the [DETAIL] key to check the result of the transmission.	
11	[CALL] key	When this key is touched after selecting a job in the COMPLETE job status screen (a job stored using the FILE or QUICK FILE keys of the document filing function), the "JOB SETTINGS" menu screen appears to let you resend or reprint the finished job.	

E. Sensor/detector



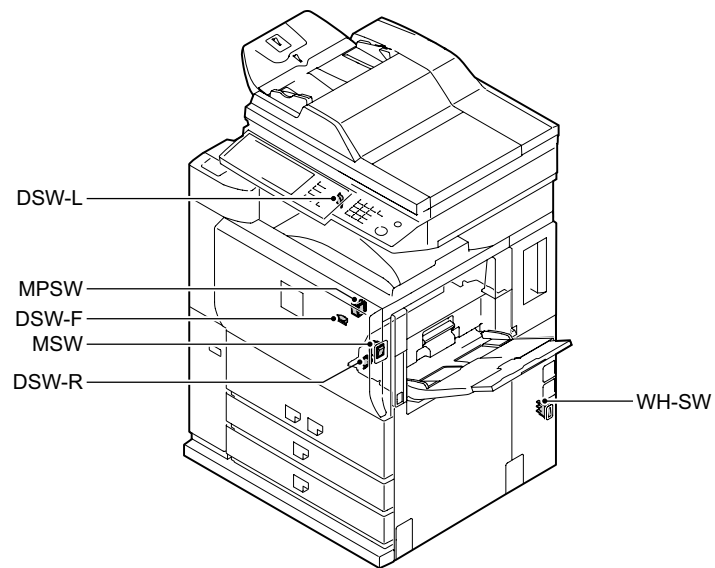
Code	Signal name	Name	Function/Operation	Type	Connector level		NOTE
					"L"	"H"	
AINPD	AINPD	Duplex (ADU) paper entry detector	Duplex (ADU) paper entry detection, detection of paper exit to finisher	Transmission type	Paper pass	—	Paper transport system sensor
APPD1	APPD1	Duplex (ADU) paper pass detector 1	Duplex (ADU) upstream paper pass detection	Transmission type	Paper pass	—	Paper transport system sensor
APPD2	APPD2	Duplex (ADU) paper pass detector 2	Duplex (ADU) midstream paper pass detection	Transmission type	Paper pass	—	Paper transport system sensor
LPPD	LPPD	LCC paper pass detector	Detection of paper entry from LCC	Transmission type	Paper pass	—	Paper transport system sensor
M1LUD	M1LUD	Paper tray upper limit detector (Paper feed tray 3)	Paper tray upper limit detection (Paper feed tray 3)	Transmission type	—	Upper limit detection	Paper feed tray system sensor

Code	Signal name	Name	Function/Operation	Type	Connector level		NOTE
					"L"	"H"	
M1PED	M1PED	Paper empty detector (Paper feed tray 3)	Paper empty detection (Paper feed tray 3)	Transmission type	Paper empty	Paper present	Paper feed tray system sensor
M1PFD	M1PFD	Paper pass detector (Paper feed tray 3)	Paper feed tray 3 paper pass detection	Transmission type	Paper pass	–	Paper transport system sensor
M2LUD	M2LUD	Paper tray upper limit detector (Paper feed tray 4)	Paper tray upper limit detection (Paper feed tray 4)	Transmission type	–	Upper limit detection	Paper feed tray system sensor
M2PED	M2PED	Paper tray upper limit detector (Paper feed tray 4)	Paper empty detection (Paper feed tray 4)	Transmission type	Paper empty	Paper present	Paper feed tray system sensor
M2PFD	M2PFD	Paper pass detector (Paper feed tray 4)	Paper feed tray 4 paper pass detection	Transmission type	Paper pass	–	Paper transport system sensor
MPED	MPED	Manual feed paper empty detector	Manual paper feed tray paper empty detection	Transmission type	Paper present	Paper empty	Manual paper feed unit
MPFD1	MPFD1	Manual feed paper pass detector 1	Manual tray paper pass detection	Transmission type	Paper pass	–	Paper transport system sensor
MPFD2	MPFD2	Manual feed paper pass detector 2	Manual tray and LCC paper pass detection	Transmission type	Paper pass	–	Paper transport system sensor
MPFPWS	MPFPWS	Manual feed paper width detector	Manual feed paper width detection	Volume resistor	–	–	Analog detector
MPLD1	MPLD1	Manual feed paper length detector 1	Manual paper feed tray paper length detection (Paper feed side)	Transmission type	–	Paper present	Manual paper feed unit
MPLD2	MPLD2	Manual feed paper length detector 2	Manual paper feed tray paper length detection (Outside)	Transmission type	–	Paper present	Manual paper feed unit
MPRD1	MPRD1	Paper feed tray 2 paper pass detector 1	Manual feed/paper feed tray 2/ LCC paper pass detection	Transmission type	Paper pass	–	Paper transport system sensor
MPRD2	MPRD2	Paper feed tray 2 paper pass detector 2	Manual feed/paper feed tray 2/ LCC paper pass detection	Transmission type	Paper pass	–	Paper transport system sensor
MTOP1	MTOP1	Manual tray pull-out position detector 1	Manual paper feed tray pull-out position detection (Storing position)	Contact type	Storage	–	Manual paper feed unit
MTOP2	MTOP2	Manual tray pull-out position detector 2	Manual paper feed tray pull-out position detection (Pull-out position)	Contact type	Pull-out	–	Manual paper feed unit
PFD2	PFD2	Paper pass detector 2	Paper pass detection (Left door unit) from duplex (ADU)/ No.1, 3, 4 paper feed	Transmission type	Paper pass	–	Paper transport system sensor
POD1	POD1	Paper exit detector 1	Paper exit detection from fusing	Transmission type	Paper pass	–	Paper transport system sensor
POD2	POD2	Paper exit detector 2	Paper pass detection from paper exit	Transmission type	Paper pass	–	Paper transport system sensor
POD3	POD3	Paper exit detector 3	Paper exit detection to upper section paper exit tray (Full detection)	Transmission type	–	Paper pass (Full detection)	Paper transport system sensor
PPD	PPD	Resist roller front paper pass detector	Paper pass detection in front of resist roller	Reflection type	Paper pass	–	Paper transport system sensor
SPED1	SPED1	DSPF document empty detector	DSPF document empty detection	Transmission type	Paper present		Sensor
SPED2	SPED2	DSPF document detector	DSPF document detection	Transmission type	Paper present		Sensor
SPLS1	SPLS1	DSPF document length detector 1	DSPF document length detection (Short)	Transmission type		Paper present	Sensor
SPLS2	SPLS2	DSPF document length detector 2	DSPF document length detection (Long)	Transmission type		Paper present	Sensor
SPOD	SPOD	DSPF paper exit detector	DSPF paper exit detection	Transmission type	Paper exit		Sensor
SPPD1	SPPD1	DSPF document paper pass detector 1	DSPF document paper pass detection 1	Transmission type	Paper present		Sensor
SPPD2	SPPD2	DSPF document paper pass detector 2	DSPF document paper pass detection 2	Transmission type	Paper present		Sensor
SPPD3	SPPD3	DSPF document paper pass detector 3	DSPF document paper pass detection 3	Transmission type	Paper present		Sensor
SPPD4	SPPD4	DSPF document paper pass detector 4	DSPF document paper pass detection 4	Transmission type	Paper present		Sensor
SPWS	SPWS	DSPF document size (Width) detection analog data detector	DSPF document size (Width) detection	Volume resistor	–	–	Other detector
STLD	STLD	DSPF document tray lower limit detector	DSPF document tray lower limit detection	Transmission type		Lower limit	Sensor
STUD	STUD	DSPF document tray upper limit detector	DSPF document tray upper limit detection	Transmission type		Upper limit	Sensor
T1LUD	T1LUD	Paper feed tray upper limit detector (Paper feed tray 1)	Paper feed tray upper limit (Paper feed tray 1)	Transmission type	Upper limit	–	Paper feed tray system sensor
T1PED	T1PED	Paper empty detector (Paper feed tray 1)	Paper presence detection (Paper feed tray 1)	Transmission type	Paper empty	Paper present	Paper feed tray system sensor
T1PPD	T1PPD	Paper pass detector (Paper feed tray 1)	Paper pass detection from paper feed tray 1	Transmission type	Paper pass	–	Paper transport system sensor

Code	Signal name	Name	Function/Operation	Type	Connector level		NOTE
					"L"	"H"	
DSW-ADU	DSW-ADU	Duplex (ADU) cover open/close detector	Duplex (ADU) cover open/close detection	Transmission type	Duplex (ADU) door open	Duplex (ADU) door open close	Door switch
DSW-DSK	DSW-DSK	Left door open/close detector (Desk section)	Left door open/close detection (Desk section)	Transmission type	Desk left door open	Desk left door close	Door switch
DSW-F	DSW-F	Front door open/close detector	Front door open/close detection	Micro switch	Front door or left door open	Front door or left door close	Door switch
DSW-L	DSW-L	Left door open/close detector	Left door open/close detection	Micro switch	Left door, front door open, manual paper feed unit pullout	Left door, front door close, manual paper feed unit close	Door switch
DSW-R	DSW-R	Manual feed open/close detector	Manual feed open/close detection	Micro switch (NC)	Left door open or manual unit pulled out	Manual unit insertion	Door switch
HUS-DV	HUS-DV	Developing humidity sensor	Developing section peripheral humidity detection	Humidity sensor	—	—	Analog detector
HUS-TC	HUS-TC	Process humidity sensor	Process section peripheral humidity detection	Humidity sensor	—	—	Analog detector (Not used)
LEDX	LEDX	Document size sensor (Light emitting) (LED)	Document size detection LED	LED	—	—	Other detector
M1PWS	M1PWS	Paper feed tray paper width detector (Paper feed tray 3)	Multi paper feed tray paper width detection (Paper feed tray 3)	Slide resistor	—	—	Analog detector
M1SPD	M1SPD	Paper remaining quantity detector (Paper feed tray 3)	Paper remaining quantity detection (Paper feed tray 3)	Transmission type	—	Remaining paper quantity 66% or less	Paper feed tray remaining quantity sensor
M1SS1	M1SS1	Paper size detector (Paper feed tray 3)	Paper size detection by combination of ON/OFF of MISS 1 – 4	Contact switch			Multi paper feed tray vertical size detection (Refer to the separate table in the "[11] SIGNAL NAME LIST" (*1).)
M1SS2	M1SS2	Paper size detector (Paper feed tray 3)	Paper size detection by combination of ON/OFF of MISS 1 – 4				Multi paper feed tray vertical size detection (Refer to the separate table in the "[11] SIGNAL NAME LIST" (*1).)
M1SS3	M1SS3	Paper size detector (Paper feed tray 3)	Paper size detection by combination of ON/OFF of MISS 1 – 4				Multi paper feed tray vertical size detection (Refer to the separate table in the "[11] SIGNAL NAME LIST" (*1).)
M1SS4	M1SS4	Paper size detector (Paper feed tray 3)	Paper size detection by combination of ON/OFF of MISS 1 – 4				Multi paper feed tray vertical size detection (Refer to the separate table in the "[11] SIGNAL NAME LIST" (*1).)
M2SPD	M2SPD	Paper remaining quantity detector (Paper feed tray 4)	Paper remaining quantity detection (Paper feed tray 4)	Transmission type	—	Remaining paper quantity 66% or less	Paper feed tray remaining quantity sensor
M2SS1	M2SS1	Paper size detector (Paper feed tray 4)	Paper size detection by combination of ON/OFF of MISS 1 – 4	Contact switch			Multi paper feed tray vertical size detection (Refer to the separate table in the "[11] SIGNAL NAME LIST" (*1).)
M2SS2	M2SS2	Paper size detector (Paper feed tray 4)	Paper size detection by combination of ON/OFF of MISS 1 – 4				Multi paper feed tray vertical size detection (Refer to the separate table in the "[11] SIGNAL NAME LIST" (*1).)

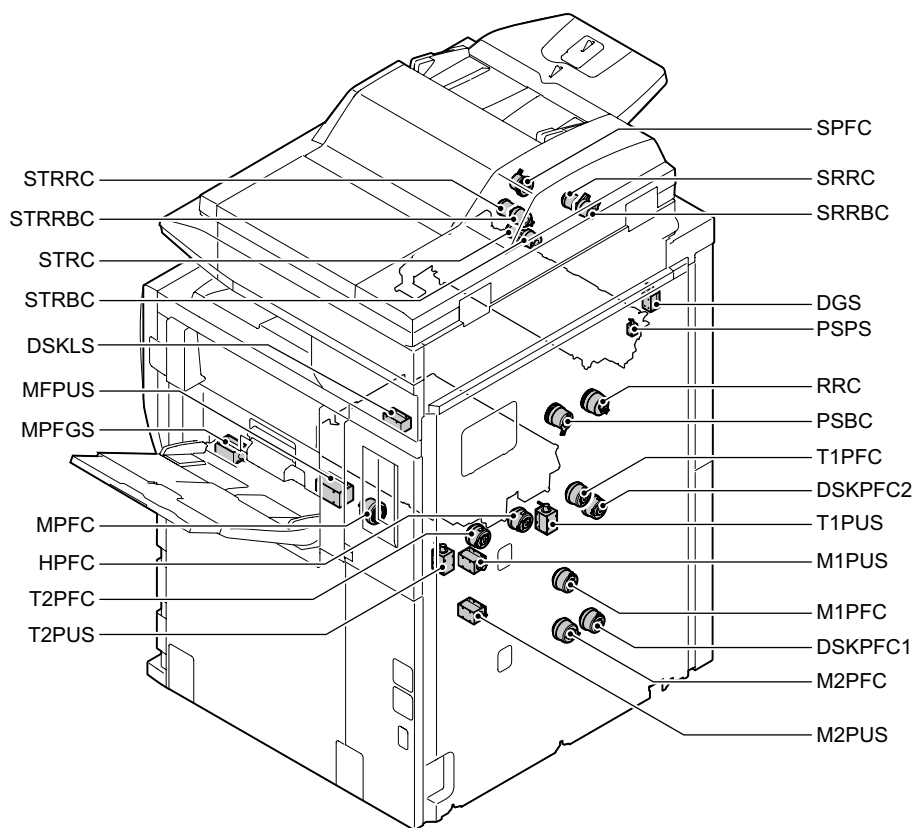
Code	Signal name	Name	Function/Operation	Type	Connector level		NOTE
					"L"	"H"	
M2SS3	M2SS3	Paper size detector (Paper feed tray 4)	Paper size detection by combination of ON/OFF of MISS 1 – 4	Contact switch			Multi paper feed tray vertical size detection (Refer to the separate table in the "[11] SIGNAL NAME LIST" (*1).)
M2SS4	M2SS4	Paper size detector (Paper feed tray 4)	Paper size detection by combination of ON/OFF of MISS 1 – 4	Contact switch			Multi paper feed tray vertical size detection (Refer to the separate table in the "[11] SIGNAL NAME LIST" (*1).)
MHPS	MHPS	Scanner home position sensor detector	Scanner home position detection	Transmission type		Home position	Sensor
OCSW	OCSW	DSPF open/close detector	Trigger for document size detection.	Transmission type	Close		Sensor
PCS	PCS	Image density sensor	Detection of density of toner patch on the OPC drum	Reflection type	–	–	Analog detector
PDSELX	PDSELX	Document size sensor (Light reception) (PT)	Document size detection	Photo transistor	–	–	Other detector
RTH1	RTH1	Heat roller temperature sensor (Center section)	Heat roller temperature detection (Center section)	Thermistor	–	–	Analog detector
RTH2	RTH2	Heat roller temperature sensor (Edge section)	Heat roller temperature detection (Edge section)	Thermistor	–	–	Analog detector
RTH3	RTH3	Sub heat roller temperature sensor	Sub heat roller temperature detection	Thermistor	–	–	Analog detector
SCOV	SCOV	DSPF cover switch	DSPF cover open/close detection	Transmission type		Close	Sensor
SOCD	SOCD	DSPF open/close detector	DSPF open/close detector	Transmission type		Close	Sensor
T1SPD	T1SPD	Paper remaining quantity detector (Paper feed tray 1)	Paper remaining quantity detection (Paper feed tray 1)	Transmission type	–	Remaining paper quantity 50% or less	Paper feed tray remaining quantity sensor
T2SPD	T2SPD	Paper remaining quantity detector (Paper feed tray 2)	Paper remaining quantity detection (Paper feed tray 2)	Transmission type	–	Remaining paper quantity 33% or less	Paper feed tray remaining quantity sensor
TANSET	TANSET	Paper feed tray 1/2 detection signal	Paper feed tray 1, 2 (Tandem tray) insertion detection	Transmission type	Pull-out	Insertion	Paper feed tray system sensor
TCS	TCS	Toner density sensor	Toner density detection	Magnetic sensor	–	–	Analog detector
TFSD	TFSD	Toner remaining quantity sensor	Toner hopper toner remaining quantity detection	Magnetic sensor	Remaining quantity great	Remaining quantity small	Other sensor, switch
TH-CL	TH-CL	OPC drum temperature sensor	OPC drum peripheral temperature detection	Thermistor	–	–	Analog detector
TH-DV	TH-DV	Developing humidity sensor	Developing section humidity detection	Thermistor/humidity	–	–	Analog detector
TH-EX	TH-EX	Paper exit unit temperature sensor	Paper exit unit peripheral temperature detection (Cooling fan operation monitor)	Thermistor	–	–	Analog detector
TH-RA	TH-RA	Room temperature sensor	Room temperature detection	Thermistor	–	–	Analog detector(Not used)
THPS2	THPS2	Transfer belt contact/separation home position sensor 2	Transfer belt separation home position detection 2	Transmission type	–	Contact	Other sensor, switch
TLS	TLS	Waste toner pipe lock detector	Waste toner pipe lock detection	Lead type	–	Lock (Tilt)	Other sensor, switch
TNCA	TNCA	Waste toner full detection signal	Waste toner full detection	Magnetic sensor			Not used.
WEBEND	WEBEND	WEB end sensor	Detects the WEB paper end (replacement)	Transmission type	–	End detection	

F. Switch



Code	Signal name	Name	Type	Function/Operation	NOTE
MPSW	MPSW	Main power switch	Seesaw switch	Turns ON/OFF all the power sources.	
MSW	MSW	Power switch	Seesaw switch	Turns ON/OFF the main DC power source. (Turns ON/OFF the engine power source except for the sub DC power source.)	Shut-off solenoid built-in
DSW-F	DSW-F	Front door open/close detector	Micro switch	Front door open/close detection, Main charger power source, Developing bias power line open/close	
DSW-L	DSW-L	Left door open/close switch	Micro switch	Left door open/close detection, Main charger power source, Developing bias power line open/close	
DSW-R	DSW-R	Manual paper feed unit open/close switch	Micro switch	Manual paper feed unit open/close detection, Main charger power source, Developing bias power line open/close	
WH-SW	WH-SW	Dry heater switch	Seesaw switch	Turns ON/OFF the power line of the dry heater.	

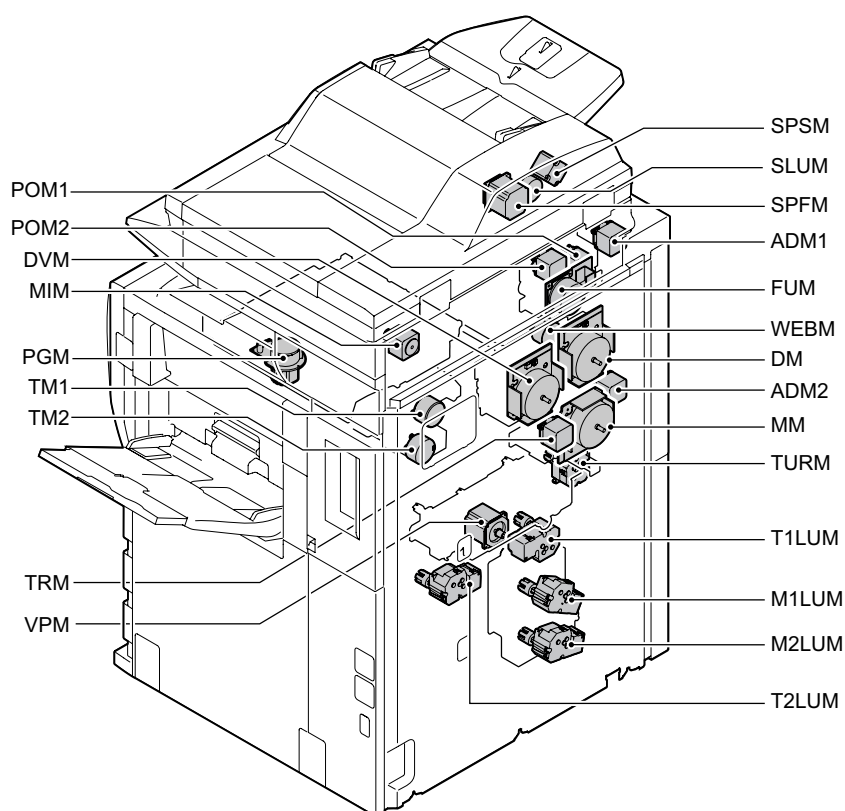
G. Clutch/solenoid



Code	Signal name	Name	Function/Operation	Type	NOTE
DGS	DGS	Paper exit gate solenoid	Paper exit gate drive	Electromagnetic solenoid	
DSKLS	DSKLS	Paper guide lock solenoid	Lock the horizontal transport paper guide	Electromagnetic solenoid	
DSKPFC1	DSKPFC1	Paper feed tray 3/4 paper transport clutch 1	Paper feed tray 3/4 section paper transport roller ON/OFF control	Electromagnetic clutch	
DSKPFC2	DSKPFC2	Paper feed tray 3/4 paper transport clutch 2	Paper feed tray 3/4 section paper transport roller ON/OFF control	Electromagnetic clutch	
HPFC	HPFC	Horizontal paper transport clutch	Manual paper feed, paper feed tray 2 section, LCC paper transport roller ON/OFF control	Electromagnetic clutch	
M1PFC	M1PFC	Paper feed clutch (Paper feed tray 3)	Paper feed tray 3 section roller ON/OFF control	Electromagnetic clutch	
M1PUS	M1PUS	Paper pickup solenoid (Paper feed tray 3)	Presses the paper pickup roller onto paper	Electromagnetic solenoid	
M2PFC	M2PFC	Paper feed clutch (Paper feed tray 4)	Paper feed tray 4 section roller ON/OFF control	Electromagnetic clutch	
M2PUS	M2PUS	Paper pickup solenoid (Paper feed tray 4)	Presses the paper pickup roller onto paper	Electromagnetic solenoid	
MFPUS	MFPUS	Paper pickup solenoid (Manual paper feed)	Presses the paper pickup roller onto paper	Electromagnetic solenoid	
MPFC	MPFC	Paper feed clutch (Manual paper feed)	Manual paper feed section paper feed roller ON/OFF control	Electromagnetic clutch	
MPFGS	MPFGS	Manual paper feed gate solenoid	Manual feed gate solenoid open/close control.	Electromagnetic solenoid	
PSBC	PSBC	Resist roller brake clutch	Resist roller braking	Electromagnetic clutch	
PSPS	PSPS	Separation solenoid	OPC drum separation pawl drive	Electromagnetic solenoid	
RRC	RRC	Resist roller clutch	Resist roller ON/OFF control	Electromagnetic clutch	
SPFC	SPFC	DSPF paper feed clutch	DSPF paper feed section roller ON/OFF control	Electromagnetic clutch	
SRRRC	SRRRC	DSPF resist roller clutch	DSPF resist roller ON/OFF control	Electromagnetic clutch	
SRRBC	SRRBC	DSPF resist roller brake clutch	DSPF resist roller braking	Electromagnetic clutch	

Code	Signal name	Name	Function/Operation	Type	NOTE
STMPs	STMPs	Stamp solenoid control signal	Stamp drive	Electromagnetic solenoid	
STRBC	STRBC	DSPF paper transport roller 2 brake clutch	DSPF transport roller 2 braking	Electromagnetic clutch	
STRC	STRC	DSPF paper transport roller 2 clutch	DSPF transport roller 2 ON/OFF control	Electromagnetic clutch	
STRRBC	STRRBC	DSPF No. 1 resist roller brake clutch	DSPF transport roller 3 braking	Electromagnetic clutch	
STRRC	STRRC	DSPF No. 1 resist roller clutch	DSPF transport roller 3 ON/OFF control	Electromagnetic clutch	
T1PFC	T1PFC	Paper feed clutch (Paper feed tray 1)	Paper feed tray 1 section roller ON/OFF control	Electromagnetic clutch	
T1PUS	T1PUS	Paper pickup solenoid (Paper feed tray 1)	Presses the paper pickup roller onto paper.	Electromagnetic solenoid	
T2PFC	T2PFC	Paper feed clutch (Paper feed tray 2)	Paper feed tray 2 section roller ON/OFF control	Electromagnetic clutch	
T2PUS	T2PUS	Paper pickup solenoid (Paper feed tray 2)	Presses the paper pickup roller onto paper.	Electromagnetic solenoid	

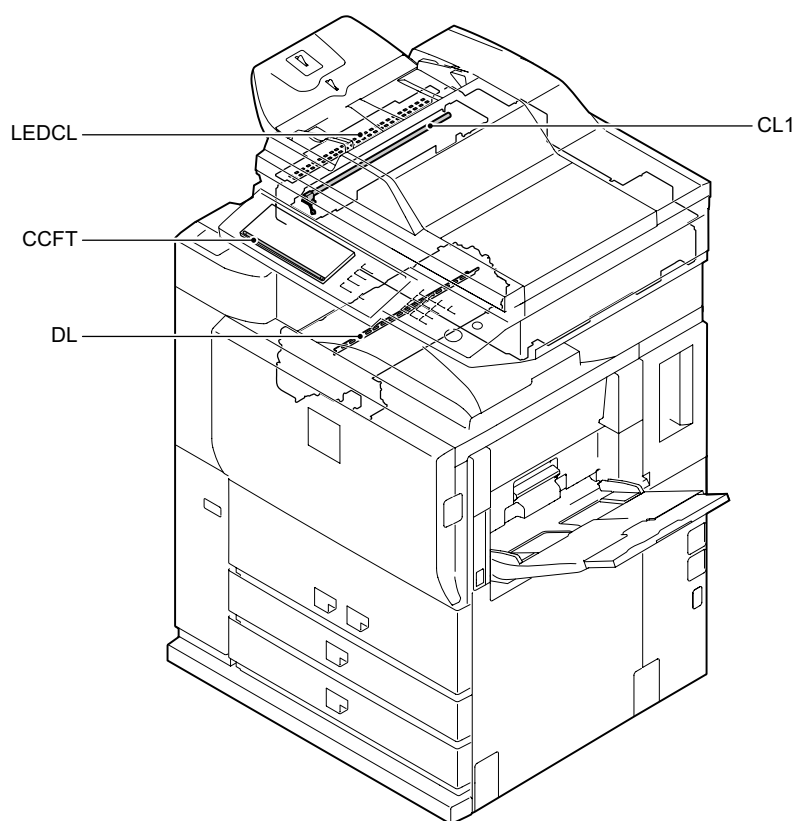
H. Drive motor



Code	Signal name	Name	Type	Function/Operation	NOTE
ADM1	ADM1	Duplex (ADU) motor 1	Stepping motor	Drives the paper transport roller 2 and the paper transport roller 19.	High speed
ADM2	ADM2	Duplex (ADU) motor 2	Stepping motor	Drives the paper exit rollers 20 and 21.	Selection of Normal speed/ High speed
DM	DM	OPC drum motor	DC brush-less motor	Drives the OPC drum and the transfer section.	
DVM	DVM	Developing system	DC brush-less motor	Drives the developing section.	
FUM	FUM	Fusing motor	DC brush-less motor	Drives the fusing section.	
M1LUM	M1LUM	Paper feed tray lift-up motor (Paper feed tray 3)	DC brush motor	Drives the lift plate of the paper feed tray.	Selection of Rotation mode/ Brake mode
M2LUM	M2LUM	Paper feed tray lift-up motor (Paper feed tray 4)	DC brush motor	Drives the lift plate of the paper feed tray.	Selection of Rotation mode/ Brake mode

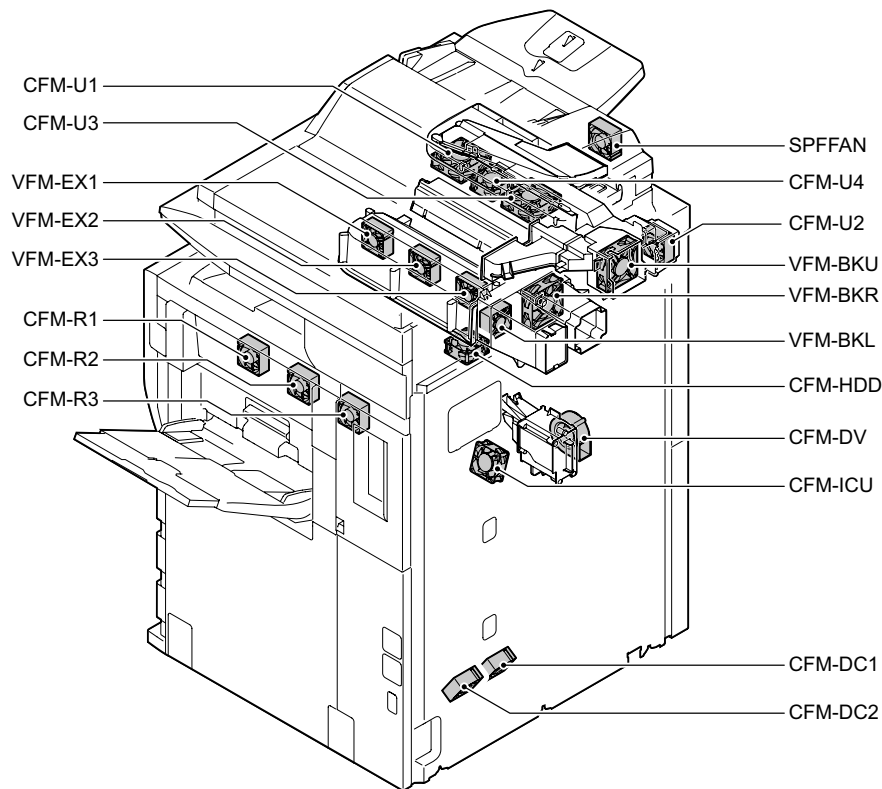
Code	Signal name	Name	Type	Function/Operation	NOTE
MIM	MIM	Scanner (reading) motor	Stepping motor	Drives the scanner (reading) section.	
MM	MM	Main motor	DC brush-less motor	Drives the paper feed trays 1, 2, 3, and 4, and the manual paper feed section.	
PGM	PGM	LSU motor	DC brush-less motor	Drives the scanner (writing) (LSU) unit mirror.	
POM1	POM1	Paper exit motor 1	Stepping motor	Drives the paper transport roller 16.	Selection of Normal speed/ High speed
POM2	POM2	Paper exit motor 2	Stepping motor	Drives the paper exit roller 1.	Selection of Normal speed/ High speed
SLUM	/SLUM	DSPF paper tray lift motor	Stepping motor	Lifts up and down the DSPF paper feed tray.	
SPFM	SPFM1	DSPF paper feed motor, paper transport motor	Stepping motor	Drives the paper feed roller and the transport roller.	
SPSM	SPFM2	DSPF paper exit motor	Stepping motor	Drives the paper exit roller. (DSPF)	
T1LUM	T1LUM	Paper feed tray lift-up motor (Paper feed tray 1)	DC brush motor	Drives the lift plate of the paper feed tray.	Selection of Rotation mode/ Brake mode
T2LUM	T2LUM	Paper feed tray lift-up motor (Paper feed tray 2)	DC brush motor	Drives the lift plate of the paper feed tray.	Selection of Rotation mode/ Brake mode
TM1	TM1	Toner motor 1	Synchronous motor	Transports toner in the toner hopper to the developing unit./ Transports waste toner to the waste toner section.	
TM2	TM2	Toner motor 2	Synchronous motor	Transports toner in the toner bottle to the toner hopper.	
TRM	TRM	Resist roller front drive motor	Stepping motor	Drives the paper transport roller 15.	Normal speed mode/ Resist roller front paper transport timing control (Warp amount control)
TURM	TURM	Transfer separation motor	DC brush motor	Drives and separates the transfer belt.	When executing the process correction and detecting a jam, the transfer belt is separated from the OPC drum.
VPM	VPM	Vertical paper transport motor	Stepping motor	Drives the paper transport rollers 4 and 13.	Normal speed mode
WEBM	WEBM	WEB motor	Synchronous motor	Drives the WEB roller	

I. Lamp



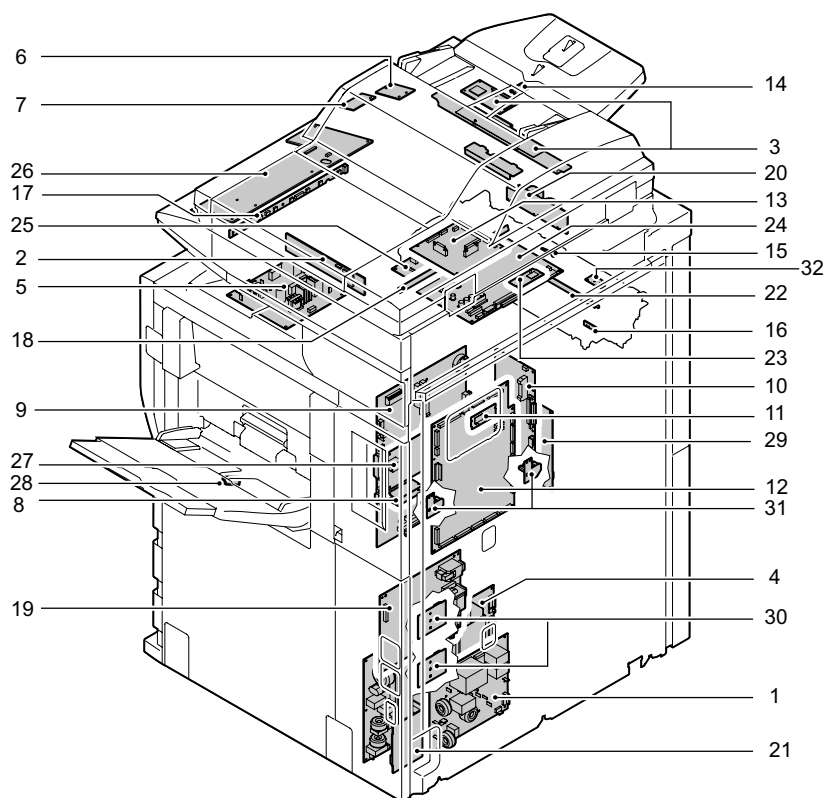
Code	Signal name	Name	Type	Function/Operation	NOTE
CCFT	CCFT	LCD backlight	Cold Cathode Fluorescent Tube	Backlight for LCD	
DL	DL	Discharge lamp	Lamp	Discharges electric charges on the OPC drum.	
CL1	CL1	Scanner lamp	Xenon lamp	Radiates lights onto a document for the CCD to scan the document image.	
LEDCL	LEDCL	CIS lamp (LED)	LED	Radiates lights onto a document for the CIS to scan the document image.	

J. Fan motor



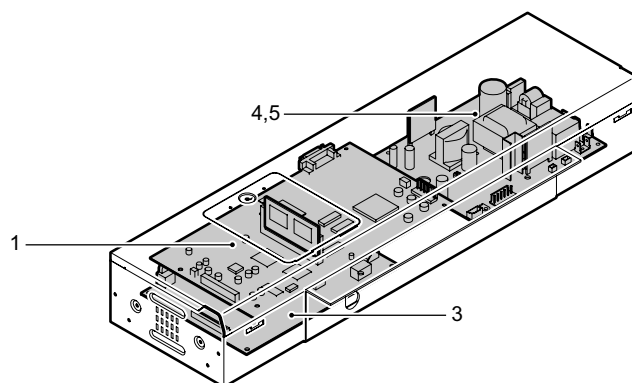
Code	Signal name	Name	Type	Function/Operation	NOTE
CFM-DC1	CFM-DC1	Power cooling fan motor	DC brush-less motor	Cools the DC power unit.	
CFM-DC2	CFM-DC2	Power cooling fan motor	DC brush-less motor	Cools the DC power unit.	
CFM-DV	CFM-DV	Developing section cooling fan motor	DC brush-less motor	Cools the developing section.	PWM control
CFM-HDD	CFM-HDD	HDD cooling fan motor	DC brush-less motor	Cools the HDD.	PWM control
CFM-ICU	CFM-ICU	Controller cooling fan motor	DC brush-less motor	Cools the controller.	PWM control
CFM-R1	CFM-R1	Process cooling fan motor 1 (LSU/process section)	DC brush-less motor	Cools the LSU/ process section.	PWM control
CFM-R2	CFM-R2	Process cooling fan motor 2 (LSU/process section)	DC brush-less motor	Cools the LSU/ process section.	PWM control
CFM-R3	CFM-R3	Process cooling fan motor 3 (LSU/process section)	DC brush-less motor	Cools the LSU/ process section.	PWM control
CFM-U1	CFM-U1	Fusing section cooling fan motor 1 (Paper exit/duplex (ADU) section) (Top surface)	DC brush-less motor	Exhaust heat from the fusing section.	PWM control
CFM-U2	CFM-U2	Fusing section cooling fan motor 2 (Paper exit/duplex (ADU) section) (Paper exit rear side)	DC brush-less motor	Exhaust heat from the fusing section.	PWM control
CFM-U3	CFM-U3	Fusing section cooling fan motor 3 (Paper exit/duplex (ADU) section) (Top surface)	DC brush-less motor	Exhaust heat from the fusing section.	PWM control
CFM-U4	CFM-U4	Fusing section cooling fan motor 4 (Paper exit/duplex (ADU) section) (Paper cooling fan motor)	DC brush-less motor	Cools paper which is discharged to the inner tray.	PWM control
SPFFAN	SPFFAN	DSPF fan motor	DC brush-less motor	Exhausts heat generated by the motor clutch in the DSPF.	PWM control
VFM-EX1	VFM-EX1	Process exhaust fan motor 1 (Front side)	DC brush-less motor	Exhaust ozone and heat from the process section.	PWM control
VFM-EX2	VFM-EX2	Process exhaust fan motor 2 (Center)	DC brush-less motor	Exhaust ozone and heat from the process section.	PWM control
VFM-EX3	VFM-EX3	Process exhaust fan motor 3 (Rear side)	DC brush-less motor	Exhaust ozone and heat from the process section.	PWM control
VFM-BKL	VFM-BKL	Process exhaust fan motor 4	DC brush-less motor	Exhaust ozone and heat from the process section.	PWM control
VFM-BKR	VFM-BKR	Process exhaust fan motor	DC brush-less motor	Exhaust heat from the fusing section.	PWM control
VFM-BKU	VFM-BKU	Paper cooling fan motor	DC brush-less motor	Exhaust heat from paper in the inner tray.	PWM control

K. PWB (Main unit section)



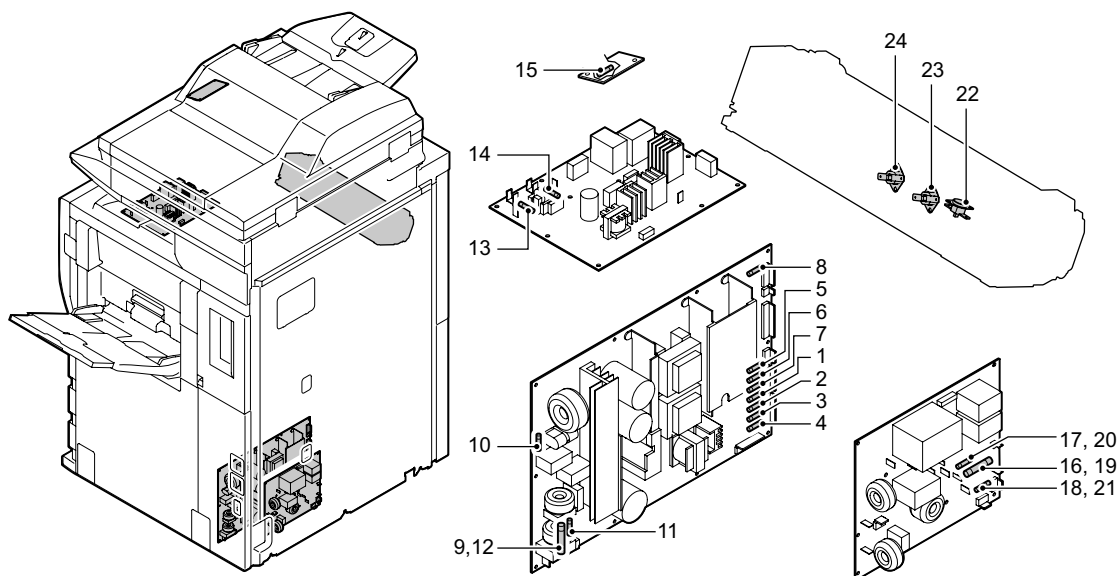
No	Name	Function/Operation	NOTE
1	AC power PWB	Controls the AC power.	
2	CCD PWB	Scans document images to converts analog signal to digital signal.	
3	CIS control PWB/CIS unit	Scans document images (back surface) and controls the CIS unit.	
4	DC main power PWB	Generates the DC power.	
5	DC sub power PWB	Generates the DC power in the power save mode.	
6	LVDS PWB	Generates the LCD display signal.	
7	LCD INV PWB	Generates a high voltage for backlight.	
8	MFP FLASH ROM PWB	Stores the MFP control program.	
9	MFP controller PWB	Controls the image-related items and controls all over the machine.	
10	Mother PWB	Interfaces the MFP control PWB and the PCU PWB.	
11	PCU FLASH ROM PWB	Stores the PCU control program.	
12	PCU PWB	Controls the engine section.	
13	DSPF PWB	Drives the DSPF section loads./ Interfaces the sensor and detector signals.	
14	DSPF paper width detection PWB	Detects the DSPF paper tray paper width.	
15	Image density sensor PWB	Detects the toner patch density in the image density correction.	
16	OPC drum mark sensor PWB	Detects the OPC drum mark.	
17	Document size detection light reception PWB	Generates the document size detection signal.	
18	Document size detection light emitting PWB	Generates lights to detect the document size.	
19	High voltage power PWB (MC/DV/TC)	Generates the main charger voltage, the developing bias voltage, the transfer voltage and the transfer belt cleaning voltage.	
20	Transfer bias high voltage PWB (TD CL)	Provides the bias voltage for the transfer cleaning roller and the print mode.	
21	Dehumidifier heater relay PWB	Controls ON/OFF of the dehumidifier heater.	
22	Discharge lamp PWB	Generates light for discharging.	
23	Scanner Flash PWB	Stores the scanner control program.	
24	Scanner control PWB	Controls the scanner section.	
25	Scanner relay PWB	Interfaces the scanner control PWB, the CCD PWB, the operation control PWB and the LVDS/INV PWB.	
26	Operation control PWB	Controls the display operation panel.	
27	Soft NIC PWB	Controls the network.	
28	Manual feed paper width detection PWB	Detects the manual paper feed tray paper width.	
29	Driver PWB	Drives the motors.	
30	Paper size detection PWB (Paper feed tray 3, 4)	Detects the paper size.	
31	Detector PWB (Paper feed tray 1, 2)	Detects the paper empty and upper limit tray.	
32	Photoconductor temperature sensor PWB	Temperature detection around the photoconductor	

L. FAX section



No	Name	Function/Operation	MODEL	NOTE
1	MDMC PWB	Controls the Modem and the TEL/LIU PWB.	Modem control	Fax unit
2	FAX IF PWB	<ul style="list-style-type: none"> Interfaces the MDMC PWB and the main unit controller PWB. Installs the FAX image memory. (Expansion memory can be installed.) 		
3	TEL/LIU PWB	<ul style="list-style-type: none"> Controls the line. (Call-out, polarity reversion detection, CI detection, line monitor, etc.) Connection of an externally connected telephone line. 		
4	FAX AC power 100	Generates the FAX DC power of 100V.		
5	FAX AC power 200	Generates the FAX DC power of 200V.		

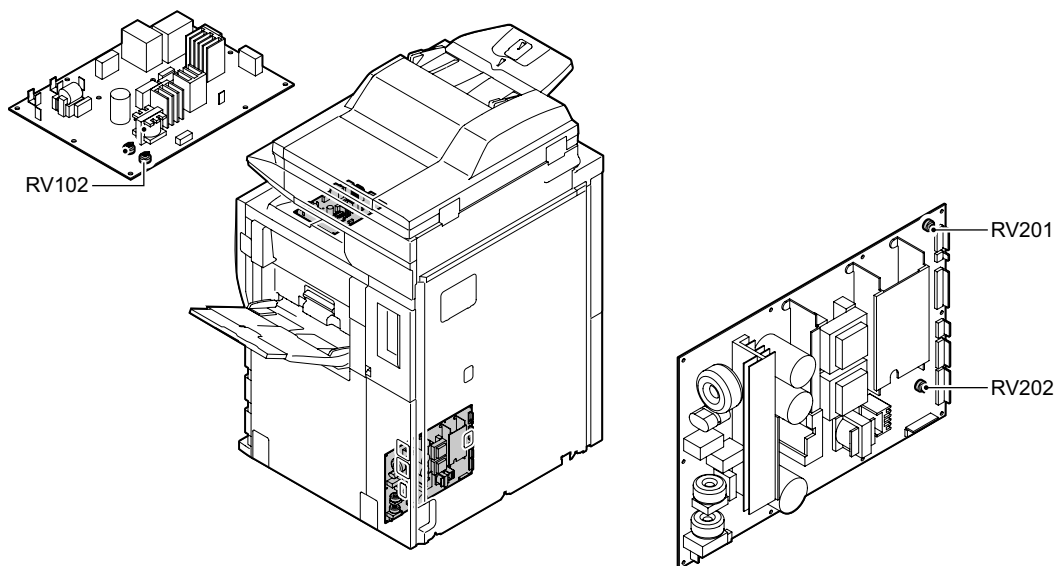
M. Fuse/thermostat



No.	Code	Name	Type	Specifications	Function/Operation	Section	NOTE
1	F201	Fuse	Time lag	250V 6.3A	PCU PWB protection (24V1)	DC main power PWB	100V series/200V series
2	F202	Fuse	Time lag	250V 6.3A	Driver PWB protection (24V2)	DC main power PWB	100V series/200V series
3	F203	Fuse	Time lag	250V 6.3A	Scanner control PWB protection (24V3)	DC main power PWB	100V series/200V series
4	F204	Fuse	Time lag	250V 6.3A	LCC control PWB protection (24V4)	DC main power PWB	100V series/200V series
5	F205	Fuse	Time lag	250V 6.3A	Finisher protection (24V5)	DC main power PWB	100V series/200V series
6	F206	Fuse	Time lag	250V 6.3A	Insertor protection (24V6)	DC main power PWB	100V series/200V series
7	F207	Fuse			Not used.	DC main power PWB	100V series/200V series
8	F208	Fuse	Time lag	250V 6.3A	Motor protection (38V)	DC main power PWB	100V series/200V series

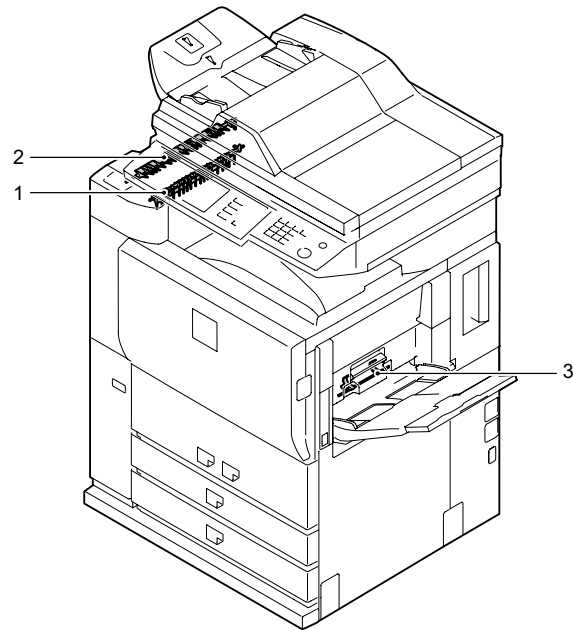
No.	Code	Name	Type	Specifications	Function/Operation	Section	NOTE
9	F1	Fuse	Time lag	250V 15A	DC power source overcurrent protection (Main source)	DC main power PWB	100V series
10	F2	Fuse	Time lag	250V 3.15A	Varistor overcurrent protection	DC main power PWB	100V series/ 200V series
11	F3	Fuse	Time lag	250V 5A	MFP controller PWB power source protection (12V1, 5V1)	DC main power PWB	100V series/ 200V series
12	F1	Fuse	Time lag	250V 8A	DC power source overcurrent protection (Main source)	DC main power PWB	200V series
13	F101	Fuse	Time lag	250V 2A	DC power source overcurrent protection (Main source)	DC sub power PWB	100V series/ 200V series
14	F102	Fuse	Time lag	250V 2A	DC power source overcurrent protection (Main source)	DC sub power PWB	100V series/ 200V series
15	F1	Fuse	Immediate decision type	250V 200mA	LCD inverter circuit overcurrent protection LVDS/INV	LCD INV PWB	Common
16	F1	Fuse	Time lag	250V 20A	AC power source overcurrent protection (Main source)	AC power PWB EX100	100V system
17	F3	Fuse	Time lag	250V 2.0A	Thermal heater overcurrent protection	AC power PWB EX100	100V system
18	F5	Fuse	Time lag	250V 2.5A	MSW detection circuit overcurrent protection	AC power PWB EX100	100V system
19	F1, F2	Fuse	Time lag	250V 10A	AC power source overcurrent protection (Main source)	AC power PWBEX200	200V system
20	F3, F4	Fuse	Time lag	250V 2.0A	Thermal heater overcurrent protection	AC power PWBEX200	200V system
21	F5	Fuse	Time lag	250V 2.5A	MSW detection circuit overcurrent protection	AC power PWBEX200	200V system
22	HLTS1	Thermostat		120VAC 15A 240VAC 10A	Fusing roller overheat protection	Fusing unit	
23	HLTS2	Thermostat		120VAC 15A 240VAC 10A	Fusing roller overheat protection	Fusing unit	
24	HLTS3	Thermostat		120VAC 15A 240VAC 10A	Sub heat roller overheat protection	Fusing unit	

N. Adjustment volume



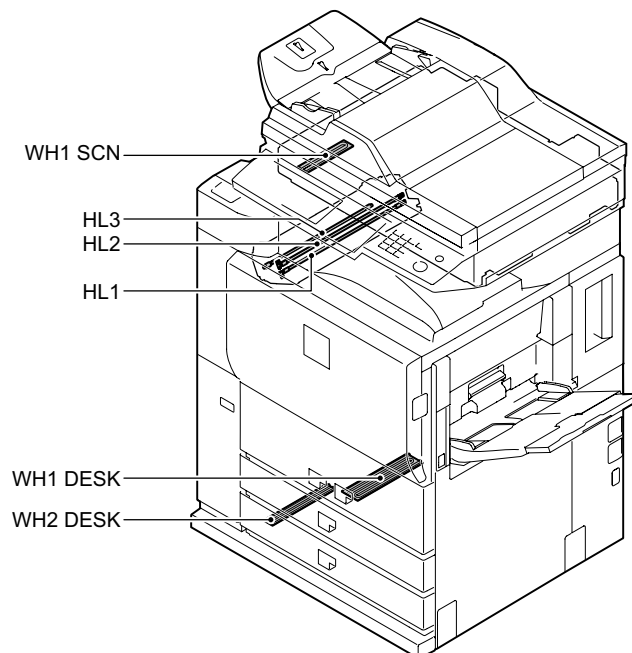
Name	Function/Operation	NOTE
RV102	DC sub power unit +12V power output voltage adjustment VR	
RV201	DC main power unit +38V power output voltage adjustment VR	
RV202	DC main power unit +24V power output voltage adjustment VR	

O. Gate



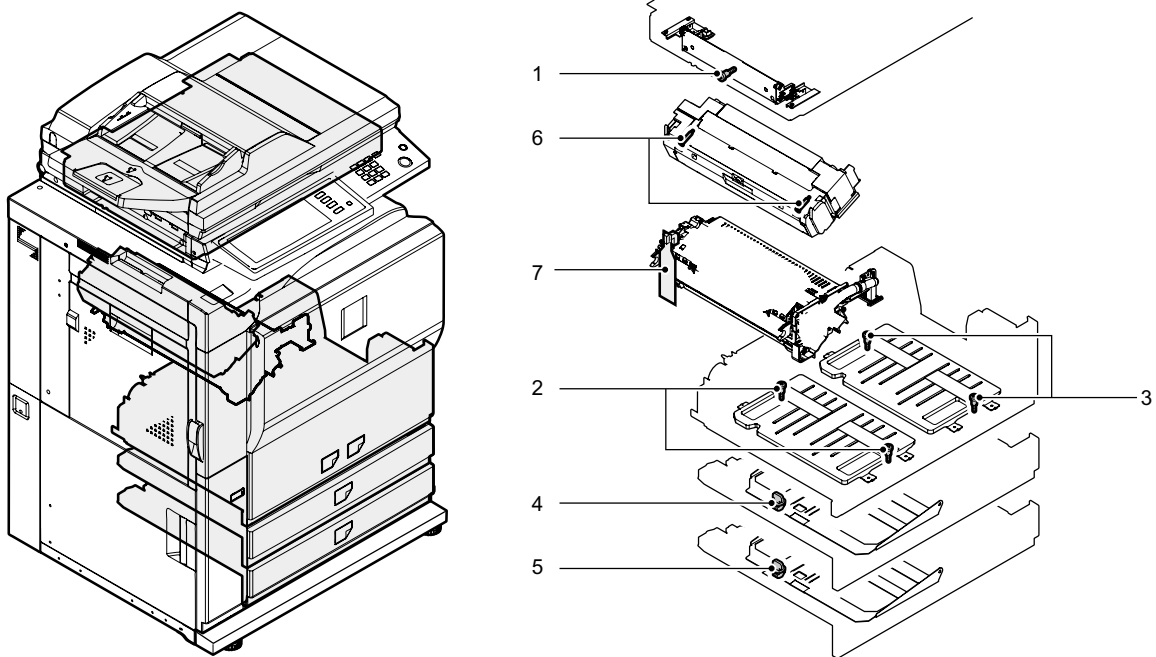
No.	Name	Function/Operation	NOTE
1	Switchback gate	Selects the paper route when discharging paper to the inner tray and when switching back to the exit or finisher.	Switched not by the solenoid drive but by the automatic procedure.
2	Paper exit gate	Selects the paper route to transport paper to the duplex (ADU) section or to discharge paper.	Driven by the solenoid (DGS).
3	Manual feed gate	Specifies the lead edge position of paper when setting paper. (Prevention against double feed and multifeed of paper into the paper feed roller)	

P. Heater



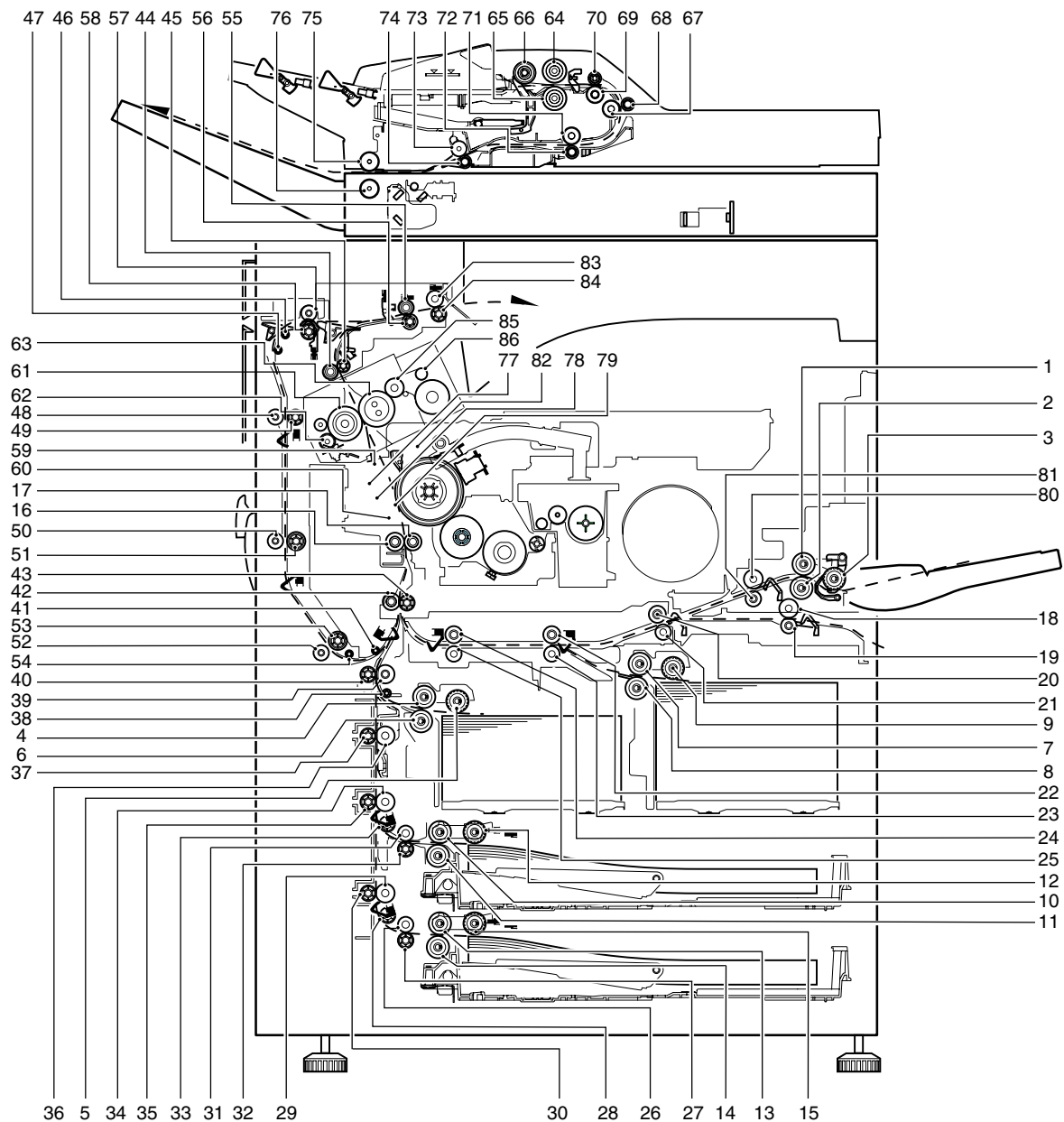
Code	Name	Type	Function/Operation	NOTE
HL1	Heater lamp 1	Halogen lamp	Heats the center of the upper fusing roller.	
HL2	Heater lamp 2	Halogen lamp	Heats the both ends of the upper fusing roller.	
HL3	Sub heater lamp	Halogen lamp	Heats the fusing roller (pressing roller).	
WH1 DESK	Dry heater (Paper feed tray 1, 2)	Nichrome wire (18W)	Dehumidifies paper on the paper feed tray 1 and 2.	Service parts
WH2 DESK	Dry heater (Paper feed tray 3, 4)	Nichrome wire (10W)	Dehumidifies paper on the paper feed tray 3 and 4.	
WH1 SCN	Scanner dry heater	Nichrome wire (7W)	Dehumidifies the scanner section.	

Q. Lock position



No.	Name	Function/Operation	NOTE
1	Scanner lock screw	Locks the scanner. (Protects the scanner unit from breakage during transit.)	Be sure to lock during transit.
2	Paper tray 1 lock block	Locks the paper lift plate	
3	Paper tray 2 lock block	Locks the paper lift plate	
4	Paper tray 3 lock block	Locks the paper lift plate	
5	Paper tray 4 lock block	Locks the paper lift plate	
6	Fusing pressure release screw	Applies and releases pressure in the fusing unit.	Release the pressure when storing the machine longer than 30 days.
7	OPC drum separation pawl lock block	Protects the OPC drum from contact with the separation pawl.	

R. Roller

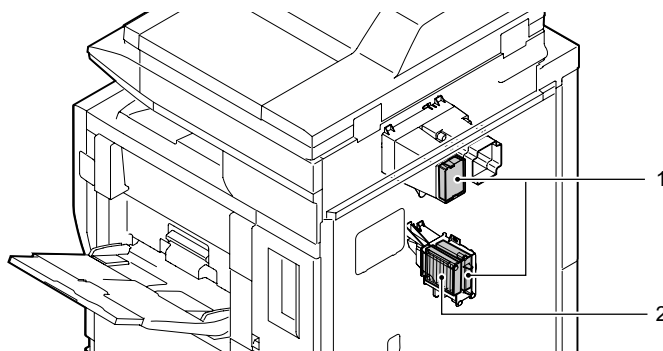


No.	Name	Function/Operation	NOTE
1	Paper feed roller (Manual paper feed tray)	Feeds paper to the paper transport section.	
2	Separation roller (Manual paper feed tray)	Separates paper to prevent double-feed.	
3	Paper pickup roller (Manual paper feed tray)	Sends paper to the paper transport section.	
4	Paper feed roller (No. 1 paper feed tray)	Feeds paper to the paper transport section.	
5	Paper pickup roller (No. 1 paper feed roller)	Sends paper to the paper transport section.	
6	Separation roller (No. 1 paper feed tray)	Separates paper to prevent double-feed.	
7	Paper feed roller (No. 2 paper feed tray)	Feeds paper to the paper transport section.	
8	Separation roller (No. 2 paper feed tray)	Separates paper to prevent double-feed.	
9	Paper pickup roller (No. 2 paper feed roller)	Sends paper to the paper transport section.	
10	Paper feed roller (No. 3 paper feed tray)	Feeds paper to the paper transport section.	

No.	Name	Function/Operation	NOTE
11	Separation roller (No. 3 paper feed tray)	Separates paper to prevent double-feed.	
12	Paper pickup roller (No. 3 paper feed roller)	Sends paper to the paper transport section.	
13	Paper feed roller (No. 4 paper feed tray)	Feeds paper to the paper transport section.	
14	Separation roller (No. 4 paper feed tray)	Feeds paper to the paper transport section.	
15	Paper pickup roller (No. 4 paper feed roller)	Sends paper to the paper transport section.	
16	Resist roller (Drive)	Transports paper to the transfer section. / Controls the paper transport timing and adjusts the relative relationship between the image and paper.	
17	Resist roller (Idle)	Applies pressure to paper and the resist roller to transport the paper.	
18	Transport roller 1 (Drive)	Transports paper fed from the large capacity tray (LCC) to the transport roller 2.	
19	Transport roller 1 (Idle)	Applies pressure to paper and the resist roller to transport the paper.	
20	Transport roller 2 (Drive)	Transports paper transported from the manual paper feed and the transport roller 1 to the transport roller 3.	
21	Transport roller 2 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.	
22	Transport roller 3 (Drive)	Transports paper transported from the paper feed tray 2 and the transport roller 2 to the transport roller 3.	
23	Transport roller 3 (Idle)	Applies pressure to paper and the resist roller to transport the paper.	
24	Transport roller 4 (Drive)	Transports paper transported from the transport roller 3 to the transport roller 15.	
25	Transport roller 4 (Idle)	Applies pressure to paper and the resist roller to transport the paper.	
26	Transport roller 5 (Drive)	Transports paper fed from the paper feed tray 4 to the transport rollers 6 and 7.	
27	Transport roller 5 (Idle)	Applies pressure to paper and the resist roller to transport the paper.	
28	Transport roller 6 (Idle)	Reduces friction between paper and the paper guide.	
29	Transport roller 7 (Drive)	Transports paper transported from the transport roller 5 to the transport roller 10.	
30	Transport roller 7 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.	
31	Transport roller 8 (Drive)	Transports paper transported from the paper feed tray 3 to the transport rollers 9 and 10.	
32	Transport roller 8 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.	
33	Transport roller 9 (Idle)	Reduces friction between paper and the paper guide.	
34	Transport roller 10 (Drive)	Transports paper transported from the transport rollers 7 and 8 to the transport roller 11.	
35	Transport roller 10 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.	
36	Transport roller 11 (Drive)	Transports paper transported from the transport roller 10 to the transport roller 13.	
37	Transport roller 11 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.	
38	Transport roller 12 (Idle)	Reduces friction between paper and the paper guide.	
39	Transport roller 13 (Drive)	Transports paper fed from the paper feed trays 1, 3, and 4 to transport roller 15.	
40	Transport roller 13 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.	
41	Transport roller 14 (Idle)	Reduces friction between paper and the paper guide.	
42	Transport roller 15 (Drive)	Transports paper to the transport resist roller.	
43	Transport roller 15 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.	
44	Transport roller 16 (Drive)	Transports paper from the fusing roller to the paper exit roller 1.	
45	Transport roller 16 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.	
46	Transport roller 17 (Idle)	Reduces friction between paper and the paper guide.	
47	Transport roller 18 (Idle)	Reduces friction between paper and the paper guide.	
48	Transport roller 19 (Drive)	Transports paper from the transport from the paper exit roller 2 to the transport roller 20.	
49	Transport roller 19 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.	
50	Transport roller 20 (Drive)	Transports paper transported from the transport roller 19 to the transport roller 21.	
51	Transport roller 20 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.	
52	Transport roller 21 (Drive)	Transports paper transported from the transport roller 20 to the transport roller 15.	
53	Transport roller 21 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.	
54	Transport roller 22 (Idle)	Reduces friction between paper and the paper guide.	
55	Paper exit roller 1 (Drive)	Discharges paper to the paper exit tray. / Switches back paper.	
56	Paper exit roller 1 (Idle)	Applies a pressure to paper and the paper exit roller to provide a transport power of the paper exit roller to paper.	
57	Paper exit roller 2 (Drive)	Discharges paper. / Transports paper to the duplex (ADU) section.	
58	Paper exit roller 2 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the paper exit roller to paper.	
59	Transfer drive roller (Drive)	Drives the transfer belt.	
60	Transfer roller (Idle)	Helps to stretch the transfer belt.	
61	Fusing roller (Pressing)	Applies a pressure to the fusing roller (heating).	
62	Sub heat roller	Heats the fusing roller (pressing).	

No.	Name	Function/Operation	NOTE
63	Fusing roller (Heating)	Heat and press toner onto paper to fuse images.	
64	Paper feed roller (DSPF)	Feeds paper to the paper transport section.	
65	Separation roller (DSPF)	Separates paper to prevent against double feed.	
66	Paper pickup roller (DSPF)	Sends paper to the paper transport section.	
67	Transport roller 1 (Drive) (DSPF)	Transports paper (which is transported by the first resist roller) to the second resist roller.	
68	Transport roller 1 (Idle) (DSPF)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.	
69	First resist roller (Drive) (DSPF)	Controls the paper transport timing. / Adjusts paper to be horizontal.	
70	First resist roller (Idle) (DSPF)	Applies a pressure to paper and the resist roller to provide a transport power of the resist roller to paper.	
71	Transport roller 2 (Drive) (DSPF)	Transports paper transported from the paper exit roller 1 to the transport roller 3.	
72	Transport roller 2 (Idle) (DSPF)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.	
73	Second resist roller (Drive) (DSPF)	Controls the paper transport timing. / Adjusts paper to be horizontal.	
74	Second resist roller (Idle) (DSPF)	Applies a pressure to paper and the resist roller to provide a transport power of the resist roller to paper.	
75	Paper exit roller (Drive) (DSPF)	Discharges paper.	
76	Paper exit roller (Idle) (DSPF)	Applies a pressure to paper and the paper exit roller to provide a transport power of the paper exit roller to paper.	
77	Transfer cleaning roller	Cleans the transfer belt.	
78	Transfer tension roller	Applies a proper tension to the transfer belt.	
79	Transfer roller	Applies a proper voltage to the transfer belt.	
80	Transfer roller 1A (Drive)	Transports paper (which is fed from the manual paper feed tray) to the transport roller.	
81	Transfer roller 1A (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.	
82	Cleaning brush roller	Removes paper dust from the photoconductor drum.	
83	Paper exit roller 3 (Drive)	Discharges paper to the paper exit tray. /Switches back paper.	
84	Paper exit roller 3 (Idle)	Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper.	
85	Pressure connect roller	Applies a pressure to WEB paper to connect with the heat roller.	
86	WEB roller	Clean the heat roller.	

S. Filter



No.	Name	Function/Operation	NOTE
1	Ozone filter	Absorbs ozone generated in the image process section.	
2	Toner filter	Filters dispersed toner in the process section.	

[6] ADJUSTMENTS

1. General

2. Outline

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

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

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

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

3. Adjustment item list

Job No	Adjustment item list		Simulation
ADJ 1	Adjusting high voltage values	ADJ 1A Adjust the main charger grid voltage	8-2
		ADJ 1B Adjust the developing bias voltage	8-1
		ADJ 1C Adjust the transfer current, voltage	8-6, 8-17, 8-18
ADJ 2	Adjusting the developing unit	ADJ 2A Adjust the developing doctor gap	
		ADJ 2B Adjust the developing roller main pole	
ADJ 3	Adjusting image distortions	ADJ 3A Adjust print image distortions (LSU parallelism adjustment)	64-1
		ADJ 3B Adjust the scanner (reading) unit parallelism	
		ADJ 3C Adjust scanned image distortions in the sub-scanning direction	
		ADJ 3D Adjust scanned image distortions in the main scanning direction – 1	
		ADJ 3E Adjust scanned image distortions in the main scanning direction – 2	
ADJ 4	Adjusting DSPF parallelism	ADJ 4A Adjust DSPF levelness	
		ADJ 4B Adjust DSPF skews	64-1
ADJ 5	Adjusting the image focus	ADJ 5A Adjust the image focus in original table mode and DSPF front-face mode (CCD)	48-1
		ADJ 5B Adjust the image focus in DSPF back-face mode (CIS)	
ADJ 6	Adjusting the image magnification	ADJ 6A Adjust the image magnification in the main scanning direction in original table mode (CCD)	48-1
		ADJ 6B Adjust the image magnification in the sub-scanning direction in original table mode (CCD)	48-1
		ADJ 6C Adjust the image magnification in the main scanning direction in DSPF front-face mode (CCD)	48-1
		ADJ 6D Adjust the image magnification in the main scanning direction in DSPF back-face mode (CIS)	48-1
		ADJ 6E Adjust the image magnification in the sub-scanning direction in DSPF mode	48-1, 48-5
ADJ7	Adjusting the image off-center	ADJ 7A Adjust the print image off-center (print engine section)	50-5 (50-10)
		ADJ 7B Adjust the scanned image off-center in original table mode (scan section)	50-12
		ADJ 7C Adjust the scanned image off-center in DSPF front-face mode (scan section)	50-12
		ADJ 7D Adjust the scanned image off-center in DSPF back-face mode (scan section)	50-12
ADJ8	Adjusting the image position, image loss, and void area	ADJ 8A Adjust copied image loss/void area in original table mode	50-1
		ADJ 8B Adjust the original scan start position (adjust the scanner read position in DSPF-mode front face scan)	53-8
		ADJ 8C Adjust the copied image loss/void area in DSPF mode	50-6
		ADJ 8D Adjust the image loss in scanner mode	50-27
		ADJ 8E Adjust the image loss for images sent in fax mode	50-27
ADJ9	Adjusting the copied image quality	ADJ 9A Adjust the binary mode copy density for all modes at once	46-2
		ADJ 9B Adjust the copy density in text binary mode	46-9, 10, 11
		ADJ 9C Adjust the copy density in text/photo binary mode	
		ADJ 9D Adjust the copy density in photo binary mode	
		ADJ 9E Adjust the copied image gamma in copy mode	46-18
		ADJ 9F Adjust the copied image sharpness	46-31
ADJ10	Adjusting the print quality in fax mode	ADJ10A Adjust the fax mode print density for all modes at once	46-12
		ADJ10B Adjust the fax mode print density in standard mode	46-13, 46-14, 46-15, 46-16, 46-45
		ADJ10C Adjust the fax mode print density in small-character mode	
		ADJ10D Adjust the fax mode print density in fine mode	
		ADJ10E Adjust the fax mode print density in super fine mode	
		ADJ10F Adjust the fax mode print density in 600dpi mode	
ADJ11	Adjusting the image quality in scan mode	ADJ11A Adjust the scan mode image density for all modes at once	46-21
		ADJ11B Scan mode image density adjustment/individual setup (standard mode)	46-21, 46-22, 46-23, 46-24, 46-25
		ADJ11C Scan mode image density adjustment/individual setup (small-character mode)	
		ADJ11D Scan mode image density adjustment/individual setup (fine mode)	
		ADJ11E Scan mode image density adjustment/individual setup (super fine mode)	
		ADJ11F Adjust the image gamma in scanner mode	46-27
ADJ12	Common image quality adjustments for all of copy, scan, and fax modes	ADJ12A Correct the image density in original table mode/DSPF mode (Copy mode)	46-20
		ADJ12B Set up the auto mode operation for copy, scan, and fax	46-19

Job No	Adjustment item list			Simulation
ADJ13	Adjusting the fusing paper guide position			
ADJ14	Adjusting the paper size detection	ADJ14A	Adjust the paper width sensor for the manual paper feed tray	40-2
		ADJ14B	Adjust the paper width sensor for paper feed tray 3	40-12
		ADJ14C	Adjust the paper width sensor for the DSPF paper feed tray	53-6
ADJ15	Adjusting the original size detection (in original table mode)	ADJ15A	Adjust the detection point of the original size sensor (in original table mode)	41-1
		ADJ15B	Adjust the sensitivity of the original size sensor	41-2
ADJ16	Adjusting the touch panel coordinates			65-1
ADJ17	Adjusting the supply voltage			

4. Details of adjustment

ADJ 1 Adjusting high voltage values

NOTE: Adjusting the output voltage requires the ability to measure internal impedance of 1000 Ω . In addition, use high voltage probe together. (FLUKE87FLUKE80K-40 is recommended.)

1-A Adjust the main charger grid voltage

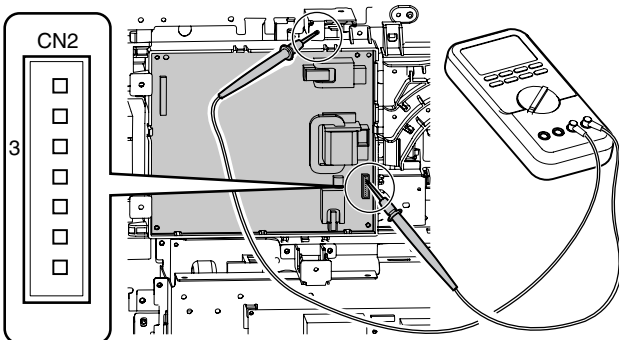
This adjustment is needed in the following situations:

- * The high voltage power PWB (MC/DV/TC) has been replaced.
- * U2 trouble has occurred.
- * The PCU PWB has been replaced.
- * The EEPROM of the PCU PWB has been replaced.

(Main charger grid voltage adjustment)

Item/operation mode			Simulation		High voltage power PWB (MC/DV/TC)		
			Setting range	Default	Connector	Pin #	Actual voltage
Copy	Auto mode	8-2	200 – 1000	580	CN2	3	-590±2v
	Text mode		CHARACTER	580			
	Text/photo mode		MIX	580			
	Photo mode		PHOTO	580			
Printer	All modes		PRINTER	580	CN2	3	-590±2v
FAX	All modes		FAX	580	CN2	3	-590±2v

- Remove the rear cover of the machine.
- Apply a digital multi-meter to the connector CN2 pin (3) of the high voltage PWB and the chassis GND.



- Go through the modes specified in Simulation 8-2.

SIMULATION 8-2
MAIN GRID SETTING. SELECT 1-6, AND PRESS START.
1.AUTO 580 2.CHARACTER 580
3.MIX 580 4.PHOTO 580
5.PRINTER 580 6.FAX 580

Press [START] key.

Press [SYSTEM SETTINGS] key.

SIMULATION 8-2
MAIN GRID SETTING. INPUT VALUE, AND PRESS START.
1.AUTO (200-1000) 580

Press [START] key.

Press [SYSTEM SETTINGS] key.
Or after 30sec output.

SIMULATION 8-2
MAIN GRID SETTING. EXECUTING...
1.AUTO 580

- Select the number that corresponds to the adjustment item using the numeric keypad.
- Press the Start key.
- Press the start key to have the voltage output for 30 seconds. The operation can be stopped with the SYSTEM SETTINGS key.
If the output voltage is not within the requirement, do the following steps.
- Enter the adjustment value using the numeric keypad.
- Press the Start key.
(The adjustment value is put into memory, and the corresponding voltage is output for 30 seconds.)

Repeat steps 7 to 8 until the output requirement is satisfied.

1-B Adjust the developing bias voltage

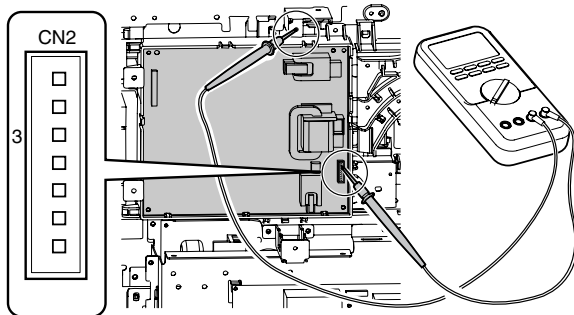
This adjustment is needed in the following situations:

- * The high voltage power PWB (MC/DV/TC) has been replaced.
- * U2 trouble has occurred.
- * The PCU PWB has been replaced.
- * The EEPROM of the PCU PWB has been replaced.

(Main charger grid voltage adjustment)

Item/operation mode		Simulation			High voltage power PWB (MC/DV/TC)			
			Setting range	Default	Connector	Pin #	Actual voltage	
Copy	Auto mode	8-1	AUTO	0 – 750	495	CN2	7	-500±5v
	Text mode		CHARACTER	0 – 750	495	CN2	7	-500±5v
	Text/photo mode		MIX	0 – 750	495	CN2	7	-500±5v
	Photo mode		PHOTO	0 – 750	495	CN2	7	-500±5v
Printer	All modes		PRINTER	0 – 750	495	CN2	7	-500±5v
FAX	All modes		FAX	0 – 750	495	CN2	7	-500±5v
Cleaning mode			PLUS	0 – 250	150	CN2	7	+500±5v

- 1) Remove the rear cover of the machine.
- 2) Apply a digital multi-meter to the connector CN2 pin (7) of the high voltage PWB and the chassis GND.



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

SIMULATION 8-1	
DV BIAS SETTING. SELECT 1-7, AND PRESS START.	
1. AUTO	495
2. CHARACTER	495
3. MIX	495
4. PHOTO	495
5. PRINTER	495
6. FAX	495
7. PLUS	150

Press [START] key.

Press [SYSTEM SETTINGS] key.

SIMULATION 8-1	
DV BIAS SETTING. INPUT VALUE, AND PRESS START.	
1: AUTO (0-750)	495

Press [START] key.

Press [SYSTEM SETTINGS] key.
Or after 30sec output.

SIMULATION 8-1	
DV BIAS SETTING. EXECUTING...	
1: AUTO	495

- 4) Select the number that corresponds to the adjustment item using the numeric keypad.
- 5) Press the Start key.
- 6) Press the start key to have the voltage output for 30 seconds. The operation can be stopped with the SYSTEM SETTINGS key.
If the output voltage is not within the requirement, do the following steps.
- 7) Enter the adjustment value using the numeric keypad.
- 8) Press the Start key. (The adjustment value is put into memory, and the corresponding voltage is output for 30 seconds.)
Repeat steps 7 to 8 until the output requirement is satisfied.

1-C Adjust the transfer current, voltage

(Transfer voltage adjustment)

Item/operation mode			Simulation		Adjustment voltage (monitor voltage)	Connector	Pin #	Actual voltage /actual current	
			Setting range	Default					
Front print	8-6	FRONT	0 – 800	350	–	–	–	35±1.0μA (1.0 – 1.5Kv)	High voltage power PWB (MC/DV/TC)
				400 *				40±1.0μA (2.0 – 2.5Kv) *	
Back print		BACK	0 – 800	350	–	–	–	35±1.0μA (1.0 – 1.5Kv)	
				400 *				40±1.0μA (2.0 – 2.5Kv) *	
Transfer belt (cleaning)	8-17	SHV FRONT	0 – 600	450	–	–	–	AC4.5Kv (p-p)	High voltage power PWB (MC/DV/TC)
		SHV BACK	0 – 600	450	–	–	–	AC4.5Kv (p-p)	
		THV-	0 – 75	10	DC – 100±10v	CN2	1	DC – 100±10v/AC4.5Kv (p-p)	
Transfer roller (cleaning)	8-18	CRHV PLUS	0 – 250	200	+2.0±10.1v	–	Check pin	+2000±100v	High voltage power PWB (TC cleaning)
Transfer roller (print)		CRHV MINUS	0 – 250	200	–2.0±10.1v	–	Check pin	–2000±100v	

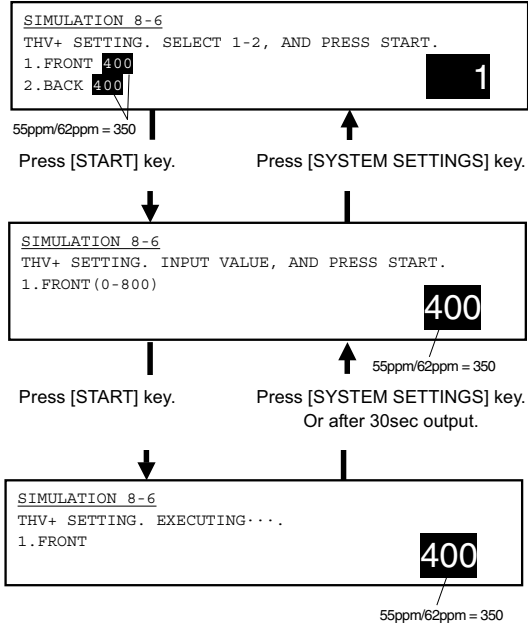
* MX-M700 only

Transfer voltage adjustment (print operation mode)

This adjustment is needed in the following situations:

- * The high voltage power PWB (MC/DV/TC) has been replaced.
- * U2 trouble has occurred.
- * The PCU PWB has been replaced.
- * The EEPROM of the PCU PWB has been replaced.

1) Go through the modes specified in Simulation 8-6.



- 2) Select the number that corresponds to the adjustment item (FRONT/BACK) using the numeric keypad.
- 3) Press the Start key.
- 4) Enter the adjustment value (default) using the numeric keypad.
- 5) Press the Start key.
(The adjustment value is put into memory, and the corresponding current is output for 30 seconds.)

The operation can be stopped with the SYSTEM SETTINGS key.

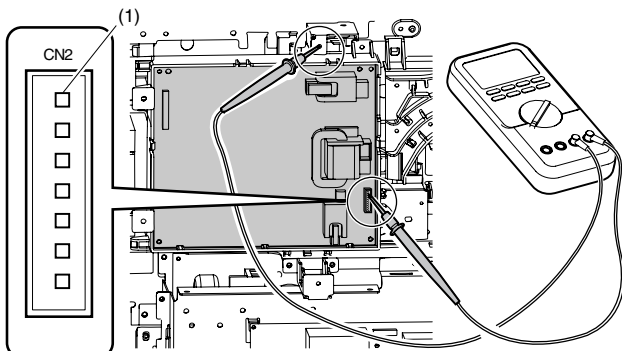
NOTE: It is not possible to determine the adjusted transfer voltage (print operation mode) (FRONT/BACK). If the voltage seems to be abnormal after setting the default value, therefore, the high voltage PWB (MC/DV/TC) should be replaced.

Transfer voltage adjustment (transfer belt cleaning mode)

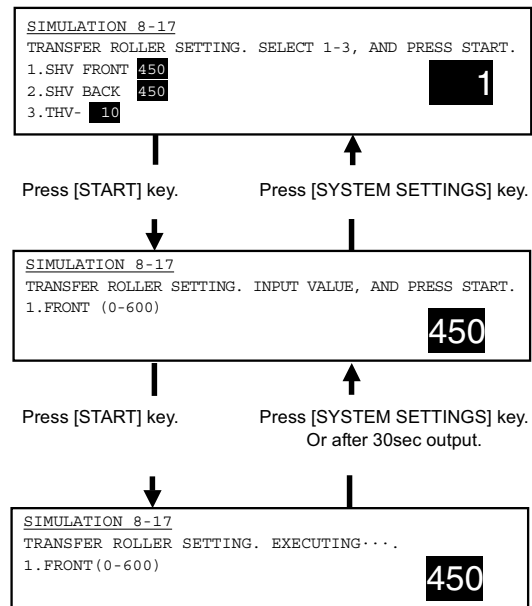
This adjustment is needed in the following situations:

- * The high voltage power PWB (MC/DV/TC) has been replaced.
- * U2 trouble has occurred.
- * The PCU PWB has been replaced.
- * The EEPROM of the PCU PWB has been replaced.

- 1) Remove the rear cover of the machine.
- 2) Apply a digital multi-meter to the connector CN2 pin (1) of the high voltage PWB and the chassis GND.



3) Go through the modes specified in Simulation 8-17.



- 4) Select the number that corresponds to the adjustment item (SHV FRONT / SHV BACK) using the numeric keypad.
- 5) Press the Start key.
- 6) Set each adjustment item to the default value (enter the adjustment value and then press the Start key).

* The adjustment items (SHV FRONT / SHV BACK) correspond to the AC component of the 'transfer belt cleaning mode voltage' applied to the transfer roller, but this voltage component cannot be determined. If the voltage seems to be abnormal after setting the default adjustment value, therefore, the high voltage PWB (MC/DV/TC) should be replaced.

- 7) Select the number that corresponds to cleaning operation mode (THV-) using the numeric keypad.

* The adjustment items (THV-) corresponds to the DC component of the 'transfer belt cleaning mode voltage' applied to the transfer roller.

- 8) Press the Start key.
- 9) Press the Start key to have the voltage output for 30 seconds.
If the output voltage is not within the requirement, do the following steps.

The operation can be stopped with the SYSTEM SETTINGS key.

- 10) Enter the adjustment value using the numeric keypad.
- 11) Press the Start key.

(The adjustment value is put into memory, and the corresponding voltage is output for 30 seconds.)

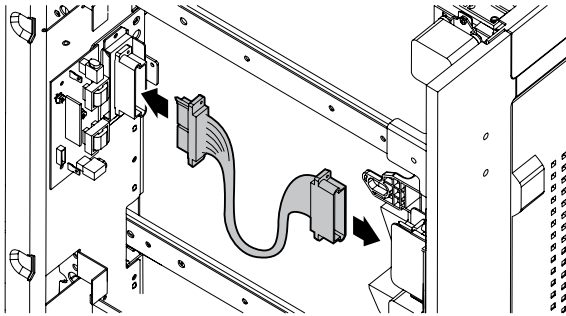
Repeat steps 10 to 11 until the output requirement is satisfied.

Transfer voltage adjustment (transfer roller cleaning/transfer roller print modes)

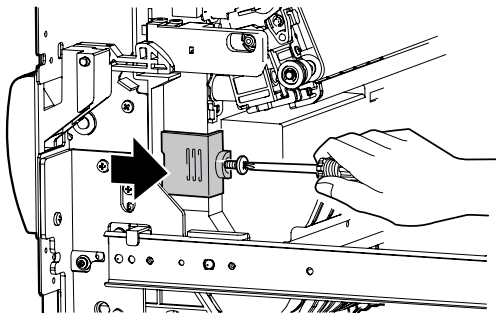
This adjustment is needed in the following situations:

- * The high voltage power PWB (TC cleaning) has been replaced.
- * U2 trouble has occurred.
- * The PCU PWB has been replaced.
- * The EEPROM of the PCU PWB has been replaced.

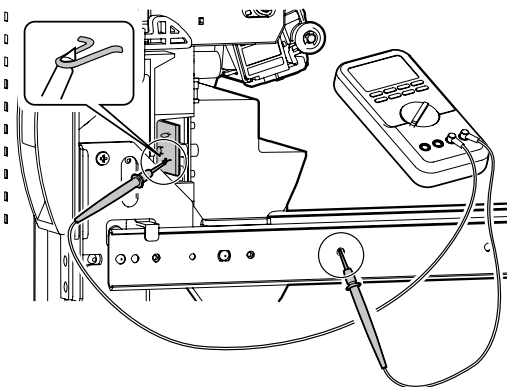
- 1) Connect the transfer section to the main body side using the transfer extension harness (DHAi-3629FCZZ).



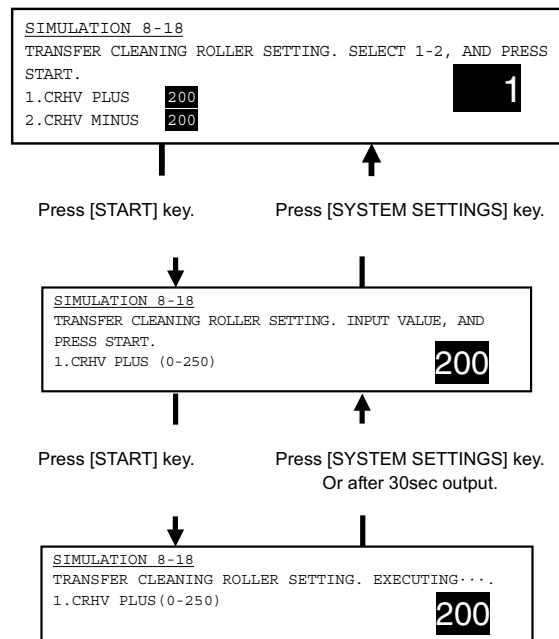
- 2) Remove the front frame cover of the duplex section, and remove the rear frame cover of the transfer section.



- 3) Apply a digital multi-meter to the check pin of the high voltage PWB (TC cleaning) and the chassis GND.



- 4) Go through the modes specified in Simulation 8-18.



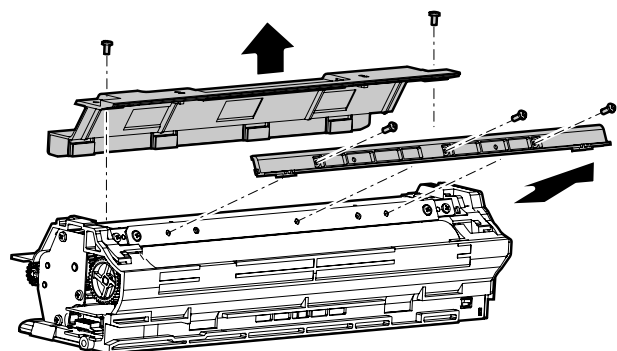
- 5) Select the number that corresponds to the adjustment item (CRHV PLUS / CRHV MINUS) using the numeric keypad.
 - 6) Press the Start key.
 - 7) Press the Start key to have the voltage output for 30 seconds.
The operation can be stopped with the SYSTEM SETTINGS key.
If the output voltage is not within the requirement, do the following steps.
 - 8) Enter the adjustment value using the numeric keypad.
 - 9) Press the Start key.
(The adjustment value is put into memory, and the corresponding voltage is output for 30 seconds.)
- Repeat steps 8 to 9 until the output requirement is satisfied.

ADJ 2 Adjusting the developing unit

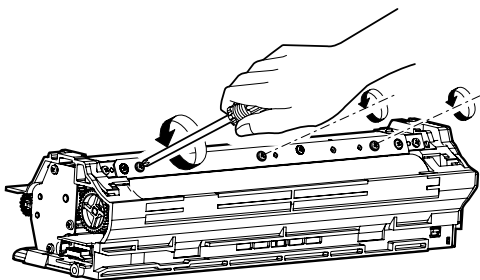
2-A Adjust the developing doctor gap

This adjustment is needed in the following situations:

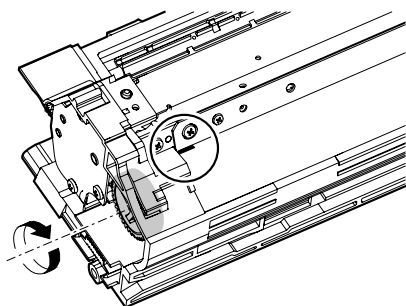
- * The developing unit has been disassembled.
 - * The print density is low.
 - * The toner is excessively dispersed.
- 1) Remove the developing unit of the machine.
 - 2) Remove the developing unit cover and blade cover.



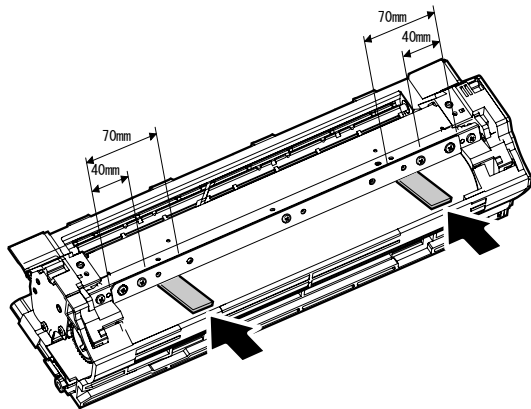
- 3) Loosen the DV doctor fixing screws.



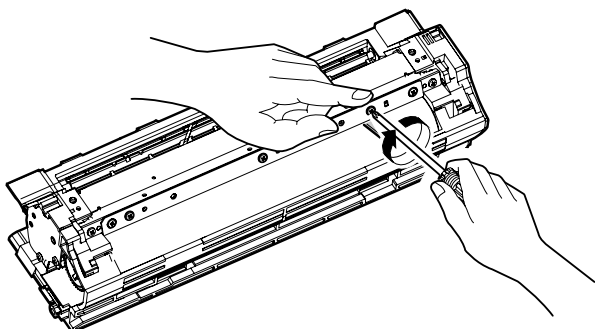
- 4) Manually turn the DV roller to align the marking on the DV roller surface with the DV doctor position.



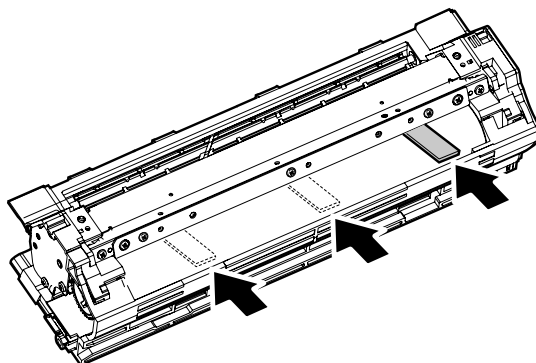
- 5) Insert a 0.525mm clearance gauge in between the DV roller and DV doctor so that the gauge is positioned at a distance of 40 mm to 70 mm from the DV doctor end face.



- 6) Tighten the DV doctor fixing screws while pressing the DV doctor in the arrow direction.
(This should be done for both front and rear frames.)



- 7) On both sides of the DV doctor and at its center, make sure that the DV doctor gap is 0.525 ± 0.03 .



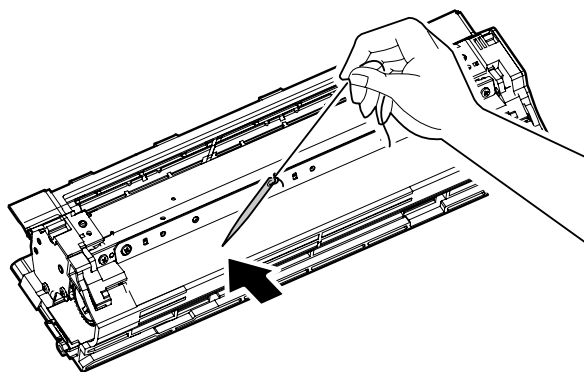
* When inserting a clearance gauge, take care not to damage the DV doctor or MG roller.

Repeat steps 2 to 6 until the DV doctor gap meets the requirement.

2-B Adjust the developing roller main pole

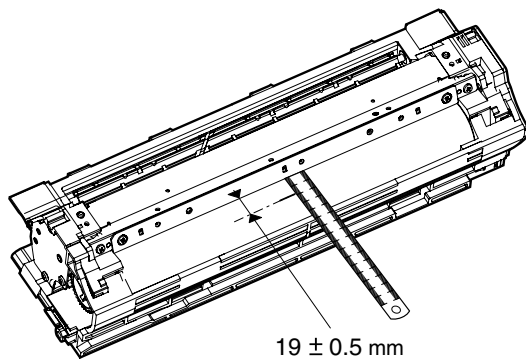
This adjustment is needed in the following situations:

- * The developing unit has been disassembled.
 - * The print density is low.
 - * The toner is excessively dispersed.
- 1) Remove the developing unit.
 - 2) Remove the developing unit cover and blade cover, and then place the developing unit on a level surface.
 - 3) Attach a piece of string to a sewing needle or pin.
 - 4) With the string in hand, bring the needle closer to the DV roller while keeping the needle parallel with the roller. (Do not use a clip, which does not accurately indicate the position.)



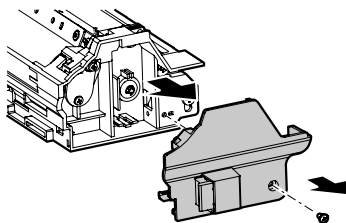
- 5) Keeping the needle 2 to 3 mm off the DV roller surface, mark the DV roller surface at an extension of the needle tip. (Do not let the needle tip contact the DV roller.)

- 6) Measure the distance between the marking on the DV roller and leading edge of the DV doctor, and make sure that it is $19 \pm 0.5 \text{ mm}$.

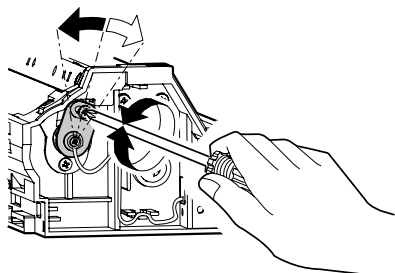


If this requirement is not met, do the following steps.

- 7) Remove the front cover.



- 8) Loosen the fixing screws of the developing roller main pole adjusting plate, and make adjustments by moving the adjusting plate in the arrow direction.



Repeat steps 3 to 6 until the developing roller main pole meets the positional requirement.

ADJ 3 Adjusting image distortions

3-A Adjust print image distortions (LSU parallelism adjustment)

This adjustment is needed in the following situations:

- * The LSU has been replaced or removed.
- * Print images are distorted.

This adjustment should be followed by:

ADJ 7 / ADJ 7A: Adjust the print image off-center (print engine section)

- 1) Set A4 (11 x 8.5) paper to Tray 1.

- 2) Go through the modes specified in Simulation 64-1.

SIMULATION 64-1

SELF PRINT MODE. SELECT 0-7, AND PRESS START.

0. TRAY SELECT : 1 1. PRINT START
2. PRINT PATTERN : 87 3. DENSITY : 1
4. MULTI : 1 5. MODE : 1
6. LEVEL : 1 7. DUPLEX : 1

1

Select 1, and
press [START]
key.

Select other than 1,
and press [START]
key.

Press [START] key, or press
[SYSTEM SETTINGS] key.

(2) SIMULATION 64-1

SELF PRINT MODE. INPUT VALUE, AND PRESS START.
(PRINT PATTERN)
INPUT 1-98.

71

(3) SIMULATION 64-1

SELF PRINT MODE. INPUT VALUE, AND PRESS START.
(DENSITY)
1-255

100

(4) SIMULATION 64-1

SELF PRINT MODE. INPUT VALUE, AND PRESS START.
(MULTI COUNT)
1-999

1

(5) SIMULATION 64-1

SELF PRINT MODE. SELECT 1-8, AND PRESS START.
(MODE)
1.STANDARD 2.SMOOTHING 3.TONER SAVE 4.HALF TONE
5.SMOOTHING+ TONER SAVE 6.SMOOTHING+ HALF TONE
7.TONER SAVE+ HALF TONE
8.SMOOTHING+ TONER SAVE+ HALF TONE

1

(6) SIMULATION 64-1

SELF PRINT MODE. INPUT VALUE, AND PRESS START.
(LEVEL)
1-5

3

(0) SIMULATION 64-1

SELF PRINT MODE. SELECT 1-6, AND PRESS START.
(FEED TRAY)
1. TRAY1 2. TRAY2 3. TRAY3 4. TRAY4 5. BPT
6. LCC

1

(7) SIMULATION 64-1

SELF PRINT MODE. SELECT 1-2, AND PRESS START.
(DUPLEX)
1. NO 2. YES

1

SIMULATION 64-1

SELF PRINT MODE.. EXECUTING...

0. TRAY SELECT : 1
2. PRINT PATTERN : 87 3. DENSITY : 1
4. MULTI : 1 5. MODE : 1
6. LEVEL : 1 7. DUPLEX : 1

0

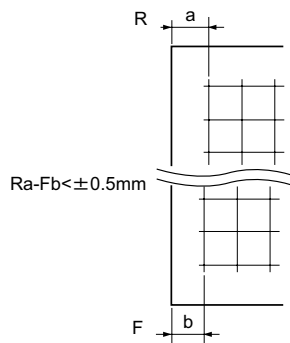
- 3) Select PRINT PATTERN using the numeric keypad.
4) Select print pattern 71 (grid pattern).
5) Press the Start key.
6) Select PRINT START using the numeric keypad.
7) Press the Start key.

- 8) Check the printed grid pattern for distortions.

[Check Method 1]

Compare the front frame side and rear frame side of the printed paper in terms of the distance between the outer end of the grid pattern image and the edge of the paper.

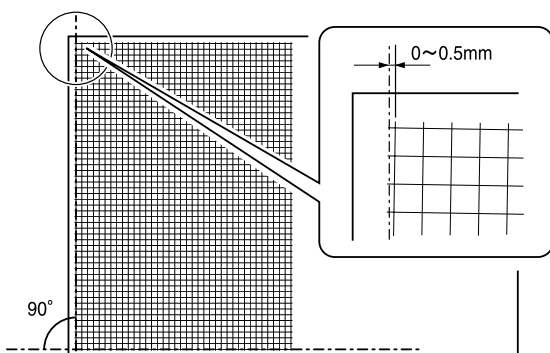
No adjustment is needed if the difference between these dimensions is within 0.5 mm.



[Check Method 2]

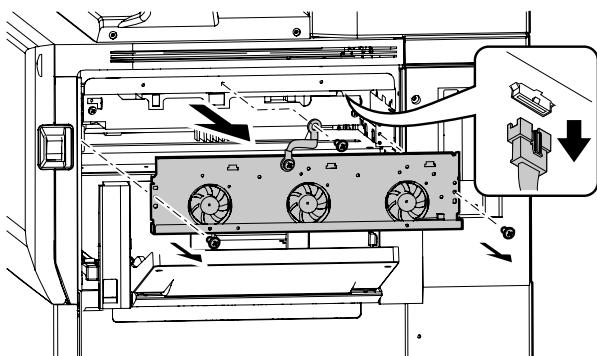
Check the printed grid pattern for distortions.

If the right-angle level of the traverse print line is 0.5mm or less with respect to the longitudinal print line of paper, no adjustment is needed.



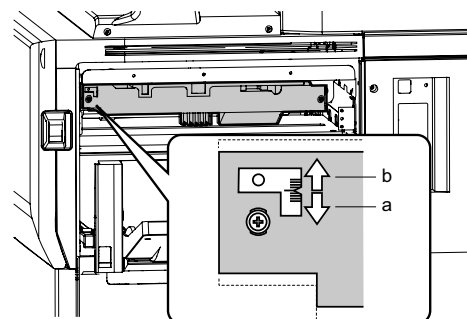
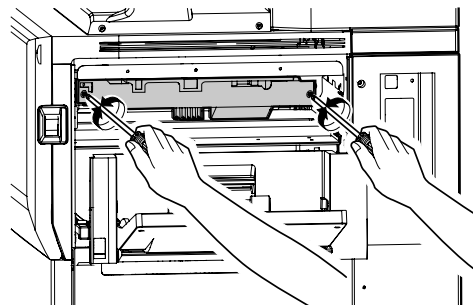
Carry out the following work if the situation is unsatisfactory.

- 9) Draw out the manual paper feed tray, and remove the front frame side, side cover, fan cover cabinet, and fan unit.
10) Remove the fan unit.



- 11) Loosen the LSU fixing screws, and change the LSU fixing angle.

- * If the vertical line image is inclined to the left with respect to the front frame side, move the LSU fixing plate in arrow direction (a).
- * If the vertical line image is inclined to the right with respect to the front frame side, move the LSU fixing plate in arrow direction (b).



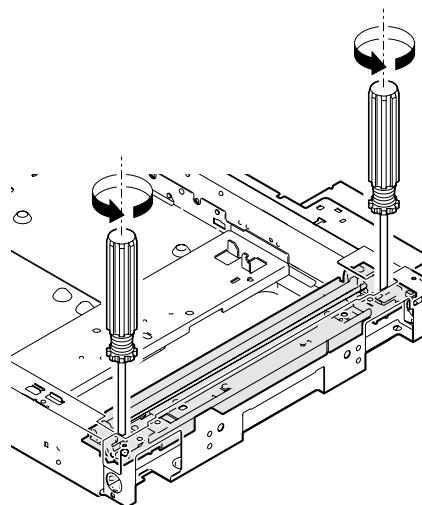
Repeat steps 5 to 11 until an acceptable result is obtained.

3-B Adjust the scanner (reading) unit parallelism

This adjustment is needed in the following situations:

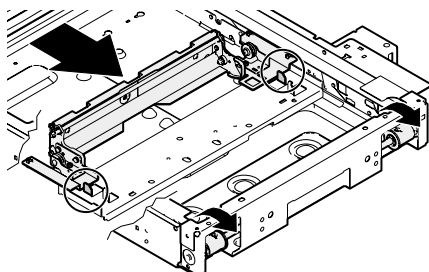
- * The scanner (reading) section has been disassembled.
- * Scanned images are distorted.

- 1) Loosen the fixing screws for Scanner Unit A and scanner drive wire to release the scanner unit from the drive wire.



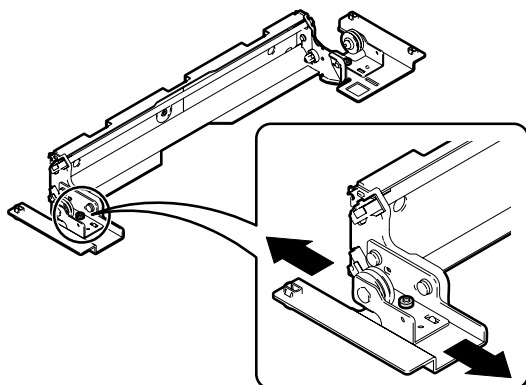
- 2) Manually turn the scanner drive pulley, and move Scanner Unit B until contact with the two stoppers on the CCD mounting plate.

If Scanner Unit B makes contact with the two stoppers on the CCD mounting plate simultaneously, the parallelism of Scanner Unit B is proper.



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

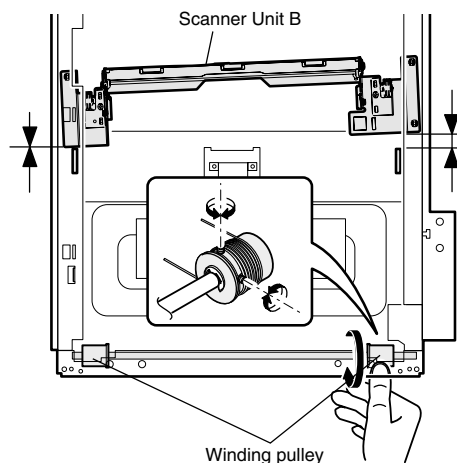
- 3) Loosen the pulley angle fixing screw on either the front or rear frame side of Scanner Unit B.



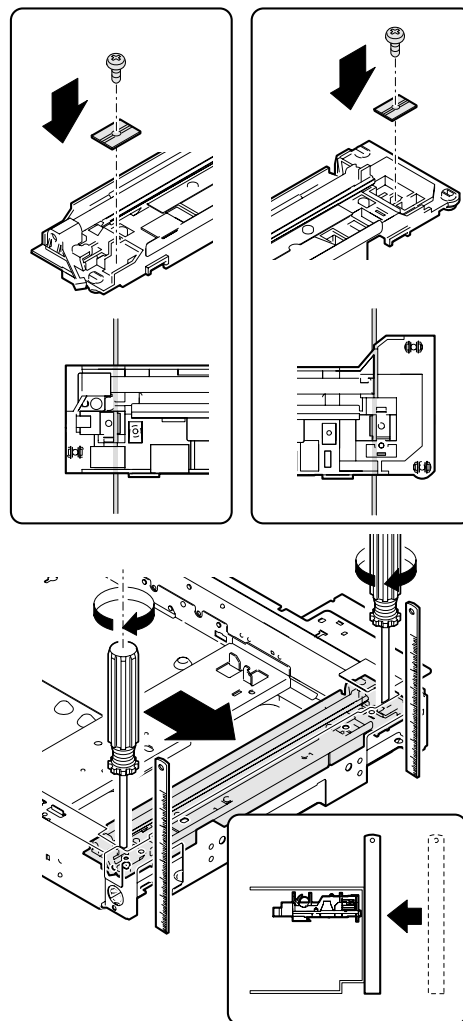
- 4) Adjust the pulley angle position on Scanner Unit B so that the scanner unit makes contact with both of the two stoppers on the CCD mounting plate at the same time.
- 5) Fix the pulley angle on Scanner Unit B.

If the above steps fail to provide an acceptable result, then do the following steps.

- 6) Loosen the fixing screw of the scanner unit drive pulley that is not in contact.
- 7) Manually turning the scanner unit drive pulley, move Scanner Unit B until it comes into contact with the two stoppers on the CCD mounting plate.



- 8) Without moving the scanner unit drive shaft, manually turn the scanner unit drive pulley so that Scanner Unit B makes contact with both of the two stoppers on the CCD mounting plate at the same time. (Change the positional relationship between the scanner unit drive pulley and the drive shaft.)
- 9) With Scanner Unit B in contact with both of the two stoppers on the CCD mounting plate at the same time, align the end face of Scanner Unit A with the right-hand side end face of the frame, and fix Scanner Unit A with the screws. (Make positioning by using the ruler to right side of the scanner frame (F/R) and fix to the wire.)

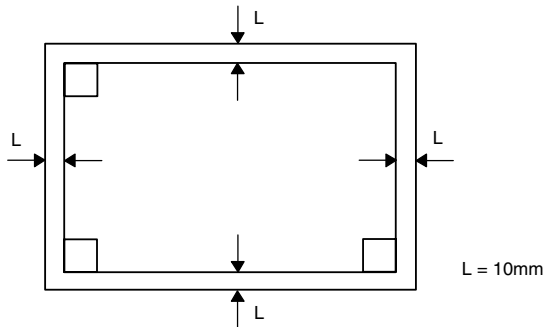


3-C Adjust scanned image distortions in the sub-scanning direction

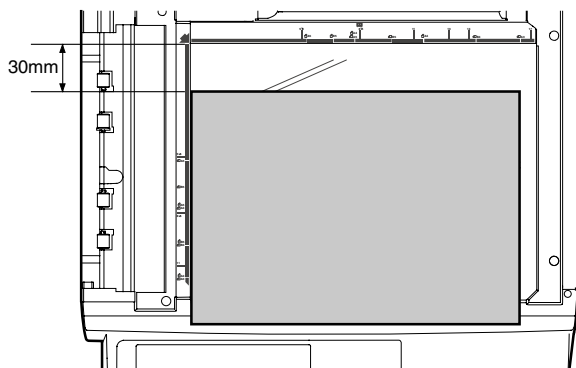
This adjustment is needed in the following situations:

- * The scanner (reading) section has been disassembled.
- * Scanned images are distorted.

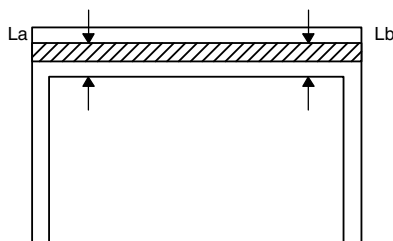
- 1) Make a test chart on A3 (11" x 17") paper as shown below.
(Draw a rectangular with four right angles.)



- 2) Set the test chart made in step 1 on the document table (about 30mm in front of the document standard setting position), and make a copy on A3 (11" x 17") paper with the DSPF unit open.

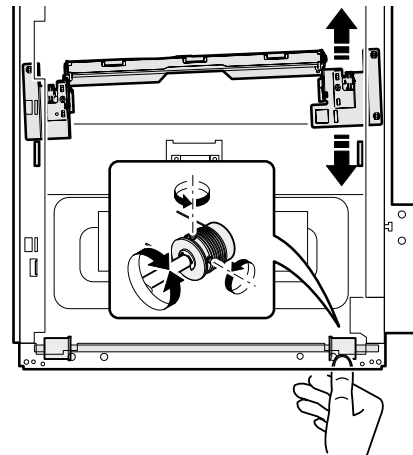


- 3) Check for distortions in the sub scanning direction.
If $L_a = L_b$, there is no distortion.



If there is some distortion in the sub scanning direction, do the following steps.

- 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, manually turn the scanner unit drive pulley to change the parallelism of Scanner Units A and B. (Change the positional relationship between the scanner unit drive pulley and the drive shaft.)
- 6) Tighten the scanner unit drive pulley fixing screw.

Repeat steps 2 to 6 until an acceptable result is obtained.

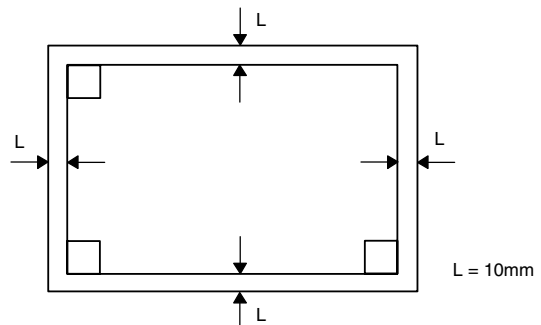
If the above steps fail to eliminate distortions in the sub scanning direction, do the steps described in "ADJ 3E: Adjust scanned image distortions in the main scanning direction-2".

3-D Adjust scanned image distortions in the main scanning direction - 1

The scanner (reading) section has been disassembled.

- * Scanned images are distorted.

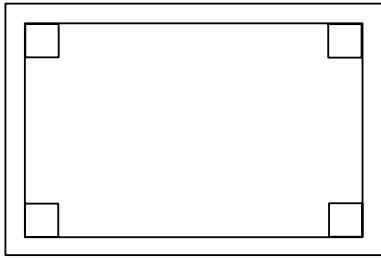
- 1) Make a test chart on A3 (11" x 17") paper as shown below.
(Draw a rectangular with four right angles.)



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

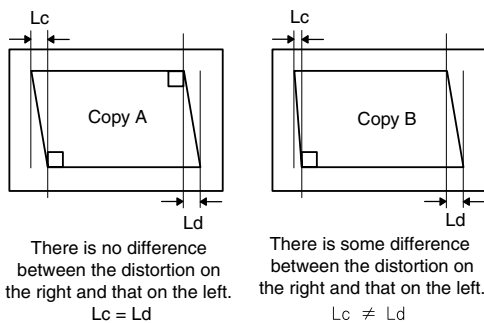
- 3) Check for distortions in the main scanning direction.

If the four angles of the rectangle on the copy are right angles, there is no distortion and therefore no further steps are needed.



If there is some distortion in the main scanning direction, do the following steps.

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

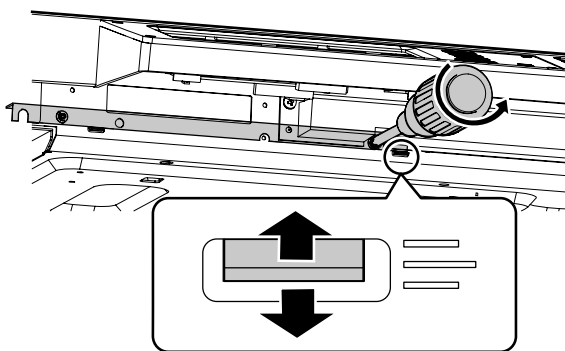


If $L_c = L_d$, the distortion on the left is equal to that on the right. (The distortions are balanced.)

If the above requirement is satisfied, then do the steps described in "ADJ 3E: Adjust scanned image distortions in the main scanning direction - 2".

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

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



- * If the paper leading edge is more distorted than the paper trailing edge, then raise the scanner rail right side.
- * If the leading edge is less distorted than the paper trailing edge, then lower the scanner rail right side.

- 6) Set the test chart made in step 1 on the document table, and make a copy on A3 (11" x 17") paper.
- 7) Check the image distortion balance in the main scanning direction.

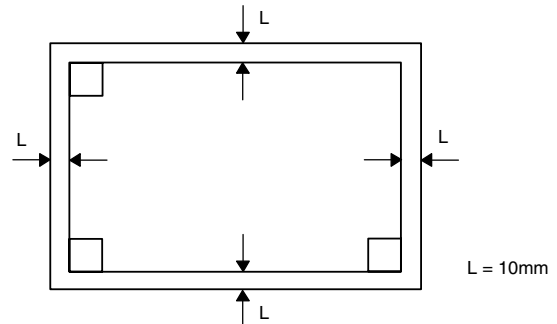
Repeat steps 5 to 7 until the difference in size of image distortion (distortion balance) in the image scanning direction is equal.

3-E Adjust scanned image distortions in the main scanning direction - 2

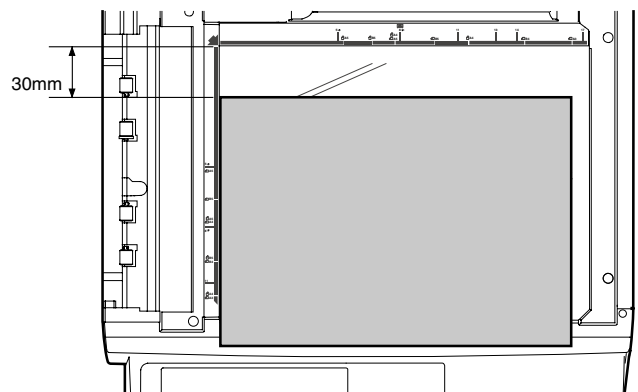
This adjustment is needed in the following situations:

- * The scanner (reading) section has been disassembled.
- * Scanned images are distorted.

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

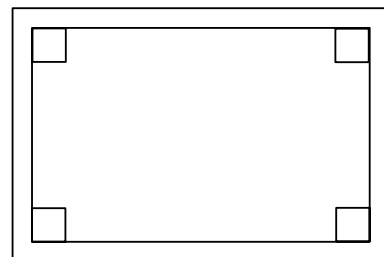


- 2) Set the test chart made in step 1 on the document table, and make a copy on A3 (11" x 17") paper.



- 3) Check for distortions in the main scanning direction.

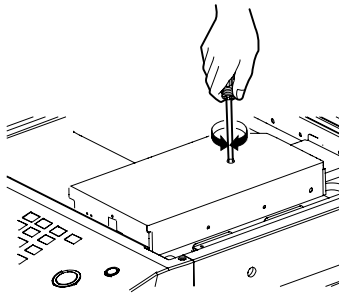
If the four angles of the rectangle on the copy are right angles, there is no distortion and therefore no further steps are needed.



If there is some distortion in the main scanning direction, do the following steps. These steps assume that there is no or little difference in distortion between the paper's leading and trailing edges.

If there is some difference in distortion between the paper's leading and trailing edges, these steps should be preceded by the adjustment steps described in "ADJ 3D: Adjust scanned image distortions in the main scanning direction - 1", intended to provide almost the same level of distortion on the leading and trailing edges.

- 4) Remove the document table glass, and make adjustments by turning the main scanning direction image distortion adjusting screw.



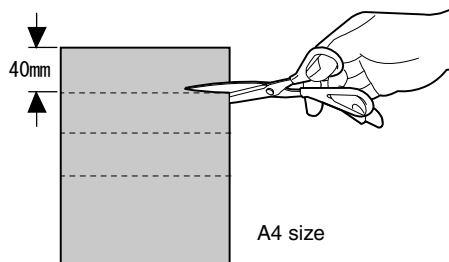
- * If the rear frame side image is shifted toward the paper's leading edge, then turn the adjusting screw clockwise.
 - * If the front frame side image is shifted toward the paper's leading edge, then turn the adjusting screw counterclockwise.
- It changes approx. 0.5mm by 90 degrees rotation.
Repeat steps 2 to 4 until an acceptable result is obtained.

ADJ 4 Adjusting DSPF parallelism

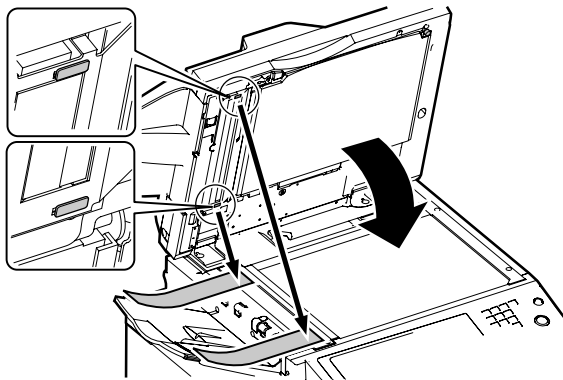
4-A Adjusting the DSPF parallelism

This adjustment is needed in the following situations:

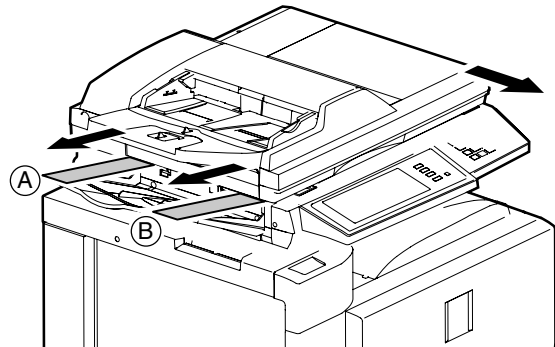
- * The DSPF section has been disassembled.
 - * The DSPF unit has been replaced.
- 1) Create two check sheets for DSPF levelness adjustment by cutting copy paper as illustrated below:



- 2) Insert each of the two check sheets in between the CIS guide boss and the glass for DSPF mode on each of the front and rear frame sides, and then close the DSPF unit.

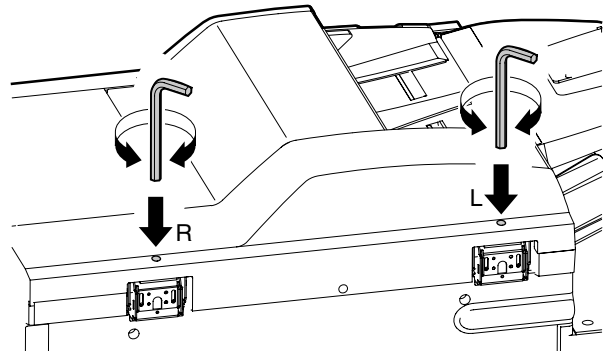


- 3) Gently pulling out each check sheet for DSPF levelness adjustment, make sure that no gap is felt between the CIS guide boss and the glass for DSPF mode for each of the front and rear frame sides.



If the above requirement is not met, do step 4.

- 4) Turn the height adjusting screw on the left side of the DSPF rear frame to adjust the fore/aft levelness between the DSPF frames.



If the front frame side is higher (i.e. there is a gap in B) : turn the height adjusting screw L on the left side of the DSPF rear frame in the clockwise direction.

If the rear frame side is higher (i.e. there is a gap in A) : turn the height adjusting screw L on the left side of the DSPF rear frame in the counterclockwise direction.

Repeat steps 2 to 4 until an acceptable result is obtained.

NOTE: If the above procedure will not allow an adjustment, turn the adjustment screw R on the rear frame of the DSPF to perform an adjustment.

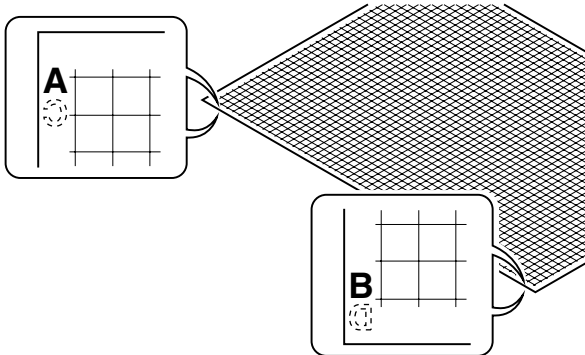
4-B Adjust DSPF skews

This adjustment is needed in the following situations:

- * The DSPF section has been disassembled.
- * The DSPF unit has been replaced.
- * The DSPF unit generates skewed scanned images.

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

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



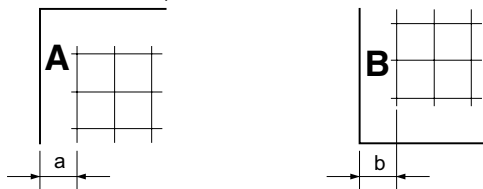
- 2) Copy the adjustment chart (created in step 1) to A3 (11" x 17") paper in duplex mode, and then check the image for skews (Set in the DSPF feed tray so that the mark on the adjustment chart is at the edge).

Check with one of the following methods.

[Check Method 1]

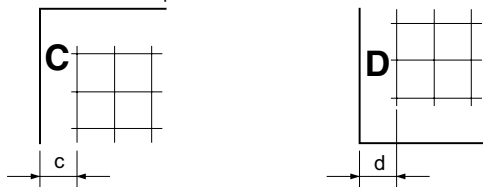
(Front side)

Make sure that the output satisfies the condition: $|a-b| \leq \pm 1 \text{ mm}$



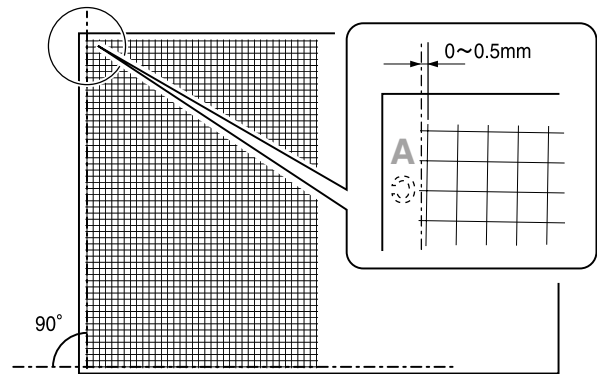
(Back side)

Make sure that the output satisfies the condition: $|c-d| \leq \pm 1 \text{ mm}$



[Check Method 2]

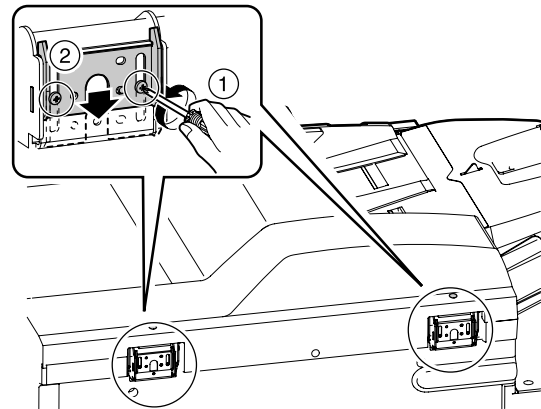
Check that the squareness of the main scanning direction print line for the longitudinal direction of paper is within 0.5mm.



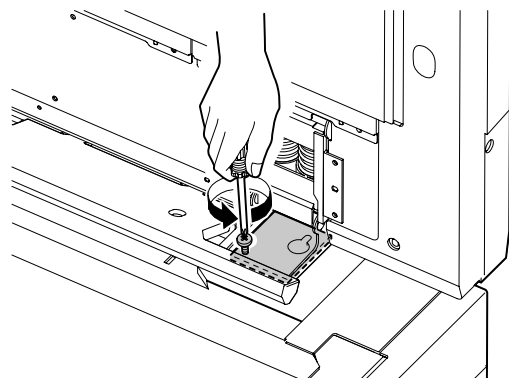
If the above requirement is met for the copied image of the paper's front side but not for the paper's back side, skip to step 4.

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

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

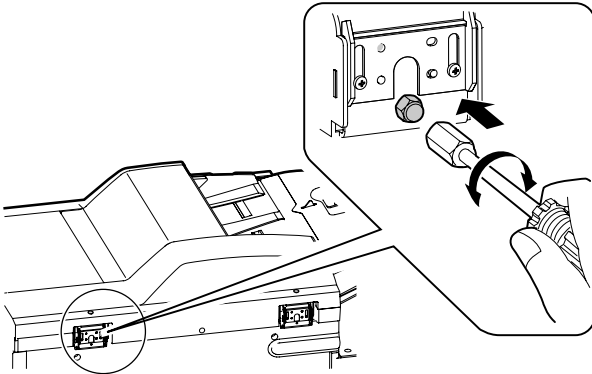


- 4) Open the DSPF and loosen the screw.



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

Remove the hexagon cap nut of the DSPF skew adjusting screw on the right side of the DSPF hinge and loosen the fixing nut, then adjust by turning the DSPF skew adjusting screw (hexagon screw).



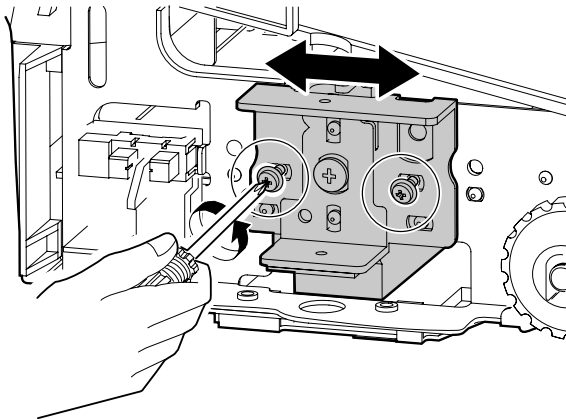
If $a < b$, then turn counterclockwise the DSPF skew adjusting screw (hexagon screw). (When the main scanning direction print line is shifted to the left)

If $a > b$, then turn clockwise the DSPF skew adjusting screw (hexagon screw). (When the main scanning direction print line is shifted to the right)

Repeat steps 2 to 5 until an acceptable result is obtained.

[If the copied image of the paper's back side is skewed beyond the acceptable level, do the following steps.]

- 6) Remove the DSPF front cover.
 - 7) Change the front frame side CIS fixing position (angle) to adjust the skew of the copied image of the paper's back side.
- This adjustment should be done by loosening the CIS fixing screw on the DSPF front side and then moving the fixing plate in the left or right direction.



If $c < d$, then shift the CIS fixing plate to the right. (When the main scanning direction print line is shifted to the left)

If $c > d$, then shift the CIS fixing plate to the left. (When the main scanning direction print line is shifted to the right)

Repeat steps 2 to 7 until an acceptable result is obtained.

ADJ 5 Adjusting the image focus

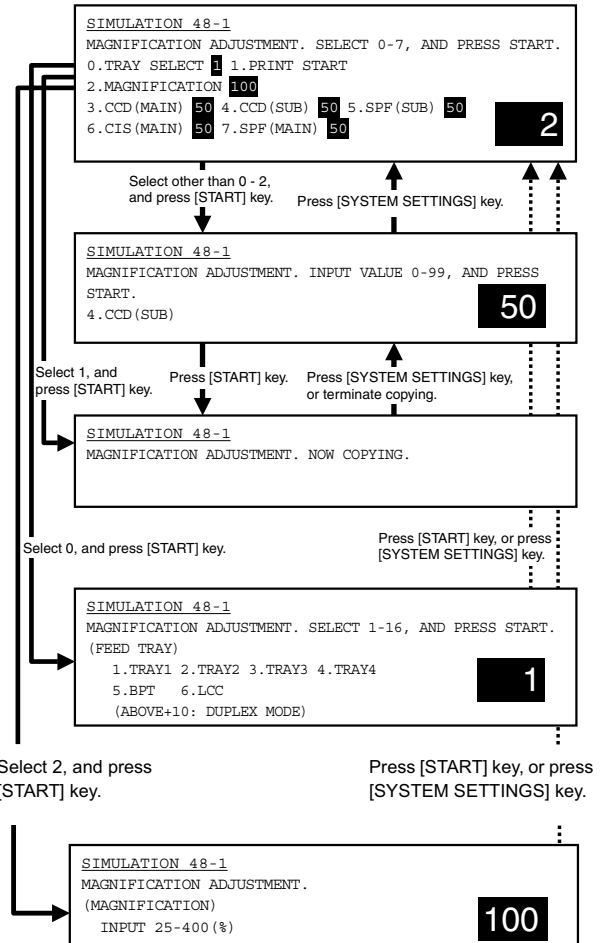
The result of this adjustment will affect all image scan modes (copy, scan, and fax).

5-A Adjust the image focus in original table mode and DSPF front-face mode (CCD)

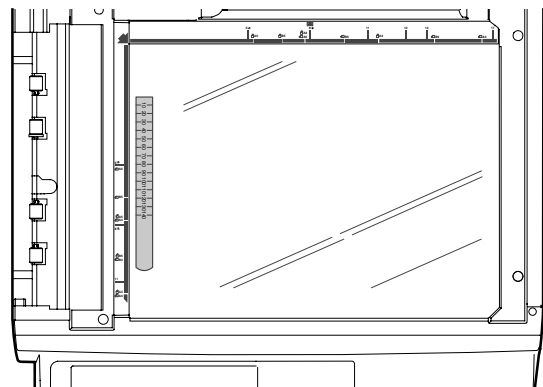
This adjustment is needed in the following situations:

- * The CCD unit has been removed from the machine.
- * The CCD unit has been replaced.
- * Copied/scanned/faxed images are not correctly focused.

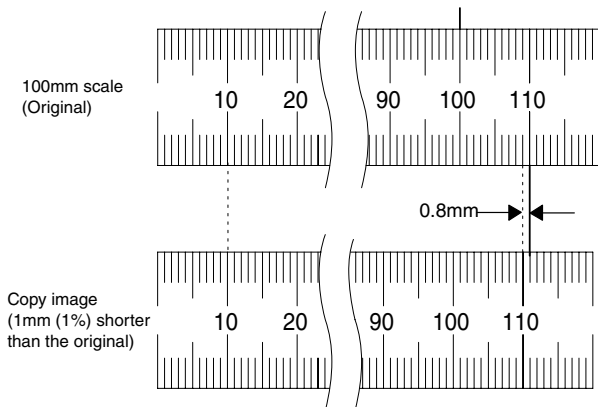
- 1) Go through the modes specified in Simulation 48-1.



- 2) Set the adjustment item CCD (MAIN) to 50 (default).
- 3) Place a scale on the original table as illustrated below.

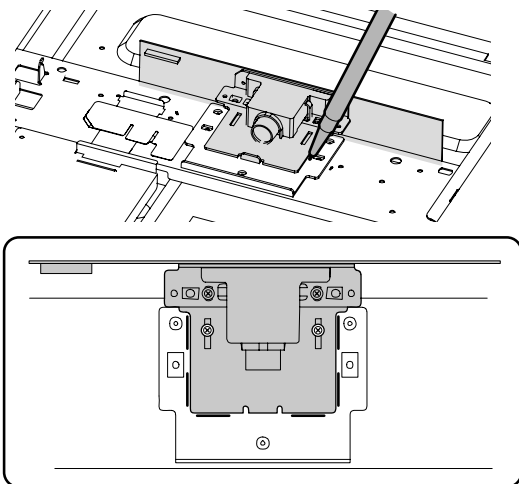


- 4) Make a normal copy on A4 paper.
- 5) Compare the copied image of the scale and the actual scale length in terms of length.

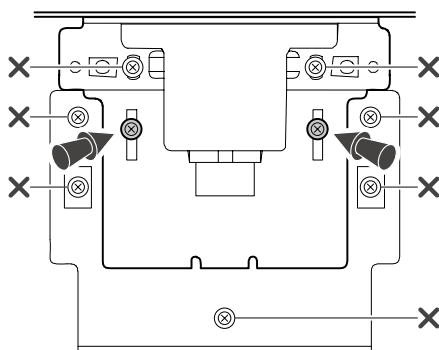


If the copied image of the scale is of almost the same length as the actual scale but is not satisfactorily focused, do the following steps.

- 6) Remove the table glass and dark box cover.
- 7) To prevent the CCD unit optical axis from being deviated, mark the CCD unit base as illustrated below.



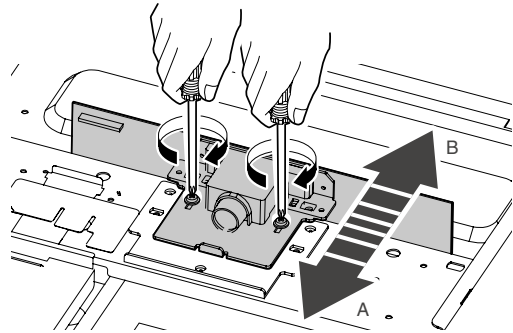
- 8) Loosen two fixing screws of the CCD unit.



* The screws cross-marked in the illustration must not be loosened.

Loosening these screws could possibly change the CCD unit base optical axis. Once the optical axis has been changed, it cannot be corrected through on-site adjustments. Solving such a problem requires the replacement of the entire scanner unit.

- 9) Slide the CCD unit in the arrow direction (CCD sub-scanning direction) to change its mounted position.



If the copied image is not satisfactorily focused and larger than the original, slide the unit in direction B.

If the copied image is not satisfactorily focused and smaller than the original, slide the unit in direction A.

* After adjusting the CCD unit position, fix the CCD unit so that it is in parallel with the marker line added in step 7, referring to the graduations on the front and rear frames sides of the CCD unit base.

Repeat steps 4 to 9 until the copied image of the scale is of almost the same size as the actual scale and the image is satisfactorily focused.

5-B Adjust the image focus in DSPF back-face mode (CIS)

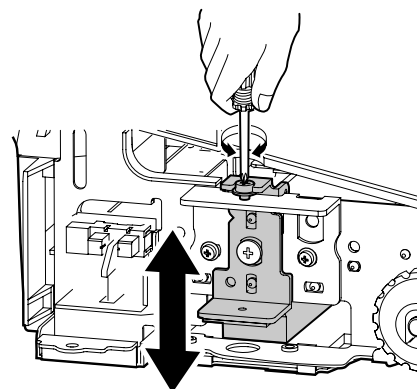
This adjustment is needed in the following situations:

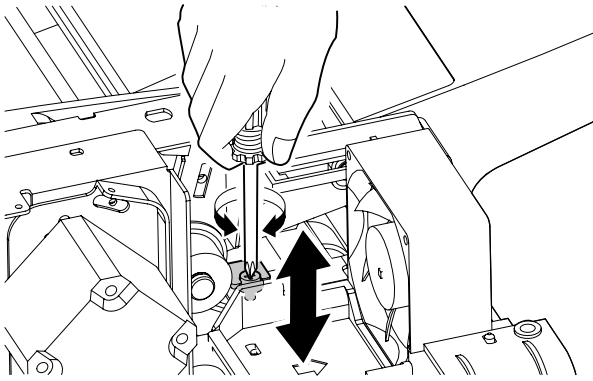
- * The CIS unit has been removed.
- * The CIS unit has been replaced.
- * Copied/scanned/faxed images are not correctly focused.
- * The DSPF unit has been removed.
- * The DSPF unit has been replaced.

- 1) Make a duplex copy in DSPF mode.
- 2) Make sure that the copied image on the back side of the paper is satisfactorily focused.

If the image is not satisfactorily focused, do the following steps.

- 3) Remove the rear frame and front frame cabinet of the DSPF unit.
- 4) Adjust the focus by turning the CIS focus adjusting screws on the front and rear frame sides, respectively.





Repeat the above adjustments until an acceptable result is obtained.

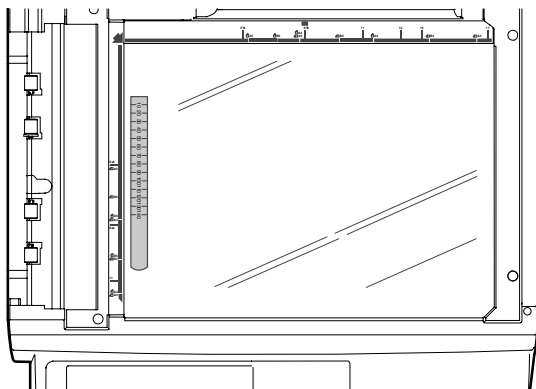
ADJ 6 Adjusting the image magnification

6-A Adjust the image magnification in the main scanning direction in original table mode (CCD)

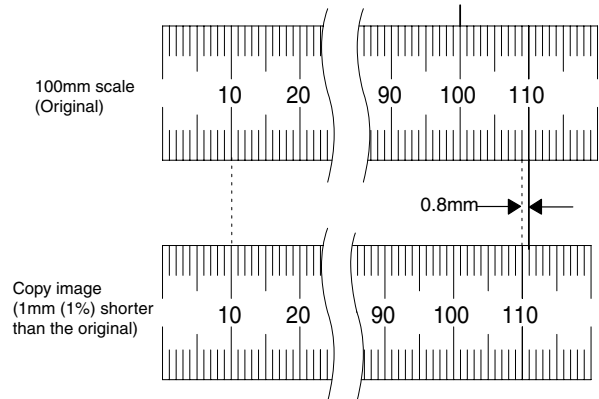
This adjustment is needed in the following situations:

- * The CCD unit has been removed from the machine.
- * The CCD unit has been replaced.
- * Images are not correctly magnified in the main scanning direction.
- * The MFP control PWB has been replaced.
- * The EEPROM on the MFP control PWB has been replaced.
- * The scan control PWB has been replaced.
- * The EEPROM on the scan control PWB has been replaced.
- * U2 trouble has occurred.

- 1) Place a scale on the original table in parallel with the main scanning direction, as illustrated below.



- 2) Make a normal copy on A4 paper.
- 3) Measure the lengths of the copied image of the scale and the actual scale.



- 4) Determine the image magnification factor using the following formula:

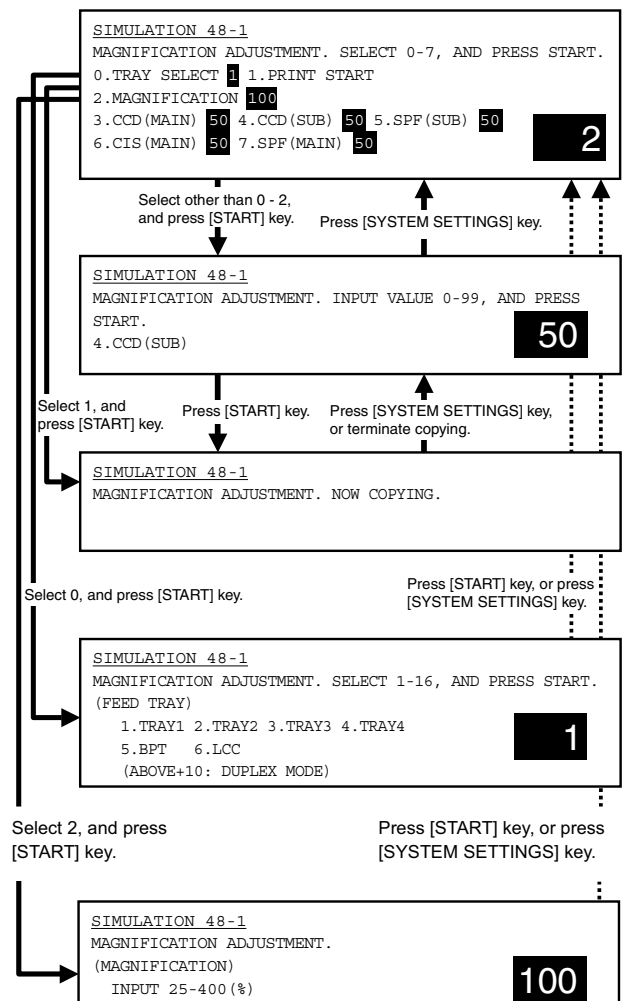
Image magnification factor (%) = Copy dimension/original dimension x 100

Example: Compare the copy and original dimensions by aligning the scale's 10 mm position with the copied image's 10 mm position.

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

If the image magnification factor is within the spec (100±0.8%), no adjustment is required; otherwise, do the following steps.

- 5) Go through the modes specified in Simulation 48-1.



- 6) Select the number that corresponds to the adjustment item CCD (MAIN) using the numeric keypad.

This adjustment item is intended to adjust the image magnification in the main scanning direction in original table mode (CCD).

- 7) Press the Start key.
- 8) Adjust the image magnification factor by entering an appropriate value through the numeric keypad.
- 9) Press the P or Start key.

Pressing the Start key starts copy operation as well as applying the adjustment value.

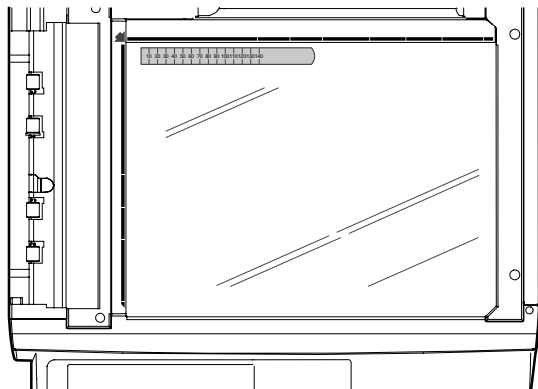
Repeat steps 2 to 9 until the image magnification factor is satisfactory.

6-B Adjust the image magnification in the sub-scanning direction in original table mode (CCD)

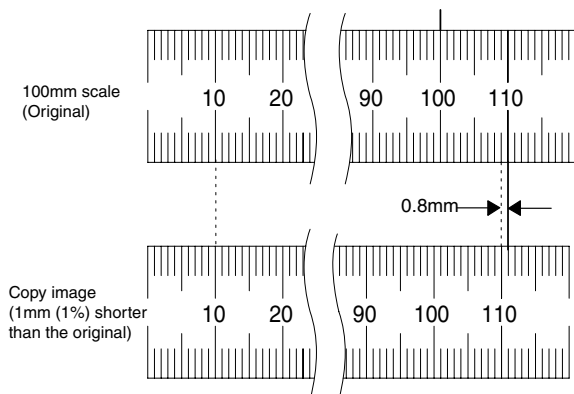
This adjustment is needed in the following situations:

- * The CCD unit has been removed from the machine.
- * The CCD unit has been replaced.
- * Images are not correctly magnified in the sub-scanning direction.
- * The MFP control PWB has been replaced.
- * The EEPROM on the MFP control PWB has been replaced.
- * The scan control PWB has been replaced.
- * The EEPROM on the scan control PWB has been replaced.
- * U2 trouble has occurred.

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



- 2) Make a normal copy on A4 paper.
- 3) Measure the lengths of the copied image of the scale and the actual scale.



- 4) Determine the image magnification factor using the following formula:

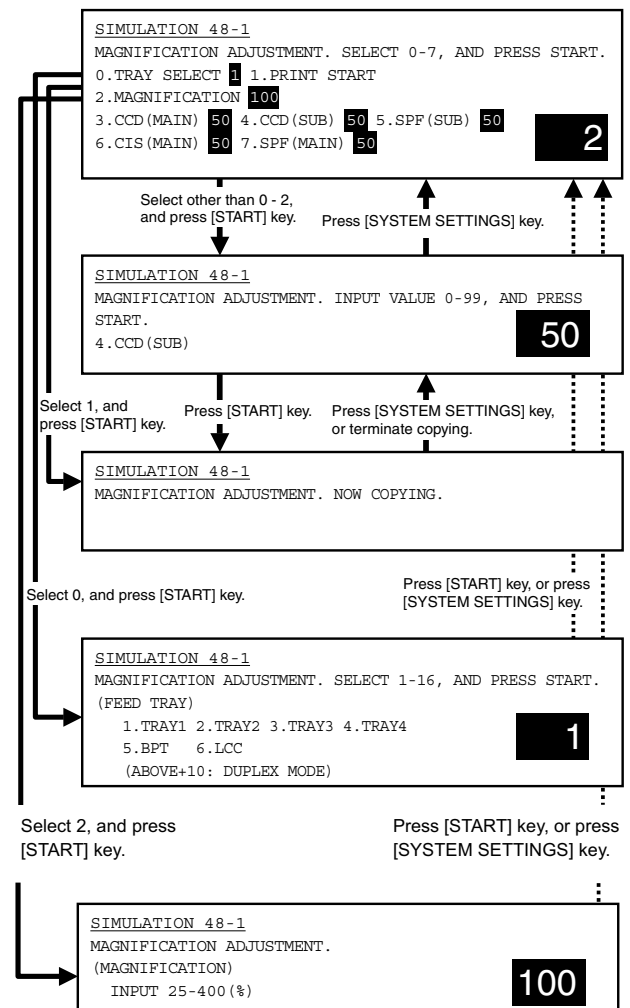
Image magnification factor (%) = Copy dimension/original dimension x 100

Example: Compare the copy and original dimensions by aligning the scale's 10 mm position with the copied image's 10 mm position.

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

If the image magnification factor is within the spec (100±0.8%), no adjustment is required; otherwise, do the following steps.

- 5) Go through the modes specified in Simulation 48-1.



- 6) Select the number that corresponds to the adjustment item CCD (SUB) using the numeric keypad. This adjustment item is intended to adjust the image magnification in the sub scanning direction in original table mode (CCD).

- 7) Press the Start key.
- 8) Adjust the image magnification factor by entering an appropriate value through the numeric keypad.
- 9) Press the P or Start key.

Pressing the Start key starts copy operation as well as applying the adjustment value.

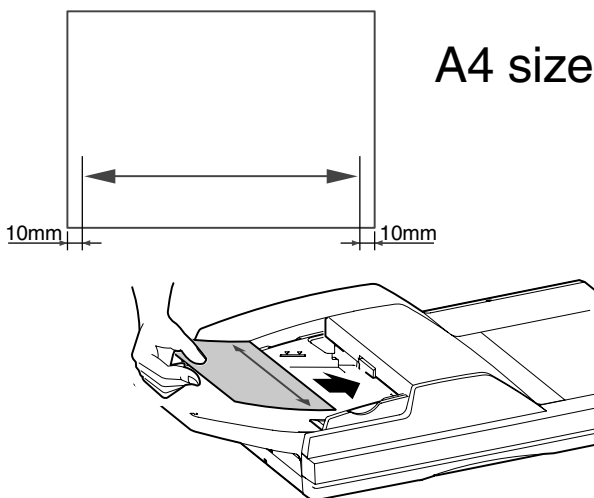
Repeat steps 2 to 9 until the image magnification factor is satisfactory.

6-C Adjust the image magnification in the main scanning direction in DSPF front-face mode (CCD)

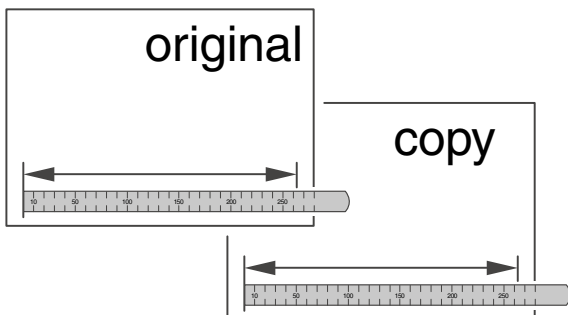
This adjustment is needed in the following situations:

- * The CCD unit has been removed from the machine.
- * The CCD unit has been replaced.
- * Images are not correctly magnified in the main scanning direction.
- * The MFP control PWB has been replaced.
- * The EEPROM on the MFP control PWB has been replaced.
- * The scan control PWB has been replaced.
- * The EEPROM on the scan control PWB has been replaced.
- * U2 trouble has occurred.

- 1) On the DSPF original tray, place such an original as illustrated below.



- 2) Make a normal copy on A4 paper.
- 3) Measure the lengths of the copied image and the original image.



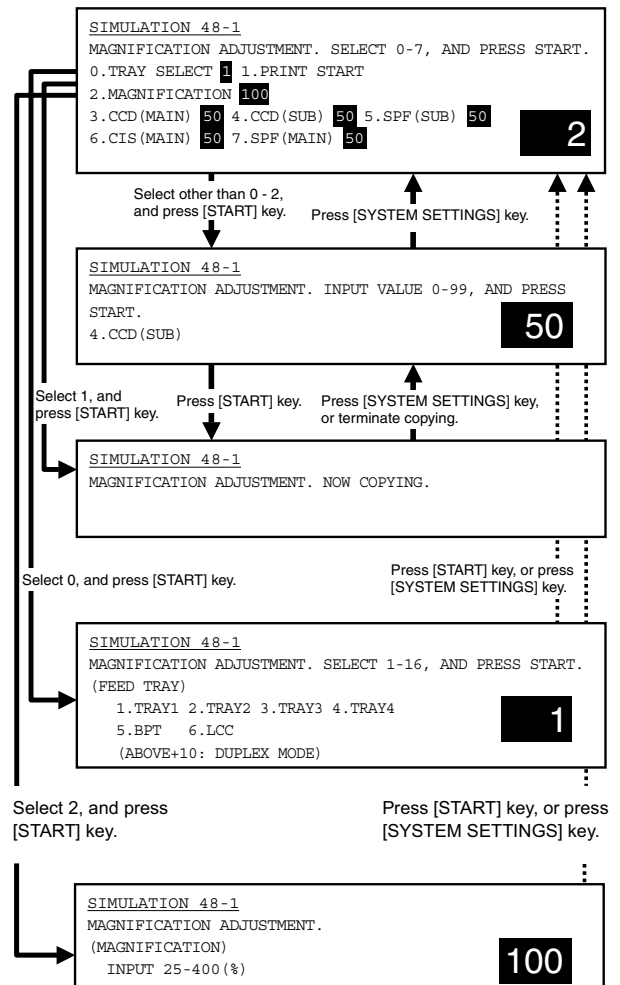
- 4) Determine the image magnification factor using the following formula:

Image magnification factor (%) = Copy dimension/original dimension x 100

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

If the image magnification factor is within the spec (100±0.8%), no adjustment is required; otherwise, do the following steps.

- 5) Go through the modes specified in Simulation 48-1.



- 6) Using the numeric keypad, select the number that corresponds to the mode for which to make adjustments. Select the adjustment item that is intended to adjust the image magnification in the main scanning direction in DSPF front-face mode (CCD). (SPF (MAIN))
- 7) Press the Start key.
- 8) Adjust the image magnification factor by entering an appropriate value through the numeric keypad.
- 9) Press the P or Start key.

Pressing the Start key starts copy operation as well as applying the adjustment value.

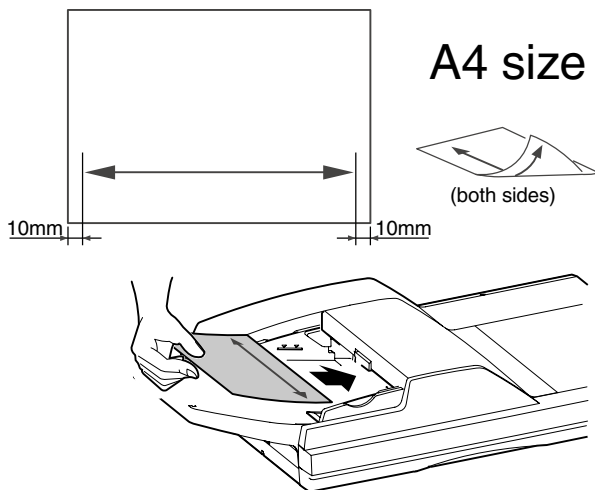
Repeat the above adjustments until an acceptable result is obtained.

6-D Adjust the image magnification in the main scanning direction in DSPF back-face mode (CIS)

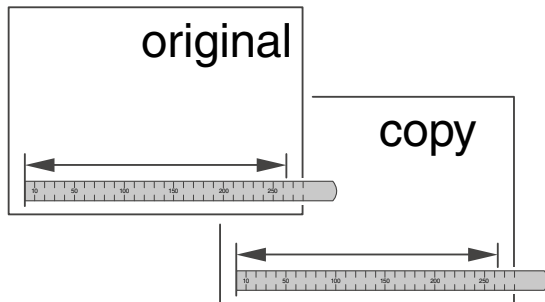
This adjustment is needed in the following situations:

- * The MFP control PWB has been replaced.
- * The EEPROM on the MFP control PWB has been replaced.
- * The scan control PWB has been replaced.
- * The EEPROM on the scan control PWB has been replaced.
- * U2 trouble has occurred.
- * Images are not correctly magnified in the main scanning direction.

- 1) On the DSPF original tray, place such a duplex original as illustrated below.



- 2) Make a normal duplex copy on A4 paper.
- 3) Measure the lengths of the copied image (on the back side) and the original image.



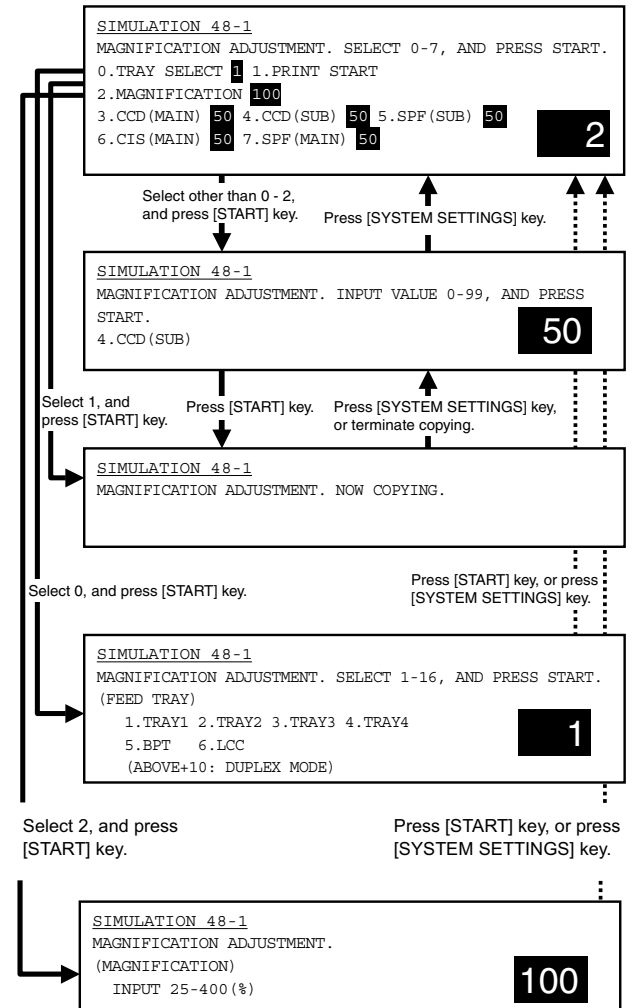
- 4) Determine the image magnification factor using the following formula:

Image magnification factor (%) = Copy dimension/original dimension x 100

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

If the image magnification factor is within the spec (100±0.8%), no adjustment is required; otherwise, do the following steps.

- 5) Go through the modes specified in Simulation 48-1.



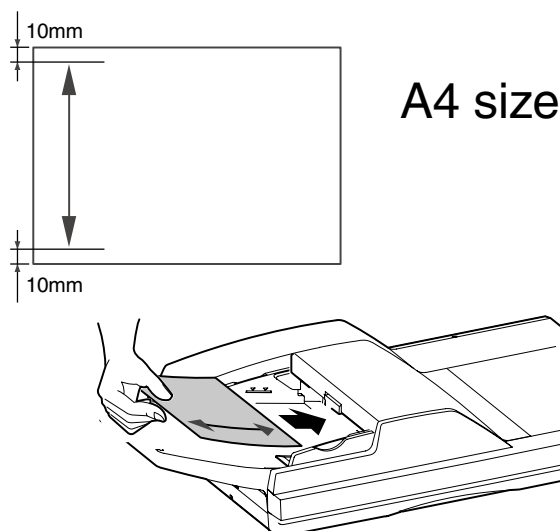
- 6) Select the number that corresponds to the adjustment item CIS (MAIN) using the numeric keypad.
This adjustment item is intended to adjust the image magnification in the main scanning direction in DSPF back-face mode (CIS). (CIS (MAIN))
 - 7) Press the Start key.
 - 8) Adjust the image magnification factor by entering an appropriate value through the numeric keypad.
 - 9) Press the P or Start key. Pressing the Start key starts copy operation as well as applying the adjustment value.
- Repeat the above adjustments until an acceptable result is obtained.

6-E Adjust the image magnification in the sub-scanning direction in DSPF mode

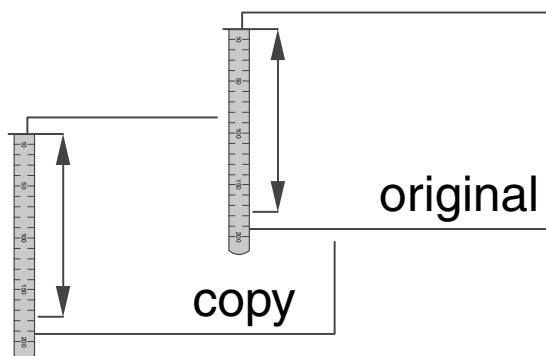
This adjustment is needed in the following situations:

- * Images are not correctly magnified in the sub-scanning direction.
- * The MFP control PWB has been replaced.
- * The EEPROM on the MFP control PWB has been replaced.
- * The scan control PWB has been replaced.
- * The EEPROM on the scan control PWB has been replaced.
- * U2 trouble has occurred.

- 1) On the DSPF original tray, place such an original as illustrated below.



- 2) Make a normal copy on A4 paper.
- 3) Measure the lengths of the copied image and the original image.



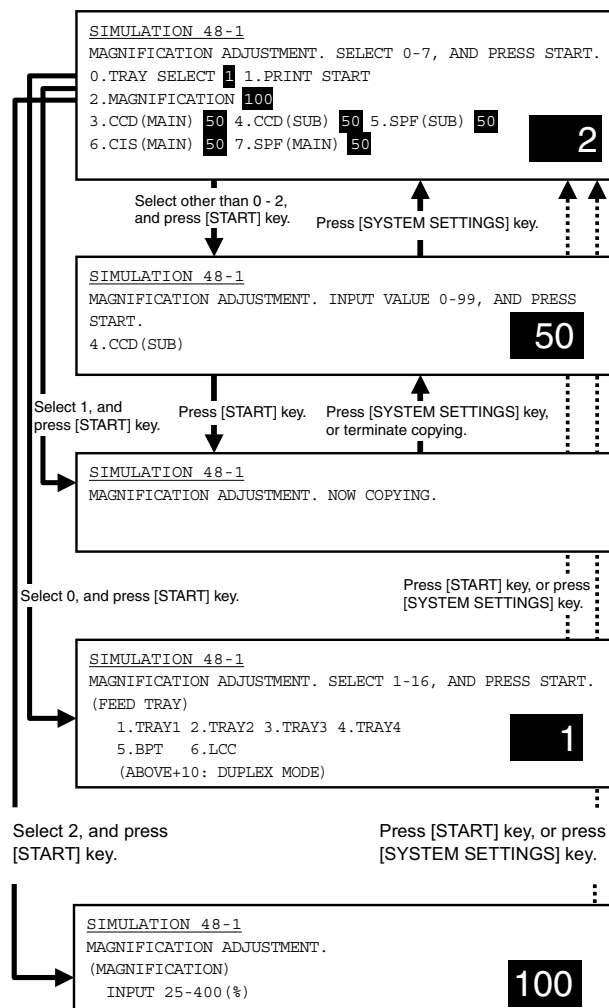
- 4) Determine the image magnification factor using the following formula:

Image magnification factor (%) = Copy dimension/original dimension x 100

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

If the image magnification factor is within the spec (100±0.8%), no adjustment is required; otherwise, do the following steps.

- 5) Go through the modes specified in Simulation 48-1.



- 6) Select the number that corresponds to the adjustment item SPF (SUB) using the numeric keypad.

This adjustment item is intended to adjust the image magnification in the sub-scanning direction in DSPF mode.

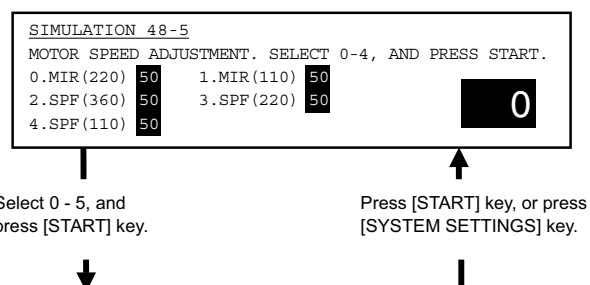
(SPF (SUB))

- 7) Press the Start key.
- 8) Adjust the image magnification factor by entering an appropriate value through the numeric keypad.
- 9) Press the P or Start key.

Pressing the Start key starts copy operation as well as applying the adjustment value. Repeat the above adjustments until an acceptable result is obtained.

* After adjusting the image magnification in the sub-scanning direction through Simulation 48-1, do the following steps if making a copy at a different magnification factor fails to produce a correctly scaled copy.

- 1) Go through the modes specified in Simulation 48-5.



↓

SIMULATION 48-5
 SCAN MOTOR SPEED ADJUSTMENT. INPUT VALUE 0-99, AND
 PRESS START.
 0.MIR (220)

50

- 2) Using the numeric keypad, select the number that corresponds to the mode for which to make adjustments.
- 3) Press the Start key.
- 4) Enter the copy adjustment value using the numeric keypad.
 Make adjustments by changing the adjustment value for high revolution mode if the copy magnification is not correct for microcopies; or the adjustment value for low revolution mode if the copy magnification is not correct for blowbacks.
- 5) Press the Start key. This applies the adjustment value.

ADJ 7 Adjusting the image off-center

7-A Adjust the print image off-center (print engine section)

This adjustment is needed in the following situations:

- * The paper feed section has been disassembled.
- * The MFP control PWB has been replaced.
- * The EEPROM on the MFP control PWB has been replaced.
- * The scan control PWB has been replaced.
- * The EEPROM on the scan control PWB has been replaced.
- * The scanner (reading) section has been disassembled.
- * The scanner (reading) unit has been replaced.
- * The LSU has been replaced.
- * U2 trouble has occurred.

(Print image off-center adjustment)

- 1) Go through the modes specified in Simulation 50-5.

SIMULATION 50-5
 LEAD EDGE ADJUSTMENT. SELECT 0-20, AND PRESS START.
 0. TRAY SELECT 1. PRINT START

(ADJUSTMENT DATA)
 LEAD EDGE: 2.RRCB 50 20.SIDE2 ADJ. 50
 RESIST: 3.T1 50 4.T2 50 5.T3 50 6.T4 50
 7.BPT 50 8.LCC 50 9.ADU 50
 OFF CENTER: 10.T1 50 11.T2 50 12.T3 50 13.T4 50
 14.BPT 50 15.LCC 50 16.ADU 50

(VOID SETTING) 17.LEAD_EDGE (DENA) 50
 18.TRAIL_EDGE (DENB) 50 19.FRONT/REAR 50

Select other than 0 - 1, and press [START] key. ↓ Press [SYSTEM SETTINGS] key. ↑

SIMULATION 50-5
 LEAD EDGE ADJUSTMENT. INPUT VALUE 0-99, AND PRESS START.
 2. RRCB

Select 1, and press [START] key. ↓ Press [START] key. ↑ Press [SYSTEM SETTINGS] key, or terminate copying. ↑

SIMULATION 50-5
 LEAD EDGE ADJUSTMENT. NOW PRINTING.

Select 0, and press [START] key. ↓ Press [START] key, or press [SYSTEM SETTINGS] key. ↑

SIMULATION 50-5
 LEAD EDGE ADJUSTMENT. SELECT 1-16, AND PRESS START.
 (FEED TRAY)
 1. TRAY1 2. TRAY2 3. TRAY3 4. TRAY4
 5. BPT 6. LCC
 (ABOVE+10: DUPLEX MODE)

1

Item			Setting range	Default
0	TRAY SELECT	Paper feed tray selection	1 - 6	-
1	PRINT START	Print start (Default)	-	-
(Lead edge adjustment value)				
2	RRCB	Resist roller clutch ON timing adjustment value	0 - 99	50
	SIDE2-ADJ	Offset (adjustment) of the RRCB setting during rear print.	1 - 99	
(Resist adjustment value)				
3	TRAY1	Tray 1 adjustment	0 - 99	50
4	TRAY2	Tray 2 adjustment		
5	TRAY3	Tray 3 adjustment		
6	TRAY4	Tray 4 adjustment		
7	BPT	Manual feed tray adjustment		
8	LCC	Side LCC adjustment		
9	ADU	Adjustment when paper is fed again from ADU		
(Off-center set value) Self print				
10	TRAY 1	Tray 1 adjustment	-	-
11	TRAY 2	Tray 2 adjustment	-	-
12	TRAY 3	Tray 3 adjustment	-	-
13	TRAY 4	Tray 4 adjustment	-	-
14	BPT	Manual feed tray adjustment	-	-
15	LCC	Side LCC adjustment	-	-
16	ADU	Adjustment when paper is fed again from ADU	-	-
(Void set value)				
7	LEAD_EDG E(DENA)	Lead edge void set value	0 - 99	35
8	TRAIL_ED GE(DENB)	Rear edge void adjustment value		
9	FRONT/ REAR	Front/Rear void adjustment value		

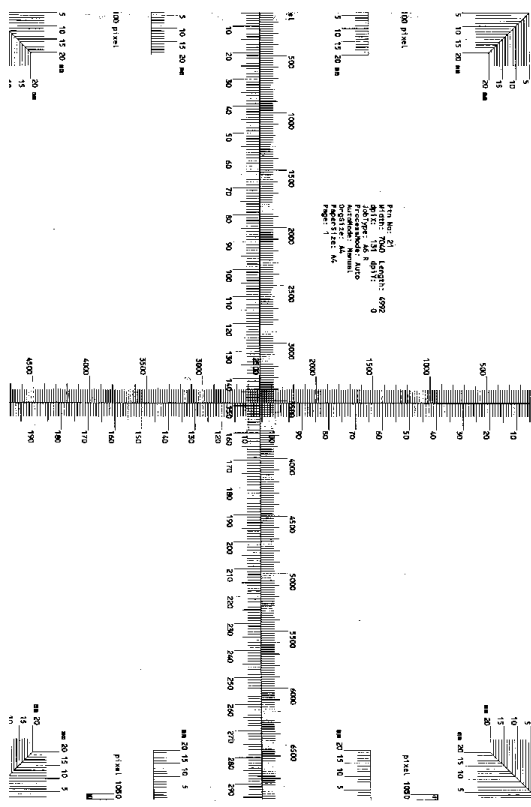
- 2) Enter the number that corresponds to the paper feed tray that needs adjustments. (Choose from numbers 10 to 16.)
- 3) Press the Start key.
- 4) Press the Start key.

A self-print pattern image is printed.

Check the off-center of the printed self-print pattern image.

If so, no adjustment is required.

Measure the void area dimensions in the front and rear frame directions, and make sure that the difference between the two dimensions is within 0±1.5 mm.



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

- 5) Using the numeric keypad, change the adjustment value in steps of 0.1 mm. A larger setting shifts the printed image toward the front side.
- 6) Press the P or Start key. Pressing the Start key starts print operation as well as applying the adjustment value. Check the off-center of the printed self-print pattern image.

Repeat steps 5 to 6 until an acceptable result is obtained.

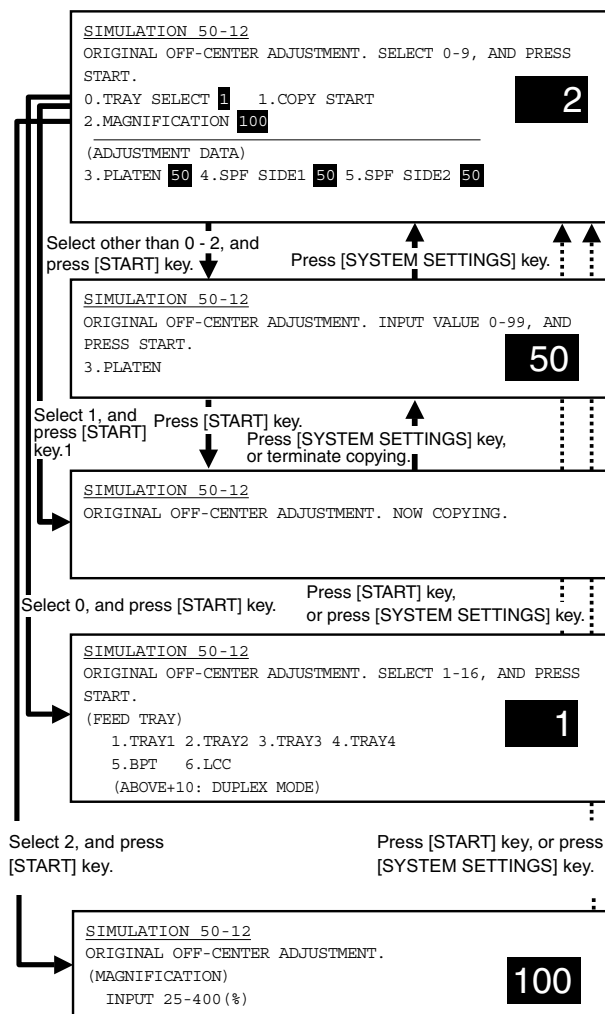
7-B Adjust the scanned image off-center in original table mode (scan section)

This adjustment is needed in the following situations:

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

(Adjustment mode selection)

- 1) Go through the modes specified in Simulation 50-12.



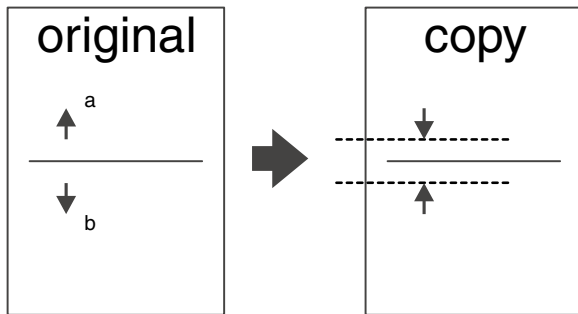
Increasing the adjustment value by 0.1 mm/step causes position of the printed image toward the front side.

Item			Setting range	Default
0	TRAY SELECT	Paper feed tray selection	1 - 5	-
1	COPY START	Copy START (Default)	-	-
2	MAGNIFICATION	Print magnification ratio	25 - 400%	100
(Off-center adjustment value)				
3	PLATEN	OC mode adjustment	0 - 99	50
4	SPF SIDE1	SPF front surface adjustment		
5	SPF SIDE2	SPF back surface adjustment		

- 2) Using the numeric keypad, select the adjustment item PLATEN, which is intended to adjust the off-center in original table mode.
- 3) Press the Start key.

(Scan off-center adjustment)

- 1) Place an original on the original table.
- 2) Press the Start key.
Check the off-center of the printed image.
If the off-center is 0 ± 4.0 mm, no adjustment is required.



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

- 3) Using the numeric keypad, change the adjustment value in steps of 0.1 mm to adjust the scan image off-center. A larger setting shifts the printed image toward the front side.
- 4) Press the P or Start key.
Pressing the Start key starts copy operation as well as applying the adjustment value.
- 5) Check the off-center of the printed image.
Repeat the above adjustments until an acceptable result is obtained.

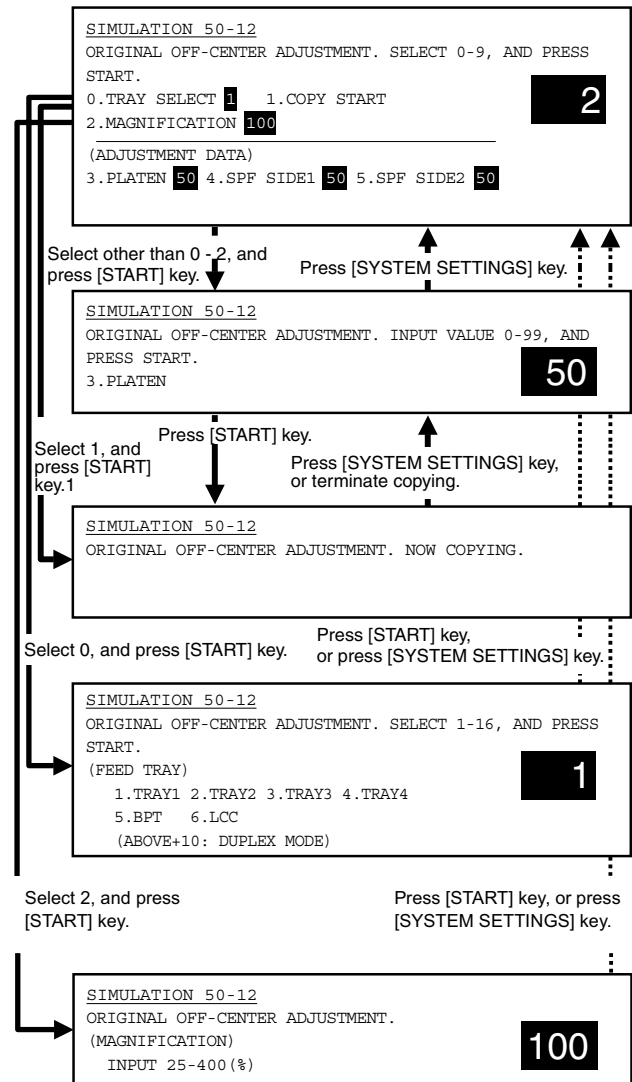
7-C Adjust the scanned image off-center in DSPF front-face mode (scan section)

This adjustment is needed in the following situations:

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

(Adjustment mode selection)

- 1) Go through the modes specified in Simulation 50-12.



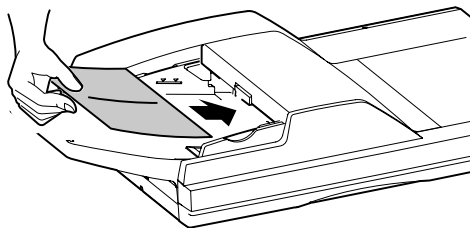
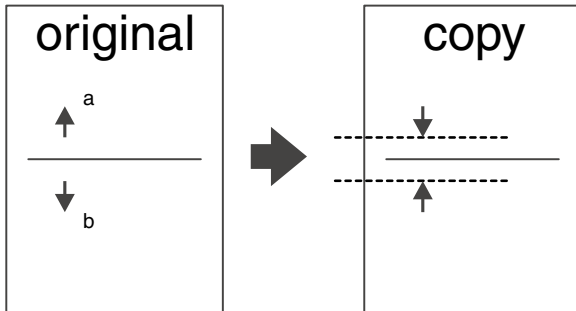
Increasing the adjustment value by 0.1 mm/step causes position of the printed image toward the front side.

Item			Setting range	Default
0	TRAY SELECT	Paper feed tray selection	1 - 5	-
1	COPY START	Copy START (Default)	-	-
2	MAGNIFICATION	Print magnification ratio	25 - 400%	100
(Off-center adjustment value)				
3	PLATEN	OC mode adjustment	0 - 99	50
4	SPF SIDE1	SPF front surface adjustment		
5	SPF SIDE2	SPF back surface adjustment		

- 2) Using the numeric keypad, select the adjustment item DSPF SIDE1, which is intended to adjust the off-center in DSPF front-face mode.
- 3) Press the Start key.

(Scan off-center adjustment)

- 1) Place an original on the DSPF original tray.
- 2) Press the Start key. Check the off-center of the printed image.
If the off-center is 0 ± 2.5 mm, no adjustment is required.



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

- 3) Using the numeric keypad, change the adjustment value in steps of 0.1 mm to adjust the scan image off-center. A larger setting shifts the printed image toward the rear side.
- 4) Press the P or Start key. Pressing the Start key starts copy operation as well as applying the adjustment value.
- 5) Check the off-center of the printed image.

Repeat the above adjustments until an acceptable result is obtained.

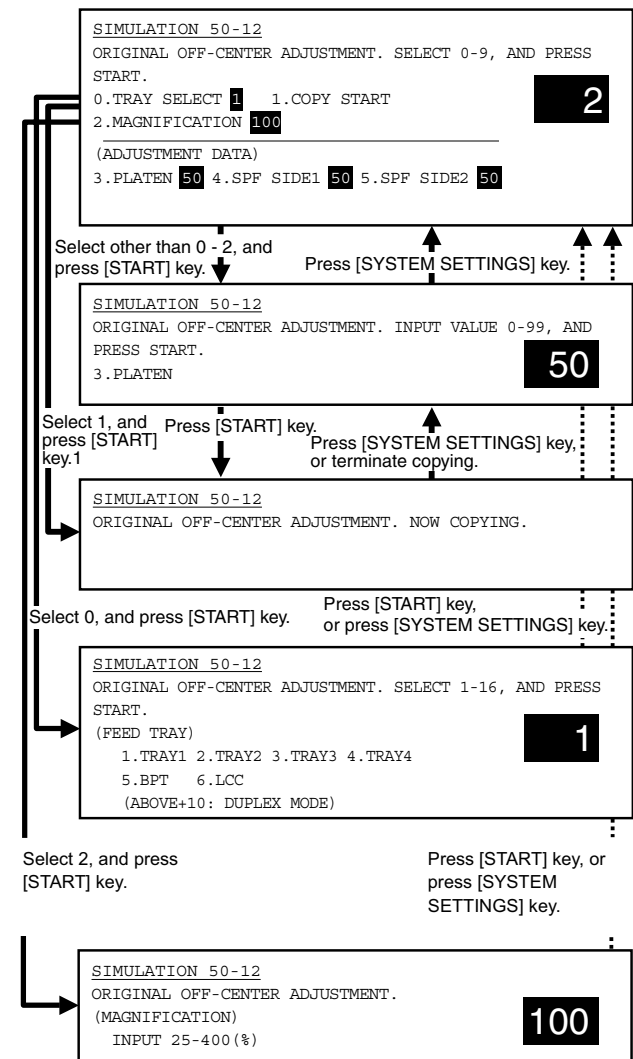
7-D Adjust the scanned image off-center in DSPF back-face mode (scan section)

This adjustment is needed in the following situations:

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

(Adjustment mode selection)

- 1) Go through the modes specified in Simulation 50-12.



Increasing the adjustment value by 0.1 mm/step causes position of the printed image toward the front side.

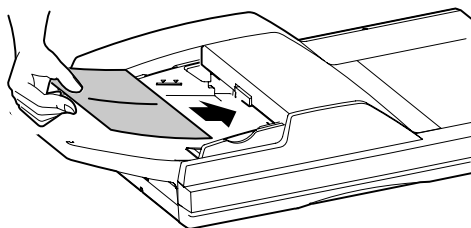
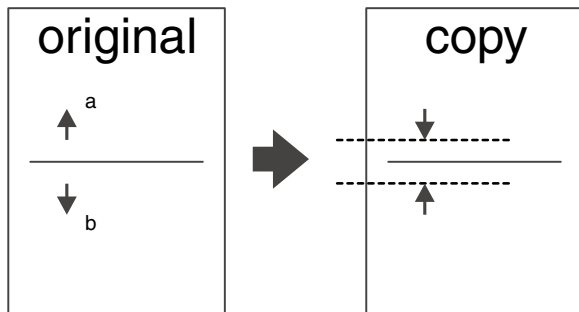
Item			Setting range	Default
0	TRAY SELECT	Paper feed tray selection	1 - 5	-
1	COPY START	Copy START (Default)	-	-
2	MAGNIFICATION	Print magnification ratio	25 - 400%	100
(Off-center adjustment value)				
3	PLATEN	OC mode adjustment	0 - 99	50
4	SPF SIDE1	SPF front surface adjustment		
5	SPF SIDE2	SPF back surface adjustment		

- 2) Using the numeric keypad, select the adjustment item DSPF SIDE2, which is intended to adjust the off-center in DSPF back-face mode.
- 3) Press the Start key.

(Scan off-center adjustment)

- 1) Place an original on the DSPF original tray.
- 2) Press the Start key.

Since the front side and back side images are copied onto separate sheets, check the off-center of the back side image.
If the off-center is 0 ± 2.7 mm, no adjustment is required.



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

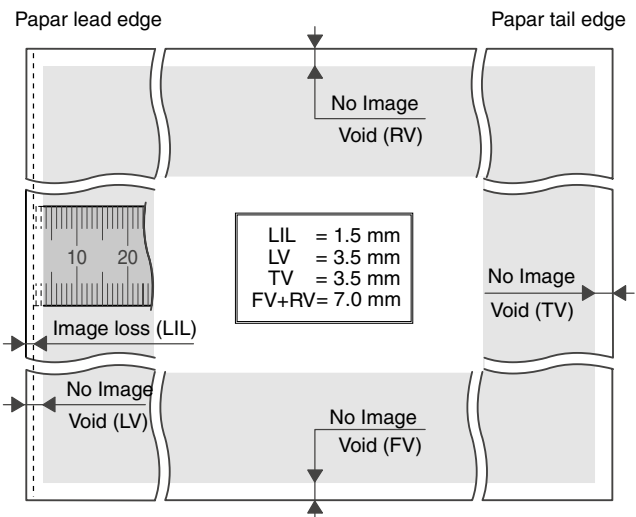
- 3) Using the numeric keypad, change the adjustment value in steps of 0.1 mm to adjust the scan image off-center. A larger setting shifts the printed image toward the rear side.
- 4) Press the P or Start key.
Pressing the Start key starts copy operation as well as applying the adjustment value.
- 5) Check the off-center of the printed image.
Repeat the above adjustments until an acceptable result is obtained.

ADJ 8 Adjusting the image position, image loss, and void area

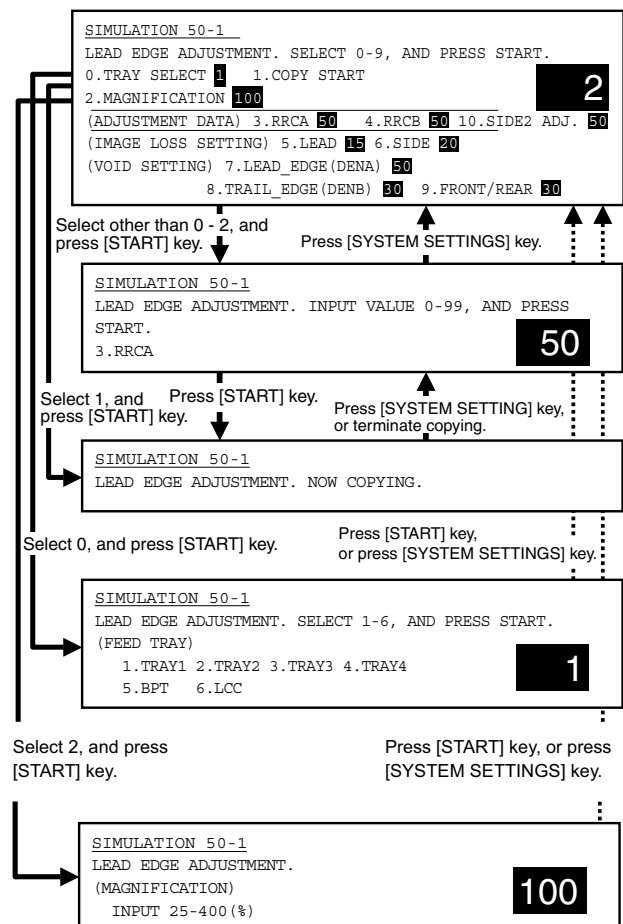
8-A Adjust copied image loss/void area in original table mode

This adjustment is needed in the following situations:

- * The paper feed section has been disassembled.
- * The MFP control PWB has been replaced.
- * The EEPROM on the MFP control PWB has been replaced.
- * The scan control PWB has been replaced.
- * The EEPROM on the scan control PWB has been replaced.
- * The scanner (reading) section has been disassembled.
- * The scanner (reading) unit has been replaced.
- * The LSU has been replaced.
- * U2 trouble has occurred.



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

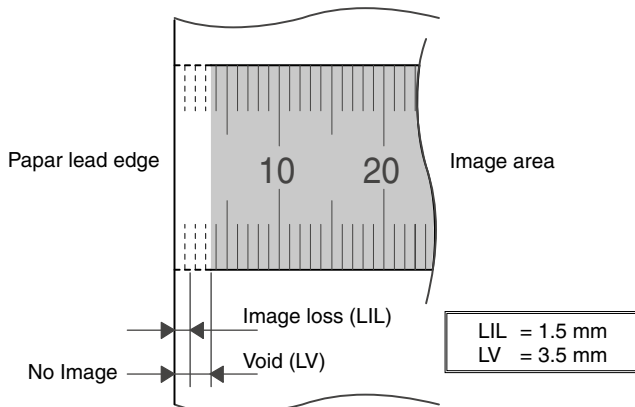


Item	Content	Setting range	Default
0	TRAY SELECT	Paper feed tray selection	1 - 6
1	COPY START	Copy START (Default)	-
2	MAGNIFICATION	Print magnification ratio	25 - 400%
(Lead edge adjustment value)			
3	RRCA	Document scan start position adjustment value	0 - 99
4	RRCB	Resist roller clutch ON timing adjustment value	

Item	Content	Setting range	Default
SIDE2-ADJ	Offset (adjustment) of the RRCB setting during rear print.	1 – 99	50
(Image loss set value)			
5	LEAD	LEAD Lead edge image loss set value	15
6	SIDE	Side image loss set	20
(Void set value)			
7	LEAD_EDGE (DENA)	Lead edge void set value	35
8	TRAIL_EDGE (DENB)	Rear edge void adjustment value	
9	FRONT/REAR	Front/Rear void adjustment value	

(Leading edge image loss/void area adjustment)

- Set the adjustment values for leading edge image loss and leading edge void as follows:
(Standard setting)
Leading edge image loss: 1.5 mm (LEAD:15)
Leading edge void: 3.5mm (DENA:35)
 - * Set the adjustment value for (LEAD) to 15 by entering "15" into the (LEAD) adjustment value field and then pressing the P key.
 - * Set the adjustment value for (DENA) to 35 by entering "35" into the (DENA) adjustment value field and then pressing the P key.
- Make a copy at 100% magnification by entering "100" into the (MAGNIFICATION) field and then pressing the Start key, and check the leading edge void area and image loss.



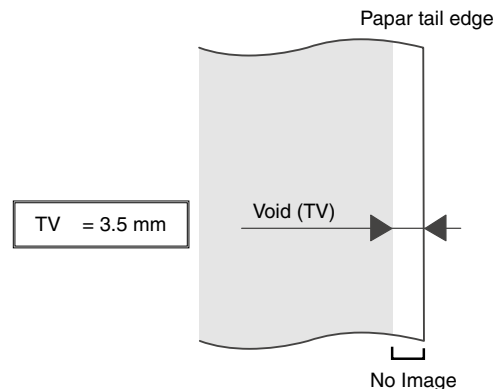
If the leading edge image loss and void area are not at acceptable levels, do the following steps.

- * If the leading edge void area is not 3.5 mm:
Repeat the process of changing the (RRCB) adjustment value and then pressing the Start key until attaining an acceptable level.
(The change according to the one step of the adjustment value is 0.1mm.)
- * If the leading edge image loss is not 1.5mm:
Repeat the process of changing the (RRCA) adjustment value, in steps of 0.1 mm, and then pressing the Start key until attaining an acceptable level.
(The adjustment value should be changed in steps of 0.2mm.)

Repeat the above adjustments until acceptable results are obtained.

(Trailing edge void area adjustment)

- Make a copy at 100% magnification by entering "100" into the (MAGNIFICATION) field and then pressing the Start key, and check the trailing edge void area.
(Standard setting) Trailing edge void area: 3.5 mm



If the trailing edge void area is not at an acceptable level, do the following steps.

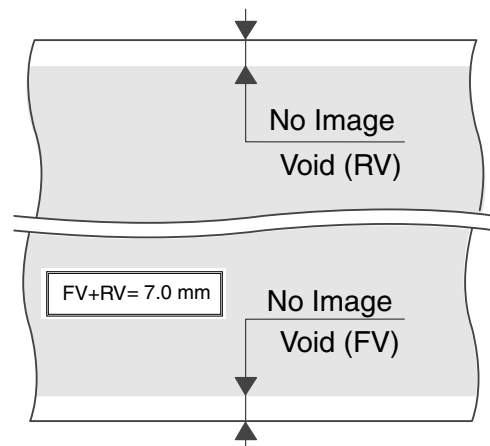
- Repeat the process of changing the (TRAIL EDGE) adjustment value and then pressing the Start key until attaining an acceptable level.
Repeat the above adjustments until acceptable results are obtained.

(Front/rear frame direction image loss adjustment)

- Set the (SIDE) adjustment value to 20 by entering "20" into the (SIDE) adjustment value field and then pressing the P key.
Note that changing this adjustment value shifts the image position in the front/rear frame direction.

(Front/rear frame direction void area)

- Make a copy at 100% magnification by entering "100" into the (MAGNIFICATION) field and then pressing the Start key, and check the front/rear frame direction void area.
(Standard settings)
Front frame side void area = 3.5 mm, rear frame side void area = 3.5 mm, sum of front/rear frame direction void area = 7.0 mm.



If the front/rear frame direction void area is not at an acceptable level, do the following steps.

- Repeat the process of changing the (FRONT/REAR) adjustment value and then pressing the Start key until attaining an acceptable level.

Repeat the above adjustments until acceptable results are obtained.

NOTE: If the front and rear frame side void areas are not equal, adjust the image off-center position using Simulation 50-5.

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

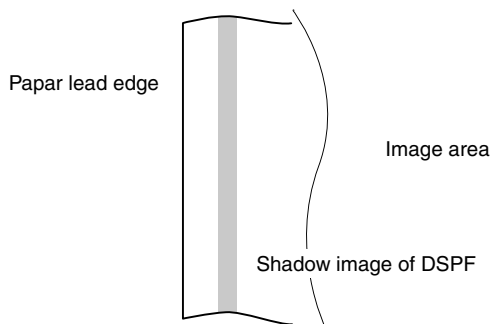
This adjustment is needed in the following situations:

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

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

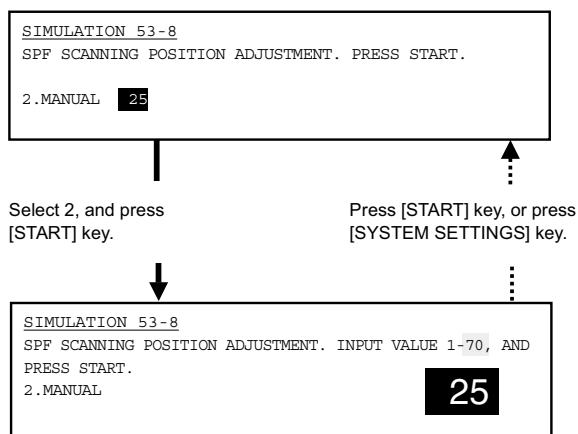
An incorrect adjustment would deviate the scanner stop position from the required position, thus possibly causing a shadow of the original table to appear at the leading edge of an image generated by DSPF (front-face) mode scan.

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



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

- 2) Go through the modes specified in Simulation 53-8.

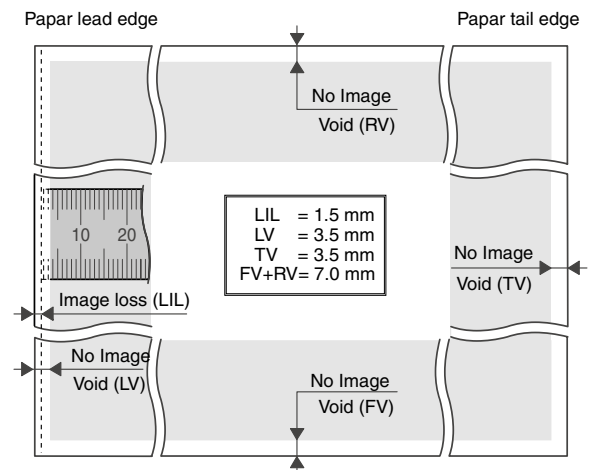


- 3) Enter the adjustment value and press the Start key.
Repeat the above adjustments until an acceptable result is obtained.

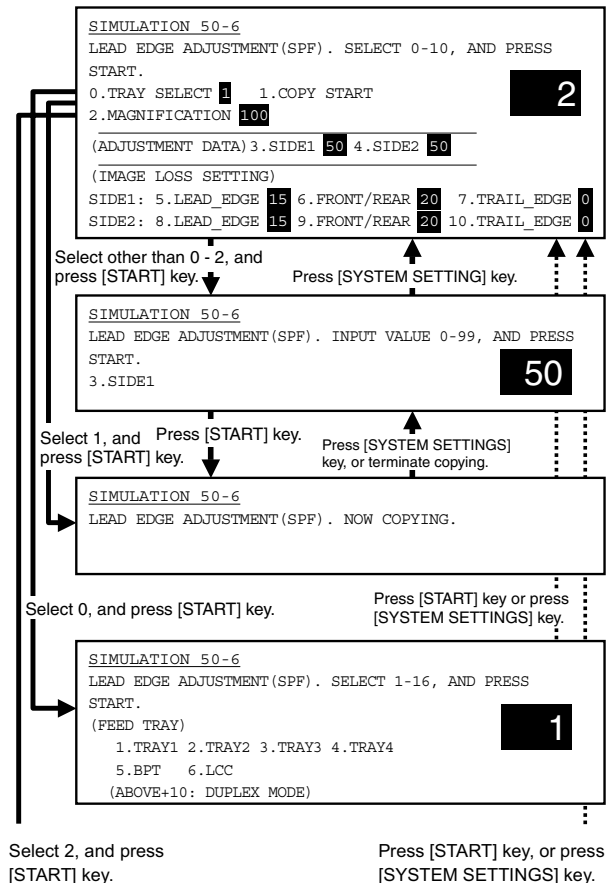
8-C Adjust the copied image loss/void area in DSPF mode

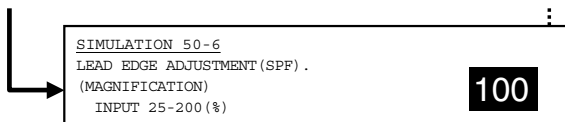
This adjustment is needed in the following situations:

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



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

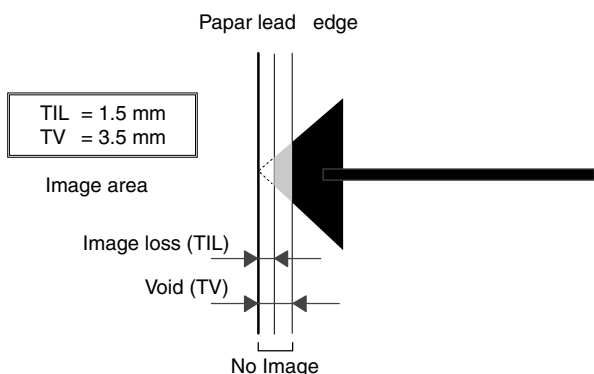




Item			Setting range	Default
0	TRAY SELECT	Paper feed tray selection	1 – 6	—
1	COPY START	Copy START (Default)	—	—
2	MAGNIFICATION	Print magnification ratio	25 – 200%	—
(Lead edge adjustment value)				
3	SIDE1	Front surface document scan start position adjustment value	0 – 99	50
4	SIDE2	Back surface document scan start position adjustment value		
(Image loss set value: SIDE 1)				
5	LEAD_EDGE	Front surface lead edge image loss set value	0 – 99	15
6	FRONT_REAR	Front surface side edge image loss set value		20
7	TRAIL_EDGE	Front surface rear edge image loss set value	0 – 20	0
(Image loss set value: SIDE 2)				
8	LEAD_EDGE	Back surface lead edge image loss set value	0 – 99	15
9	FRONT/REAR	Back surface side edge image loss set value		20
10	TRAIL_EDGE	Back surface rear edge image loss set value	0 – 20	0

(Leading edge image loss adjustment)

- Set the adjustment values for leading edge image loss for the front and back sides as follows:
(Standard setting)
5 LEAD_EDGE: 15
8 LEAD_EDGE: 15
* Set the adjustment value for "5 LEAD_EDGE" and "8 LEAD_EDGE" to 15 by entering "15" into the (LEAD_EDGE) adjustment value field and then pressing the P key.
- In DSPF mode, make a duplex copy at 100% magnification, and make sure that the leading edge image loss is 1.5 mm for both the front and back sides. (Select duplex mode from the paper selection mode as described in Simulation 50-6). (Enter "100" into the (MAGNIFICATION) field, and then press the start key).



If an acceptable result is not obtained, do the following steps.

- Repeat the process of changing the (SIDE1 & SIDE2) adjustment values and then pressing the Start key until attaining an acceptable level.

SIDE1: Adjustment value for the position at which to read the leading edge of the original in DSPF front side mode.

SIDE2: Adjustment value for the position at which to read the leading edge of the original in DSPF back side mode.

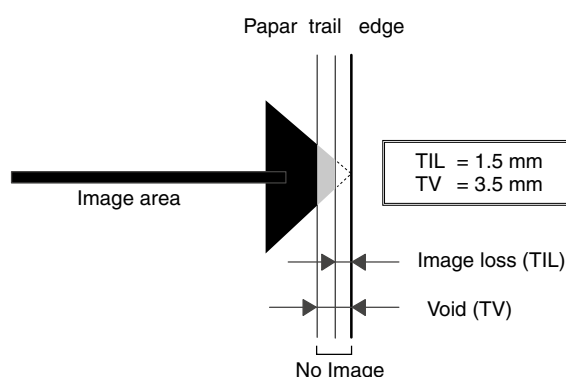
(The change according to the one step of the adjustment value is 0.1mm.)

(The timing in which to start reading the image should be determined based on the timing in which detector SPFD4 detects the leading edge of the original.)

Repeat steps 2 to 3 until an acceptable result is obtained.

(Trailing edge image loss adjustment)

- Select duplex mode from paper selection mode as described in Simulation 50-6, enter "100" into the (MAGNIFICATION) field, and then press the Start key to make a duplex copy at 100% magnification in DSPF mode, and make sure that the trailing edge image loss is 1.5 mm for both front and back sides.



If an acceptable result is not obtained, do the following steps.

- Repeat the process of changing the (TRAIL_EDGE) adjustment value and then pressing the Start key until attaining an acceptable level.

Repeat the above adjustments until an acceptable result is obtained.

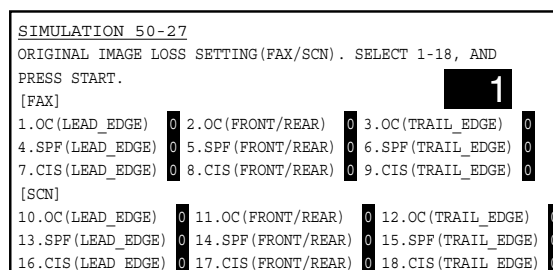
(Front/rear frame direction image loss adjustment)

Set the (FRONT/REAR) adjustment value to 20 by entering "20" into the (FRONT/REAR) adjustment value field and then pressing.

Note that changing this adjustment value shifts the image position in the front/rear frame direction.

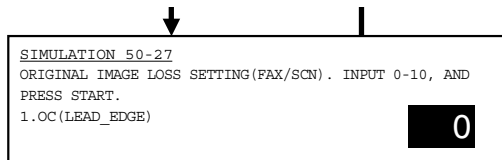
8-D Adjust the image loss in scanner mode

- Go through the modes specified in Simulation 50-27.



Press [START] key.

Press [SYSTEM SETTINGS] key.



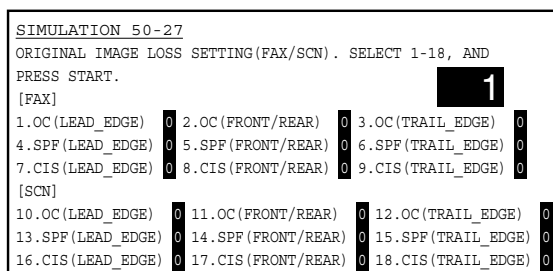
Item			Setting range	Default
FAX send				
1	OC (LEAD_EDGE)	OC lead edge	0 – 10 (Unit 1mm)	3 (3mm)
2	OC (FRONT/REAR)	OC side		
3	OC (TRAIL_EDGE)	OC rear edge		
4	SPF (LEAD_EDGE)	SPF lead edge		
5	SPF (FRONT/REAR)	SPF side		
6	SPF (TRAIL_EDGE)	SPF rear edge		
7	CIS (LEAD_EDGE)	CIS lead edge		
8	CIS (FRONT/REAR)	CIS side		
9	CIS (TRAIL_EDGE)	CIS rear edge		
Scanner mode				
10	OC (LEAD_EDGE)	OC lead edge	0 – 10 (Unit 1mm)	0 (0mm)
11	OC (FRONT/REAR)	OC side		
12	OC (TRAIL_EDGE)	OC rear edge		
13	SPF (LEAD_EDGE)	SPF lead edge		
14	SPF (FRONT/REAR)	SPF side		
15	SPF (TRAIL_EDGE)	SPF rear edge		
16	CIS (LEAD_EDGE)	CIS lead edge		
17	CIS (FRONT/REAR)	CIS side		
18	CIS (TRAIL_EDGE)	CIS rear edge		

- Using the numeric keypad, enter the number that corresponds to the scanner mode adjustment item.
- Press the Start key.
- Enter the adjustment value using the numeric keypad.
- Press the Start key (The adjustment value should be changed in steps of 1.0mm.)
Scanned images must be visually checked for image loss.

NOTE: Make adjustments in the same manner as in ADJ 8A and ADJ 8C.

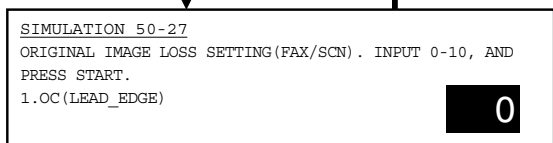
8-E Adjust the image loss for images sent in fax mode

- Go through the modes specified in Simulation 50-27.



Press [START] key.

Press [SYSTEM SETTINGS] key.



Item			Setting range	Default
FAX send				
1	OC (LEAD_EDGE)	OC lead edge	0 – 10 (Unit 1mm)	3 (3mm)
2	OC (FRONT/REAR)	OC side		
3	OC (TRAIL_EDGE)	OC rear edge		
4	SPF (LEAD_EDGE)	SPF lead edge		
5	SPF (FRONT/REAR)	SPF side		
6	SPF (TRAIL_EDGE)	SPF rear edge		
7	CIS (LEAD_EDGE)	CIS lead edge		
8	CIS (FRONT/REAR)	CIS side		
9	CIS (TRAIL_EDGE)	CIS rear edge		
Scanner mode				
10	OC (LEAD_EDGE)	OC lead edge	0 – 10 (Unit 1mm)	0 (0mm)
11	OC (FRONT/REAR)	OC side		
12	OC (TRAIL_EDGE)	OC rear edge		
13	SPF (LEAD_EDGE)	SPF lead edge		
14	SPF (FRONT/REAR)	SPF side		
15	SPF (TRAIL_EDGE)	SPF rear edge		
16	CIS (LEAD_EDGE)	CIS lead edge		
17	CIS (FRONT/REAR)	CIS side		
18	CIS (TRAIL_EDGE)	CIS rear edge		

- Enter the number that corresponds to the fax adjustment item using the numeric keypad.
- Press the Start key.
- Enter the adjustment value using the numeric keypad.
- Press the Start key.

(The adjustment value should be changed in steps of 1.0mm.)

Scanned images must be visually checked for image loss.

NOTE: Make adjustments in the same manner as in ADJ 8A and ADJ 8C.

ADJ 9 Adjusting the copied image quality

This adjustment is needed in the following situations:

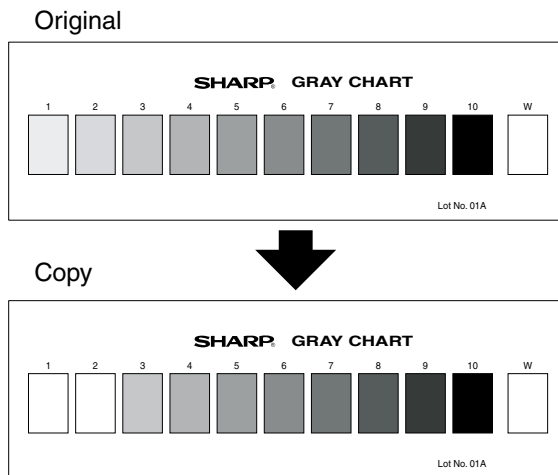
- The CCD unit has been replaced.
- U2 trouble has occurred.
- The MFP control PWB has been replaced.
- The EEPROM on the MFP control PWB has been replaced.
- The scanner control PWB has been replaced.
- The EEPROM on the scanner control PWB has been replaced.
- One or more parts of the scanner (reading) section have been replaced.
- One or more consumables (OPC drum, developer, transfer belt) have been replaced.

(Copy mode image quality adjustment items)

Image mode		Simulation for adjustment	
		All-mode adjustment	Individualmode adjustment
Auto mode	Binary mode	46-2	
Text mode	Binary mode		46-9
Text/photo mode	Binary mode		46-10
Photo mode	Binary mode		46-11

Adjustment Item List	Simulation for adjustment
Copied image gamma adjustment (copier mode)	46-18
Adjust the copied image sharpness	46-31

(Copied image reference density)



If the copied test chart (UKOG-0162FCZZ) image includes a background copy of patch 3 rather than patch 2, adjust all-copy mode to the image density level specified above.

(Copied image gamma, copied image sharpness)

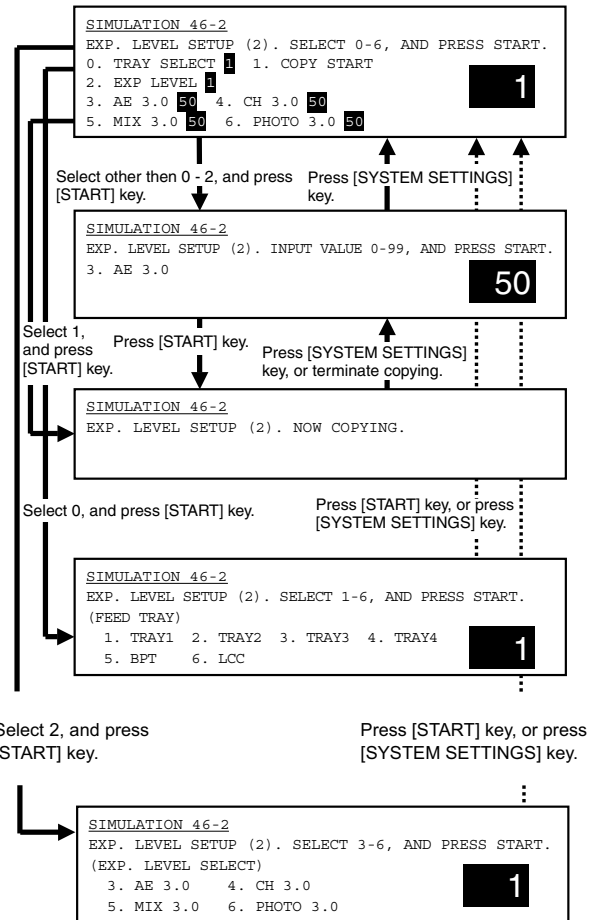
Normally, default settings should be applied to 'copied image gamma' and 'copied image sharpness', but images should be adjusted according to user requests, if any.

9-A Adjust the binary mode copy density for all modes at once

- 1) Set the test chart (UKOG-0162FCZZ) on the original table so that it aligns with the front frame. Then put four or five pieces of A3 (11" x 17") paper.



- 2) Go through the modes specified in Simulation 46-2.



Select 2, and press [START] key.

Press [START] key, or press [SYSTEM SETTINGS] key.

Item			Setting range	Default
0	TRAY SELECT	Paper feed tray selection	0 - 99	50
1	COPY START	Copy START (Default)		
2	EXP LEVEL	Exposure level selection		
3	AE 3.0	AE mode		
4	CH 3.0	Text mode 3.0		
5	MIX 3.0	Text/Photo mode 3.0		
6	PHOTO 3.0	Photo mode 3.0		

- 3) Using the numeric keypad, select the number that corresponds to the copy mode for which to make adjustments. (Choose from numbers 3 to 6.)
 - 4) Press the Start key.
 - 5) Press the Start key (A copy is created.)
Check the density of the copied image.
If the copied image density is not at an acceptable level, do the following steps.
 - 6) Adjust the copy density by entering an appropriate value through the numeric keypad.
A larger value provides higher density.
 - 7) Press the P or Start key. This applies the adjustment value.
Pressing the Start key starts copy operation as well as applying the adjustment value.
 - 8) Check the copied image density.
- Repeat steps 6 to 8 until an acceptable copied image density is obtained.

NOTE: Adjusting the copied image density through this simulation changes the copied image density settings for all copy modes to the copied image density level applied by carrying out this simulation. Also, the copied image density gradient is automatically adjusted to the specified level.

The copied image density settings for individual copy modes adjusted through Simulations 46-9, -10, and -11 are changed to the copied image density level applied by this simulation.

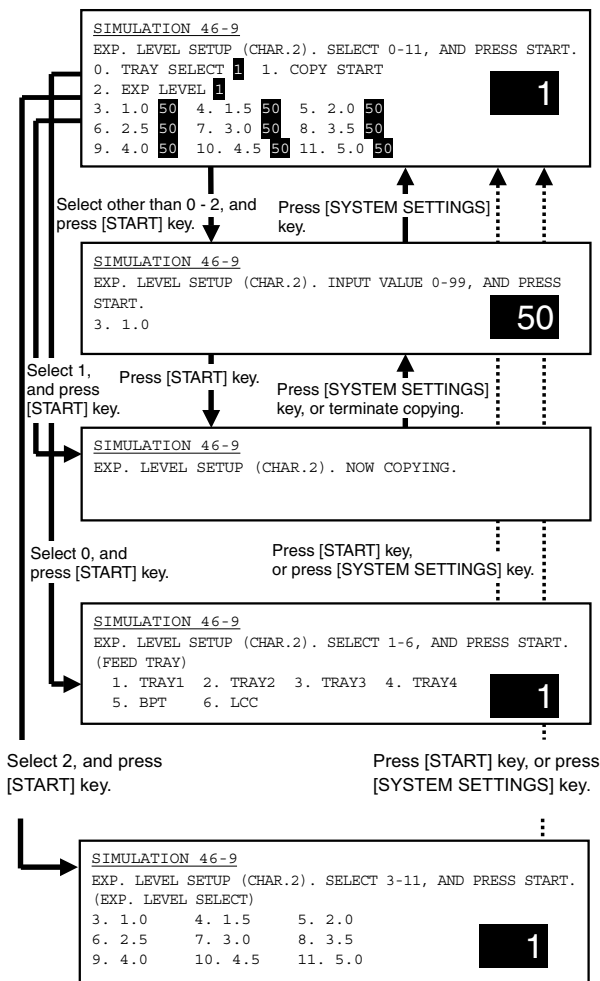
9-B Adjust the copy density in text binary mode

9-C Adjust the copy density in text/photo binary mode

9-D Adjust the copy density in photo binary mode

This adjustment is intended to customize the copied image density settings. The copy density setting for each copy density adjustment level (1 to 5) in manual copy mode can be adjusted to a custom density level.

- 1) Set the test chart (UKOG-0162FCZZ) on the original table.
- 2) Go through the simulation modes that correspond to the copy modes for which to adjust the copy density (i.e., the modes specified in Simulations 46-9, -10, or -11).



(SIM 46-9) (Text mode)

Item			Setting range	Default
0	TRAY SELECT	Paper feed tray selection	0 – 99	50
1	COPY START	Copy START (Default)		
2	EXP LEVEL	Exposure level selection		
3	1.0	Exposure level 1.0		
4	1.5	Exposure level 1.5		
5	2.0	Exposure level 2.0		
6	2.5	Exposure level 2.5		
7	3.0	Exposure level 3.0		
8	3.5	Exposure level 3.5		
9	4.0	Exposure level 4.0		
10	4.5	Exposure level 4.5		
11	5.0	Exposure level 5.0		

(SIM 46-10) (Text/photo mode)

Item			Setting range	Default
0	TRAY SELECT	Paper feed tray selection	0 – 99	50
1	COPY START	Copy START (Default)		
2	EXP LEVEL	Exposure level selection		
3	1.0	Exposure level 1.0		
4	1.5	Exposure level 1.5		
5	2.0	Exposure level 2.0		
6	2.5	Exposure level 2.5		
7	3.0	Exposure level 3.0		
8	3.5	Exposure level 3.5		
9	4.0	Exposure level 4.0		
10	4.5	Exposure level 4.5		
11	5.0	Exposure level 5.0		

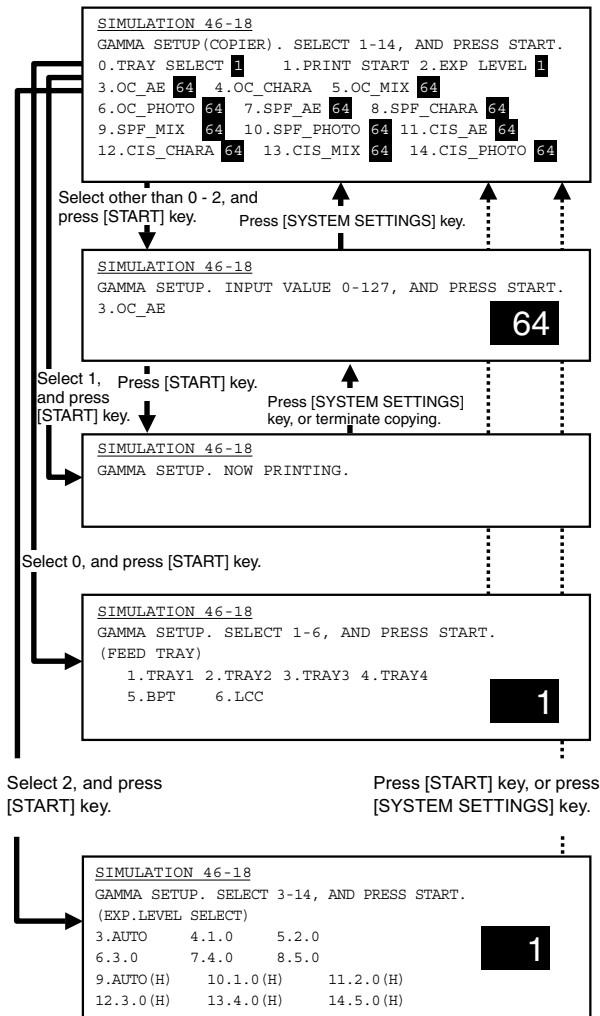
(SIM 46-11) (Photo mode)

Item			Setting range	Default
0	TRAY SELECT	Paper feed tray selection	0 – 99	50
1	COPY START	Copy START (Default)		
2	EXP LEVEL	Exposure level selection		
3	1.0	Exposure level 1.0		
4	1.5	Exposure level 1.5		
5	2.0	Exposure level 2.0		
6	2.5	Exposure level 2.5		
7	3.0	Exposure level 3.0		
8	3.5	Exposure level 3.5		
9	4.0	Exposure level 4.0		
10	4.5	Exposure level 4.5		
11	5.0	Exposure level 5.0		

- 3) Using the numeric keypad, select the number that corresponds to the copy density adjustment level. (Choose from numbers 3 to 11.)
- 4) Press the Start key.
- 5) Press the Start key. (A copy is created.)
If the copied image density is not at an acceptable level, do the following steps.
- 6) Adjust the copy density by entering an appropriate value through the numeric keypad.
A larger value provides higher density.
- 7) Press the P or Start key.
This applies the adjustment value.
Pressing the Start key starts copy operation as well as applying the adjustment value.
- 8) Check the copied image density.
Repeat steps 5 to 8 until an acceptable copied image density is obtained.

9-E Adjust the copied image gamma in copy mode

- 1) Set the original on the original table.
- 2) Go through the modes specified in Simulation 46-18.



Item			Setting range	Default
0	TRAY SELECT	Paper feed tray selection	0 - 127	96
1	PRINT START	Print start (Default)		
2	EXP LEVEL	Exposure level selection		
3	OC_AE	AE mode (OC)		
4	OC_CHARA	Text mode (OC)		
5	OC_MIX	Text/Photo mode (OC)		
6	OC_PHOTO	Photo mode (OC)		
7	SPF_AE	AE mode (SPF)		
8	SPF_CHARA	Text mode (SPF)		
9	SPF_MIX	Text/Photo mode (SPF)		
10	SPF_PHOTO	Photo mode (SPF)		
11	CIS_AE	AE mode (CIS)		
12	CIS_CHARA	Text mode (CIS)		
13	CIS_MIX	Text/Photo mode (CIS)		
14	CIS_PHOTO	Photo mode (CIS)		

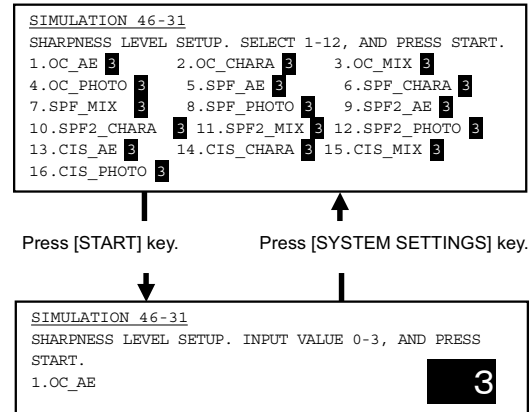
- 3) Using the numeric keypad, select the number that corresponds to the copy mode for which to make adjustments.
(Choose from numbers 3 to 14.)
- 4) Press the Start key.
- 5) Enter the gamma adjustment value using the numeric keypad.
A larger value provides larger gamma gradient and higher image contrast.

- 6) Press the P or Start key. Pressing the Start key starts copy (print) operation as well as applying the adjustment value.
- 7) Check the copied image gamma (copy density levels for low and high density areas) (contrast).

Repeat steps 5 to 7 until an acceptable copied image is obtained.

9-F Adjust the copied image sharpness

- 1) Set the original on the original table.
- 2) Go through the modes specified in Simulation 46-31.



Item			Setting range	Default
1	OC_AE	AE mode (OC)	1 - 5	3
2	OC_CHARA	Text mode (OC)		
3	OC_MIX	Text/Photo mode (OC)		
4	OC_PHOTO	Photo mode (OC)		
5	SPF1_AE	AE mode (SPF1)		
6	SPF1_CHARA	Text mode (SPF1)		
7	SPF1_MIX	Text/Photo mode (SPF1)		
8	SPF1_PHOTO	Photo mode (SPF1)		
9	SPF2_AE	AE mode (SPF2)		
10	SPF2_CHARA	Text mode (SPF2)		
11	SPF2_MIX	Text/Photo mode (SPF2)		
12	SPF2_PHOTO	Photo mode (SPF2)		
13	CIS_AE	AE mode (CIS)		
14	CIS_CHARA	Text mode (CIS)		
15	CIS_MIX	Text/Photo mode (CIS)		
16	CIS_PHOTO	Photo mode (CIS)		

- 3) Using the numeric keypad, select the number that corresponds to the copy mode for which to make adjustments.
(Choose from numbers 1 to 16.)
- 4) Press the Start key.
- 5) Adjust the sharpness by entering an appropriate value through the numeric keypad.
A larger value provides higher sharpness.
- 6) Press the P or Start key.
Pressing the Start key starts copy (print) operation as well as applying the adjustment value.
- 7) Check the copied image sharpness.

Repeat steps 5 to 7 until an acceptable copied image is obtained.

ADJ 10 Adjusting the print quality in fax mode

This adjustment is needed in the following situations:

- * The CCD unit has been replaced.
- * U2 trouble has occurred.
- * The MFP control PWB has been replaced.
- * The EEPROM on the MFP control PWB has been replaced.
- * The scanner control PWB has been replaced.
- * The EEPROM on the scanner control PWB has been replaced.
- * One or more parts of the scanner (reading) section have been replaced.

(Fax mode image density adjustment items)

Image mode			Simulation for adjustment	
			All-mode adjustment	Individual mode adjustment
Adjust the fax mode print density in standard mode	Auto mode	Binary mode	46-12	46-13
	Manual	Binary mode		
Adjust the fax mode print density in small-character mode	Auto mode	Binary mode	46-12	46-14
		Half tone mode		
	Manual	Binary mode		
		Half tone mode		
Adjust the fax mode print density in fine mode	Auto mode	Binary mode	46-12	46-15
		Half tone mode		
	Manual	Binary mode		
		Half tone mode		
Adjust the fax mode print density in super fine mode	Auto mode	Binary mode	46-12	46-16
		Half tone mode		
	Manual	Binary mode		
		Half tone mode		
Adjust the fax mode print density in 600dpi mode	Auto mode	Binary mode	46-12	46-45
		Half tone mode		
	Manual	Binary mode		
		Half tone mode		

(Fax mode density)

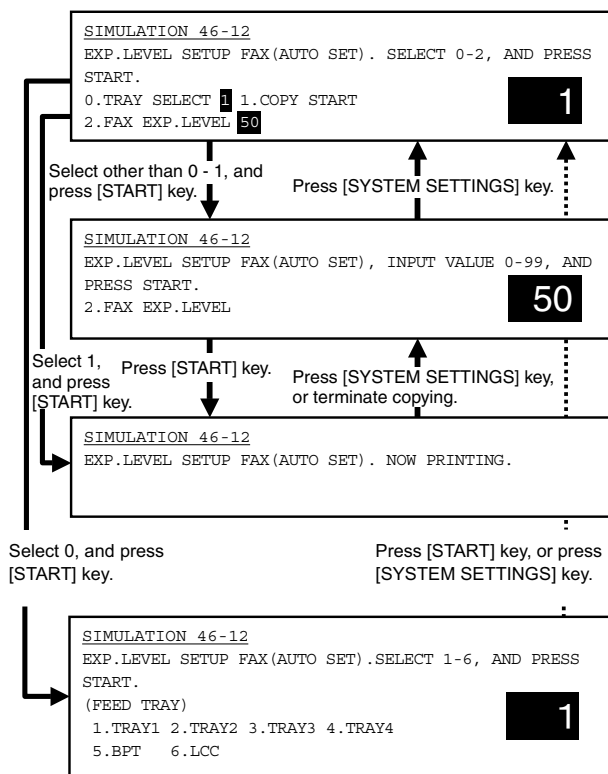
The print density settings should be normally left at defaults but should be adjusted according to user requests, if any.

10-A Adjust the fax mode print density for all modes at once

- 1) Set the test chart (UKOG-0162FCZZ) on the original table so that it aligns with the front frame. Then put four or five pieces of A3 (11" x 17") paper.



- 2) Go through the modes specified in Simulation 46-12.



Item			Setting range	Default
0	TRAY SELECT	Paper feed tray selection		
1	COPY START	Copy START (Default)		
2	FAX EXP. LEVEL	FAX mode print density	0 - 99	50

- 3) Select the adjustment item (FAX EXP. LEVEL) using the numeric keypad.
- 4) Press the Start key.
- 5) Press the Start key. (A copy is created.)
Check the print density.
If the print density is not at an acceptable level, do the following steps.
- 6) Enter the print adjustment value using the numeric keypad.

- 7) Press the P or Start key.
This applies the adjustment value.
Pressing the Start key starts print operation as well as applying the adjustment value.
- 8) Check the print density.

Repeat steps 5 to 8 until an acceptable print density is obtained.

Adjusting the Fax print density through this simulation changes the print density settings for all Fax modes to the density level applied by carrying out this simulation.

The Fax mode print density settings for individual Fax modes adjusted through Simulations 46-13, -14, -15, -16 and -45 are changed to the print density level applied by this simulation.

10-B Adjust the fax mode print density in standard mode

10-C Adjust the fax mode print density in small-character mode

10-D Adjust the fax mode print density in fine mode

10-E Adjust the fax mode print density in super fine mode

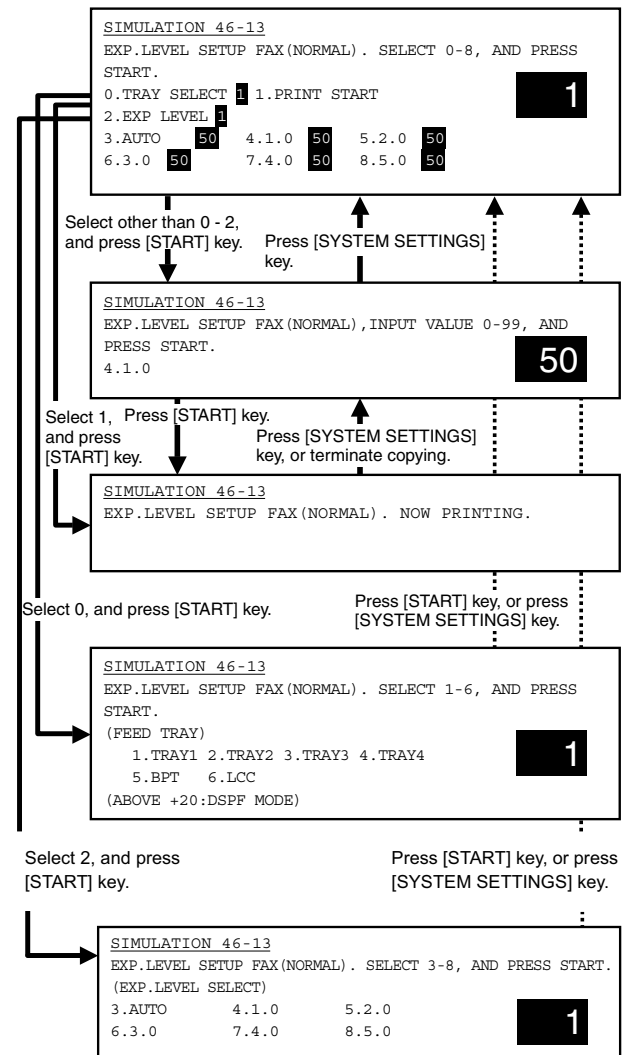
10-F Adjust the fax mode print density in 600dpi mode

This adjustment is intended to the print mode for each Fax mode individually. In manual mode, the print density setting for each print density adjustment level (1 to 5) can be adjusted to a custom density level.

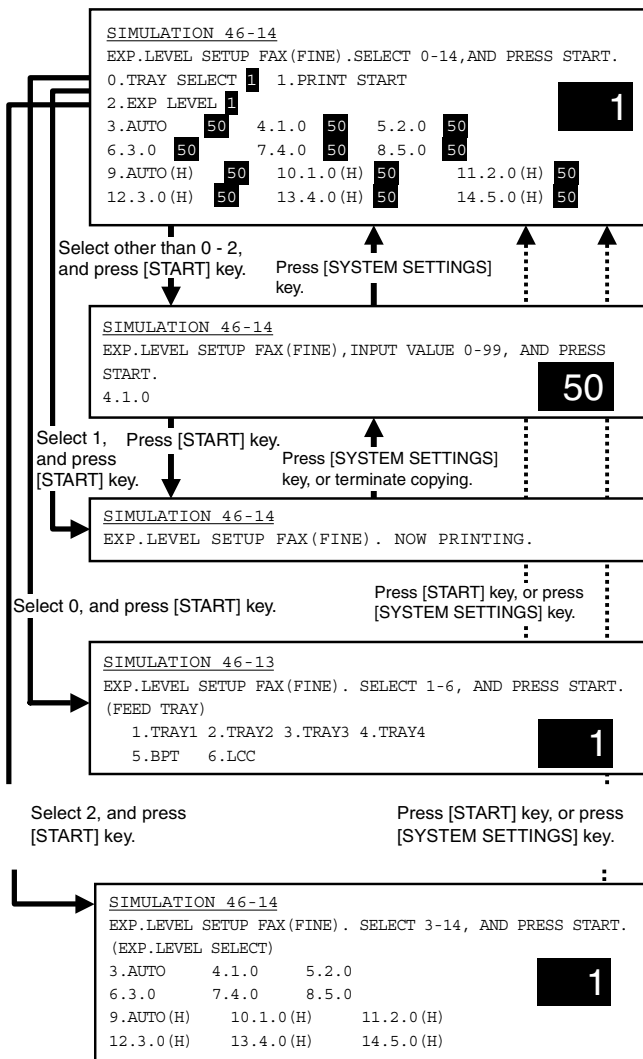
- 1) Set the test chart (UKOG-0162FCZZ) on the original table so that it aligns with the front frame. Then put four or five pieces of A3 (11" x 17") paper.



- 2) Go through the simulation modes that correspond to the Fax modes for which to adjust the print density (i.e., the modes specified in Simulations 46-13, -14, -15, -16, or -45).



Item			Setting range	Default
0	TRAY SELECT	Paper feed tray selection	0 - 99	50
1	PRINT START	Print start (Default)		
2	EXP LEVEL	Exposure level selection		
3	AUTO	Auto		
4	1.0	Exposure level 1		
5	2.0	Exposure level 2		
6	3.0	Exposure level 3		
7	4.0	Exposure level 4		
8	5.0	Exposure level 5		



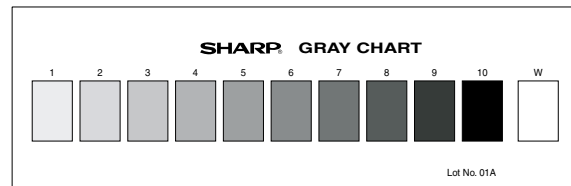
	Item	Setting range	Default
0	TRAY SELECT	Paper feed tray selection	0 - 99 50
1	PRINT START	Print start (Default)	
2	EXP LEVEL	Exposure level selection	
3	AUTO	Auto	
4	1.0	Exposure level 1	
5	2.0	Exposure level 2	
6	3.0	Exposure level 3	
7	4.0	Exposure level 4	
8	5.0	Exposure level 5	
9	AUTO (H)	Auto (Half-tone)	
10	1.0 (H)	Exposure level 1 (Half-tone)	
11	2.0 (H)	Exposure level 2 (Half-tone)	
12	3.0 (H)	Exposure level 3 (Half-tone)	
13	4.0 (H)	Exposure level 4 (Half-tone)	
14	5.0 (H)	Exposure level 5 (Half-tone)	

- Using the numeric keypad, select the number that corresponds to the adjustment item. Choose from numbers 3 to 8 (14).
 - * Auto mode
 - * Manual mode (print density adjustment level)

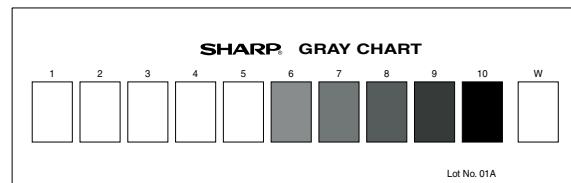
For manual mode, select the number that corresponds to the print density level (1 to 5). (Choose from numbers (4 to 8) (10-14)).
- Press the Start key.
- Press the Start key. (A copy is created.)

[Binary mode]
(Copied image reference density)

Original



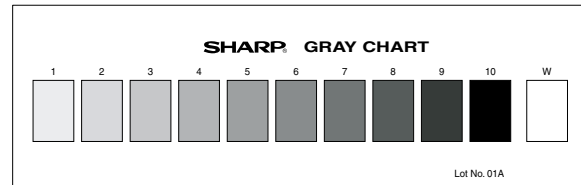
Copy



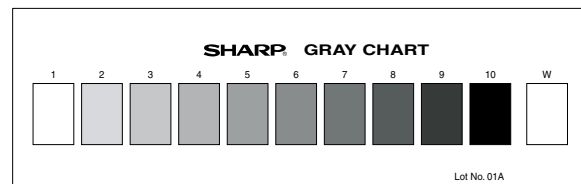
If the copied test chart (UKOG-0162FCZZ) image includes a background copy of patch 6 rather than patch 5, adjust all-copy mode to the image density level specified above.

[Half-tone mode]
(Copied image reference density)

Original



Copy



The copied test chart (UKOG-0162FCZZ) image includes a background copy of patch 2 rather than patch 1.

If the print density is not at an acceptable level, do the following steps.

- Adjust the copy density by entering an appropriate value through the numeric keypad.
A larger value provides higher density.
- Press the P or Start key.
This applies the adjustment value.
Pressing the Start key starts copy operation as well as applying the adjustment value.
- Check the printed image density.
Repeat steps 6 to 8 until an acceptable image density is obtained.

ADJ 11 Adjusting the image quality in scan mode

This adjustment is needed in the following situations:

- * The CCD unit has been replaced.
- * U2 trouble has occurred.
- * The MFP control PWB has been replaced.
- * The EEPROM on the MFP control PWB has been replaced.
- * The scanner control PWB has been replaced.
- * The EEPROM on the scanner control PWB has been replaced.
- * One or more parts of the scanner (reading) section have been replaced.

(Scan mode image quality adjustment items)

Image mode			Simulation for adjustment	
			All-mode adjustment	Individual mode adjustment
Scan mode image density adjustment/ individual setup (standard mode)	Auto mode	Binary mode	46-21	46-22
	Manual	Binary mode		
Scan mode image density adjustment/ individual setup (small-character mode)	Auto mode	Binary mode	46-23	46-23
		Half tone mode		
	Manual	Binary mode		
		Half tone mode		
Scan mode image density adjustment/ individual setup (fine mode)	Auto mode	Binary mode	46-24	46-24
		Half tone mode		
	Manual	Binary mode		
		Half tone mode		
Scan mode image density adjustment/ individual setup (super fine mode)	Auto mode	Binary mode	46-25	46-25
		Half tone mode		
	Manual	Binary mode		
		Half tone mode		

(Scan mode image quality)

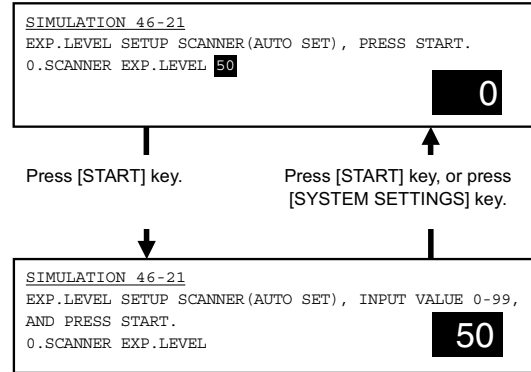
The image density settings should be normally left at defaults but should be adjusted according to user requests, if any.

11-A Adjust the scan mode image density for all modes at once

- 1) Set the test chart (UKOG-0162FCZZ) on the original table so that it aligns with the front frame. Then put four or five pieces of A3 (11" x 17") paper.



- 2) Go through the modes specified in Simulation 46-21.



Item			Setting range	Default
0	SCANNER EXP. LEVEL	Scan mode image density adjustment	0 - 99	50

- 3) Select the adjustment item SCANNER EXP. LEVEL using the numeric keypad.
- 4) Press the Start key.
- 5) Enter the image density adjustment value.
- 6) Press the P or Start key.

NOTE: Adjusting the scanned image density through this simulation changes the image density settings for all scan modes to the image density level applied by carrying out this simulation.

The scan-mode image density settings for individual scan modes adjusted through Simulations 46-22, -23, -24, -25, and -45 are changed to the image density level applied by this simulation.

Scanned images must be visually checked to ensure the post-adjustment image density.

11-B Scan mode image density adjustment/ individual setup (standard mode)

11-C Scan mode image density adjustment/ individual setup (small-character mode)

11-D Scan mode image density adjustment/ individual setup (fine mode)

11-E Scan mode image density adjustment/ individual setup (super fine mode)

This adjustment is intended to the image mode for each scan mode individually. In manual mode, the image density setting for each scanned image density adjustment level (1 to 5) can be adjusted to a custom density level.

- 1) Set the test chart (UKOG-0162FCZZ) on the original table so that it aligns with the front frame. Then put four or five pieces of A3 (11" x 17") paper.



- Go through the simulation modes that correspond to the scan modes for which to adjust the scanned image density (i.e., the modes specified in Simulations 46-22, -23, -24, or -25).

SIMULATION 46-21
EXP.LEVEL SETUP SCANNER(AUTO SET), PRESS START.
0.SCANNER EXP.LEVEL **50**

Press [START] key.

Press [START] key, or press [SYSTEM SETTINGS] key.

SIMULATION 46-21
EXP.LEVEL SETUP SCANNER(AUTO SET), INPUT VALUE 0-99, AND PRESS START.
0.SCANNER EXP.LEVEL **50**

Item			Setting range	Default
0	SCANNER EXP. LEVEL	Scan mode image density adjustment	0 - 99	50

SIMULATION 46-22
EXP.LEVEL SETUP SCANNER(NORMAL). SELECT 0-5, AND PRESS START.
0.AUTO **50** 1.1.0 **50** 2.2.0 **50**
3.3.0 **50** 4.4.0 **50** 5.5.0 **50**

Select 0 - 5, and press [START] key.

Press [START] key, or press [SYSTEM SETTINGS] key.

SIMULATION 46-22
EXP.LEVEL SETUP SCANNER(NORMAL), INPUT VALUE 0-99, AND PRESS START.
0.AUTO **50**

Item			Setting range	Default
0	AUTO	Auto	0 - 99	50
1	1.0	Exposure level 1		
2	2.0	Exposure level 2		
3	3.0	Exposure level 3		
4	4.0	Exposure level 4		
5	5.0	Exposure level 5		

- Enter the number that corresponds to the following adjustment item using the numeric keypad. (Choose from numbers 0 to 5.)
 - * Auto mode
 - * Manual mode (print density adjustment level)

For manual mode, select the number that corresponds to the image density adjustment level (1 to 5). (Choose from numbers 1 to 5.)
- Press the Start key.
- Enter the image density adjustment value.
- Press the P or Start key.

Scanned images must be visually checked to ensure the post-adjustment image density.

11-F Adjust the image gamma in scanner mode

- Go through the modes specified in Simulation 46-27.

SIMULATION 46-27
GAMMA SETUP(SCNNER), SELECT 1-9, AND PRESS START.
1.OC_Fine.HT **64** 2.OC_SFine.HT **64** 3.OC_UFine.HT **64**
4.SPF_Fine.HT **64** 5.SPF_SFine.HT **64** 6.SPF_UFine.HT **64**
7.CIS_Fine.HT **64** 8.CIS_SFine.HT **64** 9.CIS_UFine.HT **64**

Item		
1	OC_Fine.HT	Fine text (Half-tone) (OC)
2	OC_SFine.HT	Super fine (Half-tone) (OC)
3	OC_UFine.HT	Ultra fine (Half-tone) (OC)
4	SPF_Fine.HT	Fine text (Half-tone) (SPF)
5	SPF_SFine.HT	Super fine (Half-tone) (SPF)
6	SPF_UFine.HT	Ultra fine (Half-tone) (SPF)
7	CIS_Fine.HT	Fine text (Half-tone) (CIS)
8	CIS_SFine.HT	Super fine (Half-tone) (CIS)
9	CIS_UFine.HT	Ultra fine (Half-tone) (CIS)

- Using the numeric keypad, select the number that corresponds to the scan mode for which to make adjustments.
 - Press the Start key.
 - Adjust the gamma by entering an appropriate value through the numeric keypad.
- A larger value provides larger gamma gradient and higher image contrast.
- Press the Start key.
- This applies the adjustment value.

Scanned images must be visually checked to ensure the post-adjustment image gamma.

ADJ 12 Common image quality adjustments for all of copy, scan, and fax modes

(Common image quality adjustment items for all of copy, scan, and fax modes)

Adjustment Item List	Simulation for adjustment
Correct the image density in original table mode/SPF mode (Copy mode)	46-20
Set up the auto mode operation for copy, scan, and fax	46-19

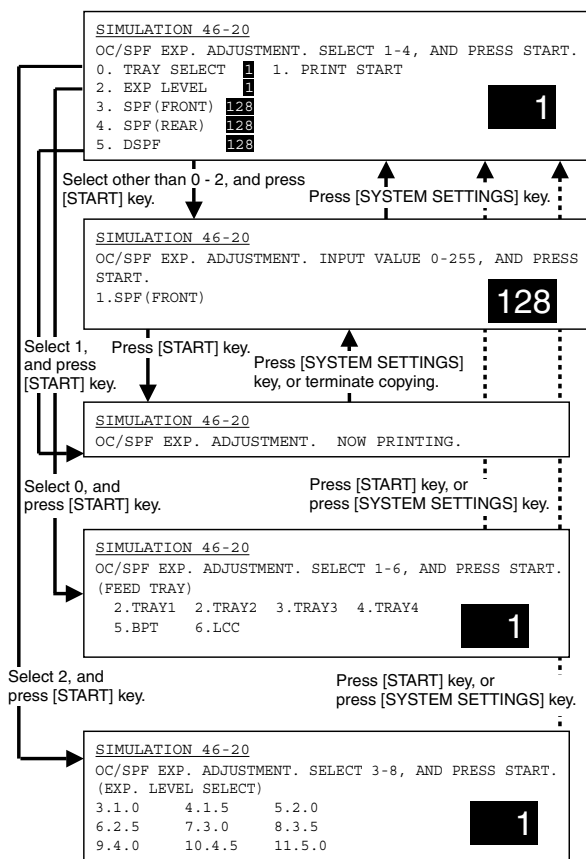
12-A Original table mode/SPF mode image density correction (copy mode)

Used to adjust the copy density correction in the DSPF copy mode for the document table copy mode. The adjustment is made so that the copy density becomes the same as that of the document table copy mode.

This adjustment is needed in the following situations:

- * The CCD unit has been replaced.
- * U2 trouble has occurred.
- * The MFP control PWB has been replaced.
- * The EEPROM on the MFP control PWB has been replaced.
- * The scanner control PWB has been replaced.
- * The EEPROM on the scanner control PWB has been replaced.
- * One or more parts of the scanner (reading) section have been replaced.
- * The CIS unit has been removed.
- * The CIS unit has been replaced.
- * The DSPF unit has been removed.
- * The DSPF unit has been replaced.

- Go through the modes specified in Simulation 46-20.



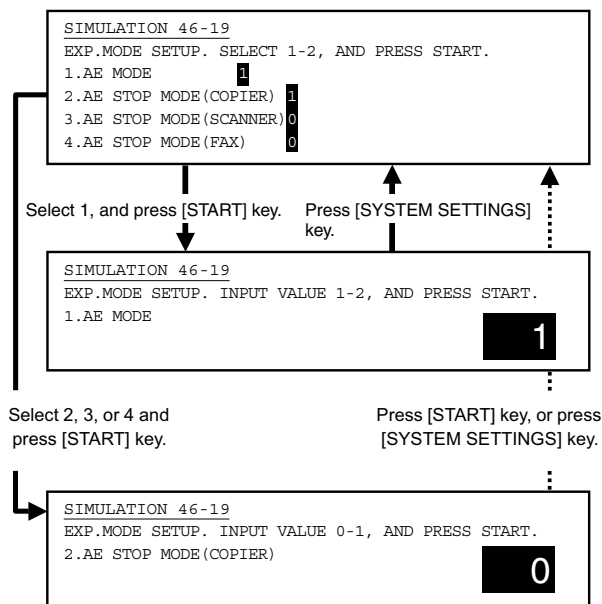
Item	Content	Setting range	Default
0	TRAY SELECT Paper feed tray selection 1: TRAY1 2: TRAY2 3: TRAY3 4: TRAY4 5: Manual feed 6: Side LCC	—	—
1	PRINT START Print start (Default)	—	—
2	EXP LEVEL Exposure level selection 3: Exposure level1.0 4: Exposure level1.5 5: Exposure level2.0 6: Exposure level2.5 7: Exposure level3.0 8: Exposure level3.5 9: Exposure level4.0 10: Exposure level4.5 11: Exposure level5.0	—	—
3	SPF (FRONT) SPF (front) (front frame side)	0 – 255	128
4	SPF (REAR) SPF (front) (rear frame side) (rear frame side)		
5	DSPF DSPF (Back surface)		

- Using the numeric keypad, select the number that corresponds to the mode for which to make adjustments.
DSPF front frame side (front face copy), DSPF rear frame side (front face copy), DSPF (back side copy) (Choose from numbers 3 to 5.)
- Press the Start key.
- Enter the density correction value using the numeric keypad.
- Press the P or Start key.
- Make two copies (one in original table mode and the other in DSPF mode) and compare the copies in terms of density.
Repeat steps 4 to 6 until both copies provide the same density.

12-B Set up the auto mode operation for copy, scan, and fax

This adjustment is needed in the following situations:

- * U2 trouble has occurred.
 - * The MFP control PWB has been replaced.
 - * The EEPROM on the MFP control PWB has been replaced.
 - * The scanner control PWB has been replaced.
 - * The EEPROM on the scanner control PWB has been replaced.
- Go through the modes specified in Simulation 46-19.



Mode	Set value	Item	Default
AE mode	1	Image quality priority mode (Normal mode) * Gamma is sharp to provide high contrast images.	2
	2	Toner consumption priority mode * Gamma is mild to provide low contrast images.	
AE fixed mode	0	AE fixed OFF	1 (COPIER) 0 (SCANNER/ FAX)
	1	AE fixed ON	

- Select "1 AE MODE" using the numeric keypad.
- Press the Start key.
- Using the numeric keypad, select the number that corresponds to the operation spec.
- Press the Start key. Pressing the Start key applies the setting.

(Auto copy mode operation setting)

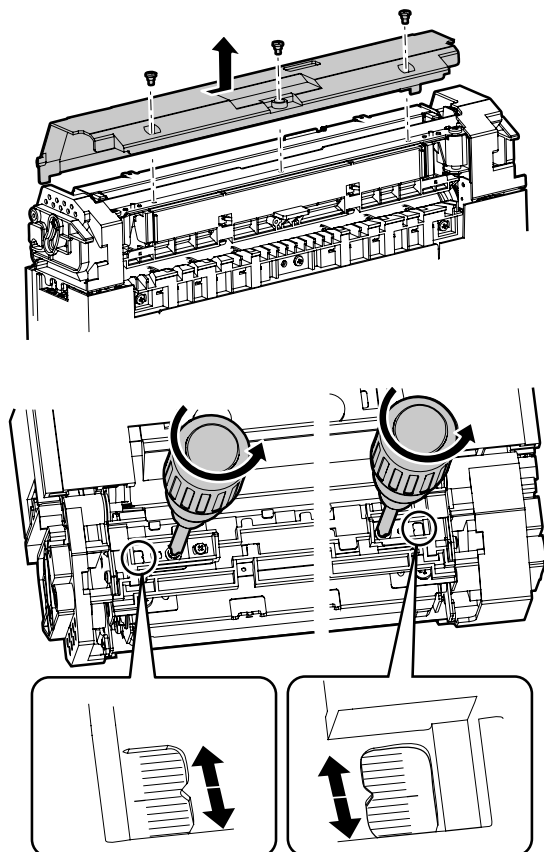
- Using the numeric keypad, select the number that corresponds to the mode for which to make adjustments. (Choose from numbers 2 to 4.)
 - Press the Start key.
 - Using the numeric keypad, select the number that corresponds to the operation mode.
 - Press the Start key.
- AE fix OFF: Density (exposure) is automatically controlled on a real time basis. (The density level is dynamically changed according to the original's pattern.)
- AE fix ON: The density of the leading edge of the original is detected and used to determine the overall density (exposure) level. (The overall density level is fixed.)

ADJ 13 Adjusting the fusing paper guide position

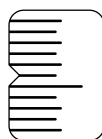
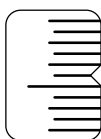
This adjustment is needed in the following situations:

- * Paper is jammed in or around the fusing section.
- * Imperfect images, deformed images, or wrinkles are produced in the paper lead edge section or the rear edge section.

Adjust the fusing paper guide position by loosening the fusing paper guide fixing screws and the sliding the fusing paper guide in the arrow direction.



When shipping, it is fixed to the position which is one scale (0.5mm) over the center.



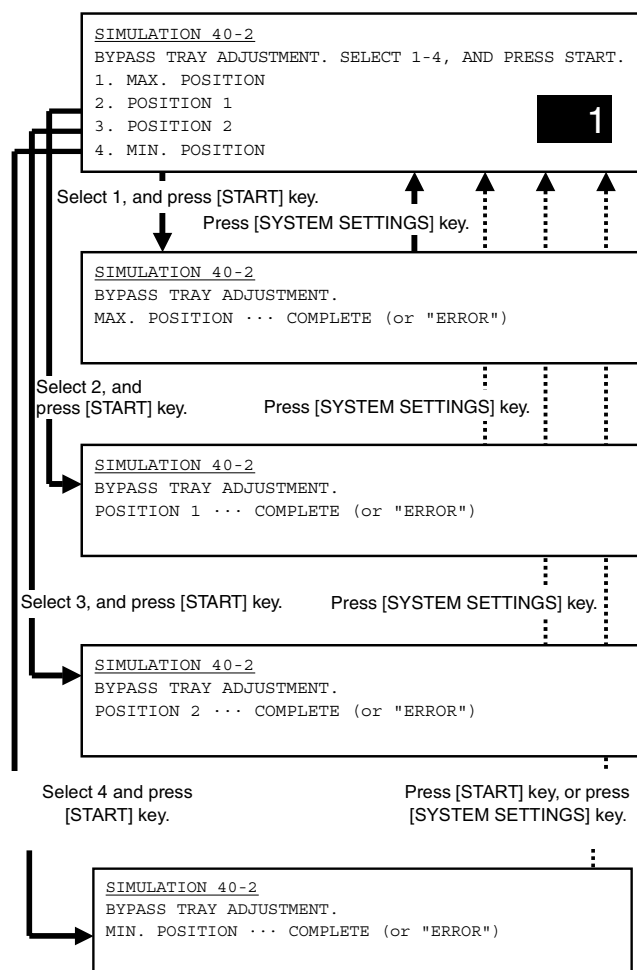
ADJ 14 Adjusting the paper size detection

14-A Adjust the paper width sensor for the manual paper feed tray

This adjustment is needed in the following situations:

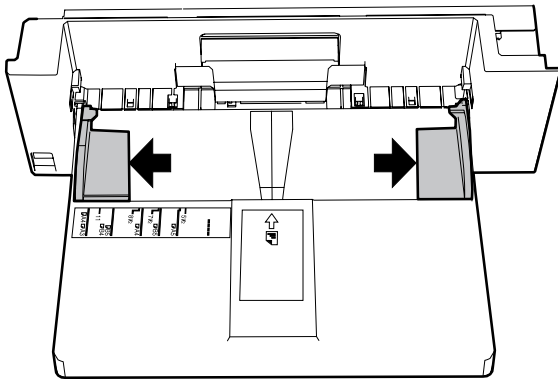
- * The manual paper feed tray section has been disassembled.
- * The manual paper feed tray unit has been replaced.
- * U2 trouble has occurred.
- * The PCU PWB has been replaced.
- * The EEPROM of the PCU PWB has been replaced.

1) Go through the modes specified in Simulation 40-2.

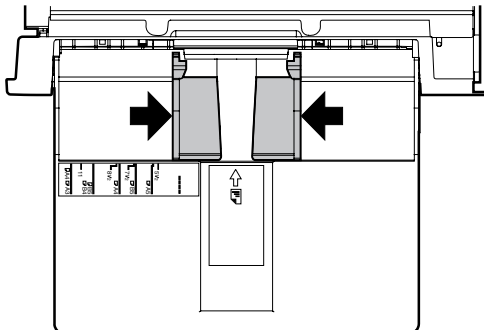


2) Open the manual paper feed guide to the maximum width position.

- 3) Select MAX. POSITION using the numeric keypad.



- 4) Press the Start key.
The maximum width detection level is recognized.
- 5) Press the SYSTEM SETTINGS key.
- 6) Set the manual paper feed guide to the width for the A4R size.
- 7) Select POSITION 1 using the numeric keypad.
- 8) Press the Start key.
The A4R width detection level is recognized.
- 9) Press the SYSTEM SETTINGS key.
- 10) Set the manual paper feed guide to the width for the A5R size.
- 11) Select POSITION 2 using the numeric keypad.
- 12) Press the Start key.
The A5R width detection level is recognized.
- 13) Press the SYSTEM SETTINGS key.
- 14) Open the manual paper feed guide to the minimum width position.



- 15) Select MIN. POSITION using the numeric keypad.
- 16) Press the Start key.

The minimum width detection level is recognized.

* When each of the above operations has been completed, the "COMPLETE" message appears; when any of the operations has failed, the "ERROR" message appears.

14-B Adjust the paper width sensor for paper feed tray 3

This adjustment is needed in the following situations:

- * The paper feed tray section has been disassembled.
- * The paper feed tray unit has been replaced.
- * U2 trouble has occurred.
- * The PCU PWB has been replaced.
- * The EEPROM of the PCU PWB has been replaced.

- 1) Go through the modes specified in Simulation 40-12.

SIMULATION 40-12

TRAY3 ADJUSTMENT. SELECT 1-2, AND PRESS START.

1. MAX. POSITION
2. MIN. POSITION

1

Select 1, and press [START] key.

Press [SYSTEM SETTINGS] key.

SIMULATION 40-12

TRAY3 ADJUSTMENT.

MAX. POSITION ... COMPLETE (or "ERROR")

Press [START] key.

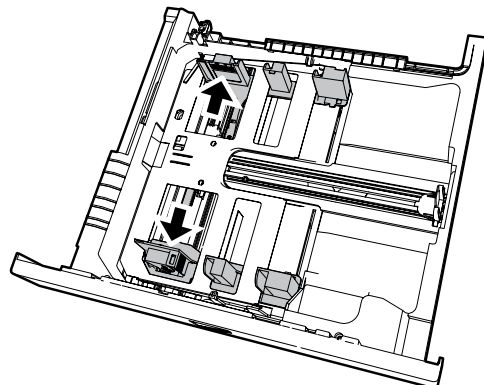
Press [SYSTEM SETTINGS] key.

SIMULATION 40-12

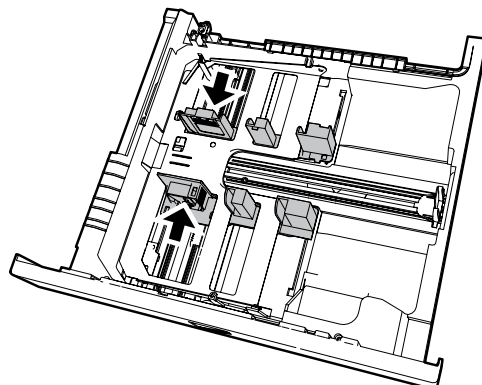
TRAY3 ADJUSTMENT.

MIN. POSITION ... COMPLETE (or "ERROR")

- 2) Open the paper feed guide to the maximum width position.



- 3) Select MAX. POSITION using the numeric keypad.
- 4) Press the Start key.
The maximum width detection level is recognized.
- 5) Press the SYSTEM SETTINGS key.
- 6) Open the paper feed guide to the maximum width position.



- 7) Select MIN. POSITION using the numeric keypad.
- 8) Press the Start key.

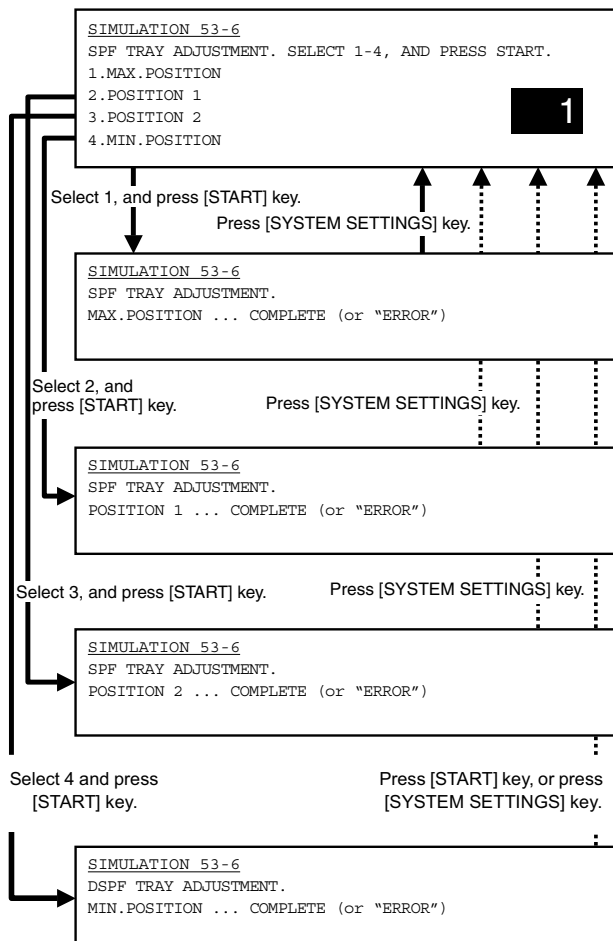
The maximum width detection level is recognized.

* When each of the above operations has been completed, the "COMPLETE" message appears; when any of the operations has failed, the "ERROR" message appears.

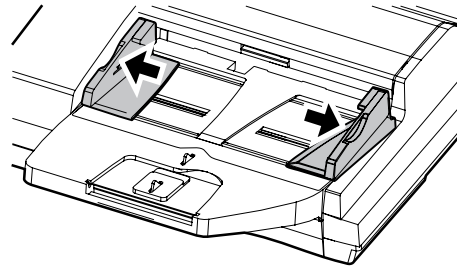
14-C Adjust the paper width sensor for the DSPF paper feed tray

This adjustment is needed in the following situations:

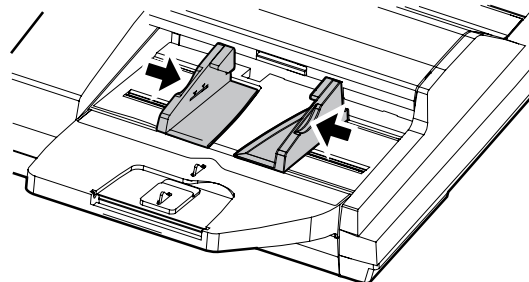
- * The paper feed tray section has been disassembled.
 - * The paper feed tray unit has been replaced.
 - * U2 trouble has occurred.
 - * The scanner PWB has been replaced.
 - * The EEPROM on the scanner PWB has been replaced.
- 1) Go through the modes specified in Simulation 53-6.



- 2) Open the DSPF paper feed guide to the maximum width position.



- 3) Select MAX. POSITION using the numeric keypad.
- 4) Press the Start key.
The maximum width detection level is recognized.
- 5) Press the SYSTEM SETTINGS key.
- 6) Open the DSPF paper feed guide to the width for the A4R size.
- 7) Select POSITION 1 using the numeric keypad.
- 8) Press the Start key.
The A4R width detection level is recognized.
- 9) Press the SYSTEM SETTINGS key.
- 10) Open the DSPF paper feed guide to the width for the A5R size.
- 11) Select POSITION 2 using the numeric keypad.
- 12) Press the Start key. The A4R width detection level is recognized.
- 13) Press the SYSTEM SETTINGS key.
- 14) Open the DSPF paper feed guide to the minimum width position.



- 15) Select MIN. POSITION using the numeric keypad.
 - 16) Press the Start key. The maximum width detection level is recognized.
- * When each of the above operations has been completed, the "COMPLETE" message appears; when any of the operations has failed, the "ERROR" message appears.

ADJ 15 Adjusting the original size detection (in original table mode)

This adjustment is needed in the following situations:

15-

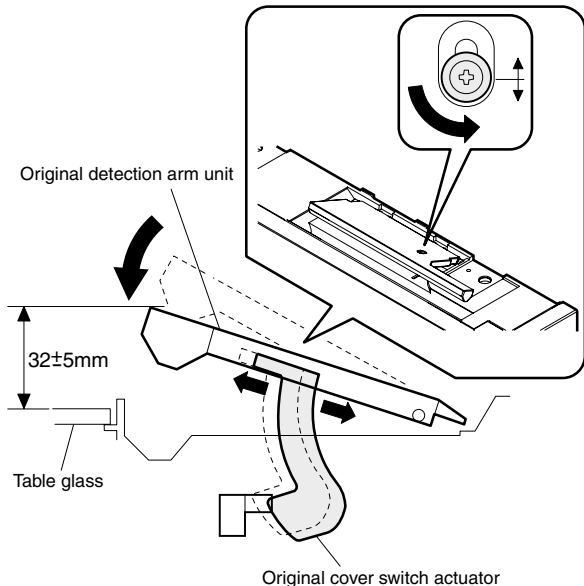
- * The original size sensor section has been disassembled.
- * The original size sensor section has been replaced.
- * U2 trouble has occurred.
- * The scanner control PWB has been replaced.
- * The EEPROM on the scanner control PWB has been replaced.

15-A Adjust the detection point of the original size sensor (in original table mode)

- Go through the modes specified in Simulation 41-1.

SIMULATION 41-1
PD SENSOR CHECK..
OCSW PD1 PD2 PD3 PD4 PD5 PD6 PD7

- Gradually turn over the original detection arm unit in the arrow direction, and loosen the original cover switch actuator adjusting screw so that the OCSW indicator changes from inverse video to normal video when the arm unit top reaches a height of 32 ± 0.5 mm from the table glass. Then move the actuator to adjust its position. (If the original cover switch turns on in improper timing, the original detection mechanism may fail to operate correctly.)



15-B Adjust the sensitivity of the original size sensor

- Go through the modes specified in Simulation 41-2.

SIMULATION 41-2
PD SENSOR ADJUSTMENT. SELECT1-2, AND PRESS START.
(PLEASE OPEN THE ORIGINAL COVER.)
1. NO ORIGINAL
2. A3 ORIGINAL

Select 1, and press [START] key.
Press [SYSTEM SETTINGS] key.

SIMULATION 41-2
PD SENSOR ADJUSTMENT.
NO ORIGINAL ... COMPLETE (or "ERROR at PD1 PD2...")
A3 ORIGINAL ... INCOMPLETE

Select 2 and press
[START] key. (Error)

Press [START] key, or press
[SYSTEM SETTINGS] key.

SIMULATION 41-2
PD SENSOR ADJUSTMENT.
NO ORIGINAL ... COMPLETE
A3 ORIGINAL ... COMPLETE (or "ERROR at PD1 PD2...")

- Open the original cover. With nothing placed on the original table, select NO ORIGINAL using the numeric keypad.
- Press the Start key.
This sets the sensor level with no original detected.
- Set A3 (11" x 17") paper on the original table, and select A3 ORIGINAL using the numeric keypad.
- Press the Start key. This sets the sensor level with an original detected.

When each of the above operations has been completed, the "COMPLETE" message appears; when any of the operations has failed, the "ERROR" message appears.

ADJ 16 Adjusting the touch panel coordinates

This adjustment is needed in the following situations:

- * The operation panel has been replaced.
- * U2 trouble has occurred.
- * The MFP control PWB has been replaced.
- * The EEPROM on the MFP control PWB has been replaced.

- Go through the modes specified in Simulation 65-1.

SIMULATION 65-1

```

+                                     +
+                                     +
+                                     +
+                                     +
  
```

- Press the four cross mark points.

Pressing the cross mark points correctly results in gray display. When the touch panel adjustment is complete with the four points pressed, the sub-number entry screen for simulation reappears.

If any error is detected, the touch panel returns to adjustment mode.

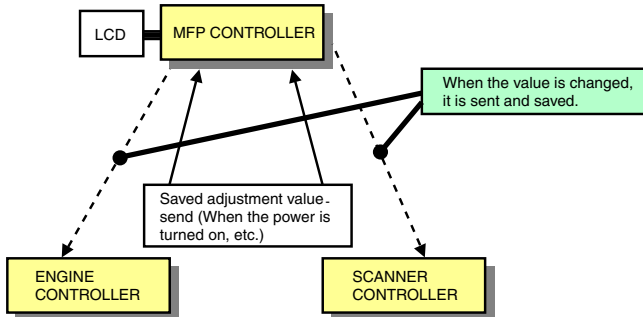
NOTE: Never use something with a sharp tip (such as a needle or pin) to press the touch panel.

[7] SIMULATION

1. Adjustment value/Simulation and storage data

A. Simulation adjustment value/ Set value data

Each controller is provided with an EEPROM. The adjustment/set values are collected to the MFP controller. If they are changed, they are sent back and saved.



B. Each storage data

(1) (Data saved by the PCU PWB)

Counters	Adjustment value	Others
Drum rotation time counter (Accumulated time)	Developing bias voltage value	Serial number
Developer unit rotation time counter	Cleaning mode Developing bias voltage value	Trouble history
Toner supply time (Block IC CHIP)	Main high voltage adjustment	Tray 1 size
Drum rotating time (Block IC CHIP)	Transfer charger voltage value	Tray 2 size
Total counter	Transfer belt cleaning voltage value	Manual destination information
Maintenance counter	Toner concentration reference value	
Developing counter	Density correction start set time (Developer unit)	Tray 3 destination information
Drum counter	Density correction rotation time (Developer tank)	Tray 4 destination information
Toner cartridge counter	Density correction amount (Developer tank)	Tray 1 paper remaining quantity data
Valid paper counter	Correction execution direction, upper/lower limit (Developer tank)	Tray 2 paper remaining quantity data
Tray 1 paper feed counter	Toner concentration temperature correction (low temperature side) correction amount	Tray 3 paper remaining quantity data
Tray 2 paper feed counter	Toner concentration temperature correction (low temperature side) set temperature	Tray 4 paper remaining quantity data
Tray 3 paper feed counter	Toner concentration temperature correction (low temperature side) release temperature	Final toner concentration sensor output value
Tray 4 paper feed counter	Toner concentration temperature correction (high temperature side) correction amount	Toner cartridge IC CHIP destination
Manual paper feed counter	Toner concentration temperature correction (high temperature side) judgment temperature	Counter mode setting

Counters	Adjustment value	Others
ADU paper feed counter	Toner concentration temperature correction (high temperature side) judgment voltage	White paper exit count setting
Staple counter	Toner concentration temperature correction (high temperature side) correction value	Trouble memory mode setting
Punch counter	Toner concentration temperature correction (low temperature side) release time	Fusing operation mode (Prevention against curl)
Main unit right-side paper exit counter	Toner concentration temperature correction (high temperature side) toner concentration delay time	CE mark conforming operation mode
Side LCC paper feed counter	Multi-purpose width adjustment value	Maintenance cycle
Insertion counter	Manual width adjustment value	Print stop setting when developer life over
Saddle staple counter	Heater lamp temperature (Center, normal control)	Saddle alignment operation priority mode
Fuser Web Send counter	Lead edge adjustment	
	Lead edge void set value	
	Rear edge void set value	
	Side edge setting	
	Print off-center adjustment value	
	Resist amount adjustment value	
	Laser power adjustment value	
	PPD1 sensor adjustment	
	Process correction inhibit allow set value	
	Developing bias rising correction wait time	
	Developing bias rising correction adjustment value	
	Built-in finisher jogger position adjustment	
	Saddle adjustment value	

(2) (Data saved by the scanner control PWB)

Counters	Adjustment value	Others
Scan counter	Document lead edge adjustment value	Exposure mode set value
SPF paper pass counter	Document off-center adjustment value	Scanner serial number
SPF stamp counter	Document image loss amount adjustment value	
	Document image loss amount adjustment value	
	SPF resist amount adjustment value	
	Exposure motor speed adjustment value	
	Platen document detection adjustment value	
	SPF size width detection adjustment value	
	Touch panel adjustment value	
	Exposure level adjustment value	
	gamma change value	
	OC/SPF exposure correction value	
	Shading adjustment value (CCD/CIS)	
	CCD shading start position adjustment value	

(3) (Data saved by the MFP control PWB)

Counters	Adjustment value	Others
Copy counter	FAX SOFT SW., etc.	Trouble history
Printer counter		JAM history
FAX receive counter		Destination setting
FAX send counter		Language setting
All valid paper counter		Toner save mode setting
Trouble counter		13" setting
JAM counter		Auditor setting
		Counter mode setting
		Trouble memory mode setting
		Center binding mode AMS setting
		PC/MODEM communication trouble detection YES/NO setting
		Tag number set value
		Printers set values
		Network set value

(4) (Detailed list)

Refer to the "3. List of simulation codes".

2. General

The simulation has the following functions to grasp the machine operating status, identify the trouble position and causes in an earlier stage, and make various setups and adjustments speedily for improving the serviceability of the machine.

- 1) Various adjustments
- 2) Setting of the specifications and functions
- 3) Canceling troubles
- 4) Operation check
- 5) Counters check, setting, clear
- 6) Machine operating conditions (operation hysteresis), data check, clear
- 7) Various (adjustments, setting, operation, counters, etc.) data transfer

The operating procedures and displays depend on the form of the operation panel of the machine.

A. Basic operation

(1) Starting the simulation

* Entering the simulation mode

- 1) Copy mode key ON → Program key ON → Asterisk (*) key ON → CLEAR key ON → Asterisk (*) key ON → Ready for input of a main code of simulation
- 2) Entering a main code with the 10-key → [START] key. ON
- 3) Entering a sub code with the 10-key → [START] key. ON
- 4) Select an item with the scroll key and the item key.
- 5) The machine enters the mode corresponding to the selected item.

Press [START] key. or EXECUTE key to start the simulation operation.

To cancel the current simulation mode or to change the main code and the sub code, press the user setup key.

* Canceling the simulation mode to return to the normal mode

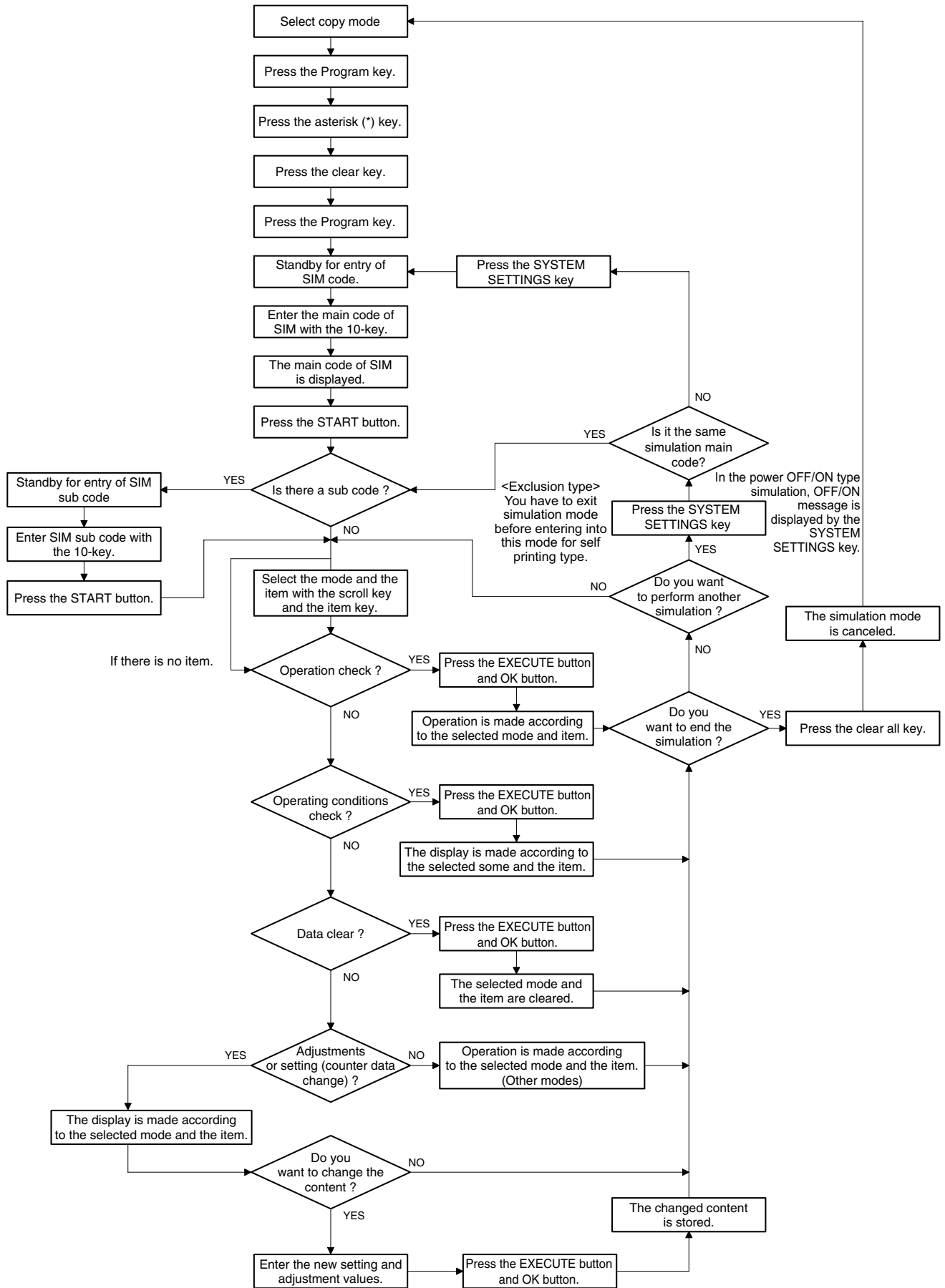
- 1) Press CA key.

(Note for the simulation mode)

- Do not turn OFF the power switch on the operation panel when the machine is in the simulation mode.

When executing the operation of mentioning above, a malfunction may be resulted. In this case, turn OFF/ON the main power source.

- Before entering the simulation mode, check to insure that neither print data nor FAX data are receiving.



3. List of simulation codes

Main code	Sub code	Operation content	Data save destination/Target		
			MFP	Scanner	Engine
1	1	Mirror scan operation		○	
	2	Optical system sensor check		○	
2	1	SPF operation aging		○	
	2	SPF sensor check		○	
	3	SPF individual load check		○	
3	2	Finisher sensor check			○
	3	Finisher individual load check			○
	10	Finisher setting			○
	30	Insertion sensor check			○
	31	Insertion load operation			○
	32	Insertion tray value setting			○
4	2	LCC sensor check			○
	3	LCC individual load check			○
5	1	LCD/LED test	○		
	2	Heater lamp test			○
	3	Copy lamp test		○	
	4	Discharge lamp test			○
6	1	Transport system load operation (Clutch/Solenoid)			○
	2	Fan motor test			○
	3	Transfer separation motor operation			○
7	1	Operation registration (jam detection:No, developing tank detection:No, aging and maintenance warm-up:No, intermittent operation:Yes, shading:No etc.)	○		
	6	Intermittent aging cycle setting	○		
	8	Warm-up time display (No aging)			○
8	1	DV bias setting			○
	2	Main charger grid voltage setting			○
	6	Transfer voltage setting			○
	17	Transfer roller setting			○
	18	Transfer cleaning roller setting			○
	19	Fusing bias setting (Not used)			○
9	1	ADU output test			○
	2	ADU sensor check			○
10	1	Toner motor activation			○
	2	Toner rest sensor check			○
13		U1 trouble cancellation	○		
14		Trouble cancellation	○		
15		LCC trouble cancellation	○		○
16		U2 trouble cancellation	○	○	○
17		PF trouble cancellation	○		
21	1	Maintenance cycle set up			○
22	1	Counter data display	○	○	○
	2	JAM/Trouble counter data display	○		
	3	Paper jam history	○		
	4	Trouble history	○		
	5	ROM version data display	○	○	○
	6	Data print mode	○		
	7	Key operator code display	○		
	8	ORG/Staple counter data display		○	○
	9	Paper feed counter data display			○
	10	System information	○		
	11	FAX counter data display	○		
	12	SPF JAM history	○		
	13	Process data display			○
	19	Network scanner counter display	○ (FAX)		
	30	OSA vendor ID display (Application Communication)	○		
	31	OSA vendor ID display (External account)	○		
23	2	JAM/trouble data print mode	○		
	80	Data print mode	○		

Main code	Sub code	Operation content	Data save destination/Target		
			MFP	Scanner	Engine
24	1	JAM/Trouble counter data clear	○		
	2	Paper feed counter clear	○		
	3	ORG/Staple counter clear		○	○
	4	Maintenance counter data clear			○
	5	Developer counter data clear			○
	6	Copy counter data clear	○		
	7	Drum/Toner counter data clear			○
	9	Printer/Other counter data clear	○		
	10	FAX counter data clear	○		
	11	Various rotation time timer clear			○
	15	Network scanner counter data clear	○ (FAX)		
25	1	Toner concentration sensor monitor			○
	2	Auto developer adjustment			○
26	2	Size setting			○
	3	Auditor setting	○		
	5	Counter mode setting	○		
	6	Destination setting	○		
	10	Network scanner trial mode setting	○		
	18	Toner save mode setting	○		
	30	CE mark conformity control inhibit/allow setting	○		
	35	Trouble memory mode setting	○		
	38	Print stop setting when life over			○
	41	Center binding mode AMS setting	○		
	50	Black-White reverse function valid/invalid setting	○		
	52	White paper exit count-up setting	○		○
	68	CA key cancel function valid/invalid	○		
27	1	PC/MODEM communication trouble (U7-00) detection YES/NO setting	○		
	5	Tag number setting	○		
30	1	Main unit sensor check			○
	2	Tray sensor check			○
40	1	Manual paper feed size width detection check			○
	2	Manual paper feed size width detection level adjustment			○
	7	Manual paper feed size width detection adjustment value input			○
	11	MPT size width detection check			○
	12	MPT size width detection level adjustment			○
41	1	Document size detection photo sensor check		○	
	2	Document size detection photo sensor detection level		○	
	3	Document size detection photo sensor light receiving/detection level check		○	
43	1	Fusing temperature control temperature setting (Normal/Energy-save mode)			○
	3	Fusing roller RPM setting.			○
44	1	Process correction inhibit/allow setting			○
	2	DM/ID sensor gain adjustment			○
	4	Standard patch density setting			○
	5	Patch making reference condition setting			○
	9	Process control data display			○
	12	Process control patch data display			○
	14	Temperature/humidity sensor output monitor			○
	16	Toner concentration reference value check			○
46	2	Copy exposure level adjustment (binary)	○	○	
	9	Copy exposure level adjustment/individual setting (Text binary)	○	○	
	10	Copy exposure level adjustment, individual setting (Text/Photo binary)	○	○	
	11	Copy exposure level adjustment, individual setting (Photo binary)	○	○	
	12	FAX exposure level adjustment (1 mode auto adjustment)	○	○	
	13	FAX exposure level adjustment, individual setting (Normal text)	○	○	
	14	FAX exposure level adjustment, individual setting (Fine)	○	○	
	15	FAX exposure level adjustment, individual setting (Super Fine)	○	○	
	16	FAX exposure level adjustment, individual setting (Ultra Fine)	○	○	
	17	Shading reference value change (Gain adjustment)		○	
	18	gamma change (Copier mode)		○	
	19	Exposure mode setting		○	
	20	OC/SPF exposure correction		○	
	21	Scanner exposure level adjustment (1 mode auto adjustment)		○	
	22	Scanner exposure level adjustment, individual setting (Normal text)		○	
	23	Scanner exposure level adjustment, individual setting (Fine)		○	
	24	Scanner exposure level adjustment, individual setting (Super Fine)		○	
	25	Scanner exposure level adjustment, individual setting (Ultra Fine)		○	
	27	gamma change (Scanner mode)		○	
	31	Copy sharpness setting		○	
	39	FAX sharpness setting		○	
	45	FAX exposure level adjustment, individual setting (600dpi)	○	○	

Main code	Sub code	Operation content	Data save destination/Target		
			MFP	Scanner	Engine
48	1	Magnification ratio adjustment (by Input/Output)	○	○	
	5	Motor speed adjustment		○	
49	1	Firmware update	○	○	○
50	1	Copy lead edge adjustment (Document table)	○	○	○
	2	Lead edge adjustment (Document table simple type)	○	○	○
	5	Print lead edge adjustment	○		○
	6	Copy lead edge adjustment (SPF)	○	○	○
	7	Copy lead edge adjustment (SPF simple type)	○	○	○
	10	Print off-center adjustment	○		○
	12	Document off-center adjustment	○	○	
	27	Document image loss setting (FAX send/scanner mode)		○	
51	2	Resist amount adjustment		○	○
53	6	SPF size width detection level adjustment		○	
	7	SPF size width detection adjustment value input		○	
	8	SPF scan position adjustment		○	
55	1	Engine soft SW change and check			○
	2	Scanner soft SW change and check		○	
	3	Controller soft SW change and check	○		
56	1	Data transfer	○		
60	1	ICU image DRAM read/write check	○		
61	1	LSU operation check			○
	2	Laser power setting (Copier)			○
	3	Laser power setting (FAX)			○
	4	Laser power setting (Printer)			○
62	1	Hard disk format	○		
	2	Hard disk read/write check	○		
	3	Hard disk read/write check (All areas)	○		
	6	HDD self diag	○		
	7	Self diag error log print	○		
	8	Hard disk format (Excluding the system area)	○		
	9	HDD format (system area)	○		
	10	Job complete list delete	○		
	11	Document filing data delete	○		
63	1	Shading check		○	
	2	Shading execution		○	
	7	White plate scan start position adjustment		○	
64	1	Self print	○		
65	1	Touch panel adjustment		○	
	2	Touch panel check		○	

Main code	Sub code	Operation content	Data save destination/Target		
			MFP	Scanner	Engine
66	1	FAX-related soft SW setting check/change	○		
	2	FAX-related soft SW clear (Excluding FAX adjustment values)	○		
	3	FAX-related memory check	○		
	4	Signal send mode (Signal send level: Max.)	○		
	5	Signal send mode (Signal send level: Soft SW setting)	○		
	6	Confidential pass code print	○		
	7	Image memory content output	○		
	8	Voice message reproduction (Signal send level: Max.)	○		
	9	Voice message reproduction (Signal send level: Soft SW setting)	○		
	10	Image memory clear	○		
	11	300bps signal send (Signal send level: Max.)	○		
	12	300bps signal send (Signal send level: Soft SW setting)	○		
	13	Dial number registration	○		
	14	Dial test (10PPS make time setting & delivery test)	○		
	15	Dial test (20PPS make time setting & send test)	○		
	16	Dial test (DTMF signal adjustment & send test)	○		
	17	DTMF signal send mode (Signal send level: Max.)	○		
	18	DTMF signal send mode (Signal send level: Soft SW setting)	○		
	19	Address book backup (WR TO FLASH)	○		
	20	Address book backup (RD FROM FLASH)	○		
	21	FAX information print	○		
	23	FAX program download	○		
	24	FAST memory data clear	○		
	25	MODEM dial-in FAX number registration	○		
	26	MODEM dial-in telephone number registration	○		
	27	Voice warp transfer destination registration	○		
	29	Address book clear	○		
	30	TEL/LIU status change check	○		
	31	TEL/LIU setting	○		
	32	Receive data check	○		
	33	Signal detection check	○		
	34	Communication time measurement display	○		
	35	MODEM program rewrite	○		
	36	MFP controller I/F check	○		
	39	FAX destination registration	○		
	42	Reload of the PIC program	○		
	43	Setting of the PIC adjustment value	○		
	60	(Secret) ACR data registration	○		
67	16	Network card check	○		

4. Details of simulation

1

1-1	
Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the scanner (read) unit and its control circuit.
Section	Optical (Image scanning)

Operation/Procedure

- 1) Select the operation mode with 10-key.
- 2) Press [START] key.
The scanner performs scanning at the speed corresponding to the operation mode.

1	HIGH SPEED	High speed (220mm/s)
2	LOW SPEED	Low speed (110mm/s)

SIMULATION 1-1
SCANNER CHECK. SELECT 1-2, AND PRESS START.
1. HIGH SPEED
2. LOW SPEED

1

1-2	
Purpose	Operation test/Check
Function (Purpose)	Used to check the operation of sensor and detector in the scanning (read) section and the related circuit.
Section	Optical (Image scanning)

Operation/Procedure

The sensor and detector operation conditions are displayed.

The active sensors and detectors are highlighted.

- The scanner (read) unit is in the home position.: "MHPS" section is highlighted.
- The scanner (read) unit is not in the home position.: "MHPS" is normally displayed.

MHPS	Optical system home position
------	------------------------------

SIMULATION 1-2
SCANNER SENSOR CHECK..
MHPS

2

2-1	
Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the automatic document feeder unit and the control circuit.
Section	DSPF

Operation/Procedure

- 1) Select the operation mode with 10-key.
- 2) Press [START] key.
The SPF repeat paper feed, transport, and paper exit at the speed corresponding to the operation mode.

The operation can be stopped with the [SYSTEM SETTINGS] key.

1	HIGH SPEED (220mm/sec)	High speed
2	LOW SPEED (110mm/sec)	Low speed
3	TOP SPEED (360mm/sec)	Top speed

SIMULATION 2-1
SPF AGING TEST. SELECT 1-3, AND PRESS START.
1. HIGH SPEED
2. LOW SPEED
3. TOP SPEED

2

2-2	
Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the sensors and detectors in the automatic document feeder unit and the related circuits.
Section	DSPF

Operation/Procedure

The sensor and detector operation conditions are displayed.

The active sensors and detectors are highlighted.

SSET	SPF sensor
SODC	Open/close sensor
SCOV	Paper feed cover sensor
SPED2	Document set sensor (Lower)
SPED1	Document set sensor (Upper)
SPPD1	Document transport sensor 1
SPPD2	Document transport sensor 2
SPPD3	Document transport sensor 3
SPPD4	Document transport sensor 4
SPOD	Document exit sensor
SWDn	Document width sensor (n → 1 (inside) to 6 (outside))
SPLSn	Document length sensor (n → 1 (inside) to 2 (outside))
CISSET	CIS installation detection
STSET	Stamp unit installation sensor
STUD	Tray upper limit sensor
STLD	Tray lower limit sensor
SWD_LEN	SPF guide plate position (unit: 0.1mm)
SWD_AD	SPF document width detection volume output AD value

SIMULATION 2-2
SPF SENSOR CHECK.
SSET SODC SCOV SPED2
SPED1 SPPD1 SPPD2 SPPD3
SPPD4 SPOD SWD6 SWD5
SWD4 SWD3 SWD2 SWD1
SPLS2 SPLS1 CISSET STSET
STUD STLD
SWD_LEN: 2100 SWD_AD: 600

2-3	
Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the loads in the automatic document feeder unit and the control circuits.
Section	DSPF

Operation/Procedure

- 1) Select the number corresponding to the target of operation check with 10-key.
- 2) Press the [START] key.
The load selected in procedure 1 is operated.
The operation can be stopped with the [SYSTEM SETTINGS] key.

1	MOTOR (T)	Motor top speed
2	MOTOR (H)	Motor high speed
3	MOTOR (L)	Motor low speed
4	STRBC	Document transport brake clutch
5	STRC	Document feed transport clutch
6	SPFC	Document feed clutch
7	SRRC	Document resist clutch
8	SRRCB	Document resist brake clutch
9	STRRC	Document feed resist clutch
10	STRRCB	Document feed resist brake clutch
11	STMP	Stamp solenoid
12	SLUM	Lift up motor
13	SPFFAN	SPF fan motor

SIMULATION 2-3

SPF LOAD TEST. SELECT 1-13, AND PRESS START.

1.MOTOR (T) 2.MOTOR (H) 3.MOTOR (L)

4.STRBC 5.STRC 6.SPFC 7.SRRC

8.SRRCB 9.STRRC 10.STRRCB 11.STMP

12.SLUM 13.SPFFAN

2

3

3-2

Purpose	Operation test/Check
Function (Purpose)	Used to check the operation of sensor and detector in the finisher and the related circuit.
Section	Finisher

Operation/Procedure

The operating conditions of the sensors and detectors are displayed.

The active sensors and detectors are highlighted.

PI1	Entry port paper detection	
PI1P	Punch side resist HP detection	When the punch unit is installed
PI1S	Paper holding plate motor clock detection	When the saddle unit is installed
PI2P	Punch motor clock detection	When the punch unit is installed
PI2S	Front door open detection	When the saddle unit is installed
PI3	Paper exit detection	
PI3P	Punch HP detection	When the punch unit is installed
PI3S	Paper exit cover open detection	When the saddle unit is installed
PI4S	Paper folding motor clock detection	When the saddle unit is installed
PI5	Shutter open detection	
PI5S	Alignment plate HP detection	When the saddle unit is installed
PI6	Alignment guide HP detection	
PI6S	Saddle tray paper detection	When the saddle unit is installed
PI7	Staple shift HP detection	
PI7S	Paper positioning plate HP detection	When the saddle unit is installed
PI8	Tray 1 HP detection	
PI8S	Paper positioning plate HP detection	When the saddle unit is installed
PI9	Tray 1 lift motor clock detection 1	
PI9S	Entry port cover open detection	When the saddle unit is installed
PI10	Paper exit motor clock detection	
PI11	Tray 1 paper detection	

PI11S	Saddle paper exit detection	When the saddle unit is installed
PI12	Tray 2 paper detection	
PI12S	Semi-circular roller phase detection	When the saddle unit is installed
PI13S	Guide HP detection	When the saddle unit is installed
PI14	Buffer path detection	
PI14S	Paper holding plate lead edge position detection	When the saddle unit is installed
PI15	Finisher joint detection	
PI15S	Paper holding plate lead edge position detection	When the saddle unit is installed
PI16	Door open detection	
PI17	Buffer path entry port paper detection	
PI17S	Vertical path paper detection	When the saddle unit is installed
PI18	Oscillating guide open detection	
PI18S	Saddle No. 1 paper detection	When the saddle unit is installed
PI19	Tray lift motor clock detection 2	
PI19S	Saddle No. 2 paper detection	When the saddle unit is installed
PI20	Oscillation guide clock detection	
PI20S	Saddle No. 3 paper detection	When the saddle unit is installed
PI21	Staple lead edge detection	
PI21S	Paper folding HP detection	When the saddle unit is installed
PI22	Staple drive HP detection	
PI23	Tray 2 lift motor clock detection 1	
PI24	Tray 2 lift motor clock detection 2	
PI25	Tray 2 HP detection	
MS1	Front door / Upper door open detection	
MS1S	Saddle entry port door detection	When the saddle unit is installed
MS2	Oscillation guide close detection	
MS2P	Punch front door open detection	When the punch unit is installed
MS2S	Front door open detection	When the saddle unit is installed
MS3	Safety area detection	
MS3S	Paper exit door open detection	When the saddle unit is installed
MS4	Shutter close detection	
MS4S	Saddle staple presence detection 2	When the saddle unit is installed
MS5S	Stitch operation HP detection 2	When the saddle unit is installed
MS6S	Saddle staple presence detection 1	When the saddle unit is installed
MS7	Cartridge detection	
MS7S	Stitch operation HP detection 1	When the saddle unit is installed
MS8	Staple empty detection	
MS9	Tray approaching detection	

SIMULATION 3-2

FINISHER SENSOR CHECK.

PI10 PI20 PI19 PI9 PI22 PI1 PI14 PI3
PI17 PI12 PI11 MS8 PI21 MS7 PI18 PI5
PI8 PI6 PI7 MS2 MS4 MS1 MS3 PI16
PI15 MS9 PI24 PI23 PI25
(PI2P) (MS2P) (PI1P) (PI3P)
<PI11S><PI15S><PI5S> <PI14S><PI1S> <PI4S> <PI13S>
<PI12S><PI17S><PI7S> <PI18S><PI6S> <PI8S><MS7S>
<MS5S><PI20S><PI19S><PI21S><MS3S><PI9S> <PI2S>
<PI3S> <MS2S><MS1S><MS6S><MS4S>

() : Added when the punch unit is installed.

< > : Added when the saddle unit is installed.

3-3	
Purpose	Operation test/Check
Function (Purpose)	Used to check the operation of the load in the finisher and the control circuit.
Section	Finisher

Operation/Procedure

- 1) Select the number corresponding to the target of operation check with 10-key.
 - 2) Press the [START] key.
- The load selected in procedure 1 is operated.
The operation can be stopped with the [SYSTEM SETTINGS] key.

1	SL7	Belt wait solenoid
2	SL6	Wait solenoid
3	SL5	Paddle solenoid
4	SL3	Buffer exit port solenoid
5	SL2	Buffer entry port solenoid
6	SL1	Flapper solenoid
7	M10	Tray 2 lift motor
8	M9	Entry port transport motor
9	M8	No. 2 transport motor
10	M7	Oscillation motor
11	M6	Staple motor
12	M5	Tray 1 lift motor
13	M4	Stapler shift motor
14	M3	Alignment motor
15	M2	Paper exit motor
16	M1	No. 1 transport motor

(When the punch unit is installed)

17	M2P	Punch side resist motor
18	M1P	Punch motor

(When the saddle unit is installed.)

19	SL4S	Transport plate contact solenoid
20	SL2S	No. 2 paper deflection plate solenoid
21	SL1S	No. 1 paper deflection plate solenoid
22	M8S	Paper holding motor
23	M7S	Stitch motor: Front
24	M6S	Stitch motor: Rear
25	M5S	Saddle alignment motor
26	M4S	Paper positioning motor
27	M3S	Guide motor
28	M2S	Paper folding motor
29	M1S	Saddle transport motor

SIMULATION 3-3
FINISHER LOAD TEST. SELECT 1- , AND PRESS START.

2

3-10	
Purpose	Adjustment
Function (Purpose)	Finisher (AR-F16) adjustment
Section	Finisher

Operation/Procedure

- 1) Select the number that corresponds to the adjustment item with 10-key.
- 2) Press the [START] key.
- 3) Enter the adjustment value with 10-key.
- 4) Press [START] key. (The entered value is stored.)

Item	Setting range
1 Saddle stitch/folding position adjustment	192 - 208, 1STEP: 0.25 mm
2 Alignment position adjustment	2 - 18, 1STEP: 0.35 mm

Item	Setting range
3 Staple binding position adjustment	68 - 132, 1STEP: 0.152 mm
4 Punch center adjustment	37 - 63, 1STEP: 0.15mm
5 Punch hole position adjustment (Paper feed direction)	35 - 57, 1STEP: 0.26mm
6 Stack tray standby position adjustment (Small size)	5 - 35, 1STEP: 1mm
7 Stack tray standby position adjustment (Large size)	5 - 35, 1STEP: 1mm

SIMULATION 3-10
FINISHER SETTING. SELECT 1-7, AND PRESS START.
1. SADDLE POSITION
2. ALIGNMENT POSITION
3. STAPLE POSITION
4. PUNCH CENTER
5. PUNCH HOLE
6. TRAY WAITING POSITION (S-SIZE)
7. TRAY WAITING POSITION (L-SIZE)

1

3-30	
Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the sensors and detectors in the inserter and the related circuit.
Section	Inserter

Operation/Procedure

The operating conditions of the sensors and detectors are displayed.

The active sensors and detectors are highlighted.

TH_SEN	Sub tray pull-out detection
TS_SEN	Sub tray storage detection
T_SEN	Inserter tray paper size detection
EMP_SEN	Inserter tray empty detection
REG_SEN	Inserter resist sensor
TIM_SEN	Inserter timing sensor detection
JCK_SEN	Inserter cover open/close sensor
H_SEN	Inserter reverse sensor
HI_SEN	Inserter paper exit sensor
HYK_SEN	Inserter reverse unit open/close sensor
S_SW	Inserter set SW
KC_SEN	Base cover open/close sensor
P_ST_SW	Inserter start SW
P_MO_SW	Inserter staple mode select SW
P_PN_SW	Inserter punch select SW

SIMULATION 3-30
INSERTER SENSOR CHECK.
TH_SEN TS_SEN T_SEN EMP_SEN
REG_SEN TIM_SEN JCK_SEN H_SEN
HI_SEN HYK_SEN S_SW KC_SEN
P_ST_SW P_MO_SW P_PN_SW

3-31

Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the loads in the inserter and the related circuits.
Section	Inserter

Operation/Procedure

- 1) Select the number corresponding to the target of operation check with 10-key.
- 2) Press the [START] key.
The load selected in procedure 1 is operated.
The operation can be stopped with the [SYSTEM SETTINGS] key.

1	K_MOT	Reverse motor
2	Y_MOT	Horizontal transport motor
3	H_MOT	Inserter reverse
4	F_SOL	Inserter flapper solenoid
5	R_CL	Inserter resist clutch
6	P_LED	Inserter operation panel upper LED

SIMULATION 3-31
 INSERTER LOAD TEST. SELECT 1-6, AND PRESS START.
 1. K_MOT 2. Y_MOT 3. H_MOT
 4. F_SOL 5. R_CL 6. P_LED

2

3-32

Purpose	Setting (Adjustment)
Function (Purpose)	Inserter paper width detection level setting.
Section	Inserter

Operation/Procedure

- 1) Select the number corresponding to the adjustment item with 10-key.
- 2) Press the [START] key.
- 3) Enter the setting (adjustment) value with 10-key.
- 4) Press the [START] key.

1	MAX. POSITION	Max. position
2	POSITION 1	Adjustment point 1
3	POSITION 2	Adjustment point 2
4	MIN. POSITION	Min. width

SIMULATION 3-32
 INSERTER TRAY VALUE SETTING. SELECT 1-4, AND PRESS START.
 1. MAX. POSITION : 72
 2. POSITION 1 : 330
 3. POSITION 2 : 710
 4. MIN. POSITION : 804

1**4**

4-2

Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the sensors and detectors in the paper feed section (large capacity tray) and the related circuit.
Section	Paper feed

Operation/Procedure

The operating conditions of the sensors and detectors are displayed.
 The active sensors and detectors are highlighted.

<LCC>

LTD	Transport sensor
LUD	Tray upper limit sensor
LLD	Tray lower limit sensor
LPED	Tray paper presence/empty sensor
LTOD	Main unit connection detection sensor
LCD	Tray insertion detection
LOSW	Upper open/close detection SW
LRE	Lift motor encoder sensor
+24VM	24V power monitor
LLSW	Upper limit SW

SIMULATION 4-2
 LCC SENSOR CHECK.
 LTD LUD LLD LPED
 LTOD LCD LOSW LRE
 +24VM LLSW

4-3

Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the loads in the paper feed section (large capacity tray) and the related circuit.

Section	Paper feed
----------------	------------

Operation/Procedure

- 1) Select the number corresponding to the target of operation check with 10-key.
- 2) Press the [START] key.
The load selected in procedure 1 is operated.
The operation can be stopped with the [SYSTEM SETTINGS] key.

<Side LCC>

1	LTM	LCC transport motor
2	LLM	LCC lift motor
3	LPFCL	Paper feed clutch
4	LPSL	LCC paper feed solenoid
5	LTCL	LCC transport clutch
6	LTLSL	Tray lock solenoid D

SIMULATION 4-3
 LCC LOAD TEST. SELECT 1-6, AND PRESS START.
 1. LTM 2. LLM
 3. LPFCL 4. LPSL
 5. LTCL 6. LTLSL

2**5**

5-1

Purpose	Operation test/Check
Function (Purpose)	Used to check the operation of the display, LCD in the operation panel, and control circuit.

Section	Operation (Display/Operation key)
----------------	-----------------------------------

Operation/Procedure

The contrast changes every 2sec from the current level to MAX → MIN → the current level. During this period, each LED is lighted.

SIMULATION 5-1

5-2

Purpose	Operation test/Check
Function (Purpose)	Used to check the operation of the heater lamp and the control circuit.
Section	Fusing/Paper exit

Operation/Procedure

- 1) Select the number corresponding to the target of operation check with 10-key.
- 2) Press [START] key.
The load selected in procedure 1 performs ON/OFF operation.
Press [SYSTEM SETTINGS] key to stop the operation of the load.
The ON/OFF operation of the selected heater lamp is repeated every 500ms five times.

1	HL1 (LOWER)	Heater lamp 1 (Lower)
2	HL2 (UPPER)	Heater lamp 2 (Upper)
3	HL3 (LEFT)	Heater lamp 3 (Left)

SIMULATION 5-2

HEATER LAMP TEST. SELECT 1-3 ,AND PRESS START.
1.HL1 (LOWER)
2.HL2 (UPPER)
3.HL3 (LEFT)

2

5-3

Purpose	Operation test/Check
Function (Purpose)	Used to check the operation of the scanner lamp and the control circuit.
Section	Optical (Image scanning)

Operation/Procedure

- 1) Select the number corresponding to the target of operation check with 10-key.
- 2) Press [START] key.
The load selected in procedure 1 turns ON for 10sec.
The operation can be stopped with the [SYSTEM SETTINGS] key.

NOTE: CIS: only when the DSPF is installed.

SIMULATION 5-3

COPY LAMP TEST. SELECT 1-2, AND PRESS START.
1.COPY LAMP
2.CIS

1

5-4

Purpose	Operation test/Check
Function (Purpose)	Used to check the operation of the discharge lamp and the related circuit.
Section	Process

Operation/Procedure

- 1) Select the number corresponding to the target of operation check with 10-key.
- 2) Press [START] key.
The load selected in procedure 1 turns ON for 30sec.
The operation can be stopped with the [SYSTEM SETTINGS] key.

SIMULATION 5-4

DISCHARGE LAMP CHECK. SELECT 1, AND PRESS START.
1.DL

1

6

6-1

Purpose	Operation test/Check
Function (Purpose)	Used to check the operation of the paper transport system loads (clutch, solenoid) and the control circuit.

Section	Paper transport (Discharge/Switchback/Transport)
----------------	--

Operation/Procedure

- 1) Select the number corresponding to the target of operation check with 10-key.
- 2) Press the [START] key.
The load selected in procedure 1 is operated.
The operation can be stopped with the [SYSTEM SETTINGS] key.

1	MSWPR	MSW reset signal
2	HLPR	Heater power relay signal
3	DCPR	DC power relay signal
4	MM	Main motor
5	DM	Drum motor
6	DVM	Developing motor
7	TURM	Transfer separation motor
8	TRM	PS front motor
9	POM1	Paper exit motor 1
10	POM2_FW	Paper exit motor 2 forward rotation
11	POM2_RV	Paper exit motor 2 reverse rotation
12	VPM	Paper transport motor
13	RRC	Resist roller clutch signal
14	PSBC	Brake clutch signal
15	PSPS	Separation pawl
16	T1PFC	Tray 1 paper feed clutch
17	T2PFC	Tray 2 paper feed clutch
18	HPFC	Horizontal transport clutch
19	T1PUS	Tray 1 pickup solenoid
20	T2PUS	Tray 2 pickup solenoid
21	HPLS	Relay path clock solenoid
22	T1LUM	Tray 1 lift-up motor
23	T2LUM	Tray 2 lift-up motor
24	DSKPFC1	Desk paper transport clutch upstream side
25	DSKPFC2	Desk paper transport clutch downstream side
26	M1PFC	Tray 3 paper feed clutch
27	M2PFC	Tray 4 paper feed clutch
28	M1PUS	Tray 3 pickup solenoid
29	M2PUS	Tray 4 pickup solenoid
30	M1LUM	Tray 3 lift-up motor
31	M2LUM	Tray 4 lift-up motor
32	TRC_LCC	Desk clutch sync signal
33	FUM	Fusing motor
34	MPFPUS	Manual pickup solenoid
35	MPFC	Manual paper feed clutch signal
36	MPFGS	Manual paper feed gate solenoid
37	WEBM	Fusing web feed motor

SIMULATION 6-1

FEED OUTPUT CHECK. SELECT 1- 37, AND PRESS START.
1.MSWPR 2.HLPR 3.DCPR 4.MM 5.DM
6.DVM 7.TURM 8.TRM 9.POM1
10.POM2_FW 11.POM2_RV 12.VPM
13.RRC 14.PSBC 15.PSPS 16.T1PFC
17.T2PFC 18.HPFC 19.T1PUS 20.T2PUS
21.HPLS 22.T1LUM 23.T2LUM 24.DSKPFC1
25.DSKPFC2 26.M1PFC 27.M2PFC 28.M1PUS
29.M2PUS 30.M1LUM 31.M2LUM 32.TRC_LCC
33.FUM 34.MPFPUS 35.MPFC 36.MPFGS
37.WEBM

2

6-2

Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of each fan motor and its control circuit.
Section	Others

Operation/Procedure

- 1) Select the number corresponding to the target of operation check with 10-key.
- 2) Press the [START] key.
The load selected in procedure 1 operates.
The operation can be stopped with the [SYSTEM SETTINGS] key.

1	VFM-EX	Exhaust fan motor (VFM-EX1, 2, 3, VFM-BKL, VFM-BKU)
2	CFM-UP	Heat exhaust fan motor (Paper exit upper) (CFM-U1, 2, 3, VFM-BKR)
3	CFM-R	Cooling fan motor (Right side) (CFM-R1, 2, 3)
4	CFM-DC	Cooling fan motor (Power source) (CFM-DC1, 2)
5	CFM-DV	Cooling fan motor (Developing) (CFM-DV)
6	CFM-ICU /HDD	Cooling fan motor (Controller/HDD) (CFM-ICU/ HDD)
7	ALL	All fans control*
8	CFM-AD	Cooling fan motor (paper exit center) (CFM-U4)

* All fans: All the fans controlled by the engine.

(Exhaust fan motor, heat exhaust fan motor (paper exit upper), cooling fan motor (right side) cooling fan motor (power source), cooling fan motor (developing), cooling fan motor (paper exit center))

SIMULATION 6-2

FAN MOTOR CHECK. SELECT 1-8, CAND PRESS START.

1. VFM-EX
2. CFM-UP
3. CFM-R
4. CFM-DC
5. CFM-DV
6. CFM-ICU /HDD
7. ALL
8. CFM-AD

2

6-3

Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the transfer unit and the related circuit.
Section	Process (Transfer)

Operation/Procedure

- 1) Select the number corresponding to the target of operation check with 10-key.
- 2) Press the [START] key.
The load selected in procedure 1 operates.
The transfer belt performs contact/separation with the OPC drum.
The operation can be stopped with the [SYSTEM SETTINGS] key.

NOTE: Before disassembling the transfer unit, use this simulation to separate the transfer unit from the OPC drum.

1	TURM (RELEASE)	Transfer unit separation state
2	TURM (JOINT)	Transfer unit contact state

SIMULATION 6-3

TURM CHECK. SELECT 1-2 CAND PRESS START.

1. TURM (RELEASE)
2. TURM (JOINT)

2

7

7-1

Purpose	Setting
Function (Purpose)	Used to set the operating conditions of aging.
Section	—

Operation/Procedure

- 1) Select the number corresponding to the operating condition of aging with 10-key.
The combined mode of 0 - 6 mode and 10, 20, or 30 mode can be set.

In that case, the number corresponding to one of 0 - 6 mode and the number corresponding to one of 10, 20, and 30 mode are added and the sum number is entered.

- 2) Press the [START] key.

The condition selected in procedure 1) is set.

The setting of this simulation is kept valid until the power is turned off.

0	NO MISS FEED DETECTION	No jam detection
1	AGING	Aging mode
2	AGING/NO MISS FEED DETECTION.	No jam detection, aging mode
3	AGING/NO MISS FEED DETECTION/NO WARM UP/ NO TEMPERATURE CONTROL.	No jam detection/ no warmup/ no fusing temperature control, aging mode
4	NO WARM UP.	No warm-up
5	AGING/INTERVAL.	Intermittent aging mode
6	AGING/INTERVAL/NO MISS FEED DETECTION.	No jam detection intermittent aging mode
+10	NO PROCESS UNIT CHECK.	Above +10: No process unit (including the developing unit) detection
+20	NO SHADING.	Above +20: No shading
+30	NO PROCESS UNIT CHECK/NO SHADING.	Above +30: No process unit detection /no shading

SIMULATION 7-1

AGING TEST SETTING. SELECT 0-36, AND PRESS START.

0.NO MISS FEED DETECTION

1.AGING

2.AGING/NO MISS FEED DETECTION.

3.AGING/NO MISS FEED DETECTION/ NO WARM UP/NO TEMPERATURE CONTROL.

4.NO WARM UP.

5.AGING/INTERVAL.

6.AGING/INTERVAL/NO MISS FEED DETECTION.

+10:NO PROCESS UNIT CHECK.

+20:NO SHADING.

+30:NO PROCESS UNIT CHECK/NO SHADING.

2

Press [START] key to start registration and operation.

The operation mode is kept until the power is turned off or setting is made again.

7-6	
Purpose	Setting
Function (Purpose)	Used to set the intermittent aging cycle.
Section	—

Operation/Procedure

- 1) Enter the intermittent aging cycle (unit: sec) with 10-key.
- 2) Press [START] key.
The time entered in procedure 1) is set.
* Set range of interval time: 1 - 999 (sec)

SIMULATION 7-6
INTERVAL AGING CYCLE SETUP. INPUT TIME AND PRESS START.
(1-999, UNIT: sec)

10

7-8	
Purpose	Setting
Function (Purpose)	Used to set the warm-up time display YES/NO.
Section	—

Operation/Procedure

- 1) Select the number corresponding to the warm-up time display YES/NO.
 - 2) Press [START] key, and the number selected in procedure 1) is set.
- * The setting of this simulation is kept valid until the power is turned off.
* The warm-up time is displayed by sec.

SIMULATION 7-8
WARM UP TIME DISPLAY.
ARE YOU SURE?
1. YES
2. NO

1

8

8-1	
Purpose	Adjustment/Operation test/Check
Function (Purpose)	Used to check and adjust the operations of the developing voltage of each color and the control circuit.
Section	Image process (Photoconductor/Developing/Transfer/Cleaning)

Operation/Procedure

- 1) Select the number that corresponds to the adjustment item with 10-key.
 - 2) Press the [START] key.
 - 3) Enter the adjustment value with 10-key.
 - 4) Press the [START] key.
(The set value is stored, and the output corresponding to the set value is outputted for 30sec.)
- The operation can be stopped with the [SYSTEM SETTINGS] key.
(The developing bias output voltage adjustment and output check can be made in each print mode.)

Item			Setting range	Default
1	AUTO	Auto mode	0 - 750	495
2	CHARACTER	Text mode		
3	MIX	Text/Photo mode		
4	PHOTO	Photo mode		
5	PRINTER	Printer mode		
6	FAX	FAX mode		
7	PLUS	Reverse developing bias voltage	0 - 250	150

SIMULATION 8-1

DV BIAS SETTING. SELECT 1-7, AND PRESS START.

1. AUTO 495 2. CHARACTER 495
3. MIX 495 4. PHOTO 495
5. PRINTER 495 6. FAX 495 7. PLUS 150

1

8-2	
Purpose	Adjustment/Operation test/Check
Function (Purpose)	Used to check and adjust the operation of the main charger grid voltage in each printer mode and the control circuit.
Section	Image process (Photoconductor/Developing/Transfer/Cleaning)

Operation/Procedure

- 1) Select the number that corresponds to the adjustment item with 10-key.
- 2) Press the [START] key.
- 3) Enter the adjustment value with 10-key.
- 4) Press the [START] key.
(The set value is stored, and the output corresponding to the set value is outputted for 30sec.)

The operation can be stopped with the [SYSTEM SETTINGS] key.

(The main charger grid output voltage adjustment and output check can be made in each print mode.)

Item			Setting range	Default
1	AUTO	Auto mode	200 - 1000	580
2	CHARACTER	Text mode		
3	MIX	Text/Photo mode		
4	PHOTO	Photo mode		
5	PRINTER	Printer mode		
6	FAX	FAX mode		

SIMULATION 8-2

MAIN GRID SETTING. SELECT 1-6, AND PRESS START.

1. AUTO 580 2. CHARACTER 580
3. MIX 580 4. PHOTO 580
5. PRINTER 580 6. FAX 580

1

8-6	
Purpose	Adjustment/Operation test/Check
Function (Purpose)	Used to check and adjust the operation of the transfer voltage and the control circuit. (Transfer mode)
Section	Image process (Photoconductor/Developing/Transfer/Cleaning)/Transfer

Operation/Procedure

- 1) Select the number that corresponds to the adjustment item with 10-key.
- 2) Press the [START] key.
- 3) Enter the adjustment value with 10-key.
- 4) Press the [START] key.
(The set value is stored, and the voltage corresponding to the set value is outputted for 30sec.)

The operation can be stopped with the [SYSTEM SETTINGS] key.
(The transfer output voltage adjustment and output check can be made in each print mode.)



Item			Setting range	Default	
				55/62 (ppm)	70 (ppm)
1	FRONT	Front surface print mode	0 - 800	300	400
2	BACK	Back surface print mode			

SIMULATION 8-6

THV+ SETTING. SELECT 1-2, AND PRESS START.

- 1.FRONT 400
- 2.BACK 400

1

8-17

Purpose	Operation test/Check
Function (Purpose)	Used to check and adjust the operation of the transfer voltage and the related circuit. (Transfer belt cleaning mode)
Section	Image process (Photoconductor/Developing/Transfer/Cleaning)

Operation/Procedure

- 1) Select the number that corresponds to the adjustment item with 10-key.
- 2) Press the [START] key.
- 3) Enter the adjustment value with 10-key.
- 4) Press the [START] key.

The set value is stored, and the voltage corresponding to the set value is outputted for 30sec.

The operation can be stopped with the [SYSTEM SETTINGS] key.

The transfer output voltage adjustment and output check can be made in the transfer belt cleaning mode.

Item			Setting range	Default
1	SHV FRONT	Front side	0 - 600	450
2	SHV BACK	Back side	0 - 600	450
3	THV-	Out put	0 - 75	10

SIMULATION 8-17

TRANSFER ROLLER SETTING. SELECT 1-3, AND PRESS START.

- 1.SHV FRONT 450
- 2.SHV BACK 450
- 3.THV- 10

1

8-18

Purpose	Adjustment/Operation test/Check
Function (Purpose)	Used to check and adjust the voltage of the transfer CL roller cleaning/transfer CL roller print mode and the control circuit.
Section	Image process (Photoconductor/Developing/Transfer/Cleaning)

Operation/Procedure

- 1) Select the number that corresponds to the adjustment item with 10-key.
 - 2) Press the [START] key.
 - 3) Enter the adjustment value with 10-key.
 - 4) Press the [START] key.
- (The set value is stored, and the voltage corresponding to the set value is outputted for 30sec.)

The operation can be stopped with the [SYSTEM SETTINGS] key.
(The output voltage of the transfer CL roller cleaning/transfer CL roller print mode can be adjusted and checked.)

Item		Set range	Default
Transfer CL roller (Print)	CRHV PLUS	0 - 250	200
Transfer CL roller (Cleaning)	CRHV MINUS	0 - 250	200

SIMULATION 8-18

TRANSFER CLEANING ROLLER SETTING. SELECT 1-2, AND PRESS START.

- 1.CRHV PLUS 200
- 2.CRHV MINUS 200

1

8-19

Purpose	Adjustment/Operation test/Check
Function (Purpose)	Used to check and adjust the fusing bias voltage and the control circuit. (Not used)
Section	Fusing

Operation/Procedure

- 1) Select the number that corresponds to the adjustment item with 10-key.
 - 2) Press the [START] key.
- (The voltage is outputted for 30sec.)

The operation can be stopped with the [SYSTEM SETTINGS] key.

The output voltage can be adjusted with the adjustment volumes VR101/VR102 on the high voltage PWB (fusing bias).

Item		Adjustment VR
Fusing bias (-)	FBIAS	VR 101
Fusing bias (+)		VR 102

SIMULATION 8-19

FUSING BIAS CHECK. SELECT 1, AND PRESS START.

- 1.FBIAS

1

9

9-1

Purpose	Operation test/Check
Function (Purpose)	Used to check and adjust the operation of the load (clutch/solenoid) in the duplex section and the control circuit.
Section	Duplex

Operation/Procedure

- 1) Select the number corresponding to the target of operation check with 10-key.
 - 2) Press [START] key.
- The load selected in procedure 1 is operated.
- The operation can be stopped with the [SYSTEM SETTINGS] key.

1	ADUM1	ADU motor 1: Upstream
2	ADUM2	ADU motor 2: Downstream
3	DGS	ADU gate solenoid

SIMULATION 9-1

ADU OUTPUT CHECK. SELECT 1-3, AND PRESS START.

1. ADUM1
2. ADUM2
3. DGS

1

9-2	
Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the sensors and detectors in the duplex section and its control circuit.
Section	Duplex
Operation/Procedure	
The sensor and detector operation conditions are displayed. The active sensors and detectors are highlighted.	
DSW_ADU	ADU cabinet open/close detection
AINPD	ADU paper entry detection
APPD1	ADU transport detection 1
APPD2	ADU transport detection 2

SIMULATION 9-2
ADU SENSOR CHECK.
DSW_ADU AINPD APPD1 APPD2

10

10-1	
Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the toner motor and the related circuit.
Section	Process (Developing)

Operation/Procedure

- 1) Select the number corresponding to the target of operation check with 10-key.
- 2) Press the [START] key.

The load selected in procedure 1) is operated for 10sec.

The operation can be stopped with the [SYSTEM SETTINGS] key.

NOTE: Do not execute this simulation with toner in the toner bottle and the intermediate toner tank. Excessive toner may enter the developing section, causing overtoner. Check that there is no toner in the toner bottle and the intermediate toner tank or disassemble the toner motor before executing this simulation.

TM1	Toner motor 1
TM2	Toner motor 2

SIMULATION 10-1
TONER MOTOR ACTIVATION. SELECT 1-2, AND PRESS START
1. TM1
2. TM2

10-2	
Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the toner remaining quantity sensor and the related circuit.
Section	Process (Developing)

Operation/Procedure

- 1) Press the [START] key.
The toner motor rotates 2 turns, and the toner presence/empty in the toner hopper is displayed.
Toner empty: Normal display
Toner remained: Highlighted display

SIMULATION 10-2
TONER REST SENSOR CHECK. PRESS START.
TFSD

13

13-0	
Purpose	Clear/Cancel (Trouble etc.)
Function (Purpose)	Used to cancel the self-diag "U1" trouble. (Only when FAX is installed.)
Section	FAX

Operation/Procedure

- 1) Select 1 (YES) with 10-key.
- 2) Press [START] key. (The trouble display is canceled.)

1	YES	After canceling U1 trouble, the machine returns to the main code entry standby mode.
2	NO	Without canceling U1 trouble, the machine returns to the main code entry standby mode.

SIMULATION 13
U1 TROUBLE CANCELLATION.
ARE YOU SURE?
1. YES
2. NO

14

14-0	
Purpose	Clear/Cancel (Trouble etc.)
Function (Purpose)	Used to cancel excluding the self-diag U1/LCC/U2/PF troubles.
Section	Trouble

Operation/Procedure

- 1) Select 1 (YES) with 10-key.
- 2) Press [START] key. (The trouble display is canceled.)

1	YES	After canceling the trouble other than U1, U2, PF, and LCC, the machine returns to the main code entry standby mode.
2	NO	Without canceling the trouble, the machine returns to the main code entry standby mode.

SIMULATION 14
TROUBLE CANCELLATION. (OTHERS)
ARE YOU SURE?
1. YES
2. NO

1

15

15-0

Purpose	Clear/Cancel (Trouble etc.)
Function (Purpose)	Used to cancel the self-diag "U6-09, F3-12, 22" (large capacity paper feed tray, paper feed trays 1, 2) troubles.
Section	LCC

Operation/Procedure

- 1) Select 1 (YES) with 10-key.
- 2) Press [START] key. (The trouble display is canceled.)

1	YES	After canceling the LCC trouble, the machine returns to the main code entry standby mode.
2	NO	Without canceling the trouble, the machine returns to the main code entry standby mode.

SIMULATION 15
LCC TROUBLE CANCELLATION.
ARE YOU SURE?
1. YES
2. NO

1

16

16-0

Purpose	Clear/Cancel (Trouble etc.)
Function (Purpose)	Used to cancel the self-diag U2 troubles.
Section	MFP control PWB, PCU PWB, scanner control PWB

Operation/Procedure

- 1) Select 1 (YES) with 10-key.
- 2) Press [START] key. (The trouble display is canceled.)

1	YES	After canceling the U2 trouble, the machine returns to the main code entry standby mode.
2	NO	Without canceling the trouble, the machine returns to the main code entry standby mode.

SIMULATION 16
U2 TROUBLE CANCELLATION.
ARE YOU SURE?
1. YES
2. NO

1

17

17-0

Purpose	Clear/Cancel (Trouble etc.)
Function (Purpose)	Used to cancel the PF troubles (when the copy inhibit command from the host computer is received).
Section	Communication unit (RIC/MODEM etc.)

Operation/Procedure

- 1) Select 1 (YES) with 10-key.
- 2) Press [START] key. (The trouble display is canceled.)

1	YES	After canceling the PF trouble, the machine returns to the main code entry standby mode.
2	NO	Without canceling the trouble, the machine returns to the main code entry standby mode.

SIMULATION 17
PF TROUBLE CANCELLATION.
ARE YOU SURE?
1. YES
2. NO

1

21

21-1

Purpose	Setting
Function (Purpose)	Used to set the maintenance cycle.
Section	Specifications - Counter

Operation/Procedure

- 1) Enter the number corresponding to the maintenance timing display.
- 2) Press [START] key. The condition entered in procedure 1) is set.

Maintenance timing display		Setting range
0	Default (Differs depending on the model.)	0 - 999
1 - 300	Maintenance display at 1K - 300K	
999	No maintenance display	

SIMULATION 21-1
MAINTENANCE CYCLE SETUP. INPUT VALUE 0-999, AND PRESS START.
0: DEFAULT
1-300: MAINTENANCE CYCLE (1K-300K)
999: FREE

0

22-1

Purpose	Adjustment/Setup/Operation data output/ Check (Display/Print)
Function (Purpose)	Used to check the print count value in each section and each operation mode. (Used to check the maintenance timing.)
Section	—

Operation/Procedure

Various print counter values are displayed.

TOTAL	Total counter
DRUM	Drum counter
TONER	Toner counter
DEVE	Developer counter
MAINTENANCE	Maintenance counter
TOTAL OUTPUT	Total output page number
COPIES	Copy effective paper counter
PRINTER	Printer counter
FAX	FAX print counter
I-FAX output	iFAX print counter
DOC FILING OUTPUT	Document filing print counter
RIGHT SIDE OUTPUT	Right paper exit counter
OTHERS	Other print counter (List print , etc.)
FUSER WEB SEND	Fusing web cleaning feed counter

SIMULATION 22-1

COUNTER DATA DISPLAY.

```
TOTAL: ***** DRUM: ***** TONER: *****
DEVE: ***** MAINTENANCE: *****
TOTAL OUTPUT: ***** COPIES: *****
PRINTER: ***** FAX OUTPUT: *****
I-FAX OUTPUT:***** DOC FILING OUTPUT:*****
RIGHT SIDE:***** OTHERS: *****
FUSER WEB SEND:*****
```

22-2

Purpose	Adjustment/Setup/Operation data output/ Check (Display/Print)
Function (Purpose)	Used to check the total numbers of misfeed and troubles. (When the number of misfeed is considerably great, it is judged as necessary for repair. The misfeed rate is obtained by dividing this count value with the total counter value.)
Section	Trouble

Operation/Procedure

The paper jam/trouble counter value is displayed.

PAPER JAM	Number of paper jams
SPF JAM	Number of SPF jams
TROUBLE	Number of troubles

SIMULATION 22-2

JAM/TROUBLE COUNTER DATA DISPLAY.

```
PAPER JAM: ***** SPF JAM: *****
TROUBLE: *****
```

22-3

Purpose	Adjustment/Setup/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.)
Section	Sections other than DSPF section

Operation/Procedure

The history of paper jams and misfeed is displayed.

The misfeed history is displayed sequentially from the latest one. The max. 100 items of misfeed history can be recorded. The data may be used to identify trouble position.

(Jam cause code)

Code	Description
NO_JAM_CAUSE	No jam. Also used to cancel a jam.
TRAY1	Tray 1 paper feed jam (PFD2 not-reached)
PFD2_NM1	PFD2 not-reached jam (Tray 3 feed paper)
PFD2_NM2	PFD2 not-reached jam (Tray 4 feed paper)
PFD2_NAD	PFD2 not-reached jam (ADU re-feed paper)
PFD2_ST1	PFD2 remaining jam (Tray 1 feed paper)
PFD2_SM1	PFD2 remaining jam (Tray 3 feed paper)
PFD2_SM2	PFD2 remaining jam (Tray 4 feed paper)
PFD2_SAD	PFD2 remaining jam (ADU re-feed paper)
PPD_NMF	PPD1 not-reached jam (Manual feed tray feed paper)
PPD_NT1	PPD1 not-reached jam (Tray 1 feed paper)
PPD_NT2	PPD1 not-reached jam (Tray 2 feed paper)
PPD_NM1	PPD1 not-reached jam (Tray 3 feed paper)
PPD_NM2	PPD1 not-reached jam (Tray 4 feed paper)
PPD_NLC	PPD1 not-reached jam (LCC paper feed paper)
PPD_NAD	PPD1 not-reached jam (ADU re-feed paper)
PPD_SMF	PPD1 remaining jam (Manual feed tray feed paper)
PPD_ST1	PPD1 remaining jam (Tray 1 feed paper)
PPD_ST2	PPD1 remaining jam (Tray 2 feed paper)
PPD_SM1	PPD1 remaining jam (Tray 3 feed paper)
PPD_SM2	PPD1 remaining jam (Tray 4 feed paper)
PPD_SLC	PPD1 remaining jam (LCC paper feed paper)
PPD_SAD	PPD1 remaining jam (ADU re-feed paper)
PPD_PRI	PPD1 jam (Image ready request is not sent from ICU.)
PSD_N	PSD not-reached jam (currently not detected)
PSD_S	PSD remaining jam (currently not detected)
POD1_N	POD1 not-reached jam
POD1_S	POD2 remaining jam
POD1_LDV	POD1 jam (LCV is turned OFF.)
POD2_N	POD2 not-reached jam
POD2_SR	POD2 remaining jam (When paper is discharged on the right side of the machine.)
POD2_SL	POD2 remaining jam (When paper is discharged on the left side of the machine.)
AINPD_N	ADU paper entry sensor not-reached jam
AINPD_S	ADU paper entry sensor remaining jam
APPD1_N	ADU transport sensor 1 not-reached jam
APPD1_S	ADU transport sensor 1 remaining jam
APPD2_N	ADU transport sensor 2 not-reached jam
APPD2_S	ADU transport sensor 2 remaining jam
DESK1	Tray 3 paper feed jam (M1PFD not-reached)
M1PFD_N2	M1PFD not-reached jam (Tray 4 feed paper)
M1PFD_S1	M1PFD remaining jam (Tray 3 feed paper)
M1PFD_S2	M1PFD remaining jam (Tray 4 feed paper)
DESK2	Tray 4 paper feed jam (M2PFD not-reached)

22-6	
Purpose	Adjustment/Setup/Operation data output/ Check (Display/Print)
Function (Purpose)	Used to output the list of the setting and adjustment data (simulations, FAX soft switch, counters).
Section	—

Operation/Procedure

When installing or servicing this machine, execute this simulation to print and save various setting and adjustment data for next servicing. (For example, memory trouble, PWB replacement, etc.)

- 1) Enter 1 with 10-key.
- 2) Press the [START] key.

The various setting and adjustment data are printed out. (The print paper cannot be selected optionally.)

0	TRAY SELECT	TRAY SELECT auto only (Selection is not allowed.)
1	PRINT START	PRINT START

SIMULATION 22-6

DATA PRINT MODE. SELECT SETTING, AND PRESS START.
0. TRAY SELECT :AUTO ONLY
1. PRINT START

1

22-7	
Purpose	Adjustment/Setup/Operation data output/ Check (Display/Print)
Function (Purpose)	Used to display the key operator code. (This simulation is used when the customer forgets the key operator code.)
Section	—

Operation/Procedure

The key operator code is displayed.

SIMULATION 22-7

KEY OPERATOR CODE DISPLAY.
CODE: *****

22-8	
Purpose	Adjustment/Setup/Operation data output/ Check (Display/Print)
Function (Purpose)	Used to check the number of use of the finisher, the SPF, and the scan (reading) unit.
Section	Scanner (Image scanning) - Finisher

Operation/Procedure

The values of the finisher counter, the scanner (read), counter, and the SPF related counters are displayed.

SPF	Document feed quantity
SCAN	Number of times of scan
STAPLER	Number of times of staple
PUNCH	Number of times of punch
STAMP	Number of times of SPF finish stamp
SADDLE STAPLER	Number of times of saddle staple
INSERTER	Number of times of inserter
INSERTER OFF LINE	Number of inserter off-line times

SIMULATION 22-8

ORG./STAPLE COUNTER DATA DISPLAY.
SPF: *****
SCAN: *****
STAPLER: ***** PUNCH: *****
STAMP: ***** SADDLE STAPLER: *****
INSERTER: ***** INSERTER OFF LINE: *****

22-9	
Purpose	Adjustment/Setup/Operation data output/ Check (Display/Print)
Function (Purpose)	Used to check the number of use (print quantity) of each paper feed section.
Section	Paper feed, ADU

Operation/Procedure

The values of the paper feed related counters are displayed.

TRAY1	Tray 1 use quantity
TRAY2	Tray 2 use quantity
TRAY3	Tray 3 use quantity
TRAY4	Tray 4 use quantity
BPT	Manual feed tray use quantity
ADU	Duplex paper feed quantity
LCC	Side LCC use quantity

SIMULATION 22-9

PAPER FEED COUNTER DATA DISPLAY.
TRAY1: ***** TRAY2: *****
TRAY3: ***** TRAY4: *****
BPT: ***** ADU: *****
LCC: *****

22-10	
Purpose	Adjustment/Setup/Operation data output/ Check (Display/Print)
Function (Purpose)	Used to check the system configuration (option, internal hardware).
Section	—

Operation/Procedure

The system configuration is displayed. (The model names of the installed devices and options are displayed.)

MACHINE	(Model code)
FINISHER	NONE/ (Model code)
LCC	NONE/ (Model code)
INSERTER	NONE/ (Model code)
PUNCH	NONE/ (Model code)
SYSTEM MEMORY	Memory capacity (MB)
HDD	Hard disk capacity (MB)
NIC	NONE/ (Network Expansion kit)
NSCN	NONE/ (Network scanner)
PS3	NONE/ (PS3 expansion kit)
FAX	NONE/ (Model code)
FAX MEMORY	FAX expansion memory capacity (MB)
STAMP	Finish stamp NONE/ (Model code)
PCU TYPE	PCU PWB type (JPN: Japan, EX: EX Japan)
I-FAX	None/ (Internet FAX expansion kit)

(Model code list)

Item	Display	Content
MACHINE	(Model code)	Network optional model (55 ppm)
	(Model code)	Network optional model (62 ppm)
	(Model code)	Network optional model (70 ppm)
	(Model code)	Network print standard equipment model (55 ppm)
	(Model code)	Network print standard equipment model (62 ppm)
	(Model code)	Network print standard equipment model (70 ppm)
INSERTER	----	Inserter not installed
	(Model code)	Inserter installed
FINISHER	----	After-process unit not installed
	(Model code)	Finisher installed
	(Model code)	Saddle finisher installed
	(Model code)	Punch unit not installed
PUNCH	(Model code)	Punch unit installed (2-hole)
	(Model code)	Punch unit installed (2-hole/3-hole auto select)
	(Model code)	Punch unit installed (4-hole)
	(Model code)	Punch unit installed (4-hole, wide)
	(Model code)	Punch unit installed (4-hole, wide)
LCC	----	Side LCC not installed
	(Model code)	Side LCC installed
	(Model code)	Side LCC installed (large size support)
MEMORY	0MB	Expansion memory not installed
	***MB	Expansion memory ***MB
HD	0MB	Hard disk not installed
	***MB	Hard disk installed
NIC	----	Network Expansion kit not installed
	(Model code)	Network Expansion kit installed
PS3 expansion kit	----	PS expansion kit not installed
	(Model code)	PS expansion kit installed
FAX	----	FAX expansion kit not installed
	(Model code)	FAX expansion kit installed
NETWORK SCANNER	----	Network scanner expansion kit not installed
	(Model code)	Network scanner expansion kit installed
EXPANSION MEMORY	----	FAX expansion memory not installed
	(Model code)	FAX expansion memory installed
FINISH STAMP	----	Finish stamp unit not installed
	(Model code)	Finish stamp unit installed
Data security kit	----	Data security kit not installed
	(Model code)	Data security kit installed
I-FAX	----	Internet FAX expansion kit not installed
	(Model code)	Internet FAX expansion kit installed

```

SIMULATION 22-10
SYSTEM INFORMATION.
MACHINE:*****
FINISHER: ***** PUNCH: *****
LCC: ***** INSERTER: *****
SYSTEM MEMORY: **MB HDD: ***MB
NIC: ***** NSCN: ***** PS3: *****
FAX: ***** FAX MEMORY: **MB
STAMP: *****
PCU TYPE: ***** I-FAX *****

```

22-11

Purpose	Adjustment/Setup/Operation data output /Check (Display/Print)
Function (Purpose)	Used to check the use frequency (send/receive) of FAX. (Only when FAX is installed)
Section	FAX

Operation/Procedure

The values of the FAX send counter and the FAX receive counter are displayed.

FAX SEND	Number of FAX send
FAX RECEIVE	Number of FAX receive
FAX OUTPUT	Number of FAX print
SEND IMAGES	Page number of send
SEND TIME	Send time
RECEIVE TIME	Receive time

```

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

```

22-12

Purpose	Adjustment/Setup/Operation data output /Check (Display/Print)
Function (Purpose)	Used to check the SPF misfeed positions and the number of misfeed at each position. (When the number of misfeed is considerably great, it can be judged as necessary for repair.)
Section	DSPF

Operation/Procedure

The history of paper jam and misfeed is displayed.

The misfeed history is displayed sequentially from the latest one. The max. 20 items are recorded. (The oldest one is sequentially deleted.) This data can be used to identify the trouble position.

(Jam cause code)

Code	Description
NO_JAM_CAUSE	No jam. Also used to cancel a jam.
SPPD1_N	SPPD1 not-reached jam
SPPD1_S	SPPD1 remaining jam
SPPD2_N	SPPD2 not-reached jam
SPPD2_S	SPPD2 remaining jam
SPPD3_N	SPPD3 not-reached jam
SPPD3_S	SPPD3 remaining jam
SPPD4_N	SPPD4 not-reached jam
SPPD4_S	SPPD4 remaining jam
SPOD_N	SPOD not-reached jam
SPOD_S	SPOD remaining jam
SPSD_SCN	Exposure start notification timer end

```

SIMULATION 22-12
SPF JAM HISTORY.
*****
*****
*****

```

(10 lines, 80 digits = 800 characters)

22-13	
Purpose	Adjustment/Setup/Operation data output/Check (Display/Print)
Function (Purpose)	Used to check the operating time of the process section (OPC drum, DV unit, toner bottle).
Section	—

Operation/Procedure

The rotating time and the print quantity of the process section (OPC drum, DV unit (developer), toner motor (toner bottle)) are displayed.

DRUM	OPC drum	Count value (counts)
		Rotating time (sec)
TONER	Toner motor	Count value (counts)
		Rotating time (sec)
DEVE	DV unit	Count value (counts)
		Rotating time (sec)

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

22-19	
Purpose	Adjustment/Setup/Operation data output/Check (Display/Print)
Function (Purpose)	Used to check the values of the counters related to the scan mode and the internet FAX mode.
Section	Scanner

Operation/Procedure

The values of the counters related to the scan mode and the internet FAX mode are displayed.

NETWORK SCANNER ORIGINAL COUNTER	Document scan quantity (OC, SPF total quantity)
MAIL COUNTER	Number of mail send
FTP COUNTER	Number of FTP send
SMB COUNTER	Number of SMB send
INTERNET-FAX ORIGINAL COUNTER	Document scan quantity (OC, SPF total quantity)
INTERNET-FAX SEND	Number of internet FAX send
INTERNET-FAX RECEIVE	Number of internet FAX receive
INTERNET-FAX OUTPUT	Internet FAX print quantity
SCAN TO HDD	Scan to HDD record quantity
INTERNET-FAX SEND IMAGES	Number of internet FAX sending page
SCAN SEND IMAGES	Number of scan sending page

```
SIMULATION 22-19
NETWORK SCANNER AND INTERNET-FAX COUNTER DISPLAY.

NETWORK SCANNER ORIGINAL COUNTER: *****
MAIL COUNTER: *****
FTP COUNTER: *****
INTERNET-FAX ORIGINAL COUNTER: *****
INTERNET-FAX SEND: *****
INTERNET-FAX RECEIVE: *****
INTERNET-FAX OUTPUT: *****
SMB COUNTER: *****
SCAN TO HDD : *****
INTERNET-FAX SEND IMAGES: *****
SCAN SEND IMAGES: *****
```

22-30	
Purpose	Setting value display/Check
Function (Purpose)	OSA vendor ID display (Application Communication Module)
Section	—

Operation/Procedure

When the product key for OSA (Application Communication Module) is effective, vendor ID is displayed. (MAX.: 8 code)

- * APPLICATION NAME: Application name (Max.36 characters)
- * VENDOR ID: Vendor ID (10 digits)

```
SIMULATION 22-30
OSA VENDOR DISPLAY (APPLICATION COMMUNICATION)
APPLICATION NAME      VENDOR ID
*****: *****
*****: *****
*****: *****
*****: *****
*****: *****
*****: *****
*****: *****
*****: *****
```

22-31	
Purpose	Setting value display/Check
Function (Purpose)	OSA vendor ID display (External account module)
Section	—

Operation/Procedure

When the product key for OSA (external account kit) is effective, vendor ID is displayed. (MAX.: 1 code)

- * APPLICATION NAME: Application name (Max.36 characters)
- * VENDOR ID: Vendor ID (10 digits)

```
SIMULATION 22-31
OSA VENDOR DISPLAY (EXTERNAL ACCOUNT)
APPLICATION NAME      VENDOR ID
*****: *****
```

23

23-2	
Purpose	Adjustment/Setup/Operation data output/Check (Display/Print)
Function (Purpose)	Used to check the trouble history of paper jam and misfeed. (If the number of misfeed and troubles is considerably great, it may be judged as necessary to repair.)
Section	—

Operation/Procedure

- 1) Select "1. PRINT START.
- 2) Press the [START] key.

The trouble history of paper jam and misfeed is printed.

This data can be cleared by SIM 24-1.

SIMULATION 23-2

JAM/TROUBLE DATA PRINT MODE. SELECT SETTING, AND PRESS START.

0. TRAY SELECT : AUTO ONLY
1. PRINT START

1**23-80**

Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the sensors and detectors in the paper feed and transport section.
Section	Paper feed, paper transport

Operation/Procedure

- 1) Select "2. PRINT PATTERN." with 10-key.
- 2) Press the [START] key.
- 3) Select "1" (Paper transport time data) with 10-key.
- 4) Press the [START] key.

The list of the ON time of the sensors and the detectors of the paper transport section is printed.

When a paper jam or misfeed is generated, the ON time of each sensor and detector is checked to check if the operation of the sensor and the detector, paper feed, and transport are normal or not.

0	TRAY SELECT AUTO ONLY	Auto only (No selection allowed)
1	PRINT START	Print execution. Print of the set data is executed.
2	PRINT PATTERN	Print pattern 1. Paper transport time data

SIMULATION 23-80

DATA PRINT MODE. SELECT SETTING, AND PRESS START.

0. TRAY SELECT : AUTO ONLY
1. PRINT START
2. PRINT PATTERN: **1**

1**<Print item list>**

Transport route section	Reference value (ms)	Previous value (ms)
TRAY1 → PFD2 On	[— ms]	— ms,
PFD2 On → PPD On	[— ms]	— ms,
RRC On → POD1 On	[— ms]	— ms,
POD1 On → POD2 On	[— ms]	— ms,
POD2 On → TOP TRAY	[— ms]	— ms,
Switch Back → AINPD On	[— ms]	— ms,
AINPD On → FINISHER	[— ms]	— ms,
AINPD On → APPD1 On	[— ms]	— ms,
APPD1 On → APPD2 On	[— ms]	— ms,
Restart → APPD2 On	[— ms]	— ms,
Restart (ADU) → PFD2 On	[— ms]	— ms,
Pass → APPD2 On	[— ms]	— ms,
TRAY3 → M1PFD On	[— ms]	— ms,
M1PFD On → PFD2 On	[— ms]	— ms,
Restart (TRAY) → PFD2 On	[— ms]	— ms,
TRAY4 → M2PFD On	[— ms]	— ms,
M2PFD On → M1PFD On	[— ms]	— ms,
TRAY2 → MPRD1 On	[— ms]	— ms,
MPRD1 On → MPRD2 On	[— ms]	— ms,
Restart → MPRD2 On	[— ms]	— ms,
MPRD2 On → PPD On	[— ms]	— ms,
BYPASS → MPFD1 On	[— ms]	— ms,
MPFD1 On → MPFD2 On	[— ms]	— ms,
MPFD2 On → MPRD1 On	[— ms]	— ms,
SIDE LCC → LPPD On	[— ms]	— ms,
LPPD On → MPFD2 On	[— ms]	— ms,

24**24-1**

Purpose	Data clear
Function (Purpose)	Used to clear the misfeed counter, the misfeed history, the trouble counter, and the trouble history. (The counters are cleared after completion of maintenance.)
Section	—

Operation/Procedure

- 1) Select the counter to be cleared with 10-key.
- 2) Press the [START] key.
The confirmation to clear is opened.
- 3) Select Yes/NO of counter clear with 10-key.
YES: Clear
NO: Not clear
- 4) Press the [START] key.

1	PAPER JAM	Number of paper jams
2	SPF JAM	Number of SPF jams
3	TROUBLE	Number of troubles

SIMULATION 24-1

JAM/ TROUBLE COUNTER DATA CLEAR. SELECT1-3, AND PRESS START.

1. PAPER JAM
2. SPF JAM
3. TROUBLE

1**24-2**

Purpose	Data clear
Function (Purpose)	Used to clear the number of use (the number of prints) of each paper feed section.
Section	Paper feed

Operation/Procedure

- 1) Select the counter to be cleared with 10-key.
- 2) Press the [START] key.
The confirmation to clear is opened.
- 3) Select Yes/NO of counter clear with 10-key.
YES: Clear
NO: Not clear
- 4) Press the [START] key.

1	TRAY1	Tray 1 use quantity
2	TRAY2	Tray 2 use quantity
3	TRAY3	Tray 3 use quantity
4	TRAY4	Tray 4 use quantity
5	BPT	Manual feed tray use quantity
6	ADU	Duplex paper feed quantity
7	LCC	Side LCC use quantity

SIMULATION 24-2

PAPER FEED COUNTER DATA CLEAR. SELECT1-7, AND PRESS START.

1. TRAY1
2. TRAY2
3. TRAY3
4. TRAY4
5. BPT
6. ADU
7. LCC

1

24-3	
Purpose	Data clear
Function (Purpose)	Used to clear the number of use of the finisher, SPF, and the scan (reading) unit.
Section	—

Operation/Procedure

- 1) Select the counter to be cleared with 10-key.
- 2) Press the [START] key.
The confirmation to clear is opened.
- 3) Select Yes/NO of counter clear with 10-key.
YES: Clear
NO: Not clear
- 4) Press the [START] key.

1	SPF	SPF paper pass quantity
2	SCAN	Number of times of document scan
3	STAPLER	Number of times of staple
4	PUNCH	Number of times of punch
5	STAMP	Number of times of SPF finish stamp
6	SADDLE STAPLER	Number of times of saddle staple
7	INSERTER	Number of times of inserter
8	INSERTER OFF LINE	Number of inserter off-line times

SIMULATION 24-3

ORG./STAPLE COUNTER DATA CLEAR. SELECT1-8, AND PRESS START.

1. SPF
2. SCAN
3. STAPLER
4. PUNCH
5. STAMP
6. SADDLE STAPLER
7. INSERTER
8. INSERTER OFF LINE

24-4	
Purpose	Data clear
Function (Purpose)	Used to reset the maintenance counter.
Section	—

Operation/Procedure

- 1) Select the counter to be cleared with 10-key.
- 2) Press the [START] key.
The confirmation to clear is opened.
- 3) Select Yes/NO of counter clear with 10-key.
YES: Clear
NO: Not clear
- 4) Press the [START] key.

1	MAINTENANCE	Maintenance counter
2	FUSER WEB SEND	Fusing web cleaning feed counter

SIMULATION 24-4

MAINTENANCE COUNTER DATA CLEAR. SELECT1-2, AND PRESS START.

1. MAINTENANCE
2. FUSER WEB SEND

24-5	
Purpose	Data clear
Function (Purpose)	Used to reset the developer counter. (The developer counter of the DV unit which is installed is reset.)
Section	Image process (Photoconductor/Developing/Transfer/Cleaning)

Operation/Procedure

- 1) Select the counter to be cleared with 10-key.
- 2) Press the [START] key.
The confirmation to clear is opened.
- 3) Select Yes/NO of counter clear with 10-key.
YES: Clear
NO: Not clear
- 4) Press the [START] key.

1	DV CARTRIDGE	Developer cartridge counter
---	--------------	-----------------------------

SIMULATION 24-5

DEVELOPER COUNTER DATA CLEAR. PRESS START.

1. DV CARTRIDGE

24-6	
Purpose	Data clear
Function (Purpose)	Used to reset the copy counter.
Section	—

Operation/Procedure

- 1) Select the counter to be cleared with 10-key.
- 2) Press the [START] key.
The confirmation to clear is opened.
- 3) Select Yes/NO of counter clear with 10-key.
YES: Clear
NO: Not clear
- 4) Press the [START] key.

1	COPY	Copy effective paper counter
---	------	------------------------------

SIMULATION 24-6

COPY COUNTER DATA CLEAR. PRESS START.

1. COPY

24-7	
Purpose	Data clear
Function (Purpose)	Used to clear the OPC drum counter. (Perform this simulation when the OPC drum is replaced.)
Section	Image process (Photoconductor/Developing/Transfer/Cleaning)

Operation/Procedure

- 1) Select the counter to be cleared with 10-key.
- 2) Press the [START] key.
The confirmation to clear is opened.
- 3) Select Yes/NO of counter clear with 10-key.
YES: Clear
NO: Not clear
- 4) Press the [START] key.

After replacing the OPC drum, be sure to clear the OPC drum counter.

1	DRUM	OPC drum counter
---	------	------------------

SIMULATION 24-7
DRUM COUNTER DATA CLEAR. SELECT1, AND PRESS START.
1. DRUM

1

24-9	
------	--

Purpose	Data clear
----------------	------------

Function (Purpose)	Used clear the printer mode print counter and the self print mode print counter.
---------------------------	--

Section	Printer
----------------	---------

Operation/Procedure

- 1) Select the counter to be cleared with 10-key.
- 2) Press the [START] key.
The confirmation to clear is opened.
- 3) Select Yes/NO of counter clear with 10-key.
YES: Clear
NO: Not clear
- 4) Press the [START] key.

1	PRINTER	Printer counter (Print mode)
2	OTHERS	Other effective paper counter (Self print mode)

SIMULATION 24-9
PRINTER/OTHERS COUNTER DATA CLEAR. SELECT1-2, AND PRESS START.
1. PRINTER
2. OTHERS

1

24-10	
-------	--

Purpose	Data clear
----------------	------------

Function (Purpose)	Used to clear the FAX counter. (Only when FAX is installed)
---------------------------	---

Section	FAX
----------------	-----

Operation/Procedure

- 1) Select the counter to be cleared with 10-key.
- 2) Press the [START] key.
The confirmation to clear is opened.
- 3) Select Yes/NO of counter clear with 10-key.
YES: Clear
NO: Not clear
- 4) Press the [START] key.

1	FAX SEND	Number of FAX send
2	FAX RECEIVE	Number of FAX receive
3	FAX OUTPUT	Number of FAX print
4	SEND IMAGES	Number of sending sheets
5	SEND TIME	Send time
6	RECEIVE TIME	Receive time

SIMULATION 24-10
FAX COUNTER DATA CLEAR. SELECT1-6, AND PRESS START.
1. FAX SEND
2. FAX RECEIVED
3. FAX OUTPUT
4. SEND IMAGES
5. SEND TIME
6. RECEIVE TIME

1

24-11	
-------	--

Purpose	Data clear
----------------	------------

Function (Purpose)	Used to reset the OPC drum rotation time, and the DV unit rotation time counter. The developer counter in the DV unit installed is reset.
---------------------------	---

Section	Image process (Photoconductor/Developing/Transfer/Cleaning)
----------------	---

Operation/Procedure

- 1) Select the counter to be cleared with 10-key.
- 2) Press the [START] key.
The confirmation to clear is opened.
- 3) Select Yes/NO of counter clear with 10-key.
YES: Clear
NO: Not clear
- 4) Press the [START] key.

1	DRUM ROTATION	OPC drum rotation time
2	DV ROTATION	DV unit rotation time

SIMULATION 24-11
TIMER DATA CLEAR. SELECT1-2, AND PRESS START.
1. DRUM ROTATION
2. DV ROTATION

1

24-15	
-------	--

Purpose	Data clear
----------------	------------

Function (Purpose)	Used to clear the counters related to the scan mode and the internet FAX mode.
---------------------------	--

Section	—
----------------	---

Operation/Procedure

- 1) Select the counter to be cleared with 10-key.
- 2) Press the [START] key.
The confirmation to clear is opened.
- 3) Select Yes/NO of counter clear with 10-key.
YES: Clear
NO: Not clear
- 4) Press the [START] key.

1	NETWORK SCANNER ORIGINAL COUNTER	Document scan quantity counter in the network scanner mode
2	MAIL COUNTER	Number of mail send
3	FTP COUNTER	Number of FTP send
4	INTERNET-FAX ORIGINAL COUNTER	Internet FAX document scan quantity (Total quantity of OC and SPF)
5	INTERNET-FAX SEND	Number of internet FAX send
6	INTERNET-FAX RECEIVE	Number of internet FAX receive
7	INTERNET-FAX OUTPUT	Internet FAX print quantity
8	SMB COUNTER	Number of SMB sending
9	SCAN TO HDD	Scan to HDD record quantity
10	INTERNET-FAX SEND IMAGES	Number of internet FAX sending page
11	SCAN SEND IMAGES	Number of scan sending page
12	DOC FILING OUTPUT	Document filing print counter

SIMULATION 24-15

NETWORK SCANNER AND INTERNET-FAX COUNTER CLEAR.
SELECT1-12, AND PRESS START.

1. NETWORK SCANNER ORIGINAL COUNTER
2. MAIL COUNTER
3. FTP COUNTER
4. INTERNET-FAX ORIGINAL COUNTER: *****
5. INTERNET-FAX SEND: *****
6. INTERNET-FAX RECEIVE: *****
7. INTERNET-FAX OUTPUT: *****
8. SMB COUNTER
9. SCAN TO HDD: *****
10. INTERNET-FAX SEND IMAGES: *****
11. SCAN SEND IMAGES: *****
12. DOC FILING OUTPUT: *****

1

25

25-1

Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the developing section (toner concentration, humidity and toner concentration sensor, humidity sensor).
Section	Process (Developing section)

Operation/Procedure

- 1) Press the [START] key.

The developing motor and the OPC drum motor rotate, and the toner concentration detection level and the humidity sensor detection level are displayed.

SIMULATION 25-1

TONER SENSOR OUTPUT MONITOR. PRESS START.
HUMIDITY AREA : 70.0 - 72.5
DEVE REFERENCE : 128

25-2

Purpose	Setting
Function (Purpose)	Used to make the initial setting of toner concentration when replacing developer.
Section	Image process (Photoconductor/Developing/Transfer/Cleaning)

Operation/Procedure

- 1) Press [START] key.

The developing motor rotates for 3 min and the toner concentration sensor makes sampling of toner concentration to display the detection level.

After the developing motor stops, the average value of toner concentration sampling is set as the reference toner concentration level.

* CAUTION:

When the above operation is interrupted on the way, the reference toner concentration level is not set.

Also when error code of EE-EL or EE-EU is displayed, the reference toner concentration level is not set normally.

(Default: 114)

- 2) The humidity near the developing tank at the developing adjustment is registered.

SIMULATION 25-2

AUTOMATIC DV ADJUSTMENT. PRESS START.
HUMIDITY AREA : 70.0 - 72.5
DEVE REFERENCE : 114

26

26-2

Purpose	Setting
Function (Purpose)	Used to set the paper size of the large capacity tray (LCC) and the paper feed tray 2. (When the paper size is changed, this simulation must be executed to change the paper size in software.)
Section	Paper feed

Operation/Procedure

- 1) Select the number corresponding to the paper feed unit for setting the paper size with 10-key.
- 2) Press the [START] key.
- 3) Select the number corresponding to the paper size.
- 4) Press the [START] key.

1	TRAY 2	TRAY 2 size (0 = 8.5 x 11, 1 = A4, 2 = B5)
2	LCC	Side LCC size (0 = 8.5 x 11, 1 = A4, 2 = B5) A3 Side LCC size (0 = 8.5 x 11, 1 = A4, 2 = B5, 3 = 11 x 17, 4 = 8.5 x 14, 5 = 8.5 x 11R, 6 = A3, 7 = B4, 8 = A4R)

SIMULATION 26-2

SIZE SETUP. SELECT NUMBER, AND PRESS START.
1. TRAY2
2. LCC

1

26-3

Purpose	Setting
Function (Purpose)	Used to set the specifications of the auditor. Setting must be made according to the auditor use conditions.
Section	Auditor

Operation/Procedure

- 1) Select the number corresponding to the auditor mode with 10-key.
- 2) Press the [START] key.

1	P10	Built-in auditor mode
2	VENDOR	Coin vendor mode
3	OTHERS	Others
4	VENDOR-EX	Coin vendor mode (No temporary charge)
5	VENDOR-EX +	Coin vendor mode (No temporary charge) + Document filing enable
6	VENDOR-EX (MULTI JOB)	Coin vendor mode (No temporary charge) + (JOB queueing)
7	VENDOR-EX + (MULTI JOB)	Coin vendor mode (No temporary charge) + Document filing enable + (JOB queueing)

(Default: 1)

SIMULATION 26-3
AUDITOR SETUP. SELECT 1-3, AND PRESS START.

1. P10
2. VENDOR
3. OTHERS
4. VENDOR-EX
5. VENDOR-EX +
6. VENDOR-EX (MULTI JOB)
7. VENDOR-EX + (MULTI JOB)

26-5	
Purpose	Setting
Function (Purpose)	Used to set the count mode of the total counter and the maintenance counter.
Section	—

Operation/Procedure

- 1) Select the number corresponding to the counter to be set with 10-key.
- 2) Press the [START] key.
- 3) Select the count mode with 10-key.
- 4) Press the [START] key.

Set the count-up (1 or 2) for A3/11x17 paper.
(Select the target counter.)

1	TOTAL COUNTER	Total counter
2	MAINTENANCE (DRUM) COUNTER	Maintenance counter/ OPC drum counter
3	DV COUNTER	Developer counter

(Count-up)

1	1 COUNT UP	1 count-up	
2	2 COUNT UP	2 count-up	Default

SIMULATION 26-5
A3(LEDGER) COUNT UP MODE SETTING. SELECT 1-3, AND PRESS START.

1. TOTAL COUNTER 1
2. MAINTENANCE (DRUM) COUNTER 1
3. DV COUNTER

26-6	
Purpose	Setting
Function (Purpose)	Used to set the specifications (paper, fixed magnification ratio, etc.) of the destination.
Section	—

Operation/Procedure

- 1) Select the number corresponding to the destination with 10-key.
 - 2) Press the [START] key.
- After completion of setting, the machine is automatically reset.

1	USA	United States of America
2	CANADA	Canada
3	INCH	Inch series EX
4	JAPAN	Japan
5	AB_B	AB series B5
6	EUROPE	Europe
7	UK	UK
8	AUSTRALIA	Australia
9	AB_A	AB series A5
10	CHINA	China

Since this simulation cannot change the Fax destination, use SIM 66-2 to change the FAX destination.

SIMULATION 26-6
DESTINATION SETUP. SELECT 1-10, AND PRESS START.

1. USA 2. CANADA 3. INCH
4. JAPAN 5. AB_B
6. EUROPE 7. UK 8. AUSTRALIA
9. AB_A 10. CHINA

26-10	
Purpose	Setting
Function (Purpose)	Used to set the network scanner trial mode.
Section	—

Operation/Procedure

- 1) Select START/END of the network scanner trial mode with 10-key.
 - 2) Press the [START] key.
- Max. 500 images can be scanned.

0	END	Trial mode cancel
1	START	Trial mode start

(Default: 0)

SIMULATION 26-10
NETWORK SCANNER TRIAL SETTING. SELECT 0-1, AND PRESS START.

0. END
1. START

26-18	
Purpose	Setting
Function (Purpose)	Used to set YES/NO of toner save operation. (This function is valid only in Japan and UK versions. (Depends on the destination setting of SIM26-6.) For the other destinations, the same setting can be made by the user program P22.)
Section	—

Operation/Procedure

- 1) Select YES/NO of the toner save mode with 10-key.
- 2) Press the [START] key.

0	YES	set.
1	NO	not set.

(Default: 1)

SIMULATION 26-18
TONER SAVE MODE SETTING. SELECT 0-1, AND PRESS START.

0. YES
1. NO

26-30	
Purpose	Setting
Function (Purpose)	Used to set the operation mode conforming to the CE mark (Europe safety standards). (Conforming to soft start when driving the fusing heater lamp.)

Section	—
----------------	---

Operation/Procedure

- 1) Select the number that corresponds to the operation mode with 10-key.
- 2) Press the [START] key.

0	NO	CE mark control NO (Normal operation)
1	YES	CE mark control YES (Heater lamp soft start operation)

▲ (Default: 1 for Europe, Australia, China, 0 for the others)

SIMULATION 26-30
CE MARK CONTROL SETTING. SELECT 0-1, AND PRESS START.
0. NO
1. YES

26-35	
Purpose	Setting
Function (Purpose)	Used to set whether the same continuous troubles are displayed as one trouble or the series of troubles with SIM 22-4 when the same troubles occur continuously.

Section	—
----------------	---

Operation/Procedure

- 1) Select the number that corresponds to the operation mode with 10-key.
- 2) Press the [START] key.

0	ONCE	When two or more troubles of a same kind occur continuously, the troubles are displayed as one trouble in the trouble history of SIM22-4.
1	ANY	When two or more troubles of a same kind occur continuously, the troubles are displayed in the trouble history of SIM22-4 directly.

(Default: 0)

SIMULATION 26-35
TROUBLE MEMORY MODE SETTING. SELECT 0-1, AND PRESS START.
0. ONCE
1. ANY

26-38	
Purpose	Setting
Function (Purpose)	Used to set CONTINUE/STOP of printing when maintenance timing is over and the count value reaches 110% of replacement timing (life).

Section	Others
----------------	--------

Operation/Procedure

- 1) Select the number that corresponds to the operation mode with 10-key.
- 2) Press the [START] key.

0	PRINT CONTINUE	Print continue
1	PRINT STOP	Print stop

(Default: 0)

SIMULATION 26-38
LIFE OVER SETTING. SELECT 0-1, AND PRESS START.
0. PRINT CONTINUE
1. PRINT STOP

26-41	
Purpose	Setting
Function (Purpose)	Used to set YES/NO of the automatic magnification ratio selection (AMS) in the pamphlet mode.

Section	—
----------------	---

Operation/Procedure

- 1) Enter the number corresponding to whether AMS operation is automatically performed or nor in the center binding mode with the 10-key.
- 2) Press the [START] key.

0	NO	AMS/APS selection allowed. (enable AMS manually)
1	YES	AMS is forcibly operated.

(Default: 0)

SIMULATION 26-41
PAMPHLET MODE AMS SETTING. SELECT 0-1, AND PRESS START.
0. NO
1. YES

26-50	
Purpose	Setting
Function (Purpose)	Black-White reverse YES/NO setting

Section	—
----------------	---

Operation/Procedure

- 1) Select ENABLE/DISABLE of the B/W reverse mode with 10-key.
- 2) Press the [START] key.

0	DISABLE	B/W reverse mode DISABLE
1	ENABLE	B/W reverse mode ENABLE

(Default: 1)

* No B/W reverse function for UK.

SIMULATION 26-50
B/W REVERSE MODE SETTING. SELECT 0-1, AND PRESS START.
0. DISABLE
1. ENABLE

26-52

Purpose	Setting
Function (Purpose)	Used to set whether non-print paper (insertion paper, cover paper) (blank image print paper) is counted up or not.
Section	Paper transport (Paper exit/Switchback/Transport)

Operation/Procedure

- 1) Select YES/NO of the non-print paper count-up with 10-key.
- 2) Press the [START] key.

Non-print paper means an insert paper (without copying) in the OHP insertion mode, a cover (without copying) in the cover insertion mode, back surface, and white paper in the duplex exit mode (CA, etc.).

0	NO (NO COUNT UP)	No count up
1	YES (COUNT UP)	Count up

(Default: 0 for Japan and Australia, 1 for the other)

The target counters are as follows:

- Copies counter
- Printer counter
- Department management counter
- Total counter
- Valid paper counter

SIMULATION 26-52

BLANK PAPER COUNT UP SETTING. SELECT 0-1, AND PRESS START.

0. NO (NO COUNT UP)
1. YES (COUNT UP)

1

26-68

Purpose	Setting
Function (Purpose)	Used to set ENABLE/DISABLE of the CA key cancel function of print stop.
Section	—

Operation/Procedure

- 1) Select ENABLE/DISABLE of the CA key cancel function of print stop with 10-key.
- 2) Press the [START] key.

0	DISABLE	Disable
1	ENABLE (PRINT STOP)	Enable

(Default: 1)

SIMULATION 26-68

CA KEY CANCEL MODE SETTING. SELECT 0-1, AND PRESS START.

0. DISABLE
1. ENABLE (PRINT STOP)

0

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 and MODEM, the self diag display (U7-00) is printed and setting for inhibition of print or not is made.)
Section	Communication unit (RIC/MODEM etc.)

Operation/Procedure

- 1) Select the number corresponding to the operation mode with 10-key.
- 2) Press the [START] key.

0	YES	Though a communication trouble occurs between the host computer and the MODEM (machine side), there is no effect on the machine operations.
1	NO	When a communication trouble occurs between the host computer and the MODEM (machine side), the self diag display (U7-00) is displayed and printing is inhibited.

(Default: 0)

SIMULATION 27-1

DISABLING OF U7-00 TROUBLE. SELECT 0-1, AND PRESS START.

0. YES
1. NO

1

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 (RIC/MODEM etc.)

Operation/Procedure

- 1) Enter the tag number with 10-key.
- 2) Press the [START] key.

SIMULATION 27-5

TAG # SETTING. INPUT VALUE, AND PRESS START.

PRESENT: 00010000
NEW: 00009999

30-1

Purpose	Operation test/Check
Function (Purpose)	Used to check the operation of sensors and detectors in other than the paper feed section and the operations of the related circuits.
Section	—

Operation/Procedure

The sensor and detector operation conditions are displayed.
The active sensors and detectors are highlighted.

PFD2	ADU paper feed detection 2
PPD	Resist roller front paper detection
PSD	Drum rear paper detection
POD1	After-fusing transport detection 1
POD2	After-fusing transport detection 2
POD3	Paper full detection
DSW_R	Manual feed door open detection
DSW_L	Cabinet open detection
DSW_F	Front cabinet open detection
DSW_DSK	Desk door open detection
TFSD	Toner remaining quantity detection (Motor rotation number count)
THPS2	Transfer belt separation home sensor 2
LPPD	LCC paper transport detection
T1PPD	Tandem tray 1 paper transport sensor
WEB_END	Fusing web end detection

SIMULATION 30-1

SENSOR CHECK..

PFD2	PPD	PSD	POD1
POD2	POD3	DSW_R	DSW_L
DSW_F	DSW_DSK	TFSD	THPS2
LPPD	T1PPD	WEB_END	

30-2

Purpose	Operation test/Check
Function (Purpose)	Used to check the operation of sensors and detectors in the paper feed section and the related circuits.
Section	Paper feed

Operation/Procedure

The sensor and detector operation conditions are displayed.
The active sensors and detectors are highlighted.

TANSET	Tray 1 and 2 insertion detection	TLUD1	Tray 1 upper limit sensor
TSPD1	Tray 1 remaining quantity sensor	TPED1	Tray 1 paper sensor
TLUD2	Tray 2 upper limit sensor	TSPD2	Tray 2 remaining quantity sensor
TPED2	Tray 2 paper sensor	MPLD1	Manual tray length detection 1
MPLD2	Manual tray length detection 2	MTOP1	Manual tray pull-out detection 1
MTOP2	Manual tray pull-out detection 2	MPED	Manual feed paper empty detection 2
MPFD1	Detection 1 of paper pass from manual paper feed	MPFD2	Detection 2 of paper pass from manual paper feed
MPRD1	Manual relay paper detection 1	MPRD2	Manual relay paper detection 2
Bypass Tray size: (The manual feed tray detection size is displayed.)			
M1PFD	Tray 3 transport detection	M1LUD	Tray 3 upper limit detection

M1PED	Tray 3 paper empty detection	M1SS1	Tray 3 rear edge switch 1
M1SS2	Tray 3 rear edge switch 2	M1SS3	Tray 3 rear edge switch 3
M1SS4	Tray 3 rear edge switch 4	M1SPD	Tray 3 paper remaining quantity detection
Tray 3 size: (The tray 3 detection size is displayed.)			
M2PFD	Tray 4 transport detection	M2LUD	Tray 4 upper limit detection
M2PED	Tray 4 paper empty detection	M2SS1	Tray 4 rear edge switch 1
M2SS2	Tray 4 rear edge switch 2	M2SS3	Tray 4 rear edge switch 3
M2SS4	Tray 4 rear edge switch 4	M2SPD	Tray 4 paper remaining quantity detection
Tray 4 size: (The tray 4 detection size is displayed.)			

SIMULATION 30-2

TRAY SENSOR CHECK..

TANSET	TLUD1	TSPD1	TPED1	TLUD2	TSPD2	TPED2
MPLD1	MPLD2	MTOP1	MTOP2	MPED	MPFD1	MPFD2
MPRD1	MPRD2	(Bypass Tray size: A3)				
M1PFD	M1LUD	M1PED	M1SS1	M1SS2	M1SS3	M1SS4
M1SPD	(Tray3 size: A3)					
M2PFD	M2LUD	M2PED	M2SS1	M2SS2	M2SS3	M2SS4
M2SPD	(Tray4 size: A3)					

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 feed

Operation/Procedure

The sensor and detector operation conditions are displayed.
The active sensors and detectors are highlighted.
The paper width size detection level is displayed.

MPLD1	Manual tray length detection 1
MPLD2	Manual tray length detection 2
MTOP1	Manual tray pull-out detection 1
MTOP2	Manual tray pull-out detection 2
BYPASS_WIDTH	anual feed guide plate position
BYPASS_AD	Manual feed width detection volume output AD value
Bypass Tray width size	(Manual tray detection size is displayed.) A4/A3, 11 x, B5/B4, 8.5 x , A4R, B5R, A5R, 5.5x, 7.25x, EXTRA

SIMULATION 40-1

BYPASS TRAY SENSOR CHECK..

MPLD1	MPLD2	MTOP1	MTOP2
BYPASS_WIDTH:	2100	BYPASS_AD:	600
(Bypass Tray width size: A4/A3)			

40-2	
Purpose	Adjustment
Function (Purpose)	Used to adjust the manual paper feed tray paper width detector detection level.
Section	Paper feed

Operation/Procedure

- 1) Open the manual paper feed guide to the maximum width position.
- 2) Select MAX. POSITION with 10-key.
- 3) Press the [START] key.
The max. width detection level is recognized.
- 4) Press the [SYSTEM SETTINGS] key.
- 5) Set the manual paper feed guide to the width for the A4R size.
- 6) Select POSITION 1 with 10-key.
- 7) Press the [START] key.
The A4R width detection level is recognized.
- 8) Press the [SYSTEM SETTINGS] key.
- 9) Set the manual paper feed guide to A5R size width.
- 10) Select POSITION 2 with 10-key.
- 11) Press the [START] key.
The A5R width detection level is recognized.
- 12) Press the [SYSTEM SETTINGS] key.
- 13) Open the manual paper feed guide to the minimum width position.
- 14) Select MIN. POSITION with 10-key.
- 15) Press the [START] key.
The minimum width detection level is recognized.

When each of the above operations has been completed, the "COMPLETE" message appears; when any of the operations has failed, the "ERROR" message appears.

```
SIMULATION 40-2
BYPASS TRAY ADJUSTMENT. SELECT 1-4, AND PRESS START.
1. MAX. POSITION
2. POSITION 1
3. POSITION 2
4. MIN. POSITION
```

40-7	
Purpose	Adjustment/Setup
Function (Purpose)	Used to enter the manual paper feed tray paper width adjustment value.
Section	Paper feed

Operation/Procedure

- 1) Select the number corresponding to the set item with 10-key.
- 2) Press the [START] key.
- 3) Enter the set value with 10-key.
- 4) Press the [START] key.

1	MAX. POSITION	Max. position
2	POSITION 1	Adjustment point 1
3	POSITION 2	Adjustment point 2
4	MIN. POSITION	Min. position

```
SIMULATION 40-7
BYPASS TRAY VALUE SETTING. SELECT 1-4, AND PRESS START.
1. MAX. POSITION : 72
2. POSITION 1 : 380
3. POSITION 2 : 710
4. MIN. POSITION : 804
```

40-11	
Purpose	Operation test/Check
Function (Purpose)	Used to check the multi-purpose tray width detection adjustment value.
Section	Paper feed

Operation/Procedure

The sensor and detector operation conditions are displayed.

The active sensors and detectors are highlighted. The paper width detection level is also displayed.

M1SS1	Tray 3 size detection 1
M1SS2	Tray 3 size detection 2
M1SS3	Tray 3 size detection 3
M1SS4	Tray 3 size detection 4
TRAY3_WIDTH	Tray 3 guide plate position
TRAY3_AD	Tray 3 width detection volume output AD value
Tray3 width size	(Tray 3 width direction detection size is displayed.) A4/A3, 11X, B5/B4, 8.5X, A4R, B5R, A5R, 5.5X, 7.25X, EXTRA

```
SIMULATION 40-11
TRAY3 SENSOR CHECK..

M1SS1      M1SS2      M1SS3      M1SS4
TRAY3_WIDTH: 2100      TRAY3_AD: 500
(Tray3 width size: A4/A3)
```

40-12	
Purpose	Adjustment/Setup
Function (Purpose)	Used to check the multi-purpose tray width detection adjustment value.
Section	Paper feed

Operation/Procedure

- 1) Open the paper feed tray 3 paper feed guide to the max. width position.
- 2) Select MAX. POSITION with 10-key.
- 3) Press the [START] key.
The max. width detection level is recognized.
- 4) Press the [SYSTEM SETTINGS] key.
- 5) Open the paper feed tray 3 paper feed guide to the min. width position.
- 6) Select MIN. POSITION with 10-key.
- 7) Press the [START] key.
The minimum width detection level is recognized.

If the above procedures are not completed normally, "ERROR" is displayed. If completed normally, "COMPLETE" is displayed.

```
SIMULATION 40-12
TRAY3 ADJUSTMENT. SELECT 1-2, AND PRESS START.
1. MAX. POSITION
2. MIN. POSITION
```

41

41-1	
Purpose	Operation test/Check
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

Operation/Procedure

The sensor and detector operation conditions are displayed.
The active sensors and detectors are highlighted.

OCSW	Document cover status	Open: Normal display Close: Highlighted
PD1 - 7	Document detection sensor status	No document: Normal display Document present: Highlighted

SIMULATION 41-1
PD SENSOR CHECK..
OCSW PD1 PD2 PD3 PD4 PD5 PD6 PD7

41-2	
Purpose	Adjustment
Function (Purpose)	Used to adjust the document size sensor sensing level.
Section	Others

Operation/Procedure

- 1) Open the original cover. With nothing placed on the original table, select NO ORIGINAL with 10-key.
- 2) Press the [START] key.
The sensor level is set without document on the document table.
- 3) Place an A3 (11x17) document on the document table, and select A3 ORIGINAL with 10-key.
- 4) Press the [START] key.
The sensor level is set when detection the document.
If the above procedures are not completed normally, "ERROR" is displayed. If completed normally, "COMPLETE" is displayed.

SIMULATION 41-2
PD SENSOR ADJUSTMENT. SELECT 1-2, AND PRESS START.
(PLEASE OPEN THE ORIGINAL COVER.)
1. NO ORIGINAL
2. A3 ORIGINAL

1

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

Operation/Procedure

The detection output level (A/D value) of the document sensors (PD1 - PD7) is displayed in real time.

* The value in [] on the side of each sensor name indicates the threshold value.

The light receiving value (A/D value) and the threshold value (A/D value) of PD1 - PD7 are in the range of 1 - 255. The default of threshold value is 128.

OCSW	Original cover status	Open: Normal display Close: Highlighted
PD1 - 7	PD sensor detection level The value in [] indicates the adjustment threshold value (SIM41-2 adjustment value).	

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

43

43-1	
Purpose	Setting
Function (Purpose)	Used to set the fusing temperature in each operation mode.
Section	Fusing

Operation/Procedure

- 1) Select the number corresponding to the setting mode with 10-key.
- 2) Press the [START] key.
- 3) Enter the setting value with 10-key.
- 4) Press the [START] key.

			100V	200V
1	INSIDE NORMAL	Fusing roller inside/normal mode	200	205
2	OUTSIDE NORMAL	Fusing roller outside/normal mode		
3	INSIDE PREHEAT	Fusing roller inside/preheat mode	170	170
4	OUTSIDE PREHEAT	Fusing roller outside/preheat mode		
5	LEFT NORMAL	Sub-heat roller/normal mode	200	205
6	LEFT PREHEAT	Sub-heat roller/preheat mode	170	170

SIMULATION 43-1
FUSER TEMPERATURE SET. SELECT 1-6, AND PRESS START.
1. INSIDE NORMAL 185 5. LEFT NORMAL 185
2. OUTSIDE NORMAL 185 6. LEFT PREHEAT 140
3. INSIDE PREHEAT 140
4. OUTSIDE PREHEAT 140

1

43-3	
Purpose	Setting (Adjustment)
Function (Purpose)	Fusing motor RPM setting.
Section	Setting

Operation/Procedure

- 1) Select the number corresponding to the adjustment item with 10-key.
- 2) Press the [START] key.
- 3) Enter the setting (adjustment) value with 10-key.
- 4) Press the [START] key.

Unless special measures are required, do not change the setting values below.

	Item	Setting range	Default	
			55/62 (ppm)	70 (ppm)
1	NORMAL	0 - 99	34	34
2	SLOWDOWN	0 - 99	46	44

SIMULATION 43-3
FUSER MOTOR SPEED SETTING. SELECT 1-2, AND PRESS START.
1. NORMAL 36
2. SLOWDOWN 50

1

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)

Operation/Procedure

- 1) Each bit (7 kinds) is assigned to each correction item to set ENABLE/DISABLE of the operation.
Each bit is assigned with 0 or 1 value. Enter the total values of items which are desired to be valid with the 10-key.
- 2) Press the [START] key.

Item			Default
BIT1	OPC drum membrane decrease (sensitivity/potential) correction	Laser power/main charger grid voltage	1
BIT2	The range of the toner patch making voltage in the developing bias voltage/main charger grid voltage correction is specified. (Voltage limit)	Developing bias/main grid voltage (adjusted by SIM 8-1 and 8-2) +-100v	1
BIT3	For humidity correction	Toner concentration correction	1
BIT4	Toner concentration correction A	When the developing bias/main charger grid voltage correction is changed more than the specified level, the toner concentration control level is corrected.	1
BIT5	Toner concentration correction B	Correction for the developer life	0

Item			Default
BIT6	Toner concentration correction C	Toner concentration correction in low density image continuous print	1
BIT7	OPC drum for environment correction		1

NOTE: Set to 222.

When bit=1, correction is made.

Bit	15	14	13	12	11	10	9	8	7
	0	0	0	0	0	0	0	0	Env

Bit	6	5	4	3	2	1
	Tcon_C	Tcon_B	Tcon_A	Humidity	Pcon_lm	Drum

SIMULATION 44-1
PROCESS CORRECTION VALUE SETTING. INPUT VALUE 0-999 AND PRESS START.
BIT1: DRUM
BIT2: PROCON_LM BIT3: HUMIDITY
BIT4: TONERCON_A BIT5: TONERCON_B
BIT6: TONERCON_C BIT7: ENVIRONMENT

223

NOTE: BIT0 is not displayed, but set to the developing bias correction function. This setting is forcibly made enable, and cannot be disabled.

44-2	
Purpose	Adjustment
Function (Purpose)	Used to perform the gain adjustment (image density sensor LED current adjustment) of the image density sensor and the gain adjustment (OPC drum marking sensor LED current adjustment) of the OPC drum marking sensor.
Section	Image process (Photoconductor)

Operation/Procedure

Press [START] key, and the adjustment is automatically performed. When the adjustment is completed, the adjustment result is displayed.

If the adjustment is not completed normally, "ERROR" is displayed. When an error occurs, the adjustment result is not revised.

DMLED	Drum marking sensor gain adjustment value
PCLED	Image density sensor gain adjustment value
DRUM	Kind of the drum 0 = Other/1 = SHARP drum

SIMULATION 44-2
PROCON GAIN ADJUSTMENT. PRESS START.
DMLED : 0
PCLED : 0
DRUM : 0

44-4	
Purpose	Setting
Function (Purpose)	Used to set the target density level in the image density correction.
Section	Image process (Photoconductor/Developing)

Operation/Procedure

- 1) Enter the target density level in the image density correction with 10-key.
- 2) Press the [START] key.
(Default: 32)

SIMULATION 44-4
PROCON INITIAL DENSITY SETUP. PRESS START.
1.PROCON INI DENSITY **32**

44-5	
Purpose	Setting
Function (Purpose)	Used to set the reference developing bias voltage, the reference main charger grid voltage, and the laser power in the image density correction.
Section	Image process (Photoconductor/Developing)

Operation/Procedure

- 1) Select the number corresponding to the setting mode with 10-key.
- 2) Press the [START] key.
- 3) Enter the setting (adjustment) value with 10-key.
- 4) Press the [START] key.

Item		NOTE
DEVE MIXING TIME	Developing roller rotation time (sec)	Reset by SIM 24-11.
DRUM	OPC drum identification code	1: 55/62 (ppm) 0: 70 (ppm)
GR BS	Actual main charger grid voltage (including correction) / Main charger grid voltage adjusted with SIM 8-2	
DV BS	Actual developing bias voltage (including correction) / Developing bias voltage adjusted with SIM 8-1	
LD ADJ	Actual laser power beam (Including correction)	
AUTO	Auto copy mode	
CHARA	Text copy mode	
CHARA P	Text/Photo copy mode	
PHOTO	Photo copy mode	
PRT	Printer mode	
DESTINATION 1	Toner destination code stored in the main unit	
DESTINATION 2	Toner destination code stored in the toner bottle CRUM chip	

SIMULATION 44-9
PROCESS CONTROL DATA DISPLAY.
DRUM ROTATION TIME: **01234567** (sec)
DEVE MIXING TIME: **01234567** (sec)
DRUM: **0**

AUTO	GR_BS	DV_BS	LD_ADJ
CHARA	000/000	000/000	000/000
CHARA_P	000/000	000/000	000/000
PHOTO	000/000	000/000	000/000
PRT	000/000	000/000	000/000

DESTINATION1: **0** DESTINATION2: **0**

44-12	
Purpose	Adjustment/Setup/Operation data output/Check (Display)
Function (Purpose)	Used to display sampling toner image patch density data in image density correction. (Used to check that the correction is performed normally or not.)
Section	Image process (Photoconductor/Developing)

Operation/Procedure

DMLED	OPC drum marking sensor LED current adjustment value
PC LED	Image density sensor gain adjustment value
END DV BS	Developing bias voltage when making PT2/BS2 of ID (1)
ID (n)	Indicates the toner patch making procedures.
PT1/BS1	Toner patch density detection level/OPC drum surface detection level when the developing bias is DV - 50V.
PT2/BS2	Toner patch density detection level/OPC drum surface detection level when the developing bias is DV.
PT3/BS3	Toner patch density detection level/OPC drum surface detection level when the developing bias is DV + 50V.

Item	
1	GRID BIAS VOL Main charger voltage for developing bias voltage correction
2	DEVE BIAS VOL Reference developing bias voltage or developing bias voltage correction
3	LASER POWER Reference laser power for developing bias voltage correction

SIMULATION 44-5
PROCESS CONTROL TEST. SELECT 1-3, AND PRESS START.
1.GRID BIAS VOL *******
2.DEVE BIAS VOL **280**
3.LASER POWER *******

44-9	
Purpose	Adjustment/Setup/Operation data output/Check (Display)
Function (Purpose)	Used to check the data related to the image forming section correction (process correction) result (corrected main charger grid voltage, the developing bias voltage, and the laser power voltage in each print mode). (This simulation allows to check that correction is performed normally or not.)
Section	Image process (Photoconductor/Developing/Transfer/Cleaning)

Operation/Procedure

Item	NOTE
DRUM ROTATION TIME	OPC drum rotation time (sec) Reset by SIM 24-11.

SIMULATION 44-12			
DM DATA, PATCH/BASE DATA DISPLAY.			
DMLED:	000	PC LED:	000
	PT1/BS1	PT2/BS2	PT3/BS3
ID (1):	000/000	000/000	000/000
ID (2):	000/000	000/000	000/000
ID (3):	000/000	000/000	000/000
ID (4):	000/000	000/000	000/000
ID (5):	000/000	000/000	000/000
ID (6):	000/000	000/000	000/000
ID (7):	000/000	000/000	000/000
ID (8):	000/000	000/000	000/000

44-14	
Purpose	Adjustment/Setup/Operation data output/Check (Display)
Function (Purpose)	Used to check the output level of the temperature sensor and the humidity sensor.
Section	Image process (Photoconductor/Developing)

Operation/Procedure

The output levels of the temperature sensor and the humidity sensor in the developing unit are displayed.

TH-DV (Not used)	Developing section temperature sensor	0 - 255
TH-RA (Not used)	Room temperature sensor	0 - 255
TH-CL	Process section temperature sensor	0 - 255
TH-EX	Paper discharging section temperature sensor	0 - 255
HUS-DV	Developing section humidity sensor	0 - 255
HUS-TC (Not used)	Process section humidity sensor	0 - 255

SIMULATION 44-14	
SENSOR DATA DISPLAY MONITOR.	
TH-DV:	255
TH-RA:	255
TH-CL:	255
TH-EX:	255
HUS-DV:	255
HUS-TC:	255

44-16	
Purpose	Adjustment/Setup/Operation data output/Check (Display)
Function (Purpose)	Used to check the toner concentration control data.
Section	Process (Developing)

Operation/Procedure

HUMIDITY AREA	Humidity area
INT HUMIDITY AREA	Humidity area when setting the toner concentration control level (SIM 25-2)
TARGET LEVEL	Current toner concentration control level
DEV REF	Toner concentration when setting the toner concentration control level (SIM 25-2)
HUMIDITY (TARGET)	Toner concentration correction value for humidity
A	Toner concentration correction value for change in developing bias voltage
B	Toner concentration value for developer life

SIMULATION 44-16	
TONER CONTROL STANDARD LEVEL DISPLAY.	
HUMIDITY AREA:	7
INT HUMIDITY AREA:	7
TARGET LEVEL = DEV REF + HUM (TARGET) + A + B	
114	= 114 + 0 (0) + 0 + 0

46

46-2	
Purpose	Adjustment
Function (Purpose)	Used to adjust the copy density in all the copy modes (Auto, Text, Text/Photo, and Photo mode).
Section	—

Operation/Procedure

- 1) Select the number corresponding to the copy mode to be adjusted with 10-key. (Select one of 3 - 6.)
- 2) Press the [START] key.
- 3) Enter the copy density level with 10-key.

Item			Setting range	Default
0	TRAY SELECT	Paper feed tray selection	0 - 99	50
1	COPY START	Copy START (Default)		
2	EXP LEVEL	Exposure level selection		
3	AE 3.0	AE mode		
4	CH 3.0	Text mode 3.0		
5	MIX 3.0	Text/Photo mode 3.0		
6	PHOTO 3.0	Photo mode 3.0		

- 4) Press the [P] or [START] key.
The adjustment value is set.
When [START] key is pressed, copy is performed and the adjustment value is set simultaneously.
Check the density of the printed copy image.

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

NOTE: When the copy image density is adjusted with this simulation, the copy image densities of all the copy modes are changed to the copy image density level set with this simulation. That is, the copy image density of each copy mode set with SIM 46-9, 10, 11 is changed to the copy image density level adjusted with this simulation.

To select paper (paper feed tray), perform the following procedures.

- 1) Enter 0 with 10-key.
- 2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- 3) Enter the number corresponding to the paper feed tray to be used with 10-key.
- 4) Press [START] key. (The paper feed tray is selected.)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual paper feed
6	LCC	Side LCC

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When [START] key is pressed, the adjustment value is set and copying is performed.

To select exposure mode, perform the following procedures.

- 1) Enter 2 with 10-key.
- 2) Press [START] key. (The mode is changed to the exposure mode.)
- 3) Enter the number corresponding to the exposure level to be used with 10-key, and press [START] key.

3	AE 3.0	AE mode
4	CH 3.0	Text mode 3.0
5	MIX 3.0	Text/Photo mode 3.0
6	PHOTO 3.0	Photo mode 3.0

SIMULATION 46-2
EXP. LEVEL SETUP (2). SELECT 0-6, AND PRESS START.
0. TRAY SELECT 1 1. COPY START
2. EXP LEVEL 1
3. AE 3.0 50 4. CH 3.0 50
5. MIX 3.0 50 6. PHOTO 3.0 50

46-9	
Purpose	Adjustment
Function (Purpose)	Used to adjust the print density for each density level (display value) in the copy mode (binary - Text mode). An optional print density can be set for each density level (display value).
Section	—

Operation/Procedure

- 1) Select the number corresponding to the copy density adjustment level with 10-key. (Select one of 3 - 11.)
- 2) Press the [START] key.
- 3) Enter the copy density level with 10-key.

Item			Setting range	Default
0	TRAY SELECT	Paper feed tray selection	0 - 99	50
1	COPY START	Copy START (Default)		
2	EXP LEVEL	Exposure level selection		
3	1.0	Exposure level 1.0		
4	1.5	Exposure level 1.5		
5	2.0	Exposure level 2.0		
6	2.5	Exposure level 2.5		
7	3.0	Exposure level 3.0		
8	3.5	Exposure level 3.5		
9	4.0	Exposure level 4.0		
10	4.5	Exposure level 4.5		
11	5.0	Exposure level 5.0		

- 4) Press the [P] or [START] key.
The adjustment value is set.
When [START] key is pressed, copy is performed and the adjustment value is set simultaneously.
Check the density of the printed copy image.

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

To select paper (paper feed tray), perform the following procedures.

- 1) Enter 0 with 10-key.
- 2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)

- 3) Enter the number corresponding to the paper feed tray to be used with 10-key.
- 4) Press [START] key. (The paper feed tray is selected.)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual paper feed
6	LCC	Side LCC

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When [START] key is pressed, the adjustment value is set and copying is performed.

SIMULATION 46-9
EXP. LEVEL SETUP (CHAR.2). SELECT 0-11, AND PRESS START.
0. TRAY SELECT 1 1. COPY START
2. EXP LEVEL 1
3. 1.0 50 4. 1.5 50 5. 2.0 50
6. 2.5 50 7. 3.0 50 8. 3.5 50
9. 4.0 50 10. 4.5 50 11. 5.0 50

46-10	
Purpose	Adjustment
Function (Purpose)	Used to adjust the print density for each density level (display value) in the copy mode (binary - Text/Photo mode). An optional print density can be set for each density level (display value).
Section	—

Operation/Procedure

- 1) Select the number corresponding to the copy density adjustment level with 10-key. (Select one of 3 - 11.)
- 2) Press the [START] key.
- 3) Enter the copy density level with 10-key.

Item			Setting range	Default
0	TRAY SELECT	Paper feed tray selection	0 - 99	50
1	COPY START	Copy START (Default)		
2	EXP LEVEL	Exposure level selection		
3	1.0	Exposure level 1.0		
4	1.5	Exposure level 1.5		
5	2.0	Exposure level 2.0		
6	2.5	Exposure level 2.5		
7	3.0	Exposure level 3.0		
8	3.5	Exposure level 3.5		
9	4.0	Exposure level 4.0		
10	4.5	Exposure level 4.5		
11	5.0	Exposure level 5.0		

- 4) Press the [P] or [START] key.
The adjustment value is set.
When [START] key is pressed, copy is performed and the adjustment value is set simultaneously.
Check the density of the printed copy image.

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

To select paper (paper feed tray), perform the following procedures.

- 1) Enter 0 with 10-key.
- 2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- 3) Enter the number corresponding to the paper feed tray to be used with 10-key.

- 4) Press [START] key. (The paper feed tray is selected.)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual paper feed
6	LCC	Side LCC

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When [START] key is pressed, the adjustment value is set and copying is performed.

SIMULATION 46-10	
EXP. LEVEL SETUP (MIX.2). SELECT 0-11, AND PRESS START.	
0. TRAY SELECT	1. COPY START
2. EXP LEVEL	1
3. 1.0	50
4. 1.5	50
5. 2.0	50
6. 2.5	50
7. 3.0	50
8. 3.5	50
9. 4.0	50
10. 4.5	50
11. 5.0	50

46-11	
Purpose	Adjustment
Function (Purpose)	Used to adjust the print density for each density level (display value) in the copy mode (binary - Photo mode). An optional print density can be set for each density level (display value).
Section	—

Operation/Procedure

- 1) Select the number corresponding to the copy density adjustment level with 10-key. (Select one of 3 - 11.)
- 2) Press the [START] key.
- 3) Enter the copy density level with 10-key.

Item		Setting range	Default
0	TRAY SELECT	Paper feed tray selection	
1	COPY START	Copy START (Default)	
2	EXP LEVEL	Exposure level selection	
3	1.0	Exposure level 1.0	0 - 99 50
4	1.5	Exposure level 1.5	
5	2.0	Exposure level 2.0	
6	2.5	Exposure level 2.5	
7	3.0	Exposure level 3.0	
8	3.5	Exposure level 3.5	
9	4.0	Exposure level 4.0	
10	4.5	Exposure level 4.5	
11	5.0	Exposure level 5.0	

- 4) Press the [P] or [START] key.
The adjustment value is set.
When [START] key is pressed, copy is performed and the adjustment value is set simultaneously.
Check the density of the printed copy image.

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

To select paper (paper feed tray), perform the following procedures.

- 1) Enter 0 with 10-key.
- 2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- 3) Enter the number corresponding to the paper feed tray to be used with 10-key.
- 4) Press [START] key. (The paper feed tray is selected.)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual paper feed
6	LCC	Side LCC

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When [START] key is pressed, the adjustment value is set and copying is performed.

SIMULATION 46-11	
EXP. LEVEL SETUP (PHOTO2). SELECT 0-11, AND PRESS START.	
0. TRAY SELECT	1. COPY START
2. EXP LEVEL	1
3. 1.0	50
4. 1.5	50
5. 2.0	50
6. 2.5	50
7. 3.0	50
8. 3.5	50
9. 4.0	50
10. 4.5	50
11. 5.0	50

46-12	
Purpose	Adjustment
Function (Purpose)	Used to adjust the print density in the FAX mode (all modes).
Section	—

Operation/Procedure

- 1) Select the adjustment item (FAX EXP. LEVEL) with 10-key.
- 2) Press the [START] key.
- 3) Enter the print density level with 10-key.

Item		Setting range	Default
0	TRAY SELECT	Paper feed tray selection	0 - 99 50
1	COPY START	Copy START (Default)	
2	FAX EXP. LEVEL	FAX mode print density	

- 4) Press the [P] or [START] key.
The adjustment value is set.
When [START] key is pressed, printing is performed and the adjustment value is set simultaneously.
Check the density of printed image.

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

NOTE: When the FAX print image density is adjusted with this simulation, the print image densities of all the FAX modes are changed to the image density level set with this simulation.
That is, the print image density of each FAX mode set with SIM 46-13, 14, 15 and 16 is changed to the print image density level adjusted with this simulation.

To select paper (paper feed tray), perform the following procedures.

- 1) Enter 0 with 10-key.
- 2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- 3) Enter the number corresponding to the paper feed tray to be used with 10-key.
- 4) Press [START] key. (The paper feed tray is selected.)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual paper feed
6	LCC	Side LCC

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When [START] key is pressed, the adjustment value is set and copying is performed.

SIMULATION 46-12
EXP.LEVEL SETUP FAX(AUTO SET). SELECT 0-2, AND PRESS START.
0. TRAY SELECT **1** 1. COPY START
2. FAX EXP.LEVEL **50**

46-13

Purpose	Adjustment
Function (Purpose)	Used to adjust the print density in the FAX mode (each Normal text mode). (Only when FAX is installed.)
Section	—

Operation/Procedure

- Select the number corresponding to one of the following adjustment items with 10-key. (Select one of 3 - 14.)
 - * Manual mode (Print density adjustment level)
 - * Auto mode
- Press the [START] key.
- Enter the print density level with 10-key.

Item			Setting range	Default
0	TRAY SELECT	Paper feed tray selection	0 - 99	50
1	PRINT START	Print start (Default)		
2	EXP LEVEL	Exposure level selection		
3	AUTO	Auto		
4	1.0	Exposure level 1		
5	2.0	Exposure level 2		
6	3.0	Exposure level 3		
7	4.0	Exposure level 4		
8	5.0	Exposure level 5		

- Press the [P] or [START] key.
The adjustment value is set.
When [START] key is pressed, printing is performed and the adjustment value is set simultaneously.
Check the density of printed image.

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

To select paper (paper feed tray), perform the following procedures.

- Enter 0 with 10-key.
- Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- Enter the number corresponding to the paper feed tray to be used with 10-key.
- Press [START] key. (The paper feed tray is selected.)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual paper feed
6	LCC	Side LCC

When the total of the above set value (1 - 6) and 20 is entered, the mode is changed to the duplex mode.

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When [START] key is pressed, the adjustment value is set and copying is performed.

SIMULATION 46-13
EXP.LEVEL SETUP FAX(NORMAL). SELECT 0-8, AND PRESS START.
0. TRAY SELECT **1** 1. PRINT START
2. EXP LEVEL **1**
3. AUTO **50** 4. 1.0 **50** 5. 2.0 **50**
6. 3.0 **50** 7. 4.0 **50** 8. 5.0 **50**

46-14

Purpose	Adjustment
Function (Purpose)	Used to adjust the print density in the FAX mode (each super fine mode). (Only when FAX is installed.)
Section	—

Operation/Procedure

- Select the number corresponding to one of the following adjustment items with 10-key. (Select one of 3 - 14.)
 - * Normal mode (Print density adjustment level)
 - * Normal mode (Print density adjustment level) (Half-tone mode)
 - * Auto mode
 - * Auto mode (Half-tone mode)
- Enter the print density level with 10-key.

Item			Setting range	Default
0	TRAY SELECT	Paper feed tray selection	0 - 99	50
1	PRINT START	Print start (Default)		
2	EXP LEVEL	Exposure level selection		
3	AUTO	Auto		
4	1.0	Exposure level 1		
5	2.0	Exposure level 2		
6	3.0	Exposure level 3		
7	4.0	Exposure level 4		
8	5.0	Exposure level 5		
9	AUTO (H)	Auto (Half-tone)		
10	1.0 (H)	Exposure level 1 (Half-tone)		
11	2.0 (H)	Exposure level 2 (Half-tone)		
12	3.0 (H)	Exposure level 3 (Half-tone)		
13	4.0 (H)	Exposure level 4 (Half-tone)		
14	5.0 (H)	Exposure level 5 (Half-tone)		

- Press the [P] or [START] key.
The adjustment value is set.
When [START] key is pressed, printing is performed and the adjustment value is set simultaneously.
Check the density of printed image.

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

To select paper (paper feed tray), perform the following procedures.

- Enter 0 with 10-key.
- Press [START] key. (The mode is changed to the paper feed tray selection mode.)

- 3) Enter the number corresponding to the paper feed tray to be used with 10-key.
- 4) Press [START] key. (The paper feed tray is selected.)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual paper feed
6	LCC	Side LCC

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When [START] key is pressed, the adjustment value is set and copying is performed.

SIMULATION 46-14		
EXP.LEVEL SETUP FAX(FINE).SELECT 0-14,AND PRESS START.		
0. TRAY SELECT	1	1. PRINT START
2. EXP LEVEL	1	
3. AUTO	50	4. 1.0
6. 3.0	50	7. 4.0
9. AUTO (H)	50	10. 1.0 (H)
12. 3.0 (H)	50	13. 4.0 (H)
		5. 2.0
		8. 5.0
		11. 2.0 (H)
		14. 5.0 (H)

46-15	
Purpose	Adjustment
Function (Purpose)	Used to adjust the print density in the FAX mode (each super fine mode). (Only when FAX is installed.)
Section	—

Operation/Procedure

- 1) Select the number corresponding to one of the following adjustment items with 10-key. (Select one of 3 - 14.)
 - * Normal mode (Print density adjustment level)
 - * Normal mode (Print density adjustment level) (Half-tone mode)
 - * Auto mode
 - * Auto mode (Half-tone mode)
- 2) Press the [START] key.
- 3) Enter the print density level with 10-key.

Item			Setting range	Default
0	TRAY SELECT	Paper feed tray selection	0 - 99	50
1	PRINT START	Print start (Default)		
2	EXP LEVEL	Exposure level selection		
3	AUTO	Auto		
4	1.0	Exposure level 1		
5	2.0	Exposure level 2		
6	3.0	Exposure level 3		
7	4.0	Exposure level 4		
8	5.0	Exposure level 5		
9	AUTO (H)	Auto (Half-tone)		
10	1.0 (H)	Exposure level 1 (Half-tone)		
11	2.0 (H)	Exposure level 2 (Half-tone)		
12	3.0 (H)	Exposure level 3 (Half-tone)		
13	4.0 (H)	Exposure level 4 (Half-tone)		
14	5.0 (H)	Exposure level 5 (Half-tone)		

- 4) Press the [P] or [START] key.
The adjustment value is set.

When [START] key is pressed, printing is performed and the adjustment value is set simultaneously.

Check the density of print image.

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

To select paper (paper feed tray), perform the following procedures.

- 1) Enter 0 with 10-key.
- 2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- 3) Enter the number corresponding to the paper feed tray to be used with 10-key.
- 4) Press [START] key. (The paper feed tray is selected.)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual paper feed
6	LCC	Side LCC

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When [START] key is pressed, the adjustment value is set and copying is performed.

SIMULATION 46-15		
EXP.LEVEL SETUP FAX(SUPER FINE).SELECT 0-14,AND PRESS START.		
0. TRAY SELECT	1	1. PRINT START
2. EXP LEVEL	1	
3. AUTO	50	4. 1.0
6. 3.0	50	7. 4.0
9. AUTO (H)	50	10. 1.0 (H)
12. 3.0 (H)	50	13. 4.0 (H)
		5. 2.0
		8. 5.0
		11. 2.0 (H)
		14. 5.0 (H)

46-16	
Purpose	Adjustment
Function (Purpose)	Used to adjust the print density in the FAX mode (each ultra fine mode). (Only when FAX is installed.)

Section	—
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Operation/Procedure

- Select the number corresponding to one of the following adjustment items with 10-key. (Select one of 3 - 14.)
 - * Normal mode (Print density adjustment level)
 - * Normal mode (Print density adjustment level) (Half-tone mode)
 - * Auto mode
 - * Auto mode (Half-tone mode)
- Press the [START] key.
- Enter the print density level with 10-key.

Item			Setting range	Default
0	TRAY SELECT	Paper feed tray selection	0 - 99	50
1	PRINT START	Print start (Default)		
2	EXP LEVEL	Exposure level selection		
3	AUTO	Auto		
4	1.0	Exposure level 1		
5	2.0	Exposure level 2		
6	3.0	Exposure level 3		
7	4.0	Exposure level 4		
8	5.0	Exposure level 5		
9	AUTO (H)	Auto (Half-tone)		
10	1.0 (H)	Exposure level 1 (Half-tone)		
11	2.0 (H)	Exposure level 2 (Half-tone)		
12	3.0 (H)	Exposure level 3 (Half-tone)		
13	4.0 (H)	Exposure level 4 (Half-tone)		
14	5.0 (H)	Exposure level 5 (Half-tone)		

- Press the [P] or [START] key.
The adjustment value is set.
When [START] key is pressed, printing is performed and the adjustment value is set simultaneously.
Check the density of printed image.

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

To select paper (paper feed tray), perform the following procedures.

- Enter 0 with 10-key.
- Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- Enter the number corresponding to the paper feed tray to be used with 10-key.
- Press [START] key. (The paper feed tray is selected.)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual paper feed
6	LCC	Side LCC

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When [START] key is pressed, the adjustment value is set and copying is performed.

SIMULATION 46-16	
EXP. LEVEL SETUP FAX (ULTRA FINE). SELECT 0-14, AND PRESS START.	
0. TRAY SELECT	1. PRINT START
2. EXP LEVEL	
3. AUTO	50
4. 1.0	50
5. 2.0	50
6. 3.0	50
7. 4.0	50
8. 5.0	50
9. AUTO (H)	50
10. 1.0 (H)	50
11. 2.0 (H)	50
12. 3.0 (H)	50
13. 4.0 (H)	50
14. 5.0 (H)	50

46-17

Purpose	Setting
Function (Purpose)	Used to set the gain in shading correction.
Section	Optical (Image scanning) - CCD, CIS

Operation/Procedure

- Select the number corresponding to the adjustment item with 10-key.
- Press the [START] key.
- Enter the shading gain change value with 10-key.
- Press the [START] key.

There is normally no need to change the shading gain with this simulation.

Only when the scanned image density is unsatisfactory though shading is performed, the above procedure is performed.

Item		Setting range	Default
1	CCD FRONT ODD	0 - 255	112
2	CCD FRONT EVEN		
3	CCD REAR ODD		
4	CCD REAR EVEN		
5	CIS		128

SIMULATION 46-17	
CCD/CIS SHADING GAIN DATA SETUP. SELECT 1-5, AND PRESS START.	
1. CCD FRONT ODD	128
2. CCD FRONT EVEN	128
3. CCD REAR ODD	128
4. CCD REAR EVEN	128
5. CIS	128

46-18	
Purpose	Adjustment
Function (Purpose)	Used to adjust the gamma (density gradient) in the copy mode.
Section	—

Operation/Procedure

(Copy mode selection)

- 1) Select the number corresponding to the copy mode to be adjusted with 10-key. (Select one of 3 - 14.)

- 2) Press the [START] key.

(Print mode selection in the FAX mode)

- 1) Enter 2 with 10-key.
- 2) Press the [START] key.
- 3) Select the number corresponding to one of the following adjustment items with 10-key. (Select one of 3 - 14.)
 - * Normal mode (Print density adjustment level)
 - * Normal mode (Print density adjustment level) (Half-tone mode)
 - * Auto mode
 - * Auto mode (Half-tone mode)

Item			Setting range	Default
0	TRAY SELECT	Paper feed tray selection	0 - 127	96
1	PRINT START	Print start (Default)		
2	EXP LEVEL	Exposure level selection		
3	OC_AE	AE mode (OC)		
4	OC_CHARA	Text mode (OC)		
5	OC_MIX	Text/Photo mode (OC)		
6	OC_PHOTO	Photo mode (OC)		
7	SPF_AE	AE mode (SPF)		
8	SPF_CHARA	Text mode (SPF)		
9	SPF_MIX	Text/Photo mode (SPF)		
10	SPF_PHOTO	Photo mode (SPF)		
11	CIS_AE	AE mode (CIS)		
12	CIS_CHARA	Text mode (CIS)		
13	CIS_MIX	Text/Photo mode (CIS)		
14	CIS_PHOTO	Photo mode (CIS)		

[AE mode]

Item		
3	AUTO	Auto
4	1	Exposure level 1
5	2	Exposure level 2
6	3	Exposure level 3
7	4	Exposure level 4
8	5	Exposure level 5
9	AUTO (H)	Auto (Half-tone)
10	1.0 (H)	Exposure level 1 (Half-tone)
11	2.0 (H)	Exposure level 2 (Half-tone)
12	3.0 (H)	Exposure level 3 (Half-tone)
13	4.0 (H)	Exposure level 4 (Half-tone)
14	5.0 (H)	Exposure level 5 (Half-tone)

- 4) Press the [START] key.

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

(Gamma adjustment)

After completion of the above procedures, perform the following procedures.

- 1) Enter the gamma level with 10-key.
- 2) Press the [P] or [START] key.

When [START] key is pressed, printing is performed and the adjustment value is set simultaneously.

Check the gamma density (copy density in the low density area and the high density area) of printed copy image.

The greater the adjustment value is, the greater the gamma value is, resulting in a higher contrast.

(Copy condition setting in this simulation)

To select paper (paper feed tray), perform the following procedures.

- 1) Enter 0 with 10-key.
- 2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- 3) Enter the number corresponding to the paper feed tray to be used with 10-key.
- 4) Press [START] key. (The paper feed tray is selected.)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual paper feed
6	LCC	Side LCC

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When [START] key is pressed, the adjustment value is set and copying is performed.

SIMULATION 46-18
 GAMMA SETUP(COPIER). SELECT 1-14, AND PRESS START.
 0. TRAY SELECT 1 1. PRINT START 2. EXP LEVEL 1
 3. OC_AE 64 4. OC_CHARA 5. OC_MIX 64
 6. OC_PHOTO 64 7. SPF_AE 64 8. SPF_CHARA 64
 9. SPF_MIX 64 10. SPF_PHOTO 64 11. CIS_AE 64
 12. CIS_CHARA 64 13. CIS_MIX 64 14. CIS_PHOTO 64

46-19	
Purpose	Adjustment
Function (Purpose)	Used to set the auto mode operation specifications in each mode (copy, scan, FAX).
Section	—

Operation/Procedure

(Toner save operation YES/NO setting in the auto mode)

- 1) Select "1. AE MODE" with 10-key.
- 2) Press the [START] key.
- 3) Select the number that corresponds to the operation specifications with 10-key.
- 4) Press the [START] key.

When [START] key is pressed, the adjustment value is set.

(Auto copy mode operation setting)

- 1) Select the number corresponding to the mode with 10-key. (Select one of 2 - 4.)
- 2) Press the [START] key.
- 3) Select the number that corresponds to the operation mode with 10-key.

4) Press the [START] key.

1	AE MODE	AE mode
2	AE STOP MODE (COPIER)	AE fixed mode (Copier)
3	AE STOP MODE (SCANNER)	AE fixed mode (Scanner)
4	AE STOP MODE (FAX)	AE fixed mode (FAX)

Mode	Set value	Item	Default
AE mode	1	Image quality priority mode (Normal mode) * Gamma is sharp to provide high contrast images.	2
	2	Toner consumption priority mode * Gamma is mild to provide low contrast images.	
AE fixed mode	0	AE fixed OFF	1 (COPIER) 0 (SCANNER /FAX)
	1	AE fixed ON	

AE fixed OFF: The automatic density (exposure) control is performed in real time. (The density level is changed in real time according to the document pattern.)

AE fixed ON: The density at the lead edge of the document is scanned, and the overall density (exposure) level is determined according to the scanned density level. (Overall density level fixed)

SIMULATION 46-19
EXP.MODE SETUP. SELECT 1-2, AND PRESS START.
1. AE MODE **1**
2. AE STOP MODE (COPIER) **1**
3. AE STOP MODE (SCANNER) **0**
4. AE STOP MODE (FAX) **0**

46-20

Purpose	Adjustment
Function (Purpose)	Used to adjust the copy density correction in the SPF copy mode for the document table copy mode. The adjustment is made so that the copy density becomes the same as that of the document table copy mode.
Section	SPF

Operation/Procedure

(Adjustment mode selection)

- 1) Select the number that corresponds to the mode for which to make adjustments with 10-key.

SPF front frame side (Front surface copy), SPF rear frame side (Front surface copy), SPF (Back surface copy) (Select one of 3 - 5.)

- 2) Press the [START] key.

(Copy density level adjustment)

- 1) Enter the density correction value with 10-key.
- 2) Press the [P] or [START] key.

(Copy condition setting in this simulation)

To select paper (paper feed tray), perform the following procedures.

- 1) Enter 0 with 10-key.
- 2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- 3) Enter the number corresponding to the paper feed tray to be used with 10-key.
- 4) Press [START] key. (The paper feed tray is selected.)

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When [START] key is pressed, the adjustment value is set and copying is performed.

Item		Content	Setting range	Default
0	TRAY SELECT	Paper feed tray selection 1: TRAY1 2: TRAY2 3: TRAY3 4: TRAY4 5: Manual feed 6: Side LCC	—	—
1	PRINT START	Print start (Default)	—	—
2	EXP LEVEL	Exposure level selection 3: Exposure level 1.0 4: Exposure level 1.5 5: Exposure level 2.0 6: Exposure level 2.5 7: Exposure level 3.0 8: Exposure level 3.5 9: Exposure level 4.0 10: Exposure level 4.5 11: Exposure level 5.0	—	—
3	SPF (FRONT)	SPF (front) (front frame side)	0 - 255	128
4	SPF (REAR)	SPF (rear) (rear frame side)		
5	DSPF	DSPF (Back surface)		

- Set value - 128 is added to the shading adjustment value (SIM 46-17).

SIMULATION 46-20
OC/SPF EXP. ADJUSTMENT. SELECT 1-4, AND PRESS START.
0. TRAY SELECT **1** 1. PRINT START
2. EXP LEVEL **1**
3. SPF (FRONT) **128**
4. SPF (REAR) **128**
5. DSPF **128**

46-21

Purpose	Adjustment
Function (Purpose)	Used to set the auto mode operation specifications in each mode (copy, scan, FAX).
Section	—

Operation/Procedure

- 1) Select the adjustment item SCANNER EXP. LEVEL with 10-key.
- 2) Press the [START] key.
- 3) Enter the image density adjustment value.
- 4) Press the [P] or [START] key.

NOTE: When this simulation is performed to adjust the scan image densities, all the image densities in all the scan modes are changed to the image density level set with this simulation. That is, the image densities set with SIM 46-22, 23, 24, 25, and 45 are changed to the image density level set with this simulation.

Item		Content	Setting range	Default
0	SCANNER EXP. LEVEL	Image density level	0 - 99	50

NOTE: Only the set value is changed and no printing is performed.

SIMULATION 46-21

EXP.LEVEL SETUP SCANNER(AUTO SET), PRESS START.
0.SCANNER EXP.LEVEL 50

0

46-22

Purpose	Adjustment
Function (Purpose)	Used to adjust the scanner exposure level in the normal text mode.
Section	—

Operation/Procedure

- Select the number corresponding to one of the following adjustment items with 10-key. (Select one of 0 - 5.)
 - * Normal mode (Image density adjustment level)
 - * Auto mode
- Press the [START] key.
- Enter the image density adjustment value with 10-key.
- Press [START] key or press [P] key.
The adjustment value is set.

Item			Setting range	Default
0	AUTO	Auto	0 - 99	50
1	1.0	Exposure level 1		
2	2.0	Exposure level 2		
3	3.0	Exposure level 3		
4	4.0	Exposure level 4		
5	5.0	Exposure level 5		

NOTE: Only the set value is changed and no printing is performed.

SIMULATION 46-22

EXP.LEVEL SETUP SCANNER(NORMAL). SELECT 0-5, AND PRESS START.

0.AUTO 50 1.1.0 50 2.2.0 50
3.3.0 50 4.4.0 50 5.5.0 50

1

46-23

Purpose	Adjustment
Function (Purpose)	Used to adjust the scanner exposure level in the fine text mode.
Section	—

Operation/Procedure

- Select the number corresponding to one of the following adjustment items with 10-key. (Select one of 0 - 11.)
 - * Normal mode (Image density adjustment level)
 - * Normal mode (Image density adjustment level) (Half-tone mode)
 - * Auto mode
 - * Auto mode (Half-tone mode)
- Press the [START] key.
- Enter the image density adjustment value with 10-key.
- Press [START] key or press [P] key.
The adjustment value is set.

Item			Setting range	Default
0	AUTO	Auto	0 - 99	50
1	1.0	Exposure level 1		
2	2.0	Exposure level 2		
3	3.0	Exposure level 3		
4	4.0	Exposure level 4		
5	5.0	Exposure level 5		
6	AUTO (H)	Auto (Half-tone)		
7	1.0 (H)	Exposure level 1 (Half-tone)		
8	2.0 (H)	Exposure level 2 (Half-tone)		
9	3.0 (H)	Exposure level 3 (Half-tone)		
10	4.0 (H)	Exposure level 4 (Half-tone)		
11	5.0 (H)	Exposure level 5 (Half-tone)		

NOTE: Only the set value is changed and no printing is performed.

SIMULATION 46-23

EXP.LEVEL SETUP SCANNER(FINE). SELECT 0-11, AND PRESS START.

0.AUTO 50 1.1.0 50 2.2.0 50
3.3.0 50 4.4.0 50 5.5.0 50
6.AUTO (H) 50 7.1.0 (H) 50 8.2.0 (H) 50
9.3.0 (H) 50 10.4.0 (H) 50 11.5.0 (H) 50

1

46-24

Purpose	Adjustment
Function (Purpose)	Used to adjust the scanner exposure level (in the super fine text mode).
Section	—

Operation/Procedure

- Select the number corresponding to one of the following adjustment items with 10-key. (Select one of 0 - 11.)
 - * Normal mode (Image density adjustment level)
 - * Normal mode (Image density adjustment level) (Half-tone mode)
 - * Auto mode
 - * Auto mode (Half-tone mode)
- Press the [START] key.
- Enter the image density adjustment value with 10-key.
- Press [START] key or press [P] key.
The adjustment value is set.

Item			Setting range	Default
0	AUTO	Auto	0 - 99	50
1	1.0	Exposure level 1		
2	2.0	Exposure level 2		
3	3.0	Exposure level 3		
4	4.0	Exposure level 4		
5	5.0	Exposure level 5		
6	AUTO (H)	Auto (Half-tone)		
7	1.0 (H)	Exposure level 1 (Half-tone)		
8	2.0 (H)	Exposure level 2 (Half-tone)		
9	3.0 (H)	Exposure level 3 (Half-tone)		
10	4.0 (H)	Exposure level 4 (Half-tone)		
11	5.0 (H)	Exposure level 5 (Half-tone)		

NOTE: Only the set value is changed and no printing is performed.

SIMULATION 46-24
 EXP.LEVEL SETUP SCANNER (SUPER FINE) . SELECT 0-11, AND
 PRESS START.
 0.AUTO 50 1.1.0 50 2.2.0 50
 3.3.0 50 4.4.0 50 5.5.0 50
 6.AUTO (H) 50 7.1.0 (H) 50 8.2.0 (H) 50
 9.3.0 (H) 50 10.4.0 (H) 50 11.5.0 (H) 50

46-25

Purpose	Adjustment
Function (Purpose)	Used to adjust the scanner exposure level in the ultra fine text mode.
Section	—

Operation/Procedure

- Select the number corresponding to one of the following adjustment items with 10-key. (Select one of 0 - 11.)
 - * Normal mode (Image density adjustment level)
 - * Normal mode (Image density adjustment level) (Half-tone mode)
 - * Auto mode
 - * Auto mode (Half-tone mode)
- Press the [START] key.
- Enter the image density adjustment value with 10-key.
- Press [START] key or press [P] key.
The adjustment value is set.

Item			Setting range	Default
0	AUTO	Auto	0 - 99	50
1	1.0	Exposure level 1		
2	2.0	Exposure level 2		
3	3.0	Exposure level 3		
4	4.0	Exposure level 4		
5	5.0	Exposure level 5		
6	AUTO (H)	Auto (Half-tone)		
7	1.0 (H)	Exposure level 1 (Half-tone)		
8	2.0 (H)	Exposure level 2 (Half-tone)		
9	3.0 (H)	Exposure level 3 (Half-tone)		
10	4.0 (H)	Exposure level 4 (Half-tone)		
11	5.0 (H)	Exposure level 5 (Half-tone)		

NOTE: Only the set value is changed and no printing is performed.

SIMULATION 46-25
 EXP.LEVEL SETUP SCANNER (ULTRA FINE) . SELECT 0-11, AND
 PRESS START.
 0.AUTO 50 1.1.0 50 2.2.0 50
 3.3.0 50 4.4.0 50 5.5.0 50
 6.AUTO (H) 50 7.1.0 (H) 50 8.2.0 (H) 50
 9.3.0 (H) 50 10.4.0 (H) 50 11.5.0 (H) 50

46-27

Purpose	Adjustment
Function (Purpose)	Used to adjust the gamma (density gradient) of the network scanner mode.
Section	—

Operation/Procedure

(Scanner mode selection)

- Select the number corresponding to the scanner mode to be adjusted with 10-key. (Select one of 1 - 9.)
- Press the [START] key.

(Gamma adjustment)

After completion of the above procedures, perform the following procedures.

- Enter the gamma level with 10-key.
- Press the [START] key.

The greater the adjustment value is, the greater the gamma value is, resulting in a higher contrast.

Item			Setting range	Default
1	OC_Fine.HT	Fine text (Half-tone) (OC)	0 - 127	64
2	OC_SFine.HT	Super fine (Half-tone) (OC)		
3	OC_UFine.HT	Ultra fine (Half-tone) (OC)		
4	SPF_Fine.HT	Fine text (Half-tone) (SPF)		
5	SPF_SFine.HT	Super fine (Half-tone) (SPF)		
6	SPF_UFine.HT	Ultra fine (Half-tone) (SPF)		
7	CIS_Fine.HT	Fine text (Half-tone) (CIS)		
8	CIS_SFine.HT	Super fine (Half-tone) (CIS)		
9	CIS_UFine.HT	Ultra fine (Half-tone) (CIS)		

SIMULATION 46-27
 GAMMA SETUP (SCANNER) , SELECT 1-9, AND PRESS START.
 1.OC_Fine.HT 64 2.OC_SFine.HT 64 3.OC_UFine.HT 64
 4.SPF_Fine.HT 64 5.SPF_SFine.HT 64 6.SPF_UFine.HT 64
 7.CIS_Fine.HT 64 8.CIS_SFine.HT 64 9.CIS_UFine.HT 64

46-31

Purpose	Adjustment
Function (Purpose)	Used to adjust sharpness of the copy mode.
Section	—

Operation/Procedure

(Copy mode selection)

- Select the number corresponding to the copy mode to be adjusted with 10-key. (Select one of 1 - 16.)
- Press the [START] key.

(Sharpness adjustment)

After completion of the above procedures, perform the following procedures.

- Enter the sharpness level with 10-key.
- Press the [START] key.

The greater the adjustment value is, the greater the sharpness is.



Item			Setting range	Default
1	OC_AE	AE mode (OC)	1 - 5	2
2	OC_CHARA	Text mode (OC)		3
3	OC_MIX	Text/Photo mode (OC)		
4	OC_PHOTO	Photo mode (OC)		
5	SPF1_AE	AE mode (SPF1)		2
6	SPF1_CHARA	Text mode (SPF1)		3
7	SPF1_MIX	Text/Photo mode (SPF1)		
8	SPF1_PHOTO	Photo mode (SPF1)		
9	SPF2_AE	AE mode (SPF2)		2
10	SPF2_CHARA	Text mode (SPF2)		3
11	SPF2_MIX	Text/Photo mode (SPF2)		
12	SPF2_PHOTO	Photo mode (SPF2)		
13	CIS_AE	AE mode (OC)		4
14	CIS_CHARA	Text mode (OC)		3
15	CIS_MIX	Text/Photo mode (OC)		
16	CIS_PHOTO	Photo mode (OC)		

* SPF1: DSPF front surface (CCD) / SPF2: DSPF back surface (CCD)

SIMULATION 46-31

SHARPNESS LEVEL SETUP. SELECT 1-16, AND PRESS START.

1.OC_AE 3 2.OC_CHARA 3 3.OC_MIX 3
4.OC_PHOTO 3 5.SPF1_AE 3 6.SPF1_CHARA 3
7.SPF1_MIX 3 8.SPF1_PHOTO 3 9.SPF2_AE 3
10.SPF2_CHARA 3 11.SPF2_MIX 3 12.SPF2_PHOTO 3
13.CIS_AE 3 14.CIS_CHARA 3 15.CIS_MIX 3
16.CIS_PHOTO 3

46-39

Purpose	Adjustment
Function (Purpose)	Used to adjust sharpness of the FAX mode.
Section	—

Operation/Procedure

- Enter the sharpness level with 10-key.
 - Press the [START] key.
- The greater the adjustment value is, the greater the sharpness is.



Item		Setting range
1	Level 1 (Half-tone/ Sharpness:Light)	1 - 3
2	Level 2 (Sharpness:Medium light)	
3	Level 3 (Normal/ Sharpness:Medium)	

SIMULATION 46-39

FAX SHARPNESS LEVEL SETUP. SELECT 1-36, AND PRESS START.

1:OC_NORMAL 3 2:OC_FINE 3 3:OC_FINE(H) 1
4:OC_SFINE 3 5:OC_SFINE(H) 1 6:OC_UFINE 3
7:OC_UFINE(H) 1 8:OC_600 3 9:OC_600(H) 1
10:SPF1_NORMAL 3 11:SPF1_FINE 3 12:SPF1_FINE(H) 1
13:SPF1_SFINE 3 14:SPF1_SFINE(H) 1 15:SPF1_UFINE 3
16:SPF1_UFINE(H) 1 17:SPF1_600 3 18:SPF1_600(H) 1
19:SPF2_NORMAL 3 20:SPF2_FINE 3 21:SPF2_FINE(H) 1
22:SPF2_SFINE 3 23:SPF2_SFINE(H) 1 24:SPF2_UFINE 3
25:SPF2_UFINE(H) 1 26:SPF2_600 3 27:SPF2_600(H) 1
28:CIS_NORMAL 3 29:CIS_FINE 3 30:CIS_FINE(H) 1
31:CIS_SFINE 3 32:CIS_SFINE(H) 1 33:CIS_UFINE 3
34:CIS_UFINE(H) 1 35:CIS_600 3 36:CIS_600(H) 1

46-45

Purpose	Adjustment
Function (Purpose)	Used to adjust the image density in the FAX mode (600dpi).

Section

Operation/Procedure

- Select the number corresponding to one of the following adjustment items with 10-key. (Select one of 0 - 14.)
 - Normal mode (Image density adjustment level)
 - Normal mode (Image density adjustment level) (Half-tone mode)
 - Auto mode
 - Auto mode (Half-tone mode)
- Press the [START] key.
- Enter the image density adjustment value with 10-key.

Item			Setting range	Default
0	TRAY SELECT	Paper feed tray selection	0 - 99	50
1	PRINT START	Print start (Default)		
2	EXP LEVEL	Exposure level selection		
3	AUTO	Auto		
4	1.0	Exposure level 1		
5	2.0	Exposure level 2		
6	3.0	Exposure level 3		
7	4.0	Exposure level 4		
8	5.0	Exposure level 5		
9	AUTO (H)	Auto (Half-tone)		
10	1.0 (H)	Exposure level 1 (Half-tone)		
11	2.0 (H)	Exposure level 2 (Half-tone)		
12	3.0 (H)	Exposure level 3 (Half-tone)		
13	4.0 (H)	Exposure level 4 (Half-tone)		
14	5.0 (H)	Exposure level 5 (Half-tone)		

- Press the [START] key.
- The adjustment value is set.
- To select paper (paper feed tray), perform the following procedures.
- Enter 0 with 10-key.
 - Press [START] key. (The mode is changed to the paper feed tray selection mode.)
 - Enter the number corresponding to the paper feed tray to be used with 10-key.
 - Press [START] key. (The paper feed tray is selected.)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual paper feed
6	LCC	Side LCC

SIMULATION 46-45

EXP.LEVEL SETUP SCANNER(600dpi). SELECT 0-5,AND PRESS START.

0.AUTO 50 1.1.0 50 2.2.0 50
3.3.0 50 4.4.0 50 5.5.0 50
6.AUTO(H) 50 7.1.0(H) 50 8.2.0(H) 50
9.3.0(H) 50 10.4.0(H) 50 11.5.0(H) 50

48-1

Purpose	Adjustment
Function (Purpose)	Used to adjust the copy magnification ratio (in the main scanning and the sub scanning directions).
Section	Optical (Image scanning)

Operation/Procedure

(Adjustment mode selection)

- 1) Select the number corresponding to the copy mode to be adjusted with 10-key. (Select one of 3 - 7.)
- 2) Press the [START] key.

Item			Setting range	Default
0	TRAY SELECT	Paper feed tray selection	0 - 99	50
1	COPY START	Copy START (Default)		
2	MAGNIFICATION	Print magnification ratio		
3	CCD (MAIN)	SCAN main scanning magnification ratio adjustment (CCD)		
4	CCD (SUB)	SCAN sub scanning magnification ratio adjustment (CCD)		
5	SPF (SUB)	SPF front surface magnification ratio adjustment (Sub scan)		
6	CIS (MAIN)	SPF back surface magnification ratio adjustment (CIS main scan)		
7	SPF (MAIN)	SPF front surface magnification ratio adjustment (Main scan)		

(Copy magnification ratio adjustment)

- 1) Select the number corresponding to the copy magnification ratio adjustment mode to be adjusted with 10-key. (Select one of 3 - 7.)
- 2) Press the [START] key.
- 3) Enter the copy magnification ratio adjustment value with 10-key.
- 4) Press the [P] or [START] key.
When [START] key is pressed, copy is performed and the adjustment value is set simultaneously.
The copy magnification ratio in the sub scan direction can be adjusted by changing the scan speed (motor RPM).

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

The greater the value is, the greater the correction is. One step corresponds to 0.1% adjustment.

(Copy condition setting in this simulation)

* To select paper (paper feed tray), perform the following procedures.

- 1) Enter 0 with 10-key.
- 2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- 3) Enter the number corresponding to the paper feed tray to be used with 10-key. (Select one of 1 - 6.)
- 4) Press [START] key. (The paper feed tray is selected.)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual paper feed
6	LCC	Side LCC

When the total of the above set value (1 - 6) and 10 is entered, the mode is changed to the duplex mode.

* The copy magnification ratio can be set with the following

- 1) Enter 2 with 10-key.
- 2) Press the [START] key.
- 3) Enter the copy magnification ratio with 10-key.
- 4) Press the [START] key.

Setting range	25 - 400 (%)
---------------	--------------

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When [START] key is pressed, the adjustment value is set and copying is performed.

SIMULATION 48-1

MAGNIFICATION ADJUSTMENT. SELECT 0-7, AND PRESS START.

0. TRAY SELECT 1 1. PRINT START

2. MAGNIFICATION 100

3. CCD (MAIN) 50 4. CCD (SUB) 50 5. SPF (SUB) 50

6. CIS (MAIN) 50 7. SPF (MAIN) 50

2

48-5

Purpose	Adjustment
Function (Purpose)	Used to adjust the copy magnification ratio in the sub scanning direction.
Section	Optical (Image scanning)

Operation/Procedure

When the sub scanning direction image magnification ratio adjustment with SIM 48-1 cannot provide a satisfactory result if a different magnification ratio is set and a copy is made, perform this simulation.

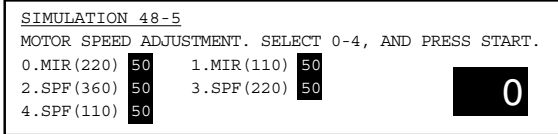
When there is an error in the copy magnification ratio in reduction copy, change the adjustment value of the high speed mode. When there is an error in the copy magnification ratio in enlargement copy, change the adjustment value of the low speed mode.

- 1) Select the number that corresponds to the mode for which to make adjustments with 10-key.
- 2) Press the [START] key.
- 3) Enter the copy adjustment value with 10-key.

The scanner/SPF motor rotation speed adjustment value is entered.

Item		Content	Setting range	Default
0	MIR (220)	Scanner motor (220mm/sec)	0 - 99	50
1	MIR (110)	Scanner motor (110mm/sec)		
2	SPF (360)	SPF motor (360mm/sec)		
3	SPF (220)	SPF motor (220mm/sec)		
4	SPF (110)	SPF motor (110mm/sec)		

- 4) The input value is saved by pressing the [START] key



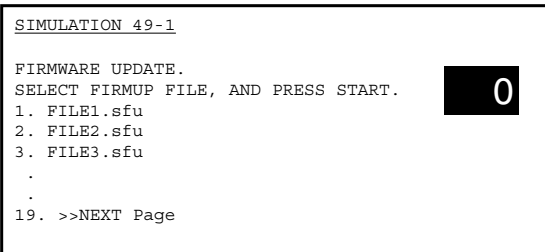
49

49-1

Purpose	Setting/update
Function (Purpose)	Firmware updating
Section	—

Operation/Procedure

- Before proceeding to the sim.49-1 screen, insert the USB memory to the main unit.
 - File and folder of the USB memory are displayed. (When the foldername is longer than 34 characters, it is not completely displayed.)
 - If the USB memory is not inserted, "INSERT A USB MEMORY DEVICE CONTAINING MFP FIRMWARE, PLEASE USE FAT (12/16) FORMAT" is displayed.
 - Non compliant to FAT32. If it's inserted, "CAN NOT SUPPORT FAT32. PLEASE USE FAT (12/16) FORMAT" is displayed.
- Enter the file/folder number of firmware that tries to be updated with 10-key, and press [START] key.
- If selecting the file, "FIRMWARE UPDATE.. ARE YOU SURE ?" is displayed. ([1]: execute, [2]: get back)
 - If the operation is normally completed, "COMPLEATE" is displayed. When the error occurs, "ERROR" is displayed.



50

50-1

Purpose	Adjustment
Function (Purpose)	Used to adjust the copy image position and the void area (image loss) adjustment on print paper in the copy mode. (The similar adjustment can be performed with SIM 50-5 and 50-2 (Simplified method).) (Document table mode)
Section	—

Operation/Procedure

(Leading edge image loss/void area adjustment)

- Set the adjustment values for leading edge image loss and leading edge void as follows:

(Standard set value)

Lead edge image loss: 1.5mm (LEDA: 15)/Paper lead edge void: 3.5mm (DENA: 35)

- * Set LEAD to 15. (Enter 15 as the adjustment value of LEAD, and press [P] key.) (0.1mm/step)
- * Set DENA to 35. (Enter 35 as the adjustment value of DENA, and press [P] key.) (0.1mm/step)

- Make a copy at the normal ratio (100%) and check the lead edge void area and the image loss. (Enter 100 as the set value of the copy magnification ratio (MAGNIFICATION), and press [START] key.)

- If an acceptable result is not obtained, do the following steps.
 - If the leading edge void area is not 3.5 mm:

Change the adjustment value of RRCB and perform the adjustment. (Change the adjustment value of RRCB and press [START] key.) (1msec/step)
 - If the lead edge image loss is not 1.5mm:

Change the adjustment value of RRCA and perform the adjustment. (Change the adjustment value of RRCA and press [START] key.)

(The adjustment value should be changed in steps of 0.2mm.)

(Trailing edge void area adjustment)

Adjust so that the rear edge void area is 3.5mm. (Change the adjustment value of TRAIL EDGE, and press [START] key.)

(Front/rear frame direction image loss adjustment)

Set the (SIDE) adjustment value to 20 by entering "20" into the (SIDE) adjustment value field and then pressing the [P] key.

Note that changing this adjustment value shifts the image position in the front/rear frame direction.

(Front/rear frame direction void area)

Set the adjustment value of SIDE to 20. (Enter 20 as the adjustment value of SIDE, and press [P] key.)

Adjust so that the total of the front/rear direction void areas is 7.0mm. (Change the adjustment values of FRONT/REAR, and press [START] key.)

Front frame void area = 3.5mm Rear frame void area = 3.5mm

If, as shown above, the front and the rear void areas are not even, use SIM 50-5 to adjust the image off-center position.

Item			Setting range	Default
0	TRAY SELECT	Paper feed tray selection	1 - 6	-
1	COPY START	Copy START (Default)	-	-
2	MAGNIFICATION	Print magnification ratio	25 - 400%	-
(Lead edge adjustment value)				
3	RRCA	Document scan start position adjustment value	0 - 99	50
4	RRCB	Resist roller clutch ON timing adjustment value		
10	SIDE2 ADJ.	Correction value for RRCB in the back surface print mode	1 - 99	50
(Image loss set value)				
5	LEAD	LEAD Lead edge image loss set value	0 - 99	15
6	SIDE	Side image loss set		20
(Void set value)				
7	LEAD_EDGE (DENA)	Lead edge void set value	0 - 99	35
8	TRAIL_EDGE (DENB)	Rear edge void adjustment value		
9	FRONT/REAR	Front/Rear void adjustment value		

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When [START] key is pressed, the adjustment value is set and copying is performed.

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

(Copy condition setting in this simulation)

* To select paper (paper feed tray), perform the following procedures.

- 1) Enter 0 with 10-key.
- 2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- 3) Enter the number corresponding to the paper feed tray of the target paper with 10-key.
- 4) Press [START] key. (The paper feed tray is selected.)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual paper feed
6	LCC	Side LCC

* The copy magnification ratio can be set with the following

- 1) Enter 2 with 10-key.
- 2) Press the [START] key.
- 3) Enter the copy magnification ratio with 10-key.

Setting range	25 - 400 (%)
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- 4) Press the [START] key.

SIMULATION 50-1

LEAD EDGE ADJUSTMENT. SELECT 0-9, AND PRESS START.

0. TRAY SELECT 1 1. COPY START

2. MAGNIFICATION 100

(ADJUSTMENT DATA) 3. RRCB 50 4. RRCB 50 10. SIDE2 ADJ. 50

(IMAGE LOSS SETTING) 5. LEAD 15 6. SIDE 20

(VOID SETTING) 7. LEAD_EDGE (DENA) 50

8. TRAIL_EDGE (DENB) 30 9. FRONT/REAR 30

50-2

Purpose	Adjustment
Function (Purpose)	Used to adjust the document scan position, the image print position, and the void area (image loss). (Simple adjustment) (This adjustment is the simple method of SIM 50-1.) (Document table mode)

Section	—
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Operation/Procedure

(Leading edge image loss/void area adjustment)

- 1) Set the RRCB value of SIM 50-1 to 80 - 99.
- 2) Set the adjustment values for leading edge image loss adjustment value (LEAD EDGE) and leading edge void adjustment value (DENA) as follows:
(Standard set value)
Lead edge image loss: 1.5mm (LEDA: 15)/Paper lead edge void: 3.5mm (DENA: 35)
* Set the adjustment value of LEAD to 15. (Enter 15 as the adjustment value of LEAD and press [P] key.)
* Set the adjustment value of DENA to 35. (Enter 35 as the adjustment value of DENA and press [P] key.)
- 3) Set the adjustment value of L1 to 0. (Enter 0 as the adjustment value of L1, and press [P] key.)
- 4) Set the adjustment value of L2 to 0. (Enter 0 as the adjustment value of L2, and press [P] key.)

- 5) Make a copy at 400%, and calculate the values of L1 and L2. (Enter 100 as the set value (MAGNIFICATION) of the copy magnification ratio, and press [START] key.) (Place a scale on the document table and make a copy.)

L1 = Distance (mm) from the image lead edge position to the scale position of 10mm x 10

L2 = Distance (mm) from the image lead edge position to the paper lead edge x 10

- 6) Enter the above values as the set values of L1 and L2.

(Enter the adjustment values of L1 and L2, and press [P] key.)

If the adjustment result is not satisfactory, perform the above procedures again from the beginning, or use SIM 50-1 to adjust.

NOTE: If a satisfactory result is not obtained with the above procedures, through the adjustment values are changed individually, the normal adjustment cannot be made.

Perform procedures 3) to 6) continuously.

(Trailing edge void area adjustment)

Adjust so that the rear edge void area is 3.5mm. (Change the adjustment value of TRAIL EDGE, and press [START] key.)

(Front/rear frame direction image loss adjustment)

Set the adjustment value of SIDE to 20. (Enter 20 as the adjustment value of SIDE, and press [P] key.)

When this adjustment value is changed, the image position is shifted in the front/rear frame direction.

(Front/rear frame direction void area)

Adjust so that the total of the front/rear direction void areas is 7.0mm. (Change the adjustment values of FRONT/REAR, and press [START] key.)

Front frame void area = 3.5mm / Rear frame void area = 3.5mm

If, as shown above, the front and the rear void areas are not even, use SIM 50-5 to adjust the image off-center position.

Item			Setting range	Default
0	TRAY SELECT	Paper feed tray selection	1 - 6	-
1	COPY START	Copy START (Default)	-	-
2	MAGNIFICATION	Print magnification ratio	25 - 400%	400
(Actual measurement value)				
3	L1	Distance from the image lead edge to the scale of 10mm. (Platen 400%, 0.1mm increment)	0 - 999	-
4	L2	Distance from the paper lead edge to the image lead edge (0.1mm increment)		
(Image loss set value)				
5	LEAD	Lead edge image loss set value	0 - 99	15
6	SIDE	Side image loss set value		20
(Void set value)				
7	LEAD_EDGE (DENA)	Lead edge void set value	0 - 99	35
8	TRAIL_EDGE (DENB)	Rear edge void adjustment value		
9	FRONT/REAR	Front/Rear void adjustment value		

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When [START] key is pressed, the adjustment value is set and copying is performed.

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

(Copy condition setting in this simulation)

To select paper (paper feed tray), perform the following procedures.

- 1) Enter 0 with 10-key.
- 2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- 3) Enter the number corresponding to the paper feed tray of the target paper with 10-key.
- 4) Press [START] key. (The paper feed tray is selected.)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual paper feed
6	LCC	Side LCC

The copy magnification ratio can be set with the following

- 1) Enter 2 with 10-key.
- 2) Press the [START] key.
- 3) Enter the copy magnification ratio with 10-key.

Setting range	25 - 400 (%)
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- 4) Press the [START] key.

SIMULATION 50-2
LEAD EDGE ADJUSTMENT (CALC). SELECT 0-9, AND PRESS START.

0. TRAY SELECT **1** 1.COPY START

2. MAGNIFICATION **400**

(ADJUSTMENT) 3.LT **320** 4.L2 **105**

(IMAGE LOSS SETTING) 5.LEAD **15** 6.SIDE **20**

(VOID SETTING) 7.LEAD_EDGE (DENA) **50**

8. TRAIL_EDGE (DENB) **30** 9.FRONT/REAR **30**

50-5	
Purpose	Adjustment
Function (Purpose)	Used to adjust the print image position and the void area (image loss) on print paper. (Adjustment as the print engine) (This adjustment is reflected on all the FAX/ printer/copy modes.)

Section	—
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Operation/Procedure

(Print image off-center adjustment)

- 1) Enter the number corresponding to the paper feed tray to be adjusted with 10-key. (Select one of 10 - 16.) (Table 1)
- 2) Press the [START] key.
- 3) Enter the adjustment value with 10-key.
- 4) Press [P] key or [START] key.

When [START] key is pressed, the adjustment value is set and printing is performed. (Table2)

Check the off-center of the self-print patten of print-out.

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

The greater the adjustment value is, the more the print image is shifted to the front.

(Lead edge void area adjustment)

- 1) Set the lead edge void adjustment value (DENA) as specified below.

(Standard set value)

Paper lead edge void: 3.5mm (DENA: 35)

* Set the adjustment value for (DENA) to 35 by entering "35" into the (DENA) adjustment value field and then pressing the [P] key.

- 2) Check the lead edge void area on the self print pattern. (Enter 1 and press [START] key.)

- 3) If an acceptable result is not obtained, do the following steps.

* If the leading edge void area is not 3.5 mm:

Repeat the process of changing the (RRCB) adjustment value and then pressing the [START] key. until attaining an acceptable level.

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

(Trailing edge void area adjustment)

Adjust so that the rear edge void area is 3.5mm. (Change the adjustment value of TRAIL EDGE, and press [START] key.)

(Front/rear frame direction void area)

Adjust so that the total of the front/rear direction void areas is 7.0mm. (Change the adjustment values of FRONT/REAR, and press [START] key.)

Front frame void area = 3.5mm Rear frame void area = 3.5mm

(Paper resist adjustment)

- 1) Enter the number corresponding to the paper feed tray to be adjusted with 10-key. (Select one of 3 - 9.) (Table 1)
 - 2) Press the [START] key.
 - 3) Enter the adjustment value with 10-key.
 - 4) Press [P] key or [START] key. When [START] key is pressed, the adjustment value is set and printing is performed. (Table 2)
- If the relative positions of paper and print images vary or a paper jam occurs, change the adjustment value.

(Print condition setting in this simulation)

* To select paper (paper feed tray), perform the following procedures.

- 1) Enter 0 with 10-key.
- 2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- 3) Enter the number corresponding to the paper feed tray to be used with 10-key. (Select one of 1 - 6.) (Table 3)
- 4) Press [START] key. (The paper feed tray is selected.)

When the total of the above set value (1 - 6) and 10 is entered, the mode is changed to the duplex mode.

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When [START] key is pressed, the adjustment value is set and copying is performed.

(Table 1)

Item			Setting range	Default	
				55/62 (ppm)	70 (ppm)
0	TRAY SELECT	Paper feed tray selection (1 - 6)	-	-	-
1	PRINT START	Print start (Default)	-	-	-
(Lead edge adjustment value)					
2	RRCB	Resist roller clutch ON timing adjustment value	0 - 99	50	50
	SIDE2-ADJ	Offset (adjustment) of the RRCB setting during rear print.	1 - 99	50	50
(Resist adjustment value)					
3	TRAY1	Tray 1 adjustment	0 - 99	40	48
4	TRAY2	Tray 2 adjustment		39	46
5	TRAY3	Tray 3 adjustment		40	47
6	TRAY4	Tray 4 adjustment		39	46
7	BPT	Manual feed tray adjustment			
8	LCC	Side LCC adjustment			
9	ADU	Adjustment when paper is fed again from ADU			
(Off-center set value)					
10	TRAY 1	Tray 1 adjustment	-	50	50
11	TRAY 2	Tray 2 adjustment	-		
12	TRAY 3	Tray 3 adjustment	-		



Item			Setting range	Default	
				55/62 (ppm)	70 (ppm)
13	TRAY 4	Tray 4 adjustment	-	50	50
14	BPT	Manual feed tray adjustment	-		
15	LCC	Side LCC adjustment	-		
16	ADU	Adjustment when paper is fed again from ADU	-		
(Void set value)					
17	LEAD_EDGE (DENA)	Lead edge void set value	0 - 99	35	35
18	TRAIL_EDGE (DENB)	Rear edge void adjustment value			
19	FRONT/REAR	Front/Rear void adjustment value			

(Table 2)

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

(Table 3)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual paper feed
6	LCC	Side LCC

SIMULATION 50-5	
LEAD EDGE ADJUSTMENT. SELECT 0-20, AND PRESS START.	
0. TRAY SELECT [1] 1. PRINT START	
(ADJUSTMENT DATA)	
LEAD EDGE: 2. RRCB [50] 20. SIDE2 ADJ. [50]	
RESIST: 3. T1 [50] 4. T2 [50] 5. T3 [50] 6. T4 [50]	
7. BPT [50] 8. LCC [50] 9. ADU [50]	
OFF CENTER: 10. T1 [50] 11. T2 [50] 12. T3 [50] 13. T4 [50]	
14. BPT [50] 15. LCC [50] 16. ADU [50]	
(VOID SETTING) 17. LEAD_EDGE (DENA) [50]	
18. TRAIL_EDGE (DENB) [30] 19. FRONT/REAR [30]	

50-6	
Purpose	Adjustment
Function (Purpose)	Used to adjust the copy image position and void area (image loss) on print paper in the copy mode. (The similar adjustment can be performed with SIM 50-7 (simple method).) (SPF mode)
Section	—

Operation/Procedure

(Lead edge image loss adjustment) (Table 1)

- Set the adjustment values for leading edge image loss for the front and back sides as follows:
(Standard set value)
Lead edge image loss: 1.5mm (LEAD: 15)/Paper lead edge void: 3.5mm (DENA: 35)
* Set the adjustment value of LEAD to 15. (Enter 15 as the adjustment value of LEAD EDGE, and press [P] key.)
- Make a duplex copy at 100% with the SPF, and check that the lead edge (image loss) is 1.5mm either on the front surface and the back surface. (Select the duplex mode in the paper selection mode of SIM 50-6.) (Table 3) (Enter 100 as the copy magnification ratio set value (MAGNIFICATION), and press [START] key.)
If an acceptable result is not obtained, do the following steps.

- Change the adjustment values of SIDE1 and SIDE2, and perform the adjustment. (Change the adjustment values of SIDE1 and SIDE2, and press [START] key.)

SIDE1: SPF front surface document lead edge scan position adjustment value

SIDE2: SPF back surface document lead edge scan position adjustment value

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

(The image scan start timing is determined with the detection timing of the document lead edge by the detector SPPD4.)

Repeat procedures 2) and 3) until a satisfactory result is obtained.

(Trailing edge image loss adjustment)

- Use the SPF at 100% to make a duplex copy, and check that the rear edge image loss is 1.5mm on the front and the back surfaces. (Select the duplex mode in the paper selection mode of SIM 50-6.) (Enter 100 as the copy magnification ratio set value (MAGNIFICATION), and press [START] key.)
If an acceptable result is not obtained, do the following steps.
- Repeat the process of changing the (TRAIL EDGE) adjustment value and then pressing the [START] key. until attaining an acceptable level.

Repeat the above adjustments until an acceptable result is obtained.

(Front/rear frame direction image loss adjustment)

Set the adjustment value of the front surface and the back surface (FRONT/REAR) to 20. (Enter 20 as the adjustment value of FRONT/REAR, and press [P] key.)

Note that changing this adjustment value shifts the image position in the front/rear frame direction.

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When [START] key is pressed, the adjustment value is set and copying is performed. (Table2)

(Copy condition setting in this simulation)

* To select paper (paper feed tray), perform the following procedures.

- Enter 0 with 10-key.
- Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- Enter the number corresponding to the paper feed tray to be used with 10-key. (Table 3)
- Press [START] key. (The paper feed tray is selected.)

* The copy magnification ratio can be set with the following procedures.

- Enter 2 with 10-key.
- Press the [START] key.
- Enter the copy magnification ratio with 10-key.

Setting range	25 - 200 (%)
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- Press the [START] key.

(Table 1)

Item			Setting range	Default
0	TRAY SELECT	Paper feed tray selection	1 - 6	-
1	COPY START	Copy START (Default)	-	-
2	MAGNIFICATION	Print magnification ratio	25 - 200%	-
(Lead edge adjustment value)				
3	SIDE1	Front surface document scan start position adjustment value	0 - 99	50
4	SIDE2	Back surface document scan start position adjustment value		

Item			Setting range	Default
(Image loss set value: SIDE 1)				
5	LEAD_EDGE	Front surface lead edge image loss set value	0 - 99	15
6	FRONT_REAR	Front surface side edge image loss set value		20
7	TRAIL_EDGE	Front surface rear edge image loss set value	0 - 20	0
(Image loss set value: SIDE 2)				
8	LEAD_EDGE	Back surface lead edge image loss set value	0 - 99	15
9	FRONT/REAR	Back surface side edge image loss set value		20
10	TRAIL_EDGE	Back surface rear edge image loss set value	0 - 20	0

(Table 2)

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

(Table 3)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual paper feed
6	LCC	Side LCC

When the total of the above set value and 10 is entered, the mode is changed to the duplex mode (DD), and a duplex copy is made.

SIMULATION 50-6	
LEAD EDGE ADJUSTMENT (SPF). SELECT 0-10, AND PRESS START.	
0. TRAY SELECT	1. COPY START
2. MAGNIFICATION	100
(ADJUSTMENT DATA) 3. SIDE1	50 4. SIDE2 50
(IMAGE LOSS SETTING)	
SIDE1: 5. LEAD_EDGE	15 6. FRONT/REAR 20 7. TRAIL_EDGE 0
SIDE2: 8. LEAD_EDGE	15 9. FRONT/REAR 20 10. TRAIL_EDGE 0

50-7	
Purpose	Adjustment
Function (Purpose)	Used to adjust the copy image position and void area (image loss) on print paper in the copy mode. (The similar adjustment can be performed with SIM 50-6.) (SPF mode)
Section	—

Operation/Procedure

(Lead edge image loss adjustment) (Table 1)

- Set the adjustment values for leading edge image loss adjustment value (LEAD EDGE) for the front and back sides as follows:
(Standard set value)
Lead edge image loss: 1.5mm (LEAD: 1.5)
Paper lead edge void: 3.5mm (DENA: 35)
* Set the adjustment value of LEAD to 15. (Enter 15 as the adjustment value of LEAD EDGE, and press [P] key.)
- Set the adjustment value of L4 to 0. (Enter 0 as the adjustment value of L4, and press [P] key.)

- Set the adjustment value of L5 to 0. (Enter 0 as the adjustment value of L5, and press [P] key.)
- Make a copy at 200% with the SPF, and calculate the values of L4 and L5. (Enter 200 as the set value of the copy magnification ratio set value (MAGNIFICATION) and press [START] key.)
L4 = Distance (mm) from the image lead edge position to the scale of 10mm x 10
L5 = Distance (mm) from the image lead edge position to the paper lead edge x 10
- Enter the above values as the set values of L4 and L5. (Enter the adjustment values of L4 and L5, and press [P] key.)
(Enter the adjustment values of L4 and L5, and press [P] key.)
(The image scan start timing is determined with the detection timing of the document lead edge by the detector SPPD4.)

If the adjustment result is not satisfactory, perform the above procedures again or adjust with SIM 50-1.

NOTE: If the adjustment result of the above procedures is not satisfactory, though the adjustment value is changed individually, the adjustment cannot be completed normally.

Repeat procedures 2) - 5) until a satisfactory result is obtained.

(Trailing edge image loss adjustment)

Adjust so that the rear edge image loss is 3.5mm. (Change the adjustment value of TRAIL EDGE, and press [START] key.)

(Front/rear frame direction image loss adjustment)

Set the adjustment value of SIDE to 20. (Enter 20 as the adjustment value of SIDE, and press [P] key.)

Note that changing this adjustment value shifts the image position in the front/rear frame direction.

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When [START] key is pressed, the adjustment value is set and copying is performed.) (Table 2)

(Copy condition setting in this simulation)

* To select paper (paper feed tray), perform the following procedures.

- Enter 0 with 10-key.
- Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- Enter the number corresponding to the paper feed tray to be used with 10-key. (Table 3)
- Press [START] key. (The paper feed tray is selected.)

* The copy magnification ratio can be set with the following

- Enter 2 with 10-key.
- Press the [START] key.
- Enter the copy magnification ratio with 10-key.

Setting range	25 - 200 (%)
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- Press the [START] key.

(Table 1)

Item			Setting range	Default
0	TRAY SELECT	Paper feed tray selection (1 - 6)	-	-
1	COPY START	Copy START (Default)	-	-
2	MAGNIFICATION	Print magnification ratio	25 - 200%	200
(Actual measurement value)				
3	L4	Distance from the front surface image lead edge to the scale of 10mm (SPF: 200%)	0 - 999	-
4	L5	Distance from the back surface image lead edge to the scale of 10mm (SPF: 200%)		
(Image loss set value: SIDE 1)				

Item			Setting range	Default
5	LEAD_EDGE	Front surface lead edge image loss set value	0 - 99	15
6	FRONT_REAR	Front surface side edge image loss set value		20
7	TRAIL_EDGE	Front surface rear edge image loss set value	0 - 20	0
(Image loss set value: SIDE 2)				
8	LEAD_EDGE	Back surface lead edge image loss set value	0 - 99	15
9	FRONT/REAR	Back surface side edge image loss set value		20
10	TRAIL_EDGE	Back surface rear edge image loss set value	0 - 20	0

(Table 2)

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

(Table 3)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual paper feed
6	LCC	Side LCC

When the total of the above set value and 10 is entered, the mode is changed to the duplex mode (DD), and a duplex copy is made.

```

SIMULATION 50-7
LEAD EDGE ADJUSTMENT(SPF CALC.). SELECT 0-10, AND PRESS
START.
0. TRAY SELECT 1 1.COPY START
2. MAGNIFICATION 200
(ADJUSTMENT DATA) 3. L4 160 4. L5 160
(IMAGE LOSS SETTING)
SIDE1: 5. LEAD_EDGE 15 6. FRONT/REAR 20 7. TRAIL_EDGE 0
SIDE2: 8. LEAD_EDGE 15 9. FRONT/REAR 20 10. TRAIL_EDGE 0

```

50-10

Purpose	Adjustment
Function (Purpose)	Used to adjust the print image off-center position. (Adjusted separately for each paper feed section.)
Section	—

Operation/Procedure

(Print image off-center adjustment)

NOTE: This simulation cannot provide an accurate adjustment. Do not use.

- Enter the number corresponding to the number of the paper feed tray to be adjusted with 10-key. (Select one of 3 - 9.)

Item			Setting range	Default
0	TRAY SELECT	Paper feed tray selection	1 - 6	-
1	COPY START	Copy START (Default)	-	-
2	MAGNIFICATION	Print magnification ratio	25 - 400%	100
(Off-center adjustment value)				

Item			Setting range	Default
3	TRAY1	Tray 1 adjustment	0 - 99	50
4	TRAY2	Tray 2 adjustment		
5	TRAY3	Tray 3 adjustment		
6	TRAY4	Tray 4 adjustment		
7	BPT	Manual feed tray adjustment		
8	LCC	Side LCC adjustment		
9	ADU	Adjustment when paper is fed again from ADU		

- Press the [START] key.
- Enter the adjustment value with 10-key.
- Press [P] key or [START] key. When [START] key is pressed, the adjustment value set and copying is performed.

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

(Image off-center adjustment)

- Enter 1 with 10-key.
- Press the [START] key.
The adjustment pattern is printed.
- Check the off-center of the printed image.
(UNIT: 0.1mm/step When the adjustment value is increased, the print image is shifted to the front direction.)

NOTE: This adjustment can be performed with SIM 50-5.

(Copy condition setting in this simulation)

To select paper (paper feed tray), perform the following procedures.

- Enter 0 with 10-key.
- Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- Enter the number corresponding to the paper feed tray to be used with 10-key. (Select one of 1 - 6)
- Press [START] key. (The paper feed tray is selected.)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual paper feed
6	LCC	Side LCC

When the total of the above set value (1 - 6) and 10 is entered, the mode is changed to the duplex print mode.

The copy magnification ratio can be set with the following

- Enter 2 with 10-key.
- Press the [START] key.
- Enter the copy magnification ratio with 10-key.

Setting range	25 - 400 (%)
---------------	--------------

- Press the [START] key.

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When [START] key is pressed, the adjustment value is set and copying is performed.

```

SIMULATION 50-10
PRINT OFF-CENTER ADJUSTMENT. SELECT 0-9, AND PRESS
START.
0. TRAY SELECT 1 1.COPY START
2. MAGNIFICATION 100
(ADJUSTMENT DATA)
3. TRAY1 50 4. TRAY2 50 5. TRAY3 50
6. TRAY4 50 7. BPT 50 8. LCC 50 9. ADU 50

```


50-12	
Purpose	Adjustment
Function (Purpose)	Used to adjust the scan image off-center position. (Adjusted separately for each scan mode.)
Section	—

Operation/Procedure

(Select the scan mode to be adjusted.)

- 1) Enter the number corresponding to the scan mode to be adjusted with 10-key. (Select one of 3 - 5.)

Item			Setting range	Default
0	TRAY SELECT	Paper feed tray selection	1 - 6	-
1	COPY START	Copy START (Default)	-	-
2	MAGNIFICATION	Print magnification ratio	25 - 400%	100
(Resist adjustment value)				
3	PLATEN	OC mode adjustment	0 - 99	50
4	SPF SIDE1	SPF front surface adjustment		
5	SPF SIDE2	SPF back surface adjustment		

- 2) Press the [START] key.

(Scan off-center position adjustment)

- 1) Enter the scan image off-center position adjustment value with 10-key.
- 2) Press [P] key or [START] key.
When [START] key is pressed, copy is performed and the adjustment value is set simultaneously.

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

Check the off-center of the printed image.

Repeat the above adjustments until acceptable results are obtained.

(UNIT: 0.1mm/step When the adjustment value is increased, the print image is shifted to the front direction.)

(Copy condition setting in this simulation)

* To select paper (paper feed tray), perform the following procedures.

- 1) Enter 0 with 10-key.
- 2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- 3) Enter the number corresponding to the paper feed tray to be used with 10-key.
- 4) Press [START] key. (The paper feed tray is selected.)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual paper feed
6	LCC	Side LCC

When the total of the above set value (1 - 6) and 10 is entered, the mode is changed to the duplex print mode.

* The copy magnification ratio can be set with the following procedures.

- 1) Enter 2 with 10-key.
- 2) Press the [START] key.
- 3) Enter the copy magnification ratio with 10-key.

Setting range	25 - 400 (%)
---------------	--------------

- 4) Press the [START] key.

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When [START] key is pressed, the adjustment value is set and copying is performed.

SIMULATION 50-12	
ORIGINAL OFF-CENTER ADJUSTMENT. SELECT 0-9, AND PRESS START.	
0. TRAY SELECT	1. COPY START
2. MAGNIFICATION	100
(ADJUSTMENT DATA)	
3. PLATEN	50
4. SPF SIDE1	50
5. SPF SIDE2	50

50-27	
Purpose	Adjustment
Function (Purpose)	Used to adjust the image loss of the scan image in the FAX/scan mode.
Section	—

Operation/Procedure

(Select the scan mode to be adjusted.)

- 1) Enter the number corresponding to the adjustment item with 10-key.
- 2) Press the [START] key.
- 3) Enter the adjustment value with 10-key.
- 4) Press the [START] key.

(Shift for the adjustment value change: 1.0mm/step)

Item			Setting range	Default
FAX send				
1	OC (LEAD_EDGE)	OC lead edge	0 - 10 (Unit 1mm)	3 (3mm)
2	OC (FRONT/ REAR)	OC side		
3	OC (TRAIL_EDGE)	OC rear edge		
4	SPF (LEAD_EDGE)	SPF lead edge		
5	SPF (FRONT/ REAR)	SPF side		
6	SPF (TRAIL_EDGE)	SPF rear edge		
7	CIS (LEAD_EDGE)	CIS lead edge		
8	CIS (FRONT/ REAR)	CIS side		
9	CIS (TRAIL_EDGE)	CIS rear edge		

Item			Setting range	Default
Scanner mode				
10	OC (LEAD_EDGE)	OC lead edge	0 - 10 (Unit 1mm)	0 (0mm)
11	OC (FRONT/ REAR)	OC side		
12	OC (TRAIL_EDGE)	OC rear edge		
13	SPF (LEAD_EDGE)	SPF lead edge		
14	SPF (FRONT/ REAR)	SPF side		
15	SPF (TRAIL_EDGE)	SPF rear edge		
16	CIS (LEAD_EDGE)	CIS lead edge		
17	CIS (FRONT/ REAR)	CIS side		
18	CIS (TRAIL_EDGE)	CIS rear edge		

SIMULATION 50-27
 ORIGINAL IMAGE LOSS SETTING (FAX/SCN). SELECT 1-18, AND PRESS START.
 [FAX]
 1. OC (LEAD_EDGE) 0 2. OC (FRONT/REAR) 0 3. OC (TRAIL_EDGE) 0
 4. SPF (LEAD_EDGE) 0 5. SPF (FRONT/REAR) 0 6. SPF (TRAIL_EDGE) 0
 7. CIS (LEAD_EDGE) 0 8. CIS (FRONT/REAR) 0 9. CIS (TRAIL_EDGE) 0
 [SCN]
 10. OC (LEAD_EDGE) 0 11. OC (FRONT/REAR) 0 12. OC (TRAIL_EDGE) 0
 13. SPF (LEAD_EDGE) 0 14. SPF (FRONT/REAR) 0 15. SPF (TRAIL_EDGE) 0
 16. CIS (LEAD_EDGE) 0 17. CIS (FRONT/REAR) 0 18. CIS (TRAIL_EDGE) 0

51

51-2

Purpose	Adjustment
Function (Purpose)	Used to adjust the contact pressure of paper on the resist roller of each section (each paper feed, duplex feed and SPF paper 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)

Operation/Procedure

(Select the scan mode to be adjusted.)

- Enter the number corresponding to the paper feed tray to be adjusted with 10-key. (Select one of 2 - 14.)
 Changing the resist amount value by 1 shifts the position by 1ms.

Item			Setting range	Default	
				55/62 (ppm)	70 (ppm)
0	TRAY SELECT	Paper feed tray selection (1 - 6)	-	-	-
1	PRINT START	Print start (Default)	-	-	-

Item			Setting range	Default	
				55/62 (ppm)	70 (ppm)
2	TRAY1	Tray 1 resist adjustment value	0 - 99	40	48
3	TRAY2	Tray 2 resist adjustment value		39	46
4	TRAY3	Tray 3 resist adjustment value		40	47
5	TRAY4	Tray 4 resist adjustment value			
6	BPT	Manual feed tray resist adjustment value		39	46
7	LCC	Side LCC resist adjustment value			
8	ADU	ADU resist adjustment value			
9	SPF (TOP)	SPF resist adjustment value (Top speed)		50	50
10	SPF (HIGH)	SPF resist adjustment value (High speed)			
11	SPF (LOW)	SPF resist adjustment value (Low speed)			
12	SPF FEED (TOP)	SPF paper feed resist adjustment value (Top speed)			
13	SPF FEED (HIGH)	SPF paper feed resist adjustment value (High speed)			
14	SPF FEED (LOW)	SPF paper feed resist adjustment (Low speed)			

- Press the [START] key.

(Resist adjustment)

- Enter the resist adjustment value with 10-key.

- Press the [START] key.

When [START] key is pressed, the adjustment value is set and paper feed and copying are performed.

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

(Copy condition setting in this simulation)

To select paper (paper feed tray), perform the following procedures.

- Enter 0 with 10-key.
- Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- Enter the number corresponding to the paper feed tray to be used with 10-key.
- Press [START] key. (The paper feed tray is selected.)

1	TRAY1	TRAY1
2	TRAY2	TRAY2
3	TRAY3	TRAY3
4	TRAY4	TRAY4
5	BPT	Manual paper feed
6	LCC	LCC

When the total of the above set value (1 - 6) and 10 is entered, the mode is changed to the duplex print mode.

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When [START] key is pressed, the adjustment value is set and copying is performed.

SIMULATION 51-2

RESIST TIMING ADJUSTMENT. SELECT 0-14, AND PRESS START.
0. TRAY SELECT **1** 1. PRINT START
2. TRAY1 **50** 3. TRAY2 **50** 4. TRAY3 **50**
5. TRAY4 **50** 6. BPT **50** 7. LCC **50**
8. ADU **50** 9. SPF (TOP) **50** 10. SPF (HIGH) **50**
11. SPF (LOW) **50** 12. SPF FEED (TOP) **50**
13. SPF FEED (HIGH) **50** 14. SPF FEED (LOW) **50**

53

53-6

Purpose	Adjustment
Function (Purpose)	Used to adjust the DSPF width detection level.
Section	—

Operation/Procedure

- 1) Open the SPF paper feed guide to the maximum width position.
- 2) Select MAX. POSITION with 10-key.
- 3) Press the [START] key.
The max. width detection level is recognized.
- 4) Press the [SYSTEM SETTINGS] key.
- 5) Open the SPF paper feed guide to the width for the A4R size.
- 6) Select POSITION 1 with 10-key.
- 7) Press the [START] key.
The A4R width detection level is recognized.
- 8) Press the [SYSTEM SETTINGS] key.
- 9) Set the manual paper feed guide to A5R size width.
- 10) Select POSITION 2 with 10-key.
- 11) Press the [START] key.
The A5R width detection level is recognized.
- 12) Press the [SYSTEM SETTINGS] key.
- 13) Open the SPF paper feed guide to the minimum width position.
- 14) Select MIN. POSITION with 10-key.
- 15) Press the [START] key.
The minimum width detection level is recognized.

If the above procedures are not completed normally, "ERROR" is displayed. If completed normally, "COMPLETE" is displayed.

SIMULATION 53-6

SPF TRAY ADJUSTMENT. SELECT 1-4, AND PRESS START.
1. MAX. POSITION
2. POSITION 1
3. POSITION 2
4. MIN. POSITION

53-7

Purpose	Adjustment/Setup/Operation data output/Check (Display/Print)
Function (Purpose)	Used to enter the SPF width detection adjustment value.
Section	DSPF

Operation/Procedure

- 1) Select the number corresponding to the set item with 10-key.

Item		Setting range	Default
1	MAX. POSITION	Max. position	0 - 1023
2	POSITION 1	Adjustment point 1	456
3	POSITION 2	Adjustment point 2	713
4	MIN. POSITION	Min. width	791

- 2) Press the [START] key.
- 3) Enter the set value with 10-key.
- 4) Press the [START] key.

SIMULATION 53-7

SPF TRAY ADJUSTMENT (MANUAL). SELECT 1-4, AND PRESS START.
1. MAX. POSITION: **66**
2. POSITION 1 : **456**
3. POSITION 2 : **713**
4. MIN. POSITION: **791**

53-8

Purpose	Adjustment
Function (Purpose)	Used to adjust the document scan start position. (Used to adjust the scanner scan position in the SPF mode front scan.)
Section	—

Operation/Procedure

- 1) Enter 2 with 10-key.
- 2) Press the [START] key.
- 3) Enter the adjustment value with 10key. (1 count: 0.1mm)
- 4) Press the [START] key.

Item		Setting range	Default
2	MANUAL	Manual adjustment (Direct entry of a number)	1 - 70

SIMULATION 53-8

SPF SCANNING POSITION ADJUSTMENT. PRESS START.
2. MANUAL **25**

55

55-1	
Purpose	Setting
Function (Purpose)	Used to set the specifications of the engine control operations. (PCU PWB)
Section	—

Operation/Procedure

This simulation is used to change and check the engine soft SW. Set this setting to the default.

There is no need to change this setting in the market.

SIMULATION 55-1
ENGINE SOFT SW. SETTING. SELECT 1-16, AND PRESS START.

1

55-2	
Purpose	Setting
Function (Purpose)	Used to set the specifications of the scanner control operations. (Scanner control PWB)
Section	—

Operation/Procedure

This simulation is used to change and check the scanner soft SW. Set this setting to the default.

There is no need to change this setting in the market.

SIMULATION 55-2
SCANNER SOFT SW. SETTING. SELECT 1-16, AND PRESS START.

1

55-3	
Purpose	Setting
Function (Purpose)	Used to set the specifications of the controller operations. (MFP control PWB)
Section	—

Operation/Procedure

This simulation is used to change and check the controller soft SW. Set this setting to the default.

There is no need to change this setting in the market.

SIMULATION 55-3
MFP SOFT SW. SETTING. SELECT 1-16, AND PRESS START.

1

56

56-1	
Purpose	Data transfer
Function (Purpose)	Used to transfer the MFP controller data. (Used to repair the PWB.)
Section	MFP controller

Operation/Procedure

- 1) Select the number corresponding to the data transfer mode with 10-key.

1	ALL (EEPROM, SRAM, FlashROM) → HDD	All the contents of memory are transferred to HDD. (Similar to execution of items 3 and 5.)
2	HDD → ALL (EEPROM, SRAM, FlashROM)	The HDD contents are transferred to all the memories. (Similar to execution of items 4 and 6.)
3	EEPROM → HDD	Transfer from EEPROM to HDD
4	HDD → EEPROM	Transfer from HDD to EEPROM
5	SRAM (+ FAX Memory, + Option Memory) → HDD	Transfer from SRAM to HDD. When, however, the FAX memory or an option memory (for FAX memory) * is installed, the contents of the Fax memory are also transferred to HDD.
6	HDD → SRAM (+ FAX Memory, + Option Memory)	Transfer from HDD to SRAM. When, however, the FAX memory or an option memory (for FAX memory) * is installed, the contents HDD are transferred to the FAX memory as well as the SRAM.
7	FontROM → HDD	Transfer from the font ROM to HDD

* When Flash ROM or OP_Flash ROM is not installed, transfer is not made.

- 2) Press the [START] key.
- 3) The confirmation menu is opened to confirm YES/NO of data transfer. Select one.

1	YES	Data transfer is executed.
2	NO	Data transfer is not executed.

- 4) Press the [START] key.

After completion of transfer, the transfer result is displayed. If there is no error, the machine is automatically reset after completion of data transfer.

If there is an error, 'NG' is displayed. (The machine is not reset.)

When restoring from HDD, fit the configurations of the Flash ROM and the optional Flash ROM at back-up.

SIMULATION 56-1
DATA COPY. SELECT 1-7, AND PRESS START.
1. ALL (EEPROM, SRAM, FlashROM) → HDD
2. HDD → ALL (EEPROM, SRAM, FlashROM)
3. EEPROM → HDD
4. HDD → EEPROM
5. SRAM (+FAX Memory, +Option Memory) → HDD
6. HDD → SRAM (+FAX Memory, +Option Memory)
7. FontROM → HDD

1

60

60-1	
Purpose	Operation test/Check
Function (Purpose)	Used to check the MFP control (DRAM) operations (read/write).
Section	ICU

Operation/Procedure

- 1) Enter the number corresponding to the memory to be checked with 10-key.

1	MFP DRAM	ERDH image memory
2	ASIC DRAM	ASIC image memory

- 2) Press the [START] key.

The memory read/write operation check is started.

After starting the operation, "NOW CHECKING" is displayed during checking. When read/write is normally completed, "OK" is displayed. If an error occurs, "NG" is displayed.

SIMULATION 60-1
DRAM TEST. SELECT 1-2, AND PRESS START.
1. ICU DRAM
2. ASIC DRAM

1

61

61-1	
Purpose	Operation test/Check
Function (Purpose)	Used to check the operation of the scanner (write) unit (LSU).
Section	Scanner (write) unit (LSU)

Operation/Procedure

Used to check if the LSU delivers output of the sync signal (HSYNC/) or not.

"NOW CHECKING" is displayed during checking. When the test is normally completed, "OK" is displayed. If an error occurs, "NG" is displayed.

SIMULATION 61-1
LSU TEST. PRESS START.
1. LSU

1

61-2	
Purpose	Adjustment
Function (Purpose)	Used to adjust the laser power (absolute value) in the copy mode.
Section	Scanner (write) unit (LSU)

Operation/Procedure

- 1) Select the number corresponding to the adjustment mode with 10-key.

Item			Setting range	Default	
				55/62 (ppm)	70 (ppm)
1	AE	Auto exposure mode	32 - 82	44	38
2	CHARA.	Text mode		50	43
3	MIX	Text/Photo mode			
4	PHOTO	Photo mode			

- 2) Press the [START] key.
- 3) Enter the adjustment value with 10-key.
- 4) Press the [START] key.

NOTE: Be sure to set the default value. If not, a trouble may occur in the LSU.

SIMULATION 61-2
LASER POWER SETTING(COPY) . SELECT 1-4, AND PRESS START.
1. AE 44 2. CHARA. 50
3. MIX 50 4. PHOTO 50

1

61-3	
Purpose	Adjustment
Function (Purpose)	Used to adjust the laser power (absolute value) in the FAX mode. (Only when FAX is installed.)
Section	Scanner (write) unit (LSU)

Operation/Procedure

- 1) Select the number corresponding to the adjustment mode with 10-key.
- 2) Press the [START] key.
- 3) Enter the adjustment value with 10-key.

Setting range	32 - 82
Default	50 (55/62 ppm), 38 (70 ppm)

- 4) Press the [START] key.

NOTE: Be sure to set the default value. If not, a trouble may occur in the LSU.

SIMULATION 61-3
LASER POWER SETTING(FAX) . PRESS START.
1. FAX 5

1

61-4	
Purpose	Adjustment
Function (Purpose)	Used to adjust the laser power (absolute value) in the printer mode.
Section	Scanner (write) unit (LSU)

Operation/Procedure

- 1) Select the number corresponding to the adjustment mode with 10-key.
- 2) Press the [START] key.
- 3) Enter the adjustment value with 10-key.

Setting range	32 - 82
Default	44 (55/62 ppm), 38 (70 ppm)

- 4) Press the [START] key.

NOTE: Be sure to set the default value. If not, a trouble may occur in the LSU.

SIMULATION 61-4
LASER POWER SETTING(PRINTER) . PRESS START.
1. PRINTER 5

1

62

62-1

Purpose	Data clear
Function (Purpose)	Used to format the hard disk.
Section	MFP controller (HDD)

Operation/Procedure

- 1) Select YES/NO of hard disk format.

1	YES	Execution
2	NO	Cancel

- 2) Press the [START] key.

During formatting, "EXECUTING" is displayed. When formatting is completed normally, "OK" is displayed. If not, "NG" is displayed.

SIMULATION 62-1
HDD FORMAT.
ARE YOU SURE?
1. YES
2. NO

1

62-2

Purpose	Operation test/Check
Function (Purpose)	Used to check the operation of the hard disk (read/write). (Only in the model with a disk installed) (Partial check)
Section	MFP controller (HDD)

Operation/Procedure

- 1) Select YES/NO of hard disk read/write check.

1	YES	Execution
2	NO	Cancel

- 2) Press the [START] key.

During testing, "EXECUTING" is displayed. When test is completed normally, "OK" is displayed. If not, "NG" is displayed.

SIMULATION 62-2
HDD R/W TEST.
ARE YOU SURE?
1. YES
2. NO

1

62-3

Purpose	Operation test/Check
Function (Purpose)	Used to check the operation of the hard disk (read/write). (All areas check)
Section	MFP controller (HDD)

Operation/Procedure

- 1) Select YES/NO of hard disk read/write check.

1	YES	Execution
2	NO	Cancel

- 2) Press the [START] key.

During testing, "EXECUTING" is displayed. When test is completed normally, "OK" is displayed. If not, "NG" is displayed.

SIMULATION 62-3

HDD R/W TEST (ALL) .
ARE YOU SURE?
1. YES
2. NO

1

62-6

Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the hard disk. (The self diag operation of the SMART function is executed.)
Section	MFP controller (HDD)

Operation/Procedure

- 1) Select the number corresponding to the self diag check mode.

1	SHORT SELF-TEST	Partial test
2	EXTENDED SELF-TEST	All areas test

- 2) Press the [START] key.

During the self diag operation, "EXECUTING" is displayed. If the self diag is completed normally, "0" is displayed. If not, any value but 0 is displayed.

SIMULATION 62-6

SMART OFFLINE TEST.
1. SHORT SELF-TEST
2. EXTENDED SELF-TEST

1

62-7

Purpose	Operation test/Check
Function (Purpose)	Used to check the operations of the hard disk. (The result of the self diag operation of the SMART function is printed out.)
Section	MFP controller (HDD)

Operation/Procedure

- 1) Enter 1 with 10-key.

0	TRAY SELECT	TRAY SELECT auto only (Selection is not allowed.)
1	PRINT START	PRINT START

- 2) Press the [START] key.

The result of the hard disk operation check (the self diag operation of the SMART function) is printed out.

SIMULATION 62-7

SMART ERROR LOG PRINT OUT. SELECT SETTING, AND PRESS START.
0. TRAY SELECT :AUTO ONLY
1. PRINT START

1

62-8	
Purpose	Data clear
Function (Purpose)	Used to format the hard disk (the system area excluded).
Section	MFP controller (HDD)

Operation/Procedure

- 1) Select YES/NO of hard disk (the system area excluded) format.

1	YES	Execution
2	NO	Cancel

- 2) Press the [START] key.

During formatting, "EXECUTING" is displayed. When formatting is completed normally, "OK" is displayed. If not, "NG" is displayed.

```
SIMULATION 62-8
HDD FORMAT (EXCEPT SYSTEM AREA) .
ARE YOU SURE?
1 . YES
2 . NO
```

1

62-9	
Purpose	Data clear
Function (Purpose)	Used to format the hard disk (system area)
Section	MFP controller (HDD)

Operation/Procedure

- 1) Select YES/NO of hard disk (the system area) format.

1	YES	Execution
2	NO	Cancel

- 2) Press the [START] key.

62-10	
Purpose	Data clear
Function (Purpose)	Used to delete a job complete list (also to delete job log data)
Section	MFP controller (HDD)

Operation/Procedure

- 1) Select YES/NO of deleting the job complete list.

1	YES	Execution
2	NO	Cancel

- 2) Press the [START] key.

During formatting, "EXECUTING" is displayed. When formatting is completed normally, "OK" is displayed. If not, "NG" is displayed.

NOTE: When executed, this function also deletes the complete queues of E-MAIL, FAX and IFAX, reservation data associated with the image send function, bulletin board data, and confidential data.

```
SIMULATION 62-10
JOB COMPLETE DATA CLEAR. (WITH JOB LOG DATA)
ARE YOU SURE?
1 . YES
2 . NO
```

1

62-11	
Purpose	Data clear
Function (Purpose)	Used to delete document filing data. (The management area (standard folder, user folder) is cleared.)
Section	MFP controller (HDD)

Operation/Procedure

- 1) Select YES/NO of deleting the document filing data.

1	YES	Execution
2	NO	Cancel

- 2) Press the [START] key.

During formatting, "EXECUTING" is displayed. When formatting is completed normally, "OK" is displayed. If not, "NG" is displayed.

NOTE: When executed, this function internally executes the same function as SIM66-10; deleting reservation data, bulletin board data, and confidential data.

```
SIMULATION 62-11
DOCUMENT FILING DATA CLEAR.
ARE YOU SURE?
1 . YES
2 . NO
```

1

63

63-1	
Purpose	Adjustment/Setup/Operation data output/Check (Display/Print)
Function (Purpose)	Used to check the result of shading correction. (The shading correction data are displayed.)
Section	Optical (Image scanning)
Operation/Procedure	

CCD data	
FRONT ODD GAIN	Front odd-number pixel gain adjustment value
FRONT EVEN GAIN	Front even-number pixel gain adjustment value
FRONT OFFSET	Front black difference
REAR ODD GAIN	Rear odd-number pixel gain adjustment value
REAR EVEN GAIN	Rear even-number pixel gain adjustment value
REAR OFFSET	Rear black difference
MIN	All pixels min. value
MAX	All pixels max. value
AVE	All pixels average value
CIS data (Only when DSPF installed.)	
GAIN	Gain adjustment value
MAX	Pixel max.
MIN	Pixel min.
AVE	Pixel average
OFFSET	Black difference
DEV	Standard deviation

```
SIMULATION 63-1
SHADING DATA DISPLAY.
(CCD)
FRONT ODD GAIN: 128    FRONT EVEN GAIN: 255
FRONT OFFSET: 2       REAR EVEN GAIN: 255
REAR ODD GAIN: 128    REAR EVEN GAIN: 255
REAR OFFSET: 2
MIN.: 255    MAX.: 0    AVE.: 255

(CIS)
GAIN: 128    OFFSET: 0    MAX.: 255
MIN.: 255    AVE.: 255    DEV.: 0
```

63-2	
Purpose	Adjustment
Function (Purpose)	Used to execute shading.
Section	Optical (Image scanning)

Operation/Procedure

- 1) Enter the number corresponding to the shading mode to be executed.

1	OC SHADING	OC analog level correction and shading correction (Document table mode)
2	DSPF SHADING	DSPF analog level correction and shading correction (SPF mode)

- 2) Press the [START] key.

During execution, "EXECUTING" is displayed. When execution is completed normally, "COMPLETED" is displayed.

SIMULATION 63-2
SHADING EXECUTION. SELECT1-2, AND PRESS START.
1. OC SHADING
2. DSPF SHADING

1

63-7	
Purpose	Adjustment
Function (Purpose)	Used to adjust the white plate scan start position for shading. (Document table mode)
Section	Scanner (Exposure)

Operation/Procedure

- 1) Enter 1 with 10-key.
- 2) Press the [START] key.
- 3) Enter the adjustment value with 10-key. (1count = 0.5mm)
- 4) Press the [START] key.

When a shading error occurs, this adjustment value is changed.

Item			Setting range	Default
1	CCD	CCD scan	1 - 16	6

SIMULATION 63-7
SHADING POSITION ADJUSTMENT. PRESS START.
1. CCD

1

64

64-1	
Purpose	Operation test/Check
Function (Purpose)	Used to check the operation of the printer section (self-print operation), (The print pattern, the paper feed mode, the print mode, the print quantity, and the density can be optionally set.)
Section	—

Operation/Procedure

(Various print patterns output) (Table 1)

- 1) Select PRINT PATTERN with 10-key.
- 2) Enter the number corresponding to the print pattern to be printed with 10-key.
- 3) Press the [START] key.
- 4) Select PRINT START with 10-key.

- 5) Press the [START] key.

(Print condition setting in this simulation)

* To select paper (paper feed tray), perform the following procedures.

- 1) Select TRAY SELECT with 10-key.
- 2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- 3) Enter the number corresponding to the paper feed tray to be used with 10-key.
- 4) Press [START] key. (The paper feed tray is selected.)

* To adjust the print density, perform the following procedures.

- 1) Select DENSITY with 10-key.
- 2) Enter the adjustment value with 10-key.
- 3) Press the [START] key.

* To set the print quantity, perform the following procedures.

- 1) Select MULTI with 10-key.
- 2) Enter the print quantity with 10-key.
- 3) Press the [START] key.

* To set the print quality mode, perform the following procedures.

- 1) Select MODE with 10-key.
 - 2) Enter the number corresponding to the print quality mode with 10-key.
 - 3) Press the [START] key.
- * To set the print level, perform the following procedures.
- 1) Select LEVEL with 10-key.
 - 2) Enter the adjustment value with 10-key.
 - 3) Press the [START] key.

NOTE: In some print patterns, changing the level may not change the picture quality.

* To set duplex/simplex print, perform the following procedures.

- 1) Select DUPLEX with 10-key.
- 2) Enter the number corresponding to the operation mode with 10-key.
- 3) Press [START] key.

(Table 1)

0	TRAY SELECT 1. TRAY1 2. TRAY2 3. TRAY3 4. TRAY4 5. BPT 6. LCC	Paper feed tray 1: Tray 1 2: Tray 2 3: Tray 3 4: Tray 4 5: Manual feed 6: LCC
1	PRINT START	Print execution (Printing of the set data is executed.)
2	PRINT PATTERN	Print pattern (Note 1)
3	DENSITY	Graphic density (Valid only when No. 79, 80 or 84 is selected.)
4	MULTI	Number of print
5	MODE 1. STANDARD 2. SMOOTHING 3. TONER SAVE 4. HALF TONE 5. SMOOTHING + TONER SAVE 6. SMOOTHING + HALF TONE 7. TONER SAVE + HALF TONE 8. SMOOTHING + TONER SAVE+ HALF TONE	Print mode 1. Standard 2. Smoothing ON 3. Toner save ON 4. Half tone ON 5. Smoothing + toner save 6. Smoothing + half tone 7. Toner save + half tone 8. Smoothing + toner save + half tone
6	LEVEL	Parameter of print image process: (1 -5)
7	DUPLEX 1. NO 2. YES	Duplex 1 : Simplex 2 : Duplex

(Note 1) Print pattern

NO	ENGINE PATTERN	CONTROLLER PATTERN	PATTERN	NOTE
1	Yes		For off-center adjustment	
2	Yes		Main scanning direction 1 by 5	
3	Yes		Main scanning direction 1mm-pitch	
4	Yes		Main scanning direction 3 by 3	
5	Yes		Sub scanning direction 1 by 1	
6	Yes		Sub scanning direction 1 by 5	
7	Yes		Sub scanning direction 2 by 4	
8	Yes		Sub scanning direction 3 by 3	
9	Yes		Right oblique 1 by 2	
10	Yes		Right oblique 1 by 5	
11	Yes		Right oblique 2 by 4	
12	Yes		Right oblique 3 by 3	
13	Yes		Left oblique 1 by 2	
14	Yes		Left oblique 1 by 5	
15	Yes		Left oblique 2 by 4	
16	Yes		Left oblique 3 by 3	
17	Yes		Dot 1 by 1	
18	Yes		Dot 3 by 3	
19	Yes		Dot	
20	Yes		Solid black	
21	Yes		Main scanning direction 1 by 1	
22	Yes		Main scanning direction 5 by 1	
23	Yes		Main scanning direction 4 by 2	
24	Yes		Main scanning direction 3 by 3	
25	Yes		Sub scanning direction 1 by 1	
26	Yes		Sub scanning direction 5 by 1	
27	Yes		Sub scanning direction 4 by 2	
28	Yes		Sub scanning direction 3 by 3	
29	Yes		Right oblique 2 by 1	
30	Yes		Right oblique 5 by 1	
31	Yes		Right oblique 4 by 2	
32	Yes		Right oblique 3 by 3	
33	Yes		Left oblique 2 by 1	
34	Yes		Left oblique 5 by 1	
35	Yes		Left oblique 4 by 2	
36	Yes		Left oblique 3 by 3	
37	Yes		Dot 1 by 1	
38	Yes		Dot 3 by 3	
39	Yes		Dot	
40	Yes		Solid white	
50		Yes	All surface 1 by 1 (Vertical)	
51		Yes	All surface 1 by 1 (Horizontal)	
52		Yes	All surface 1 by 2 (Vertical)	
53		Yes	All surface 1 by 2 (Horizontal)	
54		Yes	All surface 1 by 3 (Vertical)	
55		Yes	All surface 1 by 3 (Horizontal)	
56		Yes	All surface 1 by 4 (Vertical)	

NO	ENGINE PATTERN	CONTROLLER PATTERN	PATTERN	NOTE
57		Yes	All surface 1 by 4 (Horizontal)	
58		Yes	All surface 1 by 5 (Vertical)	
59		Yes	All surface 1 by 5 (Horizontal)	
60		Yes	All surface 2 by 2 (Vertical)	
61		Yes	All surface 2 by 2 (Horizontal)	
62		Yes	All surface 2 by 3 (Vertical)	
63		Yes	All surface 2 by 3 (Horizontal)	
64		Yes	All background	
65		Yes	Special pattern (Vertical)	
66		Yes *1	For every other 1 block width 128 pixels/ 32 gradations	
67		Yes *1	For every other 1 block width 128 pixels/ 16 gradations	
68		Yes *1	For every other 1 block width 128 pixels/ 8 gradations	
69		Yes	1-dot pattern	
70		Yes	Print adjustment pattern with scale (Vertical)	
71		Yes	Grid pattern	
72		Yes	Slant line 45 degrees	
73		Yes	Slant line 26.6 degrees	
74		Yes	Slant line 63.4 degrees	
75		Yes	ID/BG pattern	
76		Yes	Dot pattern 12.5%	
77		Yes	Dot pattern 28%	
78		Yes	Dot pattern 50%	
79		Yes *1	All surface effort diffusion background	
80		Yes	All surface dither process background	
81		Yes	For every other 1 block width 128 pixels/ 32 gradations	
82		Yes	For every other 1 block width 128 pixels/ 16 gradations	
83		Yes	For every other 1 block width 128 pixels/ 8 gradations	
84		Yes	Memory check pattern	
85		Yes	Cleaning check pattern	
86		Yes	Offset check pattern	
87		Yes	Test B image (For aging)	
88		Yes	6% printer chart	
89		Yes	5% printer chart	
90			Toner quantity measuring chart	
91			Radiation chart	
98			Various data printing	

Yes *1 : Error diffusion process

SIMULATION 64-1
 SELF PRINT MODE. SELECT 0-7, AND PRESS START.
 0. TRAY SELECT : 1 1. PRINT START
 2. PRINT PATTERN: 87 3. DENSITY : 1
 4. MULTI : 1 5. MODE : 1
 6. LEVEL : 1 7. DUPLEX : 1

1

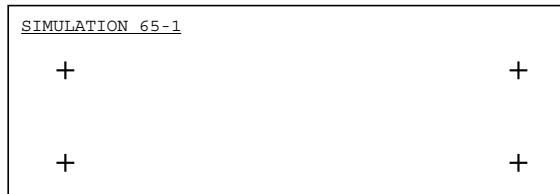
65

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 (+) sequentially. The coordinates of pressed positions are set.

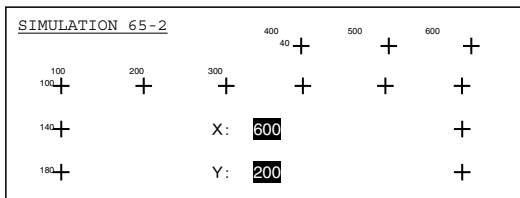
When the coordinates setting is completed normally, the display turns gray. When all the four points are set, the display returns to the normal state.



65-2	
Purpose	Adjustment/Setup/Operation data output/Check (Display/Print)
Function (Purpose)	Used to check the result of the touch panel (LCD display) detection position adjustment.
Section	Operation (Display/Operation key)

Operation/Procedure

When the touch panel is touched, the X and Y coordinate values of the touched point and the coordinate values of the specified point are displayed. The coordinate values set with SIM 65-1 are used as the reference.



66

66-1	
Purpose	Setting
Function (Purpose)	Used to change and check the FAX soft switch functions. (Used to change and check the functions provided for the FAX soft switches.)
Section	FAX

Operation/Procedure

Setting of soft switches other than SW1 can be changed and checked.

- 1) Enter the soft switch number to be checked or changed with 10-key.

The current set state is displayed.

- 2) Enter the number corresponding to the bit to be changed with 10-key.
(Example) When the bit of 5 is to be changed, enter 5.
The set value of 1/0 is alternatively changed every time when the target key is pressed.
- 3) After completion of setting of all the bits, press [START] key.

SIMULATION 66-1
FAX SOFT SW. SETTING. SELECT 2-120, AND PRESS START.

1

66-2	
Purpose	Data clear
Function (Purpose)	Used to clear the FAX soft switch function data and to set to the default. (Excluding the adjustment values.)
Section	FAX

Operation/Procedure

- 1) Set the destination code with 10-key.
[Destination code]

Japan	0 0 0 0 0 0 0 0	Norway	1 0 0 0 0 0 1 0
U.S.A.	1 0 1 1 0 1 0 1	Denmark	0 0 1 1 0 0 0 1
Australia	0 0 0 0 1 0 0 1	Netherlands	0 1 1 1 1 0 1 1
U.K.	1 0 1 1 0 1 0 0	Italy	0 1 0 1 1 0 0 1
France	0 0 1 1 1 1 0 1	Switzerland	1 0 1 0 0 1 1 0
Germany	0 0 0 0 0 1 0 0	Austria	0 0 0 0 1 0 1 0
Sweden	1 0 1 0 0 1 0 1	Indonesia	0 1 0 1 0 1 0 0
Newzealand	0 1 1 1 1 1 1 0	Thailand	1 0 0 1 0 0 1 1
China	0 0 1 0 0 1 1 0	Malaysia	0 1 1 0 1 1 0 0
Singapore	1 0 0 1 1 1 0 0	India	0 1 0 1 0 0 1 1
TW	1 1 1 1 1 1 1 0	Philippines	1 0 0 0 1 0 0 1
Other1	1 1 1 1 1 1 0 1	Hongkong	0 1 0 1 0 0 0 0
Other2	1 1 1 1 1 1 0 0	Russia	1 0 1 1 1 0 0 0
Other3	1 1 1 1 1 0 1 1	S. Africa	1 0 0 1 1 1 1 1
Finland	0 0 1 1 1 1 0 0		

The codes other than the above are recognized as Japan.

- 2) Press the [START] key.
- 3) The confirmation menu of YES/NO of clear is displayed. Select one.

1	YES	FAX soft SW is cleared.
2	NO	Not cleared.

- 4) Press the [START] key.

The soft switch (except for the adjustment values) is cleared according to the destination selected in procedure 1.

After the data clear, the machine is automatically reset.

NOTE: When the FAX BOX is not installed, initialization including the adjustment value is performed. (The adjustment value is stored in the FAX BOX.)

SIMULATION 66-2
FAX SOFT SW. CLEAR (WITHOUT ADJUSTMENT VALUE).
INPUT COUNTRY CODE, AND PRESS START.

1 2 3 4 5 6 7 8
00000000

66-3	
Purpose	Operation test/Check
Function (Purpose)	Used to check the operation of the FAX PWB memory (read/write). (This adjustment is required when the PWB is replaced with a new one.)
Section	FAX

Operation/Procedure

- 1) Enter the number corresponding to the memory to be checked with 10-key.
 - 2) Press the [START] key.
- In the case of All, all memories are checked only once.

Check connection wire list	
NO CHECK	Not checked yet.
CHECKING	Checking
OK	Check complete OK
NG	Check complete NG

The error address or the data line is displayed individually.

Target memory of check	
MFP SRAM	SRAM
MFP FLASH	FLASH ROM
MFP OP.FLASH	
MODEM EEPROM	
MODEM SRAM (G/A)	
MODEM SRAM	
MODEM SDRAM	

When "repeat" is selected, the operation is repeated until the result is "NG" or "[SYSTEM SETTING]" is pressed.

SIMULATION 66-3
FAX PWB MEMORY CHECK INPUT 1-13, AND PRESS START.
1. All Memory Device Check (once)
2. MFP SRAM (once) 3. MFP SRAM (repeat)
4. MFP FLASH+ OP.FLASH (once)
5. MFP FLASH+ OP>FLASH (repeat)
6. MODEM EEPROM (once) 7. MODEM EEPROM (repeat)
8. MODEM SRAM (G/A) (once) 9. MODEM SRAM (G/A) (repeat)
10. MODEM SRAM (once) 11. MODEM SRAM (repeat)
12. MODEM SDRAM (once) 13. MODEM SDRAM (repeat)

66-4	
Purpose	Operation test/Check
Function (Purpose)	Used to check the output operation of data signals in each data output mode of FAX. (Used to check the operation of MODEM.) Send level: Max. (Only when FAX is installed)
Section	FAX

Operation/Procedure

- 1) Enter the number corresponding to the output mode with 10-key.
 - 2) Press the [START] key.
- The output is delivered at the max. send level.

1	NOSIGNAL	No signal	17	12.0 V33	12.0 V33
2	33.6 V34	26.4 V34	18	14.4 V17	14.4 V17
3	31.2 V34	31.2 V34	19	12.0 V17	12.0 V17
4	28.8 V34	28.8 V34	20	9.6 V17	9.6 V17
5	26.4 V34	26.4 V34	21	7.2 V17	7.2 V17
6	24.0 V34	24.0 V34	22	9.6 V29	9.6 V29
7	21.6 V34	21.6 V34	23	7.2 V29	7.2 V29
8	19.2 V34	19.2 V34	24	4.8 V27t	4.8 V27t
9	16.8 V34	16.8 V34	25	2.4 V27t	2.4 V27t
10	14.4 V34	14.4 V34	26	0.3 FLG	0.3 FLG
11	12.0 V34	12.0 V34	27	CED 2100	CED 2100
12	9.6 V34	9.6 V34	28	CNG 1100	CNG 1100
13	7.2 V34	7.2 V34	29	0.3 V21	0.3 V21
14	4.8 V34	4.8 V34	30	ANSam	ANSam
15	2.4 V34	2.4 V34	31	RINGER	RINGER
16	14.4 V33	14.4 V33	32	No RBT	No RBT

When [SYSTEM SETTING] key is pressed during execution, execution is stopped.

When a number is entered and [START] key is pressed during execution, the kind of signal can be changed.

SIMULATION 66-4
SIGNAL OUTPUT CHECK. (LEVEL MAX) SELECT 1-32, AND PRESS START.

1

1.NOSIGNAL 2.33.6 V34 3.31.2 V34 4.28.8 V34
 2.26.4 V34 6.24.0 V34 7.21.6 V34 8.19.2 V34
 9.16.8 V34 10.14.4 V34 11.12.0 V34 12.9.6 V34
 13.7.2 V34 14.4.8 V34 15.2.4 V34 16.14.4 V33
 17.12.0 V33 18.14.4 V17 19.12.0 V17 20.9.6 V17
 21.7.2 V17 22.9.6 V29 23.7.2 V29 24.4.8 V27t
 25.2.4 V27t 26.0.3 FLG 27.CED 2100 28.CNG 1100
 29.0.3 V21 30.ANSam 31.RINGER 32.No RBT

66-5	
Purpose	Operation test/Check
Function (Purpose)	Used to check the output operation of data signals in each data output mode of FAX. (Used to check the operation of MODEM.) An output is sent at the send level set by the soft switch. (Only when FAX is installed)
Section	FAX

Operation/Procedure

- 1) Enter the number corresponding to the output mode with 10-key.
 - 2) Press the [START] key.
- The output is delivered at the send level set with the soft switch.

1	NOSIGNAL	No signal	17	12.0 V33	12.0 V33
2	33.6 V34	26.4 V34	18	14.4 V17	14.4 V17
3	31.2 V34	31.2 V34	19	12.0 V17	12.0 V17
4	28.8 V34	28.8 V34	20	9.6 V17	9.6 V17
5	26.4 V34	26.4 V34	21	7.2 V17	7.2 V17
6	24.0 V34	24.0 V34	22	9.6 V29	9.6 V29
7	21.6 V34	21.6 V34	23	7.2 V29	7.2 V29
8	19.2 V34	19.2 V34	24	4.8 V27t	4.8 V27t
9	16.8 V34	16.8 V34	25	2.4 V27t	2.4 V27t
10	14.4 V34	14.4 V34	26	0.3 FLG	0.3 FLG
11	12.0 V34	12.0 V34	27	CED 2100	CED 2100
12	9.6 V34	9.6 V34	28	CNG 1100	CNG 1100
13	7.2 V34	7.2 V34	29	0.3 V21	0.3 V21
14	4.8 V34	4.8 V34	30	ANSam	ANSam
15	2.4 V34	2.4 V34	31	RINGER	RINGER
16	14.4 V33	14.4 V33	32	No RBT	No RBT

When [SYSTEM SETTING] key is pressed during execution, execution is stopped.

When a number is entered and [START] key is pressed during execution, the kind of signal can be changed.

SIMULATION 66-5

SIGNAL OUTPUT CHECK. (SOFT SW.) SELECT 1-32, AND PRESS START.

1.NOSIGNAL 2.33.6 V34 3.31.2 V34 4.28.8 V34
 2.26.4 V34 6.24.0 V34 7.21.6 V34 8.19.2 V34
 9.16.8 V34 10.14.4 V34 11.12.0 V34 12.9.6 V34
 13.7.2 V34 14.4.8 V34 15.2.4 V34 16.14.4 V33
 17.12.0 V33 18.14.4 V17 19.12.0 V17 20.9.6 V17
 21.7.2 V17 22.9.6 V29 23.7.2 V29 24.4.8 V27t
 25.2.4 V27t 26.0.3 FLG 27.CED 2100 28.CNG 1100
 29.0.3 V21 30.ANSam 31.RINGER 32.No RBT

1**66-6**

Purpose	User data output/Check (Display/Print)
Function (Purpose)	Used to print the confidential pass code. (Used when the confidential pass code is forgotten.) (Only when FAX is installed)
Section	FAX

Operation/Procedure

- 1) Enter 1 with 10-key and press [START] key.

1	PRINT START	Print start
---	-------------	-------------

The paper is automatically selected with the size saved in the image memory.

SIMULATION 66-6

PASS CODE PRINT OUT. PRESS START.
 1.PRINT START

0**66-7**

Purpose	User data output/Check (Display/Print)
Function (Purpose)	Used to print the image memory data (memory send/receive). (Only when FAX is installed)
Section	FAX

Operation/Procedure

All image data stored in the image memory are printed.

- * The confidential receive data are also printed.

1	PRINT START	Print start
---	-------------	-------------

The paper is automatically selected with the size saved in the image memory.

SIMULATION 66-7

IMAGE MEMORY PRINT OUT. PRESS START.
 1.PRINT START

0**66-8**

Purpose	Operation test/Check
Function (Purpose)	Used to check the output operation of various sound signals of FAX. (Used to check the operation of the sound output IC.) Send level: Max. (Only when FAX is installed)
Section	FAX

Operation/Procedure

- 1) Enter the number corresponding to the output mode with 10-key.
 - 2) Press the [START] key.
- The output is delivered at the max. level.

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

When the number is entered during execution, the kind of signal can be changed.

When [START] key is pressed, the voice message is sent. When [SYSTEM SETTINGS] key is pressed, it is stopped.

SIMULATION 66-8

MESSAGE OUTPUT CHECK. (LEVEL MAX) SELECT 1-20, AND PRESS START.

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

2**66-9**

Purpose	Operation test/Check
Function (Purpose)	Used to check the output operation of various sound signals of FAX. (Used to check the operation of the sound output IC.) An output is sent at the send level set by the soft switch. (Only when FAX is installed)
Section	FAX

Operation/Procedure

- 1) Enter the number corresponding to the output mode with 10-key.
- 2) Press the [START] key.

The output is delivered at the send level set with the soft switch.

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

When the number is entered during execution, the kind of signal can be changed.

When [START] key is pressed, the voice message is sent. When [SYSTEM SETTINGS] key is pressed, it is stopped.

SIMULATION 66-9

MESSAGE OUTPUT CHECK. (SOFT SW.) SELECT 1-20, AND PRESS START.

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

2

66-10	
Purpose	User data output/Check (Display/Print)
Function (Purpose)	Used to clear all data of the image memory (memory send/receive). The confidential data are also cleared at the same time. (Only when FAX is installed)
Section	FAX

Operation/Procedure

- 1) Select YES/NO of image memory clear with 10-key.

1	YES	Image memory clear is executed.
2	NO	Not cleared.

- 2) Press the [START] key.

The SRAM image data management table and image data in the Flash ROM area and HD (except for filing images) are cleared.

SIMULATION 66-10
IMAGE MEMORY CLEAR
ARE YOU SURE?
1. YES
2. NO

1

66-11	
Purpose	Operation test/Check
Function (Purpose)	Used to check the output operation of FAX G3 mode 300bps. (Used to check the operation of MODEM.) Send level: Max. (Only when FAX is installed)
Section	FAX

Operation/Procedure

- 1) Enter the number corresponding to the output mode with 10-key.
- 2) Press the [START] key.

The output is delivered at the max. send level.

1	NO SIGNAL	No signal	4	00000	00000
2	11111	11111	5	010101	010101
3	11110	11110	6	00001	00001

When the number is entered during execution, the kind of signal can be changed.

When [SYSTEM SETTINGS] key is pressed during execution, the operation is stopped.

SIMULATION 66-11
300bps SIGNAL OUTPUT. (LEVEL MAX) SELECT 1-6, AND PRESS START.
1. NO SIGNAL 2. 11111 3. 11110 4. 00000
5. 010101 6. 00001

1

66-12	
Purpose	Operation test/Check
Function (Purpose)	Used to check the output operation of FAX G3 mode 300bps. (Used to check the operation of MODEM.) An output is send at the send level set by the soft switch. (Only when FAX is installed)
Section	FAX

Operation/Procedure

- 1) Enter the number corresponding to the output mode with 10-key.
 - 2) Press the [START] key.
- The output is delivered at the send level set with the soft switch.

1	NO SIGNAL	No signal	4	00000	00000
2	11111	11111	5	010101	010101
3	11110	11110	6	00001	00001

When the number is entered during execution, the kind of signal can be changed.

When [SYSTEM SETTINGS] key is pressed during execution, the operation is stopped.

SIMULATION 66-12

300bps SIGNAL OUTPUT. (SOFT SW.) SELECT 1-6, AND PRESS START.

1. NO SIGNAL 2. 11111 3. 11110 4. 00000
5. 010101 6. 00001

1

66-13	
Purpose	Setting
Function (Purpose)	Used to enter (set) the number of FAX dial signal output test. (The dial number set by this simulation is outputted when the dial signal output test is made by SIM 66-14 - 16.) (Only when FAX is installed)
Section	FAX

Operation/Procedure

- 1) Enter the dial number with 10-key.
Use 10-key, [*] key, and [#] key to enter the number. The upper limit is 20 digits.
When [CLEAR] key is pressed, the mode returns to the initial state.
- 2) Press the [START] key.

SIMULATION 66-13
DIAL TEST NUMBER SETTING. 0-9: [0-9], *: [*], #: [#]
INPUT NUMBER AND PRESS START.
0123456789*#01234567

66-14	
Purpose	Setting/Operation test/Check
Function (Purpose)	Used to set the make time in the FAX pulse dial mode (10pps) and to test the dial signal output. (The dial number signal set by SIM 66-13 is outputted.) Used to check troubles in dialing and to check the operation. (Only when FAX is installed)
Section	FAX

Operation/Procedure

- 1) Enter 0 with 10-key.
- 2) Press the [START] key.
The dial signal is outputted.
(Dial pulse make time setting)
- 1) Enter 1 with 10-key.
- 2) Press the [START] key.
- 3) Enter the set value with 10-key.
- 4) Press the [START] key.

0	EXECUTE	Execution
1	MAKE TIME	Dial pulse make time setting (0 - 15)

The dial signal is sent with the set value + 29ms.

When [SYSTEM SETTINGS] key is pressed during execution, the operation is stopped.

SIMULATION 66-14

DIAL TEST(10PPS). SELECT 0-1, AND PRESS START.
0. EXECUTE
1. MAKE TIME **7** ; [+29 ms]

1

66-15

Purpose	Setting/Operation test/Check
Function (Purpose)	Used to set the make time in the FAX pulse dial mode (20pps) and to test the dial signal output. (The dial number signal set by SIM 66-13 is outputted.) Used to check troubles in dialing and to check the operation. (Only when FAX is installed)

Section	FAX
----------------	-----

Operation/Procedure

- 1) Enter 0 with 10-key.
- 2) Press the [START] key.
The dial signal is outputted.

(Dial pulse make time setting)

- 1) Enter 1 with 10-key.
- 2) Press the [START] key.
- 3) Enter the set value with 10-key.
- 4) Press the [START] key.

0	EXECUTE	Execution
1	MAKE TIME	Dial pulse make time setting (0 - 15)

The dial signal is sent with the set value + 9ms.

When [SYSTEM SETTINGS] key is pressed during execution, the operation is stopped.

SIMULATION 66-15

DIAL TEST(20PPS). SELECT 0-1, AND PRESS START.
0. EXECUTE
1. MAKE TIME **7** ; [+9 ms]

1

66-16

Purpose	Setting/Operation test/Check
Function (Purpose)	Used to check the dial signal (DTMF) output in the FAX tone dial mode. (The dial number signal set by SIM 66-13 is outputted.) The send level can be set to an optional level. Used to check troubles in dialing and to check the operation. (Only when FAX is installed)

Section	FAX
----------------	-----

Operation/Procedure

- 1) Enter 0 with 10-key.
- 2) Press the [START] key.
The dial signal is outputted.

(Dial pulse make time setting)

- 1) Enter 1 or 2 with 10-key.
- 2) Press the [START] key.
- 3) Enter the set value with 10-key.
- 4) Press the [START] key.

	Item	Setting range
0	EXECUTE	Execution
1	HIGH	High group level
2	HIGH LOW	High group - Low group

When [SYSTEM SETTINGS] key is pressed during execution, the operation is stopped.

SIMULATION 66-16

DIAL TEST(DTMF). SELECT 0-2, AND PRESS START.
0. EXECUTE
1. HIGH **7** (dB) 2. HIGH-LOW **7**

1

66-17

Purpose	Setting
Function (Purpose)	Used to check the dial signal (DTMF) output in the FAX tone dial mode. Send level: Max. Used to check the operation. (Only when FAX is installed)

Section	FAX
----------------	-----

Operation/Procedure

- 1) Enter the DTMF signal (1 - 9, 0, *, #) to be sent with 10-key.
- 2) Press the [START] key.

The output is delivered at the max. send level.

When [SYSTEM SETTINGS] key is pressed during execution, the operation is stopped.

SIMULATION 66-17

DTMF SIGNAL OUTPUT. (LEVEL MAX) INPUT 0-9, *, #, AND PRESS START.

1

66-18

Purpose	Setting
Function (Purpose)	Used to check the dial signal (DTMF) output in the FAX tone dial mode. An output is sent at the send level set by the soft switch. Used to check the operation. (Only when FAX is installed)

Section	FAX
----------------	-----

Operation/Procedure

- 1) Enter the DTMF signal (1 - 9, 0, *, #) to be sent with 10-key.
- 2) Press the [START] key.

The signal is sent in the send level set with the soft SW.

When [SYSTEM SETTINGS] key is pressed during execution, the operation is stopped.

SIMULATION 66-18

DTMF SIGNAL OUTPUT. (SOFT SW.) INPUT 0-9, *, #, AND PRESS START.

1

66-19

Purpose	Data transfer
Function (Purpose)	Used to back-up the HDD data into the Flash memory (optional FAX expansion memory). (Only when FAX is installed)

Section	FAX
----------------	-----

Operation/Procedure

- 1) Select YES/NO of data transfer (backup).

1	YES	Backup is executed.
2	NO	Backup is not executed.



2) Press [START] key.

This function is valid only when the FAX expansion memory is installed.

Backup contents

- One-touch dial
- FTP expansion
- Group expansion
- Program
- Use index
- Standard sender
- IFAX sender registration
- FAX sender registration
- Item name
- File name
- FAX receive select table
- IFAX receive YES/NO
- Polling allow number
- Memory box
- Sender name

The other contents are not backed up.

SIMULATION 66-19
ADDRESS DATA BACK UP. (WRITE TO FLASH ROM)
ARE YOU SURE?
1. YES
2. NO

1

66-20

Purpose	Data transfer
Function (Purpose)	Used to read the back-up data by SIM 66-19 to the SRAM/HDD. (Only when FAX is installed)
Section	FAX

Operation/Procedure

1) Select YES/NO of data transfer.

1	YES	Read/write is executed.
2	NO	Read/write is not executed.

2) Press the [START] key.

SIMULATION 66-20
ADDRESS DATA BACK UP. (READ FROM FLASH ROM)
ARE YOU SURE?
1. YES
2. NO

1

66-21

Purpose	Adjustment/Setup/Operation data output/Check (Display/Print)
Function (Purpose)	Used to print information related to FAX (various registrations, communication management, file management, system error protocol). (Only when FAX is installed)
Section	FAX

Operation/Procedure

1) Enter the number corresponding to the information (item) to be printed with 10-key.
2) Press the [START] key.

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

SIMULATION 66-21

FAX INFORMATION PRINT OUT. SELECT 1-5, AND PRESS START.
1. REGISTERED 2. MANAGEMENT
3. FILE MANAGEMENT 4. SYSTEM ERROR
5. PROTOCOL

0

66-22

Purpose	Setting
Function (Purpose)	Used to adjust the handset volume. (Only when the FAX is installed.) (Not used)
Section	FAX

Operation/Procedure

1) Enter the number corresponding to the volume with 10-key.
2) Press the [START] key.

1	MIN	Small
2	MIDDLE	Medium
3	MAX	Large

Selection of 1, 2, and 3 can be made during execution.

SIMULATION 66-22

HANDSET VOLUME SETTING SELECT 1-3, AND PRESS START.

1. MIN
2. MIDDLE
3. MAX

2

66-23

Purpose	Setting
Function (Purpose)	Used to download the FAX program. (Only when FAX is installed) Not used in the market. (For development)
Section	FAX

Operation/Procedure

1) Turn OFF the power.
2) Remove the protect pin.
3) Turn ON the power.
4) Enter the SIM 66-23 mode.
5) Press the [START] key.
During execution, "EXECUTING" is displayed. When execution is completed normally, "COMPLETED" is displayed.
If an error occurs, "FAIL" is displayed.
6) Turn OFF the power, and attach the protect pin.

SIMULATION 66-23

FAX PROGRAM DOWNLOAD.
EJECT PROTECT PIN, AND PRESS START.

66-24	
Purpose	Clear
Function (Purpose)	Used to clear the FAST memory data.
Section	FAX

Operation/Procedure

- 1) Select YES/NO of data clear.

1	YES	FAST memory data is cleared
2	NO	Not cleared.

- 2) Press [START] key.

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

66-25	
Purpose	Setting
Function (Purpose)	Used to register the FAX number for Modem dial-in. (Only when FAX is installed) Not used in the market. (For development)
Section	FAX

Operation/Procedure

- 1) Enter the Modem dial-in FAX number (1 - 9, 0, *, #) with 10-key.
- 2) Press [START] key.

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

66-26	
Purpose	Setting
Function (Purpose)	Used to register external telephone numbers for Modem dial-in. (Only when FAX is installed) Not used in the market. (For development)
Section	FAX

Operation/Procedure

- 1) Enter the Modem dial-in FAX number (1 - 9, 0, *, #) with 10-key.
- 2) Press [START] key.

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

66-27	
Purpose	Setting
Function (Purpose)	Used to register the transfer number for voice warp. (Only when FAX is installed) Not used in the market. (For development)
Section	FAX

Operation/Procedure

- 1) Enter the voice warp transfer number (1 - 9, 0, *, #) with 10-key.
- 2) Press [START] key.

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

66-28	
Purpose	Setting
Function (Purpose)	Used to record voice messages. (Only when FAX is installed.)
Section	FAX

Operation/Procedure

- 1) Enter the number corresponding to the registration number with 10-key.
- 2) Use the handset to record a voice message. (Max. 6sec)
- 3) Onhook the handset. (End)

There are following five kinds of recording.

1	MESSAGE1	Recording No. 1
2	MESSAGE2	Recording No. 2
3	MESSAGE3	Recording No. 3
4	MESSAGE4	Recording No. 4
5	MESSAGE5	Recording No. 5

When [SYSTEM SETTING] key is pressed, recording is interrupted.

SIMULATION 66-28
VOICE RECORD. SELECT 1-5, AND PRESS START.
1.MESSAGE1 2.MESSAGE2 3.MESSAGE3
4.MESSAGE4 5.MESSAGE5

1

66-29	
Purpose	Clear
Function (Purpose)	Used to clear data related to an address book (one-touch registration, program registration/expansion, relay memory box registration, each table content).
Section	FAX, Network scanner

Operation/Procedure

- 1) Select YES/NO of data clear.

1	YES	Address book data is cleared.
2	NO	Not cleared.

- 2) Press [START] key.

SIMULATION 66-29
ADDRESS DATA CLEAR.
ARE YOU SURE?
1. YES
2. NO

1

66-30	
Purpose	Operation test/Check
Function (Purpose)	Used to check the change in the TEL/LIU status.
Section	FAX

Operation/Procedure

The TEL/LIU state is displayed.

When the state is changed, it is highlighted.

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

SIMULATION 66-30
TEL/LIU SENSOR CHECK.
HS1 HS2 **RHS** EXHS

1

66-31	
Purpose	Operation check
Function (Purpose)	Used to check the relay operation.
Section	FAX

Operation/Procedure

- 1) Enter the number corresponding to the check item with 10-key.
- 2) Press [START] key.

SIMULATION 66-31
TEL/LIU SETTING.
INPUT 0-1, AND PRESS START.
MOVEMENT LEFT: [*] RIGHT: [#]
1. MPXA 2. CION 3. MR 4. EC
5. **S.** 6. **CML** 7. DP 8.

1 2 3 4 5 6 7 8
10001100

66-32	
Purpose	Operation test/Check
Function (Purpose)	Used to check the receive data (fixed data) from the line.
Section	FAX

Operation/Procedure

When check is completed normally, "OK" is displayed. In case of an error, "NG" is displayed.
(Display message)

CHECKING	Checking
OK	Checking completed (OK)
NG	Checking completed (NG)

SIMULATION 66-32
RECEIVED DATA CHECK.
CHECKING... (OK or NG)

66-33	
Purpose	Operation test/Check
Function (Purpose)	Used to check the signal (BUSY TONE/ CNG/CED/FNET/DTMF) detection.
Section	FAX

Operation/Procedure

The detected signal is highlighted.

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

66-34	
Purpose	Operation test/Check
Function (Purpose)	Used to measure the communication time of test image data.
Section	FAX

Operation/Procedure

Communication test is performed to measure the time (ms).
Send is made under the following conditions.

Communication means	Memory send
Image quality	Normal text
Density	Light
ECM	ON
Sender record	OFF

SIMULATION 66-34
COMMUNICATION TIME DISPLAY.

* * * * * ms

66-35	
Purpose	Setting
Function (Purpose)	Modem program reloading (Only when FAX is installed) Not used in the market. (For development)
Section	FAX

Operation/Procedure

- 1) Select YES/NO of Modem program reload.

1	YES	Modem block reload is executed.
2	NO	Not cleared.

- 2) Press [START] key.

When reload is completed normally, "OK" is displayed. In case of an error, "CHECK SUM" is displayed.

The result of Modem reload is displayed.

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

SIMULATION 66-35
MODEM PROGRAM RELOAD.
ARE YOU SURE?
1. YES
2. NO

1

66-36	
Purpose	Operation test/Check
Function (Purpose)	Used to check interface between MFPC controller and MDMC. (Check of the data line or the command line)
Section	FAX

Operation/Procedure

- 1) Enter the number corresponding to the check mode with 10-key.

1	MFPC ← MDMC	Date line once only
2	MFPC → MDMC	Date line once only
3	MFPC ← MDMC	Data line repeat
4	MFPC → MDMC	Data line repeat
5	MFPC ← MDMC	Command line once only
6	MFPC → MDMC	Command line once only
7	MFPC ← MDMC	Command line repeat
8	MFPC → MDMC	Command line repeat

- 2) Press [START] key.

When check is completed normally, "OK" is displayed. In case of an error, "NG" is displayed.

When check is "repeat," the operation is continued until the result is NG or [SYSTEM SETTINGS] key is pressed.

SIMULATION 66-36
MFPC-MDMC I/F CHECK. INPUT 1-8, AND PRESS START.

1. MFPC<-MDMC(DATA once)
2. MFPC->MDMC(DATA once)
3. MFPC<-MDMC(DATA repeat)
4. MFPC->MDMC(DATA repeat)
5. MFPC<-MDMC(CMD once)
6. MFPC->MDMC(CMD once)
7. MDPC<-MDMC(CMD repeat)
8. MFPC->MDMC(CMD repeat)

1

66-39	
Purpose	Setting
Function (Purpose)	Used to set the destination specifications.
Section	FAX

Operation/Procedure

- 1) Enter the number corresponding to the destination.
- 2) Press [START] key.

SIMULATION 66-39
FAX DESTINATION SETUP.
SELECT 1-6, AND PRESS START

0. NO DESTINATION
1. JAPAN
2. U.S.A./CANADA
3. EUROPE
4. AUSTRALIA
5. CHINA
6. ASIA&OTHERS

1

66-42	
Purpose	Setting
Function (Purpose)	Reloads the PIC program installed to FAX BOX.
Section	FAX

Operation/Procedure

NOTE: Before processing, permit writing to the FAX PROGRAM. (Cancel the write protection)

- 1) Press [1] key to carry out the writing. Press [2] key to cancel.
- 2) If the operation is normally completed, "OK" is displayed. When the error occurs, "NG" is displayed.

(Cause of the ERROR)

- * State is write-protection.
- * PIC is not mounted.
- * Access trouble to PIC

SIMULATION 66-42
PIC PROGRAM RELOAD
ARE YOU SURE?
1.YES
2.NO

1

66-43	
Purpose	Adjustment/Setup
Function (Purpose)	Setting of the PIC adjustment value
Section	FAX

Operation/Procedure

NOTE: Before processing, permit writing to the FAX PROGRAM. (Cancel the write protection)

- 1) Present setting is highlight-displayed on the side of item.
 - 2) Use the numeric keys to enter the adjustment value. Press the [P] key to memorizes the input value.
 - 3) Press [1] to writing the adjustment value collectively to PIC that installed to the FAX BOX.
- * If the operation is normally completed, "WRITING OK" is displayed. When the error occurs, "NG" is displayed.

SIMULATION 66-43
PIC ADJUSTMENT VALUE WRITING.
ENABLE WRITE PIN (for FAX PROGRAM ROM)
SELECT 0-12 AND PRESS START.
0. WRITING for PIC 1. ci_level_judge 2
2. ci_cycle_min 10 3. ci_cycle_max 107 4. ci_range 5
5. ci_count 3 6. cidetect 8 7. fnet_level_judge 1
8. fnet_range 3 9. fnet_time_out 100 10. fnet_count 3
11. poff_time 8 12. mswon_level_judge 3

1

66-60	
Purpose	Setting
Function (Purpose)	Used to set the ACR data.
Section	FAX

Operation/Procedure

- 1) Enter the number corresponding to the set item with 10-key.
The item list menu can be switched by pressing [P] key.
- 2) Press [START] key.
- 3) Enter the setting value with 10-key.
- 4) Press [START] key.

This simulation can be executed when soft SW 24-4 and 24-5 are set to 1.

Display/Not display is switched by soft SW 24-4 and 24-5.

The digit limitation and characters allowed to be inputted depend on the input item.

<u>SIMULATION 66-60</u>	
ACR SETTING. SELECT NUMBER, AND PRESS START.	
SWITCHING OF MENU: [#]	
1.Local Carrier Number	2.Long-distance Carrier Number
3.Overseas Carrier Number	4.Bypass Number
5.User Area Code	6.Machine Code
7.Version	8.Through Number1
9.Through Number2	10.Through Number3
11.Through Number4	12.Through Number5
13.Through Number6	14.Through Number7
15.Through Number8	15.Through Number9
17.Through Number10	18.Through Number11

1

67

67-16	
Purpose	Operation test/Check
Function (Purpose)	Used to check the operation of the network card.
Section	MFP controller

Operation/Procedure

During check, "CHECKING" is displayed. When check is completed normally, "OK" is displayed. In case of an error, "NG" is displayed.

(Display message)

CHECKING	Checking
OK	Check end (Normal)
NG	Check end (Error)

SIMULATION 67-16
NETWORK INTERFACE CARD CHECK.
NIC: CHECKING

[8] SELF DIAG AND TROUBLE CODE

1. Self diag

When a trouble occurs in the machine or when the life of a consumable part is nearly expired or when the life is expired, the machine detects and displays it on the display section. This allows the user and the serviceman to take the suitable action. In case of a trouble, this feature notifies the occurrence of a trouble and stops the machine to minimize the damage.

A. Function and purpose

- 1) Securing safety.
(The machine is stopped on detection of a trouble.)
- 2) The damage to the machine is minimized.
(The machine is stopped on detection of a trouble.)
- 3) By displaying the trouble content, the trouble position can be quickly identified. (This allows to perform an accurate repair, improving the repair efficiency.)
- 4) Preliminary warning of running out of consumable parts allows to arrange for new parts in advance of running out.
(This avoids stopping of the machine due to running out the a consumable part.)

B. Self diag message kinds

The self diag messages are classified as shown in the table below.

Class 1	User	Warning of troubles which can be recovered by the user. (Paper jam, consumable part life expiration, etc.)
	Service man	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	—

C. Self diag operation

(1) Self diag operation and related work flow

The machine always monitors its own state.

When the machine recognizes a trouble, it stops the operation and dis-plays the trouble message.

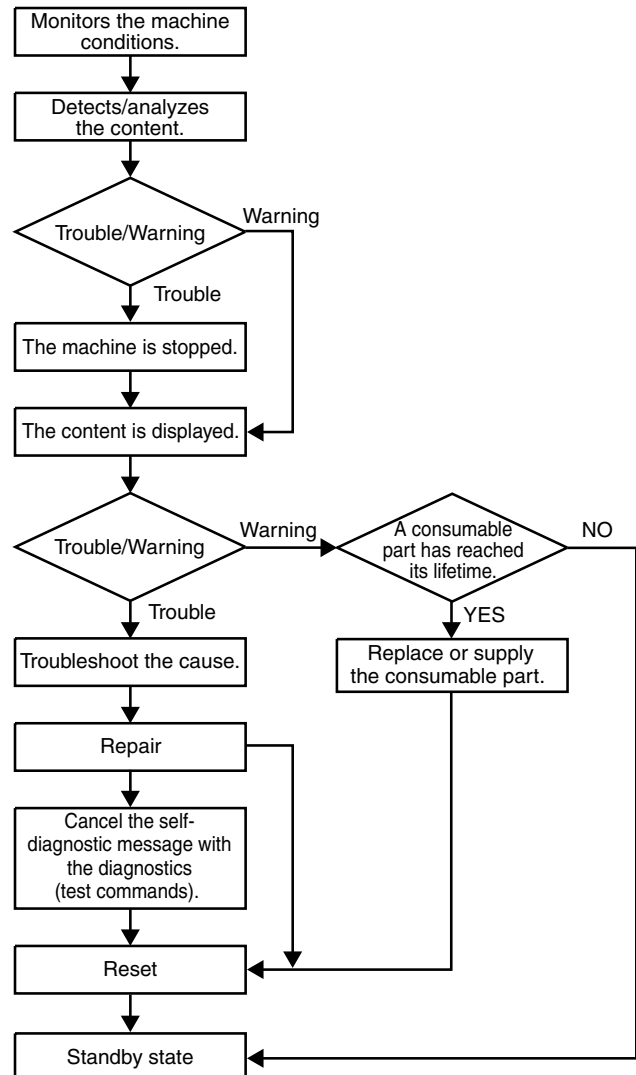
A warning message is displayed when a consumable part life is nearly expired or is expired.

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.



D. Breakdown sequence

(1) Breakdown mode list

There are following cases of the breakdown mode.

kind of trouble	Judgment block	Trouble code	Operation enable mode						
			Copy read (including interrupt)	FAX send	Email receive	FAX print	Print	List print	Notification to FASThost
(DSPF breakdown)	Scanner	U5	△ 1	△ 1	△ 1	○	○	○	○
Scanner section breakdowns (Mirror motor, lens, copy lamp)	Scanner	L1, L3, U2 (80, 81)	×	×	×	○	○	○	○
FAX board breakdown	MFP control/ FAX	F6, F7	○	×	○	×	○	○	×
FAX power OFF	MFP control		○	×	○	×	○	○	×
Network error	MFP control	CE	○	○	×	○	○	○	×
Staple breakdown	MFP control	F1 (10)	△ 2	○	○	△ 2	△ 2	△ 2	○
Paper feed tray breakdown	PCU	F3, U6 (LCC)	△ 3	○	○	△ 3	△ 3	△ 3	○
(Process control breakdown)	PCU	F2 (31, 32, 37)	△ 4	○	○	△ 4	△ 4	△ 4	○
PCU section breakdowns (Motor, fusing section, etc.)	PCU	C1, C2, C3, H2, H3, H4, H5, L4 (excluding L4-30), L8, U2 (90, 91), F2, F4	×	○	○	×	×	×	○
After-process breakdown	PCU	F1	△ 5	○	○	△ 5	△ 5	△ 5	○
Insertion trouble (excluding communication trouble)	PCU	F1 (61, 62)	△ 7	○	○	△ 7	△ 7	△ 7	○
Laser breakdown	PCU	E7 (02 only), L6	×	○	○	×	×	×	○
HDD breakdown	MFP control	E7 (03)	×	×	×	×	×	×	○
CCD breakdowns (Shading, etc.)	Scanner	E7 (10, 11, 12, 14)	△ 6	△ 6	△ 6	○	○	○	○
CIS breakdowns (Shading, etc.)	Scanner	E6 (10, 11, 14)	×	×	×	○	○	○	○
Scanner communication trouble	MFP control	E7 (80)	×	×	×	×	×	×	○
PCU communication trouble	MFP control	E7 (90)	○	×	×	○	○	○	○
FAX backup battery voltage fall	MFP control	U1 (01, 02)	○	×	×	○	○	○	○
HDD registration data sum error	MFP control	U2 (50)	○	○	○	○	○	○	○
Thermistor trouble (trouble history)	PCU	F2 (39, 46, 47, 48)	○	○	○	○	○	○	○

(The machine cannot be operated.)

Memory	MFP control	U2 (00, 11, 12, 22, 23)	×	×	×	×	×	×	○
External communication disable (RICA)	MFP control	U7, PF	×	×	×	×	×	×	○
Image memory trouble, decode error	MFP control	E7 (01, 06)	×	×	×	×	×	×	○
Incompatibility check error	MFP control/ PCU	E7 (50, 55, 56, 57, 60, 65, 66, 67)	×	×	×	×	×	×	○
Controller fan motor trouble	MFP control	L4-30	×	×	×	×	×	×	×

* For FAX communication, refer to the sheet of "(3) Call request and Callin."

* The machine may be operated under some conditions.

△1: When detected except when in a job, the machine can be operated in the OC mode.

△2: Can be operated except in the staple mode.

△3: When detected except in a job, the machine can be operated except with the breakdown tray.

△4: Can be operated with some restriction on the image quality depending on the destination. (Low density print)

* Refer to the process control trouble operation table below.

△5: When detected except in a job, can be operated except in the trouble paper exit section.

△6: When detected except in a job, can be operated in the single surface scan mode.

△7: Can be operated except in the inserter tray, if the error is detected in the standby mode.

* Process control trouble operation table

Trouble code	Error content	Operation /SEC
F2-31	Process control sensor gain adjustment failure	Machine stop
F2-32	Mark detection failure	Low density copy
F2-37	Mark sensor gain adjustment failure	Machine stop

- Trouble mode process

The machine can be operated under some conditions.

Operations except for the trouble mode are enabled (READY). For the modes which cannot be operated, only setting is enabled and a message is given to show the operations are disabled.

(NOT READY in this case)

(Display)

When a trouble occurs, a dialog is shown. In the mode where the operation is enabled, the OK button is added to the message. In the mode where the operation is disabled, the OK button is not shown and the display is kept until the trouble is canceled.

- Writing to the trouble memory

In case of a same trouble in this machine, selection is made with the simulation to write into the trouble memory or not. If this simulation is set, any trouble is written into the trouble memory unconditionally.

(SIM. 26-35)

0: A same trouble as the previous one is not written. (Default)

1: Any trouble is written into the trouble memory unconditionally.

(2) Power ON trouble detection sequence.

- When the power is turned ON, if H3, H4, H5, U1, U2, PF, L4-31, F3-12/22, or U6 (LCC-related sub code 09 only) is saved, a trouble code is immediately displayed. E7 (50, 55, 56, 57, 60, 65, 66, 67) trouble is not saved.

(Power ON sequence)

- H3, H4, U1, U2, U6 PF trouble check

Trouble check is made in each block when initializing and data are sent to the MFP control.

H3, H4, H5, L4-31, F3-12/22: Saved in the PCU.

U1: Saved in the MFP control.

U2: Saved in each block.

PF: Saved in the MFP control.

U6-09: Saved in the PCU.

L4-31 : Saved in the PCU.

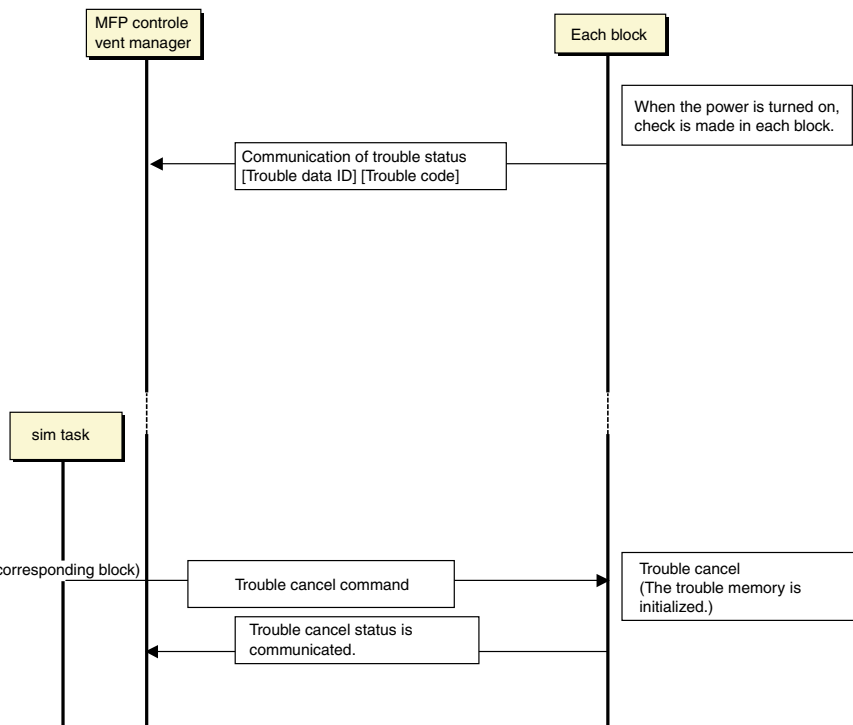
F3-12, 22: Saved in the PCU.

(Trouble cancel sequence)

- When executing SIM 13, 14, 15, 16, 17

SIM 13: U1 trouble cancel
SIM 14: H3, H4, H5, L4-31 trouble cancel
SIM 15: LCC (U6), Tray 1, 2 (F3-12, 22)
F3-12/22 trouble cancel
SIM 16: U2 trouble cancel
SIM 17: PF trouble cancel

(To the corresponding block)



2. Trouble code list

Trouble code		Trouble content	Trouble detection	Mechanism	Option	Electricity	FAX	Supply
Main code	Sub code							
C1	00	MC trouble	PCU			●		
CE	00	Another communication error occurs.	Network					
	01	The network card is not installed or broken.	Network					
	02	The specified mail server or the FTP server is not found.	Network					
	03	The specified server suspends response during transmission of images.	Network					
	04	The entered account name of the FTP server or the password for authentication is invalid.	Network					
	05	The entered directory of the FTP server is invalid.	Network					
	06	The specified mail server (POP3) is not found.	Network					
	07	The entered account name of the POP3 server or the password for authentication is invalid.	Network					
	08	The specified mail server (POP3) suspends response.	Network					
E6	11	CIS shading trouble (White correction)	Scanner			●		
	14	CIS communication trouble	Scanner			●		
E7	01	System data trouble	MFP control	—	—	—	—	—
	02	Laser trouble	PCU			●		
	03	HDD trouble	MFP control			●		
	06	Decode error trouble	MFP control			●		
	10	CCD shading trouble (Black correction)	Scanner			●		
	11	CCD shading trouble (White correction all pixel adjustment)	Scanner			●		
	12	CCD shading trouble (White correction center adjustment)	Scanner			●		
	14	CCD communication trouble	Scanner			●		
	50	LSU connection trouble	PCU			●		
	55	Incompatibility check (Engine (PCU) detection)	PCU			●		
	56	Incompatibility check (Engine (PCU) detection)	PCU			●		
	57	Incompatibility check (Engine (PCU) detection)	PCU			●		
	60	Controller connection trouble	MFP control			●		
	65	Incompatibility check (MFP controller detection)	MFP control			●		
	66	Incompatibility check (MFP controller detection)	MFP control			●		
	67	Incompatibility check (MFP controller detection)	MFP control			●		
	80	Communication trouble between the MFP control and the scanner (MFP control detection)	MFP control			●		
	90	MFP control-PCU communication trouble (MFP control detection)	MFP control			●		
EE	EL	Auto developer adjustment trouble (Overtoner error)	PCU					●
	EU	Auto developer adjustment trouble (Undertoner error)	PCU					●
F1	00	Finisher communication trouble	PCU		●			
	02	Finisher transport motor abnormality	PCU		●			
	03	Finisher oscillation motor trouble	PCU		●			
	08	Finisher staple shift motor trouble	PCU		●			
	09	Finisher load capacity sensor trouble	PCU		●			
	10	Finisher/staple motor trouble	PCU		●			
	11	Finisher/pusher motor trouble	PCU		●			
	15	Finisher tray lift motor trouble	PCU		●			
	19	Finisher/alignment motor trouble	PCU		●			
	31	Finisher saddle folding sensor trouble	PCU		●			
	32	Finisher-saddle communication trouble	PCU		●			
	33	Finisher/punch shift motor trouble	PCU		●			
	34	Finisher/punch motor trouble	PCU		●			
	37	Finisher/ backup RAM trouble	PCU		●			
	38	Finisher/punch backup ROM trouble	PCU		●			
	41	Finisher/saddle positioning plate motor trouble	PCU		●			
	42	Finisher/saddle guide motor trouble	PCU		●			
	43	Finisher/saddle alignment motor trouble	PCU		●			
	44	Finisher/saddle bottom staple motor trouble	PCU		●			
	45	Finisher/saddle front staple motor trouble	PCU		●			
	46	Finisher/saddle push motor trouble	PCU		●			
	51	Finisher/saddle sensor connector connection trouble	PCU		●			
	52	Finisher/micro switch trouble	PCU		●			
	60	Finisher-inserter communication trouble	PCU		●			
	61	Inserter/EEPROM trouble	PCU		●			
	62	Inserter/reverse sensor trouble	PCU		●			
F2	00	Toner control sensor open	PCU					●
	02	Toner supply abnormality	PCU					●
	04	Improper cartridge (Life cycle error, etc.)	PCU					●
	05	CRUM error	PCU					●
	06	CRUM ID error	PCU					●

Trouble code		Trouble content	Trouble detection	Mechanism	Option	Electricity	FAX	Supply
Main code	Sub code							
F2	31	Process control trouble (Photoconductor surface reflection rate abnormality)	PCU					●
	32	Process control trouble (Drum marking scan trouble)	PCU					●
	37	Drum marking sensor gain adjustment error	PCU					●
	39	Process thermistor breakdown	PCU					●
	46	Developing thermistor breakdown	PCU					●
	47	Room temperature thermistor breakdown	PCU					●
	48	Developing humidity sensor break down	PCU					●
F3	12	Machine tray 1 lift-up trouble	PCU	●				
	22	Machine tray 2 lift-up trouble	PCU	●				
	32	Machine tray 3 lift-up trouble	PCU	●				
	42	Machine tray 4 lift-up trouble	PCU	●				
F4	38	38V voltage trouble	PCU			●		
F6	00	MFP control-FAX communication trouble (MFP control detection)	MFP control				●	
	01	FAX expansion Flash memory trouble (MFP control detection)	MFP control				●	
	04	FAX modem operation abnormality	FAX				●	
	20	FAX write protect cancel	FAX				●	
	21	Abnormal combination of the TEL/LIU PWB and the FAX soft switch	FAX				●	
	97	FAX-BOX incompatibility trouble	FAX				●	
	98	Combination error of the FAX-BOX destination information and the machine destination information	FAX				●	
F7	01	FAX board EEPROM read/write error	FAX				●	
F9	02	PRT centro port check error	MFP control			●		
H2	00	Thermistor open/Fusing unit not installed (HL1)	PCU	●				
	01	Thermistor open/Fusing unit not installed (HL2)	PCU	●				
	02	Thermistor open/Fusing unit not installed (HL3)	PCU	●				
H3	00	Fusing section high temperature trouble (HL1)	PCU	●				
H3	01	Fusing section high temperature trouble (HL2)	PCU	●				
	02	Fusing section high temperature trouble (HL3)	PCU	●				
H4	00	Fusing section low temperature trouble (HL1)	PCU	●				
	01	Fusing section low temperature trouble (HL2)	PCU	●				
	02	Fusing section low temperature trouble (HL3)	PCU	●				
H5	01	5-time continuous POD notreached JAM detection	PCU	●				
L1	00	Scanner feed trouble	Scanner	●				
L3	00	Scanner return trouble	Scanner	●				
L4	01	Main motor lock detection	PCU			●		
	02	Drum motor lock detection	PCU			●		
	03	Fusing motor lock detection	PCU			●		
	04	Developing motor lock detection	PCU			●		
	06	Transfer belt separation motor trouble detection	PCU			●		
	30	Controller fan motor lock detection	MFP control			●		
	31	Paper discharging fan trouble	MFP control			●		
L6	10	Polygon motor lock detection	PCU			●		
L8	01	No full wave signal	PCU			●		
PF	00	RIC copy inhibit command receive	MFP control			●		
U1	01	FAX battery abnormality	MFP control				●	
	02	RTC read error (combined use as FAX, on MFP control PWB)	MFP control				●	
U2	00	EEPROM read/write error (MFP control)	MFP control			●		
	11	Counter check sum error (MFP control)	MFP control			●		
	12	Adjustment value check sum error (MFP control)	MFP control			●		
	22	SRAM memory check sum error (MFP control)	MFP control				●	
	23	SRAM memory individual data check sum error	MFP control				●	
	50	HDD section individual data check sum error (MFP control)	MFP control				●	
	80	EEPROM read/write error (Scanner)	Scanner			●		
	81	Memory check sum error (Scanner)	Scanner			●		
	90	EEPROM read/write error (PCU)	PCU			●		
	91	Memory check sum error (PCU)	PCU			●		
U5	30	DSPF tray lift-up trouble	Scanner	●				
	31	DSPF tray lift-down trouble	Scanner	●				
U6	09	LCC lift motor trouble	PCU		●			
	20	LCC communication trouble	PCU		●			
	21	LCC transport motor trouble	PCU		●			
	22	LCC 24V power abnormality addition	PCU		●			
U7	00	RIC communication trouble	MFP control			●		
--	-	Auditor NOT READY	MFP control					

3. Details of trouble code

C1-00 MC trouble

Details		Three successive MHV-T signals are detected during operation of MHV. Main charger output abnormality (Output open) A trouble signal is outputted from the high voltage transformer.
Section		Engine
Case 1	Cause	The main charger is not installed properly. The main charger is not assembled properly.
	Check and remedy	Use SIM 8-2 to check the main charger output. Main charger disconnection check
Case 2	Cause	The high voltage transformer connector is disconnected. The high voltage harness is disconnected or broken.
	Check and remedy	Connection check
Case 3	Cause	High voltage unit trouble
	Check and remedy	Replace the high voltage unit.

CE-00 Another communication error occurs.

Details		Communication error
Section		
Case 1	Cause	Improper connection of the network cable
	Check and remedy	Check the connection of the network cable.

CE-01 The network card is not installed or broken.

Details		Network card connection trouble
Section		
Case 1	Cause	The network card is not installed on the controller.
	Check and remedy	Check that the network card is installed on the controller.
Case 2	Cause	Network card control PWB trouble
	Check and remedy	1) Output the NIC Config. Page to check the NIC version. 2) Replace the NIC.

CE-02 The specified mail server or the FTP server is not found.

Details		The specified mail server or the FTP server is not found.
Section		
Case 1	Cause	Improper connection of the network cable
	Check and remedy	Check that the network cable is properly connected.
Case 2	Cause	Network setup trouble
	Check and remedy	1) Check that the connected network supports TCP/IP protocol. 2) Check from the Web Page to confirm that the Primary/Secondary E-mail server address or the FTP server/ Desktop PC address as the destination is properly set. 3) When the above address is described with the Hostname, check that the DNS server is properly set or not.
Case 3	Cause	An error occurs in the SMTP server/ FTP server/ NTS.
	Check and remedy	Check the SMTP server/ FTP server/ NTS for any trouble.

CE-03 The specified server suspends response during transmission of images.

Details		The specified server suspends response during transmission of images.
Section		
Case 1	Cause	Improper connection of the network cable
	Check and remedy	Check that the network cable is properly connected.
Case 2	Cause	An error occurs in the SMTP server/ FTP server/ NTS.
	Check and remedy	Check the SMTP server/ FTP server/ NTS for any trouble.

CE-04 The entered account name of the FTP server or the password for authentication is invalid.

Details		The entered account name of the FTP server or the password for authentication is invalid.
Section		
Case 1	Cause	Improper connection of the network cable
	Check and remedy	Check that the network cable is properly connected.
Case 2	Cause	Improper registration of the account name or improper password registered in the FTP server as the destination
	Check and remedy	Check the account name or the password registered in the FTP server as the destination.

CE-05 The entered directory of the FTP server is invalid.

Details		The entered directory of the FTP server is invalid.
Section		
Case 1	Cause	Improper connection of the network cable
	Check and remedy	Check that the network cable is properly connected.
Case 2	Cause	Check for existence of the directory name in the FTP server registered as the destination.
	Check and remedy	Check for existence of the directory name in the FTP server registered as the destination.

CE-06 The specified mail server (POP3) is not found.

Details		The specified mail server (POP3) is not found. POP3 server access error
Section		
Case 1	Cause	Improper connection of the network cable
	Check and remedy	Check connection of the network cable.
Case 2	Cause	Network setup trouble
	Check and remedy	1) Check that the connected network supports TCP/IP protocol. 2) Check on the Web page that the POP3 server address is correctly set. 3) When the above address is described with the Hostname, check that the DNS server is properly set or not.
Case 3	Cause	An error occurs in the POP3 server.
	Check and remedy	Check for any error in the POP3 server.

CE-07 The entered account name of the POP3 server or the password for authentication is invalid.

Details	POP3 server authentication check error	
Section		
Case 1	Cause	Improper connection of the network cable
	Check and remedy	Check connection of the network cable.
Case 2	Cause	Improper account name or password registered in the POP3 server
	Check and remedy	Check that the account name or the password registered for the POP3 server is correct.

CE-08 The specified mail server (POP3) suspends response.

Details	POP3 server time-out error	
Section		
Case 1	Cause	Improper connection of the network cable
	Check and remedy	Check connection of the network cable.
Case 2	Cause	An error occurs in the POP3 server.
	Check and remedy	Check for any error in the POP3 server.

E6-11 CIS shading trouble (White correction)

Details	When the power is turned on or when the proper gain setup value is not obtained with SIM 63-2 CIS shading (Retry number: 256 times): CIS white reference plate scan level is abnormal when the lamp is lighted.	
Section	Scanner	
Case 1	Cause	Defective installation of the harness to the CIS unit CIS unit abnormality
	Check and remedy	CIS unit harness check
Case 2	Cause	Reference white plate dirt
	Check and remedy	Clean the reference white plate.
Case 3	Cause	CIS lighting trouble
	Check and remedy	Use SIM 5-3 to check the light quantity of CIS.
Case 4	Cause	Scanner PWB abnormality
	Check and remedy	Scanner PWB check

E6-14 CIS communication trouble

Details	When an error occurs in an access check to the CIS-ASIC on turning on the power or closing the DSFP cover. (Retry number: 5 times) Communication trouble between the scanner PWB and the CIS-ASIC. (Clock synchronization)	
Section	Scanner	
Case 1	Cause	Defective installation of the harness to the CIS unit
	Check and remedy	Check the harness connected to the CIS unit.
Case 2	Cause	CIS unit abnormality
	Check and remedy	CIS unit check
Case 3	Cause	Scanner PWB abnormality
	Check and remedy	Scanner PWB check

E7-01 System data trouble

Details	While reading/writing the HDD system area data, the HDD returns an error response or no response at all for longer than 30 seconds.	
Section	Controller	
Case 1	Cause	No HDD is installed on the MFP control PWB.
	Check and remedy	Check installation status of the HDD on the MFP control PWB.
Case 2	Cause	HDD does not properly function.
	Check and remedy	<ul style="list-style-type: none"> CHECK connection between the HDD and MFP control. Perform an HDD read/write test using SIM 62-2/3. Replace HDD.
Case 3	Cause	MFP control PWB abnormality
	Check and remedy	Replace the MFP control PWB.

E7-02 Laser trouble

Details	The BD signal from the LSU is kept OFF or ON. When the polygon motor rotation is started and three successive BDT signals of I/O ASIC are detected after forced lighting of laser.	
Section	Engine	
Case 1	Cause	The connector to the LSU or the harness in the LSU is disconnected or broken.
	Check and remedy	Check for disconnection of the connector to the LSU.
Case 2	Cause	The polygon motor does not rotate properly.
	Check and remedy	Check that the polygon motor rotated properly or not.
Case 3	Cause	The position of the laser home position sensor in the LSU is shifted.
	Check and remedy	Use SIM 61-1 to check the LSU operation.
Case 4	Cause	A proper voltage is not supplied to the power line of the laser.
	Check and remedy	Replace the LSU unit.
Case 5	Cause	Defective lighting of the laser emitting diode
	Check and remedy	Check lighting of the laser emitting diode.
Case 6	Cause	PCU PWB abnormality
	Check and remedy	Replace the MFP control PWB.
Case 7	Cause	MFP control ASIC PWB abnormality
	Check and remedy	Replace the MFP control PWB.

E7-03 HDD trouble

Details	Data abnormality in the HDD file management area (cluster chain corrupted) The HDD sends an error response or does not respond for 30 sec.	
Section	Controller	
Case 1	Cause	The HDD is not installed properly to the MFP control PWB.
	Check and remedy	Check installation of the HDD to the MFP control PWB.
Case 2	Cause	The HDD of the MFP control PWB does not operate properly.
	Check and remedy	Check connection of the harness to the HDD of the MFP control PWB. Use SIM 62-2, -3 to check read/write of the HDD. Replace the HDD.
Case 3	Cause	MFP control ASIC PWB abnormality
	Check and remedy	Replace the MFP control PWB.

E7-06 Decode error trouble

Details		A decode error occurs in making an image.
Section		Controller
Case 1	Cause	Garbled data in input from PCI to PM DM trouble Data are garbled in image compression/transfer.
	Check and remedy	Check installation of the PWB. (PCI bus) If the job at occurrence is FAX, check installation of the FAX PWB. For the other cases, check the MFP control PWB.
Case 2	Cause	MFP control ASIC PWB abnormality
	Check and remedy	Replace the HDD.

**E7-10 CCD shading trouble
(Black correction)**

Details		CCD black scan level abnormality when the copy lamp is turned off. When the proper offset setup value is not obtained at turning on the power or CCD shading with SIM 63-2.
Section		Controller
Case 1	Cause	Defective installation of the flat cable to the CCD unit
	Check and remedy	Check installation of the flat cable to the CCD unit.
Case 2	Cause	CCD unit abnormality
	Check and remedy	CCD unit check
Case 3	Cause	Scanner PWB abnormality
	Check and remedy	Scanner PWB check

**E7-11 CCD shading trouble
(White correction all pixel adjustment)**

Details		The CCD white reference plate scan level abnormality when lighting the copy lamp When the proper gain setup value is not obtained at turning on the power or CCD shading with SIM 63-2. (Retry number 256 times)
Section		Scanner
Case 1	Cause	Mirror, lens, reference white plate dirt
	Check and remedy	Clean the mirror, the lens, and the reference white plate.
Case 2	Cause	Copy lamp lighting abnormality
	Check and remedy	Check the light quantity and lighting of the copy lamp. (SIM 5-3)
Case 3	Cause	Defective installation of the flat cable to the CCD unit Improper installation of the CCD unit CCD unit abnormality
	Check and remedy	CCD unit check
Case 4	Cause	Scanner PWB abnormality
	Check and remedy	Scanner PWB check

**E7-12 CCD shading trouble
(White correction center adjustment)**

Details		The CCD white reference plate scan level abnormality when lighting the copy lamp When the proper gain setup value is not obtained at turning on the power or CCD shading with SIM 63-2. (Retry number 256 times)
Section		Scanner
Case 1	Cause	Mirror, lens, reference white plate dirt
	Check and remedy	Clean the mirror, the lens, and the reference white plate
Case 2	Cause	Copy lamp lighting abnormality
	Check and remedy	Check the light quantity and lighting of the copy lamp. (SIM 5-3)
Case 3	Cause	Defective installation of the flat cable to the CCD unit. Improper installation of the CCD unit 3 CCD unit abnormality.
	Check and remedy	CCD unit check
Case 4	Cause	Scanner PWB abnormality
	Check and remedy	Scanner PWB check

E7-14 CCD communication trouble

Details		Communication trouble between the scanner PWB and the CCD-ASIC. (Clock synchronization) When an error occurs in the access check to the CCD-ASIC executed at turning on the power. (Retry number 5 times)
Section		Scanner
Case 1	Cause	Defective installation of the harness connected to the CCD unit
	Check and remedy	Check the harness connected to the CCD unit.
Case 2	Cause	CCD unit abnormality
	Check and remedy	CCD unit check
Case 3	Cause	Scanner PWB abnormality
	Check and remedy	Scanner PWB check

E7-50 LSU connection trouble

Details		The LSU connected does not conform to the machine specifications. When the combination of the pattern of an input port on the PCU and the pattern of a port connected to the LSU is not proper.
Section		Engine
Case 1	Cause	LSU connection trouble
	Check and remedy	Check connection between the PCU and the LSU and the harness.
Case 2	Cause	PCU PWB trouble LSU trouble
	Check and remedy	Check the LSU. Check the PCU.

**E7-55 Incompatibility check (55ppm)
(Engine (PCU) detection)**

Details		An error is detected in the internal incompatibility check in the engine (PCU).
Section		Engine (PCU)
Case 1	Cause	PCU PWB trouble or a improper PCU PWB has been installed.
	Check and remedy	Check the PCU PWB.

E7-56 Incompatibility check (62ppm) (Engine (PCU) detection)

Details	An error is detected in the internal incompatibility check in the engine (PCU).	
Section	Engine (PCU)	
Case 1	Cause	PCU PWB trouble or a improper PCU PWB has been installed.
	Check and remedy	Check the PCU PWB.

E7-57 Incompatibility check (70ppm) (Engine (PCU) detection)

Details	Incompatibility check trouble An error is detected in the internal incompatibility check in the engine (PCU).	
Section	Engine (PCU)	
Case 1	Cause	PCU PWB trouble or a improper PCU PWB has been installed.
	Check and remedy	Check the PCU PWB.

E7-60 Controller connection trouble

Details	Incompatibility trouble between the controller and the engine	
Section	Controller	
Case 1	Cause	Improper combination of the controller PWB and the engine
	Check and remedy	Check the MFP controller PWB.

E7-65 Incompatibility check (55ppm) (MFP controller detection)

Details	An error is detected in the internal incompatibility check in the MFP control PWB.	
Section	MFP control PWB	
Case 1	Cause	MFP control PWB trouble
	Check and remedy	Check the MFP control PWB

E7-66 Incompatibility check (62ppm) (MFP controller detection)

Details	An error is detected in the internal incompatibility check in the MFP control PWB.	
Section	MFP control PWB	
Case 1	Cause	MFP control PWB trouble
	Check and remedy	Check the MFP control PWB

E7-67 Incompatibility check (70ppm) (MFP controller detection)

Details	An error is detected in the internal incompatibility check in the MFP control PWB.	
Section	MFP control PWB	
Case 1	Cause	MFP control PWB trouble
	Check and remedy	Check the MFP control PWB

E7-80 Communication trouble between the MFP control and the scanner (MFP control detection)

Details	Communication establishment error/ framing/ parity/ protocol error. Follows the communication protocol specifications. Communication error, timing abnormality of the communication data and the communication signal line.	
Section	Controller	
Case 1	Cause	Defective connection of the slave unit PWB connector. Defective harness between the slave unit PWB and the MFP control PWB. Slave unit PWB mother board connector pin breakage.
	Check and remedy	Check connection of the connector between the slave unit PWB and the MFP control PWB and the harness. Check grounding of the machine.

E7-90 MFP control-PCU communication trouble (MFP control detection)

Details	Communication establishment error/ framing/ parity/ protocol error Follows the communication protocol specifications. Communication error, timing abnormality of the communication data and the communication signal line	
Section	Controller	
Case 1	Cause	Defective connection of the slave unit PWB connector. Defective harness between the slave unit PWB and the MFP control PWB. Slave unit PWB mother board connector pin breakage.
	Check and remedy	Check connection of the connector between the slave unit PWB and the MFP control PWB and the harness. Check grounding of the machine.

EE-EL Auto developer adjustment trouble (Overtoner error)

Details	Described on the toner density control design specifications and the change request. When the average of 10 output values of the toner sensor (sampling data) after completion (3 min) of the auto development adjustment is smaller than 1.5V.	
Section	Engine	
Case 1	Cause	Toner density sensor trouble. Charging voltage and developing voltage trouble. Toner density trouble Developing unit trouble PCU PWB trouble.
	Check and remedy	Use SIM 25-2 to perform the automatic developing adjustment.

EE-EU Auto developer adjustment trouble (Undertoner error)

Details	Described on the toner density control design specifications and the change request. When the average of 10 output values of the toner sensor (sampling data) after completion (3 min) of the auto development adjustment is smaller than 3.5V.	
Section	Engine	
Case 1	Cause	Toner density sensor trouble Charging voltage and developing voltage trouble Toner density trouble Developing unit trouble PCU PWB trouble
	Check and remedy	Use SIM 25-2 to perform the automatic developing adjustment.

F1-00 Finisher communication trouble

Details	An error in the communication line test after turning on the power or canceling the simulation. Communication error with the finisher. Follows the communication protocol specifications. Communication error, timing abnormality of the communication data and the communication signal line	
Section	Engine	
Case 1	Cause	Improper connection or disconnection of the connector or harness between the machine and the finisher.
	Check and remedy	Check the connector and the harness in the communication line.
Case 2	Cause	Finisher control PWB trouble. Control PWB (PCU) trouble.
	Check and remedy	Replace the finisher control PWB or the PCU PWB.
Case 3	Cause	Malfunction caused by noises
	Check and remedy	Canceled by turning ON/ OFF the power.

F1-02 Finisher transport motor abnormality

Details	When opening the shutter unit, the opening process is not completed in 1sec. When closing the shutter unit, the closing process is not completed in 1sec. When the tray lift unit is operating in the dangerous area, "Not closed state" of the shutter close sensor is detected.	
Section	Finisher	
Case 1	Cause	Motor lock Motor RPM abnormality Overcurrent to the motor Finisher control PWB trouble
	Check and remedy	Use SIM 3-3 to check the transport motor operation.

F1-03 Finisher oscillation motor trouble

Details	When opening the oscillation unit, the opening process is not completed in 1sec. When closing the oscillation unit, the closing operation is not completed in 3sec. When the tray lift unit is operating in the dangerous area, "Not closed state" of the oscillation unit close sensor is detected. When controlling the oscillation unit speed, the encoder input cannot be detected within a specified time.	
Section	Finisher	
Case 1	Cause	Motor lock Motor RPM abnormality Overcurrent to the motor Finisher control PWB trouble
	Check and remedy	Use SIM 3-3 to check the motor operation.

F1-08 Finisher staple shift motor trouble

Details	When the stapler shift motor does not move from the home position in 4sec when operating the stapler shift motor. When the stapler shift motor does not return to the home position in 4sec when operating the stapler shift motor.	
Section	Finisher	
Case 1	Cause	Motor lock Motor RPM abnormality Overcurrent to the motor Finisher control PWB trouble operation.
	Check and remedy	Use SIM 3-3 to check the staple shift motor

F1-09 Finisher load capacity sensor trouble

Details	When the received data on performing the sensor test at turning on the power are outside the specified range. When the detected data on calculation of the correction value are outside the specified range.	
Section	Finisher	
Case 1	Cause	Sensor breakage Harness disconnection Console finisher control PWB trouble
	Check and remedy	Use SIM 3-2 to check the sensor operation.

F1-10 Finisher/staple motor trouble

Details	When the staple unit does not shift from HP within 0.5sec in staple process. When a stapler jam is detected and the staple motor is reversed, the staple motor does not return to HP in 0.5sec.	
Section	Finisher	
Case 1	Cause	Motor lock Motor RPM abnormality Overcurrent to the motor Finisher control PWB trouble
	Check and remedy	Use SIM 3-3 to check the staple shift motor operation.

F1-11 Finisher/pusher motor trouble

Details		When learning the paper exit roller speed, the process is not completed in 10sec. When controlling the paper exit roller speed, an encoder input is not detected in a specified time.
Section		Finisher
Case 1	Cause	Motor lock Motor RPM abnormality Overcurrent to the motor Finisher control PWB trouble
	Check and remedy	Use SIM 3-3 to check the pusher motor operation and the paddle solenoid operation, or use SIM 3-2 to check the oomerang rotations sensor.

F1-15 Finisher tray lift motor trouble

Details		When operating the tray lift unit, the process is not completed in 12sec. When the tray lift unit is lifting, the tray lift unit upper limit sensor ON is detected. When operating the tray lift unit, an encoder input is not detected in 0.2sec.
Section		Finisher
Case 1	Cause	Motor lock Motor RPM abnormality Overcurrent to the motor Finisher control PWB trouble
	Check and remedy	Use SIM 3-3 to check the elevator motor operation.

F1-19 Finisher/alignment motor trouble

Details		When operating the alignment motor, it does not move from the home position in 2sec. When operating the alignment motor, it does not return to the home position in 2sec.
Section		Finisher
Case 1	Cause	Motor lock Motor RPM abnormality Overcurrent to the motor Finisher control PWB trouble
	Check and remedy	Use SIM 3-3 to check the motor operation.

F1-31 Finisher saddle folding sensor trouble

Details		When the motor rotation speed (linear velocity) at every 200msec falls below the specified level. When moving to the home position, the home position sensor does not turn on within the specified time. When shifting from the home position to the lead edge, the home position sensor does not turn off within the specified time.
Section		Finisher
Case 1	Cause	Sensor breakage Harness disconnection Console finisher control PWB trouble
	Check and remedy	Use SIM 3-2 to check the sensor operation.

F1-32 Finisher-saddle communication trouble

Details		Communication error between the finisher and the saddle When the motor rotation speed (linear velocity) at every 200msec falls below the specified level. When moving to the home position, the home position sensor does not turn on within the specified time. When shifting from the home position to the lead edge, the home position sensor does not turn off within the specified time.
Section		Finisher
Case 1	Cause	Improper connection or disconnection of the connector and the harness between the finisher and the saddle unit.
	Check and remedy	Check the connector and the harness in the communication line.
Case 2	Cause	Finisher control PWB trouble Control PWB (PCU) trouble
	Check and remedy	Replace the finisher control PWB.
Case 3	Cause	Malfunction caused by noises
	Check and remedy	Canceled by turning ON/ OFF the power.

F1-33 Finisher/punch shift motor trouble

Details		When operating the punch shift motor, it does not move from the home position in 4sec. When operating the punch shift motor, it does not return to the home position in 4sec.
Section		Finisher
Case 1	Cause	Motor lock Motor RPM abnormality Overcurrent to the motor Finisher control PWB trouble
	Check and remedy	Use SIM 3-3 to check the motor operation.

F1-34 Finisher/punch motor trouble

Details		When learning the punch unit, it does not complete normally and does not return to the home position. When executing punching, it does not shift from the home position in 0.2sec, or it overruns to go into non-HP state. When operating the punch unit, the encoder input cannot be detected within 0.1sec.
Section		Finisher
Case 1	Cause	Motor lock Motor RPM abnormality Overcurrent to the motor Finisher control PWB trouble
	Check and remedy	Use SIM 3-3 to check the motor operation.

F1-37 Finisher/ backup RAM trouble

Details		When backup RAM data check sum is NG when turning on the power.
Section		Finisher
Case 1	Cause	Finisher control PWB trouble Malfunction caused by noises
	Check and remedy	Replace the finisher control PWB.

F1-38 Finisher/punch backup ROM trouble

Details	Punch unit backup RAM data are garbled.	
Section	Finisher	
Case 1	Cause	Punch control PWB trouble Malfunction caused by noises
	Check and remedy	Replace the punch control PWB.

F1-41 Finisher/saddle positioning plate motor trouble

Details	The positioning motor HP sensor does not turn on within 1.33sec after starting the motor. The positioning motor HP sensor does not turn off within 1sec after starting the motor.	
Section	Finisher	
Case 1	Cause	Finisher control PWB trouble Malfunction caused by noises
	Check and remedy	Replace the finisher control PWB.

F1-42 Finisher/saddle guide motor trouble

Details	It does not return to the home position within the specified time from starting the guide motor. The HP sensor does not turn off within the specified time when shifting from the home position to the specified position.	
Section	Finisher	
Case 1	Cause	Finisher control PWB trouble Malfunction caused by noises
	Check and remedy	Replace the finisher control PWB.
	Cause	

F1-43 Finisher/saddle alignment motor trouble

Details	When shifting to the home position, the home position sensor does not turn on. The HP sensor does not turn off within the specified time when shifting from the home position to the specified position.	
Section	Finisher	
Case 1	Cause	Finisher control PWB trouble Malfunction caused by noises
	Check and remedy	Replace the finisher control PWB.

F1-44 Finisher/saddle bottom staple motor trouble

Details	The home position sensor does not turn off within the specified time after normal starting of the motor. The home positions sensor does not turn on within the specified time after reverse starting of the motor in recovery.	
Section	Finisher	
Case 1	Cause	Finisher control PWB trouble Malfunction caused by noises
	Check and remedy	Replace the finisher control PWB.

F1-45 Finisher/saddle front staple motor trouble

Details	The home position sensor does not turn off within the specified time after normal starting of the motor. The home positions sensor does not turn on within the specified time after reverse starting of the motor in recovery.	
Section	Finisher	
Case 1	Cause	Finisher control PWB trouble Malfunction caused by noises
	Check and remedy	Replace the finisher control PWB.

F1-46 Finisher/saddle push motor trouble

Details	When moving to the home position, the home position sensor does not turn on within the specified time. The push lead edge sensor does not turn on within the specified time after shifting from the home position. When shifting from the home position to the lead edge, the home position sensor does not turn off within the specified time. The lead edge sensor does not turn off within the specified time when shifting from the lead edge position to the home position. The motor RPM at every 50msec falls below the specified level. The lead edge sensor does not turn on within the specified time when shifting from the home position to the lead edge position.	
Section	Finisher	
Case 1	Cause	Finisher control PWB trouble Malfunction caused by noises
	Check and remedy	Replace the finisher control PWB.

F1-51 Finisher/saddle sensor connector connection trouble

Details	The connector connection detection input of the guide HP sensor is off. The connector connection detection input of the push lead edge sensor is off.	
Section	Finisher	
Case 1	Cause	Finisher control PWB trouble Malfunction caused by noises
	Check and remedy	Replace the finisher control PWB.

F1-52 Finisher/micro switch trouble

Details	With all cover PI (photo sensor) ON, the transport cover MS is off for 1sec continuously from starting copying. With all cover PI (photo sensor) ON, the front cover MS is off for 1sec continuously from starting copying. With all cover PI (photo sensor) ON, the paper exit cover MS is off for 1sec continuously from starting copying.	
Section	Finisher	
Case 1	Cause	Finisher control PWB trouble Malfunction caused by noises
	Check and remedy	Replace the finisher control PWB.

F1-60 Finisher-inserter communication trouble

Details	Finisher/inserter communication trouble	
Section	Inserter	
Case 1	Cause	Improper connection or disconnection of the connector and the harness between the finisher and the inserter unit
	Check and remedy	Check the connector and the harness in the communication line.
Case 2	Cause	Finisher control PWB trouble. Control PWB (PCU) trouble.
	Check and remedy	Replace the finisher control PWB.
Case 3	Cause	Malfunction caused by noises
	Check and remedy	Canceled by turning ON/ OFF the power.

F1-61 Inserter/EEPROM trouble

Details	Data read failure on turning on the power	
Section	Inserter	
Case 1	Cause	EEPROM trouble Control circuit runaway due to noises
	Check and remedy	Check that the EEPROM is properly installed. Replace the inserter PWB.
Case 2	Cause	Inserter PWB EEPROM access circuit trouble
	Check and remedy	Replace the inserter PWB.

F1-62 Inserter/reverse sensor trouble

Details	Auto adjustment failure on turning on the power	
Section	Inserter	
Case 1	Cause	Harness disconnection. Inserter PWB trouble.
	Check and remedy	Use SIM 3-2 to check the sensor operation.

F2-00 Toner control sensor open

Details	When the toner sensor output value is detected as smaller than 0.5V or greater than 4.5V for 3 times continuously at every 500ms after completion of the auto development adjustment.	
Section	Engine	
Case 1	Cause	Connector harness trouble Connector not connected.
	Check and remedy	Check connection of the toner control sensor. Check connection of the connector harness to the main PWB. Check for disconnection of the harness.

F2-02 Toner supply abnormality

Details	Toner remains in the toner bottle when undertoner is detected by the toner concentration sensor in the developing unit.	
Section	Engine	
Case 1	Cause	Toner concentration sensor trouble. Toner remaining quantity sensor trouble. Connector harness trouble for the above sensors.
	Check and remedy	Check connector of hopper unit toner motor (TM1) Check connector of toner bottle toner motor (TM2) Check connection of the connector harnesses to the main PWB. Check broken harness for above connections. Check output of the toner concentration sensor (SIM25-1). Check output of the toner remaining quantity sensor (SIM10-2).

F2-04 Improper cartridge (Life cycle error, etc.)

Details	An improper toner bottle is inserted. CRUM (IC chip trouble)	
Section	Engine	
Case 1	Cause	IC chip trouble Improper cartridge
	Check and remedy	Insert a proper cartridge.

F2-05 CRUM error

Details	Communication with the IC chip cannot be made. Data write failure to the CRUM or data read failure from the CRUM occurs 3 times continuously except for toner cartridge installation detection.	
Section	Engine	
Case 1	Cause	IC chip trouble Improper cartridge
	Check and remedy	Insert a proper cartridge.

F2-06 CRUM ID error

Details	IC chip trouble	
Section	Engine	
Case 1	Cause	Improper cartridge
	Check and remedy	Insert a proper cartridge.

F2-31 Process control trouble (Photoconductor surface reflection rate abnormality)

Details	Before starting process control, the drum surface is read by the image density sensor to make the sensor gain adjustment so that the output is fixed to a certain level. Though the sensor gain is changed, the output is not fixed to a certain level.	
Section	Engine	
Case 1	Cause	Image density sensor trouble
	Check and remedy	Use SIM 44-02 to perform the process control sensor gain adjustment.

F2-32 Process control trouble (Drum marking scan trouble)

Details	The drum marking size, density, or the number of units is improper.	
Section	Engine	
Case 1	Cause	Drum marking sensor trouble
	Check and remedy	Use SIM 44-02 to perform the process control sensor gain adjustment.
Case 2	Cause	Improper connection of the harness between the PCU PWB and the drum marking sensor
	Check and remedy	If "Error" is displayed, it may be considered as a breakdown. Check the sensor and the harness.
Case 3	Cause	The drum marking sensor is dirty. OPC drum cleaning trouble
	Check and remedy	If the adjustment is completed, check the drum surface conditions.

F2-37 Drum marking sensor gain adjustment error

Details	Before starting process control, the drum marking area surface is read by the sensor to make the sensor gain adjustment so that the output is fixed to a certain level. Though the sensor gain is changed, the output is not fixed to a certain level.	
Section	Engine	
Case 1	Cause	Drum marking sensor trouble
	Check and remedy	Use SIM 44-02 to perform the process control sensor gain adjustment.
Case 2	Cause	Improper connection of the harness between the PCU PWB and the drum marking sensor
	Check and remedy	If "Error" is displayed, it may be considered as a breakdown. Check the sensor and the harness.
Case 3	Cause	The drum marking sensor is dirty. OPC drum cleaning trouble
	Check and remedy	If the adjustment is completed, check the drum surface conditions.

F2-39 Process thermistor breakdown

Details	When the input value of the process thermistor is detected as 235 or greater or 22 or smaller for 3 times continuously.	
Section	Engine	
Case 1	Cause	Improper connection of the process thermistor harness.
	Check and remedy	Check connection of the connector and the harness of the process thermistor.
Case 2	Cause	Process thermistor trouble
	Check and remedy	Check the process thermistor.
Case 3	Cause	PCU PWB trouble
	Check and remedy	Check the PCU PWB.

F2-46 Developing thermistor breakdown

Details	When the input value of the process thermistor is detected as 244 or greater or 20 or smaller for 3 times continuously	
Section	Engine	
Case 1	Cause	Developing thermistor harness connection trouble
	Check and remedy	Check connection of the connector and the harness of the developing thermistor.
Case 2	Cause	Developing thermistor harness trouble
	Check and remedy	Check the developing thermistor
Case 3	Cause	PCU PWB trouble
	Check and remedy	Check the PCU PWB.

F2-47 Room temperature thermistor breakdown

Details	When the input value of the process thermistor is detected as 235 or greater or 22 or smaller for 3 times continuously.	
Section	Engine	
Case 1	Cause	Improper connection of the room temperature thermistor harness.
	Check and remedy	Check connection of the connector and the harness of the process thermistor.
Case 2	Cause	Room temperature thermistor trouble
	Check and remedy	Check the room temperature thermistor.
Case 3	Cause	PCU PWB trouble
	Check and remedy	Check the PCU PWB.

F2-48 Developing humidity sensor breakdown

Details	When the output value of the development humidity sensor is detected as 38 or smaller or 255 or greater. The output value is the average value of 5 sampling data in the interval of 100ms.	
Section	Engine	
Case 1	Cause	Developing humidity sensor harness connection trouble
	Check and remedy	Check connection of the connector and the harness of the developing humidity sensor.
Case 2	Cause	Developing humidity sensor trouble
	Check and remedy	Check the developing humidity sensor
Case 3	Cause	PCU PWB trouble
	Check and remedy	Check the PCU PWB.

F3-12 Machine tray 1 lift-up trouble

Details		PED does not turn on within the specified time. LUD does not turn on within the specified time. The trouble occurs 3 times continuously that the upper limit sensor does not turn on by lift-up operation for 21sec when inserting a tray or for 2sec when printing. For the first and the second times, guide the user to pull out the tray in case of a tray size error.
Section		Engine
Case 1	Cause	PED, LUD trouble No. 1 tray lift-up motor trouble Improper connection of the harness of the PCU PWB, the lift-up unit, and the paper feed unit
	Check and remedy	Check the harness and connector of PED and LUD Lift-up trouble unit check. Use SIM 15 to cancel the trouble.

F3-22 Machine tray 2 lift-up trouble

Details		MCPED does not turn on within the specified time. MCLUD does not turn on within the specified time. The trouble occurs 3 times continuously that the upper limit sensor does not turn on by lift-up operation for 21sec when inserting a tray or for 2sec when printing. For the first and the second times, guide the user to pull out the tray in case of a tray size error.
Section		Engine
Case 1	Cause	MCPED, MCLUD trouble No. 2 tray lift-up motor trouble Improper connection of the harness of the PCU PWB, the lift-up unit, and the paper feed unit
	Check and remedy	Check the harness and the connector of MCPED and MCLUD. Lift-up trouble unit check. Use SIM 15 to cancel the trouble.

F3-32 Machine tray 3 lift-up trouble

Details		MCPED does not turn on within the specified time. MCLUD does not turn on within the specified time. The trouble occurs 3 times continuously that the upper limit sensor does not turn on by lift-up operation for 10sec when inserting a tray or for 2sec when printing. For the first and the second times, guide the user to pull out the tray in case of a tray size error.
Section		Engine
Case 1	Cause	MCPED, MCLUD trouble No. 3 tray lift-up motor trouble Improper connection of the harness of the PCU PWB, the lift-up unit, and the paper feed unit
	Check and remedy	Check the harness and the connector of MCPED and MCLUD. Lift-up trouble unit check

F3-42 Machine tray 4 lift-up trouble

Details		MCPED does not turn on within the specified time. MCLUD does not turn on within the specified time. The trouble occurs 3 times continuously that the upper limit sensor does not turn on by lift-up operation for 10sec when inserting a tray or for 2sec when printing. For the first and the second times, guide the user to pull out the tray in case of a tray size error.
Section		Engine
Case 1	Cause	MCPED, MCLUD trouble No. 4 tray lift-up motor trouble. Improper connection of the harness of the PCU PWB, the lift-up unit, and the paper feed unit.
	Check and remedy	Check the harness and the connector of MCPED and MCLUD. Lift-up trouble unit check.

F4-38 38V voltage trouble

Details		38V voltage falls or rises. When the 38V MON signal is not turned on in 50ms after turning on the INTRP.
Section		Engine
Case 1	Cause	Improper connection or disconnection of the connector and the harness
	Check and remedy	Check the connector and the harness of the power line.
Case 2	Cause	PCU PWB trouble Power unit trouble
	Check and remedy	Check 38V power source in the power unit and the PCU PWB.

F6-00 MFP control-FAX communication trouble (MFP control detection)

Details		The booting sequence by the command line (9600bps, serial) is not completed normally. Communication establishment error/ framing/ parity/protocol error
Section		FAX
Case 1	Cause	Defective connection of the slave unit PWB connector. Defective harness between the slave unit PWB and the MFP control PWB. Slave unit PWB mother board connector pin breakage.
	Check and remedy	Check connection of the connector between the slave unit PWB and the MFP control PWB and the harness.
Case 2	Cause	Slave unit ROM trouble/no ROM/ Reversed insertion of ROM/ ROM pin breakage
	Check and remedy	Check the ROM on the slave unit PWB.

F6-01 FAX Flash memory trouble (MFP control detection)

Details		The flash memory inserted to the FAX I/F PWB could not be cleared.
Section		FAX
Case 1	Cause	The flash memory could not be cleared.
	Check and remedy	FAX image save flash memory check. Use SIM 66-10 to clear the expansion flash memory.

F6-04 FAX modem operation abnormality

Details	The initializing process of the modem chip in the FAX PWB is not completed normally.	
Section	FAX	
Case 1	Cause	SW101 in the FAX PWB tries to perform normal operation on the boot side.
	Check and remedy	Set SW101 on the FAX PWB to other than the boot side, and turn on the power again.
Case 2	Cause	FAX PWB modem chip operation trouble
	Check and remedy	Replace the FAX PWB.

F6-20 FAX write protect cancel

Details	The write protect jumper of the FAX interface PWB is released.	
Section	FAX	
Case 1	Cause	The FAX write protect pin is set to Write Enable.
	Check and remedy	Check the write protect pin in the FAX interface PWB.
Case 2	Cause	FAX interface PWB trouble FAX PWB trouble
	Check and remedy	Replace the FAX PWB. Replace the FAX interface PWB.

F6-21 Abnormal combination of the TEL/LIU PWB and the FAX soft switch

Details	Combination error of TEL/LIU PWB and software If the destination of the installed TEL/LIU PWB differs from that of the FAX soft switch, it is judged as an error. Or when the TEL/LIU PWB is not a new one for a new MDMC PWB.	
Section	FAX	
Case 1	Cause	The destination of the installed TEL/LIU PWB differs. The FAX PWB information (soft switch) differs.
	Check and remedy	Check the destination of the TEL/LIU PWB. Check the FAX PWB information (soft switch).
Case 2	Cause	TEL/LIU PWB trouble
	Check and remedy	Replace the TEL/LIU PWB.
Case 3	Cause	The TEL/LIU PWB is not a new one.
	Check and remedy	Replace the TEL/LIU PWB with a new one.

F6-97 FAX-BOX incompatibility trouble

Details	The FAX-BOX PWB is not one for the main unit. (FAX detection) If the FAX-BOX modem controller PWB information (hard detection) is not for the main unit, it is judged as an error.	
Section	FAX	
Case 1	Cause	Because the FAX-BOX modem controller PWB information (hard detection) is not for the main unit.
	Check and remedy	Check the FAX-BOX modem controller PWB. Replace it with a modem controller PWB for the main unit.

F6-98 Combination error of the FAX-BOX destination information and the machine destination information

Details	When the destination information stored in the FAX-BOX EEPROM is compared with that of the machine, and if the combination is improper, it is judged as an error.	
Section	FAX	
Case 1	Cause	Because of improper combination between the destination information stored in the EEPROM on the FAX-BOX PWB and that of the machine (set with SIM 26-6).
	Check and remedy	Check the destination of the FAX-BOX. Check the machine destination with SIM 26-6. Use a proper combination of the machine and the FAX-BOX.

F7-01 FAX board EEPROM read/write error

Details	ACK from the EEPROM cannot be checked.	
Section	FAX	
Case 1	Cause	EEPROM trouble FAX PWB EEPROM access circuit trouble
	Check and remedy	Replace the EEPROM. Re-setup the soft SW.

H2-00 Thermistor open/Fusing unit not installed (HL1)

Details	Thermistor open (An input voltage of 4.6V or above is detected.) Fusing unit not installed	
Section	Engine	
Case 1	Cause	Thermistor trouble. Control PWB trouble Improper connection of the fusing section connector. AC power trouble. Fusing unit not installed.
	Check and remedy	Check the harness and the connector between the thermistor and the control PWB. Use SIM 14 to clear the self diag display.

H2-01 Thermistor open/Fusing unit not installed (HL2)

Details	Thermistor open (An input voltage of 4.6V or above is detected.) Fusing unit not installed	
Section	Engine	
Case 1	Cause	Thermistor trouble Control PWB trouble Improper. connection of the fusing section connector. AC power trouble. Fusing unit not installed.
	Check and remedy	Check the harness and the connector between the thermistor and the control PWB. Use SIM 14 to clear the self diag display.

H2-02 Thermistor open/Fusing unit not installed (HL3)

Details		Thermistor open (An input voltage of 4.6V or above is detected.) Fusing unit not installed
Section		Engine
Case 1	Cause	Thermistor trouble. Control PWB trouble. Improper connection of the fusing section connector. AC power trouble. Fusing unit not installed.
	Check and remedy	Check the harness and the connector between the thermistor and the control PWB. Use SIM 14 to clear the self diag display.

H3-00 Fusing section high temperature trouble (HL1)

Details		The fusing temperature exceeds 241.5 °C. (An input voltage of 1.3V or less is detected.) When fusing temperature control is started and a temperature of 242 °C is detected 3 times continuously in sampling of 250 msec interval. (In the interval of 150ms)
Section		Engine
Case 1	Cause	Thermistor trouble Control PWB trouble Improper connection of the fusing section connector AC power trouble
	Check and remedy	Use SIM 5-2 to check flashing of the heater lamp. When the lamp flashes normally. • Check the thermistor and the harness. • Check the thermistor input circuit on the control PWB. When the lamp keeps ON. • Check the AC PWB and the lamp control circuit on the control PWB. Use SIM 14 to cancel the trouble

H3-01 Fusing section high temperature trouble (HL2)

Details		The fusing temperature exceeds 241.5 °C. (An input voltage of 1.3V or less is detected.) When fusing temperature control is started and a temperature of 242 °C is detected 3 times continuously in sampling of 250 msec interval. (In the interval of 150ms)
Section		Engine
Case 1	Cause	Thermistor trouble. Control PWB trouble. Improper connection of the fusing section connector. AC power trouble.
	Check and remedy	Use SIM 5-2 to check flashing of the heater lamp. When the lamp flashes normally. • Check the thermistor and the harness. • Check the thermistor input circuit on the control PWB. When the lamp keeps ON. • Check the AC PWB and the lamp control circuit on the control PWB. Use SIM 14 to cancel the trouble

H3-02 Fusing section high temperature trouble (HL3)

Details		The fusing temperature exceeds 241.5 °C. (An input voltage of 1.3V or less is detected.) When fusing temperature control is started and a temperature of 242 °C is detected 3 times continuously in sampling of 250 msec interval. (In the interval of 150ms)
Section		Engine
Case 1	Cause	Thermistor trouble Control PWB trouble Improper connection of the fusing section connector AC power trouble
	Check and remedy	Use SIM 5-2 to check flashing of the heater lamp. When the lamp flashes normally. • Check the thermistor and the harness. • Check the thermistor input circuit on the control PWB. When the lamp keeps ON. • Check the AC PWB and the lamp control circuit on the control PWB. Use SIM 14 to cancel the trouble

H4-00 Fusing section low temperature trouble (HL1)

Details		The set temperature is not reached within the specified time (normally 3 min or 5 min in the curl prevention mode) after turning on the power relay. When the heater lamp is not turned off in 4 min after starting the warm-up operation. When the set value of -40°C is detected for 5 times continuously in the specified interval after completion of the warm-up operation. (In the interval of 150ms)
Section		Engine
Case 1	Cause	Thermistor trouble Heater lamp trouble Control PWB trouble Thermostat trouble AC power trouble Interlock switch
	Check and remedy	Use SIM 5-2 to check flashing of the heater lamp. When the lamp flashes normally. • Check the thermistor and the harness. • Check the thermistor input circuit on the control PWB. When the lamp does not turn on. • Check for disconnection of the heater lamp or the thermostat. • Check the interlock switch. • Check the AC PWB and the lamp control circuit on the control PWB. Use SIM 14 to cancel the trouble

H4-01 Fusing section low temperature trouble (HL2)

Details		The set temperature is not reached within the specified time (normally 3 min or 5 min in the curl prevention mode) after turning on the power relay. When the heater lamp is not turned off in 4 min after starting the warm-up operation. When the set value of -40°C is detected for 5 times continuously in the specified interval after completion of the warm-up operation. (In the interval of 150ms)
Section		Engine
Case 1	Cause	Thermistor trouble Heater lamp trouble Control PWB trouble Thermostat trouble AC power trouble Interlock switch
	Check and remedy	Use SIM 5-2 to check flashing of the heater lamp. When the lamp flashes normally. <ul style="list-style-type: none"> • Check the thermistor and the harness. • Check the thermistor input circuit on the control PWB. When the lamp does not turn on. <ul style="list-style-type: none"> • Check for disconnection of the heater lamp or the thermostat. • Check the interlock switch. • Check the AC PWB and the lamp control circuit on the control PWB. Use SIM 14 to cancel the trouble

H4-02 Fusing section low temperature trouble (HL3)

Details		The set temperature is not reached within the specified time (normally 3 min or 5 min in the curl prevention mode) after turning on the power relay. When the heater lamp is not turned off in 4 min after starting the warm-up operation. When the set value of -40°C is detected for 5 times continuously in the specified interval after completion of the warm-up operation. (In the interval of 150ms)
Section		Engine
Case 1	Cause	Thermistor trouble Heater lamp trouble Control PWB trouble Thermostat trouble AC power trouble Interlock switch
	Check and remedy	Use SIM 5-2 to check flashing of the heater lamp. When the lamp flashes normally. <ul style="list-style-type: none"> • Check the thermistor and the harness. • Check the thermistor input circuit on the control PWB. When the lamp does not turn on. <ul style="list-style-type: none"> • Check for disconnection of the heater lamp or the thermostat. • Check the interlock switch. • Check the AC PWB and the lamp control circuit on the control PWB. Use SIM 14 to cancel the trouble

H5-01 5-times continuous POD notreached JAM detection

Details		When POD1 not-reached jam is detected 5-times continuously. POD1 jam counter is backed up and used in a print job after turning on the power. The counter is cleared when POD1 jam does not occur in a job or when the trouble is canceled.
Section		Engine
Case 1	Cause	The fusing jam is not canceled completely. (Jam paper remains.)
	Check and remedy	Check for jam paper in the fusing section. (Winding, etc.)
Case 2	Cause	POD1 sensor trouble, or harness connection trouble
	Check and remedy	Check the PODC1 sensor harness and installation of the fusing unit.
Case 3	Cause	Fusing unit installation trouble
	Check and remedy	Use SIM 14 to cancel the trouble

L1-00 Scanner feed trouble

Details		Scanner feed is not completed within the specified time. When MHP Soft is not detected within 2 sec after shifting the mirror base unit in the feeding direction.
Section		Scanner
Case 1	Cause	Scanner unit trouble The scanner wire is disconnected.
	Check and remedy	Use SIM 1-1 to check scanning operation.

L3-00 Scanner return trouble

Details		Scanner return is not completed within the specified time. MHP Son is not detected within 10sec after starting the mirror base unit in the return direction.
Section		Scanner
Case 1	Cause	Scanner unit trouble The scanner wire is disconnected.
	Check and remedy	Use SIM 1-1 to check scanning operation.

L4-01 Main motor lock detection

Details		When it is detected for 3 times continuously in the interval of 500ms after ignoring the main motor drive for 600ms.
Section		Engine
Case 1	Cause	Main motor trouble
	Check and remedy	Use SIM 25-1 to check the main motor operation.
Case 2	Cause	Improper disconnection of the harness between the PCU PWB and the main motor Control circuit trouble
	Check and remedy	Check the harness and the connector between the PCU PWB and the main motor.

L4-02 Drum motor lock detection

Details		The motor lock signal is detected for 1.5sec during rotation of the drum motor. When the motor lock signal is detected for 3 times continuously in the interval of 500ms after 900ms of rotation start.
Section		Engine
Case 1	Cause	Drum motor trouble
	Check and remedy	Use SIM 25-1 to check the drum motor operation.
Case 2	Cause	Improper connection of the harness between the PCU PWB and the drum motor Control circuit trouble
	Check and remedy	Check the harness and the connector of the PCU PWB, and the drum motor.

L4-03 Fusing motor lock detection

Details		When it is detected for 3 times continuously in the interval of 500ms after ignoring the fusing motor drive start for 600ms.
Section		Engine
Case 1	Cause	Main motor trouble
	Check and remedy	Use SIM 25-1 to check the fusing motor operation.
Case 2	Cause	Improper connection of the harness between the PCU PWB and the fusing motor Control circuit trouble
	Check and remedy	Check connection of the harness and the connector between the PCU PWB and the fusing motor.

L4-04 Developing motor lock detection

Details		The motor lock signal is detected for 1.5sec during rotation of the developing motor. When the motor lock signal is detected for 3 times continuously in the interval of 500ms after 900ms of rotation start.
Section		Engine
Case 1	Cause	Developing motor trouble
	Check and remedy	Use SIM 6-1 to check the developing motor operation.
Case 2	Cause	Improper connection of the harness between the PCU PWB and the developing motor. Control circuit trouble.
	Check and remedy	Check the harness and the connector between the PCU PWB and the developing motor.

L4-06 Transfer belt separation motor trouble detection

Details		Transfer belt separation motor trouble detection The transfer belt home position sensor ON/OFF is not detected within the specified time (4 sec) during operation of the transfer belt (separation, contact).
Section		Engine
Case 1	Cause	Transfer belt separation motor trouble
	Check and remedy	Use SIM 6-1 to check the transfer belt motor operation.
Case 2	Cause	Improper connection of the harness between the PCU PWB and the transfer belt separation motor. Control circuit trouble
	Check and remedy	Check connection of the harness and the connection of the harness between the PCU PWB and the transfer belt separation motor.

L4-30 Controller fan motor lock detection

Details		The motor lock signal is detected during rotation of the controller fan motor. The motor lock signal is detected during rotation of the HDD fan motor.
Section		Controller
Case 1	Cause	Fan motor trouble
	Check and remedy	Use SIM 6-2 to check the fan motor operation.
Case 2	Cause	Improper connection of the harness between the controller PWB and the fan motor. Control circuit trouble
	Check and remedy	Check the harness and the connector between the controller PWB and the fan motor.

L4-31 Paper discharging fan trouble

Details		When the detected value of the temperature sensor (TH_EX) in the paper exit reverse unit is greater than the specified level for 2 times continuously in the interval of 30sec. When 100°C (value of 235) of the paper exit thermistor is detected for 3 times continuously. (In the interval of 100ms)
Section		Engine
Case 1	Cause	Fan motor trouble
	Check and remedy	Use SIM 6-2 to check the fan motor operation.
Case 2	Cause	PCU PWB, harness connection between fan and motor trouble PCU circuit trouble Thermistor (TH_EX) trouble
	Check and remedy	Check the PCU PWB, the harness between fan and motor, and the connector.

L6-10 Polygon motor lock detection

Details		It is judged that the polygon motor lock signal of the LSU is not outputted. The polygon motor lock signal is checked in an interval of 10sec after starting the polygon motor, and it is found that the polygon motor is not rotating normally.
Section		Engine
Case 1	Cause	Polygon motor trouble
	Check and remedy	Use SIM 61-1 to check the polygon motor operation.
Case 2	Cause	Disconnection or breakage of the LSU connector or the harness in the LSU
	Check and remedy	Check connection of the harness and the connector. Replace the LSU.

L8-01 No full wave signal

Details		The full wave signal is not detected. When the FWS signal is not varied for 120ms when supplying the power.
Section		Engine
Case 1	Cause	Disconnection or breakage of the PCU PWB connector or the harness in the power unit
	Check and remedy	Check connection of the harness and the connector.
Case 2	Cause	PCU PWB trouble
	Check and remedy	Replace the PCU PWB.
Case 3	Cause	12V power source trouble
	Check and remedy	Replace the power unit. Replace the controller connection mother board.

PF-00 RIC copy inhibit command receive

Details	The copy inhibit command is received from the RIC (host). (By PPC communication standards.)	
Section	Controller	
Case 1	Cause	Judged by the host.
	Check and remedy	Notification to the host

U1-01 FAX battery abnormality

Details	FAX backup SRAM battery voltage fall. When the battery capacity is less than the threshold value (fixed by the hardware), it is judged as an error. (Insufficient capacity of the SRAM backup battery)	
Section	FAX	
Case 1	Cause	Battery life
	Check and remedy	Check that the battery voltage is about 2.5V or above.
Case 2	Cause	Battery circuit trouble
	Check and remedy	Check the battery circuit.

U1-02 RTC read error (combined use as FAX, on MFP control PWB)

Details	The read value from the RTC on the MFP control PWB is abnormal such as "EE" h.	
Section	Controller	
Case 1	Cause	RTC circuit trouble
	Check and remedy	Make the time setup again with the key operation and check that the time advances normally. Check the RTC circuit.
Case 2	Cause	Battery voltage fall
	Check and remedy	Check that the battery voltage is about 2.5V or above.
Case 3	Cause	Battery circuit trouble
	Check and remedy	Check the battery circuit.

U2-00 EEPROM read/write error (MFP control)

Details	EEPROM write error (without retry) EEPROM magic number error.	
Section	Controller	
Case 1	Cause	EEPROM trouble
	Check and remedy	Check that the EEPROM is properly installed. In the simulation to prevent against delete of the counter data/adjustment values, write down the counter/adjustment values.
Case 2	Cause	Insertion of EEPROM which is not initialized
	Check and remedy	Use SIM 16 to cancel the U2 trouble.
Case 3	Cause	MFP control PWB EEPROM access circuit trouble
	Check and remedy	Replace the MFP control PWB.

U2-11 Counter check sum error (MFP control)

Details	EEPROM counter area checksum error. (If this error occurs, the process will retrieve for effective data within 8 blocks.)	
Section	Controller	
Case 1	Cause	EEPROM trouble
	Check and remedy	Check that the EEPROM is properly installed. In the simulation to prevent against delete of the counter data/adjustment values, write down the counter/adjustment values.
Case 2	Cause	Control circuit runaway due to noises
	Check and remedy	Use SIM 16 to cancel the U2 trouble.
Case 3	Cause	MFP control PWB EEPROM access circuit trouble
	Check and remedy	Replace the MFP control PWB.

U2-12 Adjustment value check sum error (MFP control)

Details	EEPROM counter area checksum error (If this error occurs, the process will retrieve for effective data within 8 blocks.)	
Section	Controller	
Case 1	Cause	EEPROM trouble
	Check and remedy	Check that the EEPROM is properly installed. In the simulation to prevent against delete of the counter data/adjustment values, write down the counter/adjustment values.
Case 2	Cause	Control circuit runaway due to noises
	Check and remedy	Use SIM 16 to cancel the U2 trouble.
Case 3	Cause	MFP control PWB EEPROM access circuit trouble
	Check and remedy	Replace the MFP control PWB.

U2-22 SRAM memory check sum error (MFP control)

Details	SRAM check sum error when turning on the power. (If this error occurs, initialize the one-touch dial and the FAX soft switches.)	
Section	Controller	
Case 1	Cause	SRAM trouble
	Check and remedy	Initialize the communication management table registered in the SRAM and the FAX soft switch. Since the registered data are deleted, register the data again.
Case 2	Cause	Control circuit runaway due to noises
	Check and remedy	Use SIM 16 to cancel the U2 trouble.
Case 3	Cause	MFP control PWB EEPROM access circuit trouble
	Check and remedy	Replace the MFP control PWB.

U2-23 SRAM memory individual data check sum error

Details	Check sum error for every individual data in SRAM of the MFPC section when turning on the power (If this error occurs, initialize the data related to the check sum error. (Communication management table, sender's information, etc.))	
Section	Controller	
Case 1	Cause	SRAM trouble
	Check and remedy	Automatically initialize the data related to the check sum error by turning OFF/ON the power. Since the registered data are deleted, register the data again.
Case 2	Cause	Control circuit runaway due to noises
	Check and remedy	Use SIM 16 to cancel the U2 trouble.
Case 3	Cause	MFP control PWB EEPROM access circuit trouble
	Check and remedy	Replace the MFP control PWB.

U2-50 HDD section individual data check sum error (MFP control)

Details	Check sum error for every individual data in HDD of the MFPC section when turning on the power (If this error occurs, initialize the data related to the check sum error. (One-touch, group, program, etc.))	
Section	Controller	
Case 1	Cause	HDD write/read error
	Check and remedy	Automatically initialize the data related to the check sum error by turning OFF/ON the power. Since the registered data are deleted, register the data again.
Case 2	Cause	Control circuit runaway due to noises
	Check and remedy	Use SIM 16 to cancel the U2 trouble.
Case 3	Cause	MFP control PWB HDD access circuit trouble
	Check and remedy	Replace the HDD. Replace the MFP control PWB.

U2-80 EEPROM read/write error (Scanner)

Details	EEPROM communication trouble (NACK detection) Retry 3 times	
Section	Scanner	
Case 1	Cause	EEPROM trouble
	Check and remedy	Check that the EEPROM is properly installed. In the simulation to prevent against delete of the counter data/adjustment values, write down the counter/adjustment values.
Case 2	Cause	Insertion of EEPROM which is not initialized
	Check and remedy	Use SIM 16 to cancel the U2 trouble.
Case 3	Cause	Scanner PWB EEPROM access circuit trouble
	Check and remedy	Replace the scanner PWB.

U2-81 Memory check sum error (Scanner)

Details	When counter data sum error is detected.	
Section	Scanner	
Case 1	Cause	EEPROM trouble
	Check and remedy	Check that the EEPROM is properly installed. In the simulation to prevent against delete of the counter data/adjustment values, write down the counter/adjustment values.
Case 2	Cause	Control circuit runaway due to noises
	Check and remedy	Use SIM 16 to cancel the U2 trouble.
Case 3	Cause	Scanner PWB EEPROM access circuit trouble
	Check and remedy	Replace the scanner PWB.

U2-90 EEPROM read/write error (PCU)

Details	EEPROM communication trouble (NACK detection) Retry 3 times	
Section	Engine	
Case 1	Cause	EEPROM trouble
	Check and remedy	Check that the EEPROM is properly installed. In the simulation to prevent against delete of the counter data/adjustment values, write down the counter/adjustment values.
Case 2	Cause	Insertion of EEPROM which is not initialized
	Check and remedy	Use SIM 16 to cancel the U2 trouble.
Case 3	Cause	PCU PWB EEPROM access circuit trouble
	Check and remedy	Replace the PCU PWB.

U2-91 Memory check sum error (PCU)

Details	When POF data/counter data sum error is detected.	
Section	Engine	
Case 1	Cause	EEPROM trouble
	Check and remedy	Check that the EEPROM is properly installed. In the simulation to prevent against delete of the counter data/adjustment values, write down the counter/adjustment values.
Case 2	Cause	Control circuit runaway due to noises
	Check and remedy	Use SIM 16 to cancel the U2 trouble.
Case 3	Cause	PCU PWB EEPROM access circuit trouble
	Check and remedy	Replace the PCU PWB.

U5-30 DSPF tray lift-up trouble

Details	Lift-up trouble is detected 5 times continuously.	
Section	Scanner	
Case 1	Cause	STUD/STLD trouble. STUD does not turn on within the specified time. STLD does not turn off within the specified time.
	Check and remedy	Check the harness and the connector of the STUD and STLD. Lift-up trouble unit check

U5-31 DSPF tray lift-down trouble

Details		STLD does not turn off within the specified time.
Section		Scanner
Case 1	Cause	STUD/STLD trouble. STUD does not turn on within the specified time. STLD does not turn off within the specified time.
	Check and remedy	Check the harness and the connector of the STUD and STLD. Lift-up trouble unit check

U6-09 LCC lift motor trouble

Details		<ul style="list-style-type: none"> The upper limit sensor is not turned on within 24sec from starting the liftup motor. The encoder input is not made within 0.2sec during rotation of the liftup motor. The upper limit SW is turned on during rotation of the liftup motor. When the above trouble occurs for 3 times continuously. For the first time and the second time, it is a tray size error and the user pulls the tray. <p>When the trouble occurs 3 time continuously that the upper limit sensor does not turn on.</p>
Section		LCC
Case 1	Cause	Sensor trouble LCC control PWB trouble. Gear breakage. Lift motor trouble.
	Check and remedy	Use SIM to check the sensor detection. Use SIM to check the lift motor operation. Use SIM 15 to cancel the trouble.

U6-20 LCC communication trouble

Details		Communication trouble with the LCC. Follows the communication protocol specifications. Communication error, timing abnormality of the communication data and the communication signal line
Section		Engine
Case 1	Cause	Improper connection or disconnection of the connector and the harness. Desk control PWB trouble Control PWB (PCU) trouble. Malfunction caused by noises
	Check and remedy	Canceled by turning ON/OFF the power. Check the connector and the harness in the communication line.

U6-21 LCC transport motor trouble

Details		The lock detection signal is detected continuously for 1sec after delay of 1sec from start of the motor. When the motor lock detection signal is continued for 1sec after 1sec delay from starting the motor. For the first time, it is regarded as a Jam and the machine is stopped. When two errors are continued, it is regarded as a trouble.
Section		LCC
Case 1	Cause	Motor lock Motor RPM abnormality Overcurrent to the motor Desk control PWB trouble
	Check and remedy	Use SIM 4-3 to check the transport motor operation.

U6-22 LCC 24V power abnormality addition

Details		24V power is not supplied to the LCC. (The LCC 24V power is not detected for 1 sec or longer after 1 sec from power on)
Section		LCC
Case 1	Cause	Improper connection or disconnection of the connector and the harness.
	Check and remedy	Check the connector and the harness of the power line.
Case 2	Cause	LCC control PWB trouble. Power unit trouble.
	Check and remedy	Check the 24V power with the power unit and the LCC control PWB.

U7-00 RIC communication trouble

Details		Communication error with RIC (By PPC communication standards) An error in the communication line test after turning on the power or canceling the simulation
Section		Controller
Case 1	Cause	Improper connection or disconnection of the connector and the harness. RIC control PWB trouble. Control PWB (MFP control) trouble. Malfunction caused by noises.
	Check and remedy	Canceled by turning ON/OFF the power. Check the connector and the harness in the communication line.

[9] MAINTENANCE

1. Maintenance system table

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

			When calling	250 K	500 K	750 K	1000 K	1250 K	1500 K	1750 K	2000 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
				300 K	600 K	900 K	1200 K	1500 K	1800 K	2100 K	2400 K	
Unit name	No.	Part name										
Drum peripheral section	1	Drum	×	▲	▲	▲	▲	▲	▲	▲	▲	
	2	Cleaning blade	×	▲	▲	▲	▲	▲	▲	▲	▲	Maximum 1 year use (P/G No.: [43]-5)
	3	Cleaning brush roller	×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [43]-29)
	4	Toner reception seal	×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [43]-11)
	5	Side seal		×	▲	×	▲	×	▲	×	▲	(P/G No.: [43]-33, [43]-35)
	6	Drum separation pawl	×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [42]-33)
	7	Sawtooth	○	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [39]-7)
	8	Screen grid	×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [39]-1)
Transfer section	1	Transfer drum gear	×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [45]-25)
	2	Transfer belt	○	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [45]-50)
	3	Transfer roller		▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [45]-47)
	4	Transfer roller collar		×	▲	×	▲	×	▲	×	▲	(P/G No.: [45]-48)
	5	Shaft (Conductive grease)	×	×	×	×	×	×	×	×	×	UKOG-0012QSZZ
	6	Paper guide	○	○	○	○	○	○	○	○	○	
Developing section	1	Developer		▲	▲	▲	▲	▲	▲	▲	▲	Supply when installing (P/G No.: [37]-5)
	2	DV seal		▲	▲	▲	▲	▲	▲	▲	▲	
	3	MG holder F/R	○	○	○	○	○	○	○	○	○	
	4	DV side seal F		▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [36]-14)
	5	DV side seal R		▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [36]-13)
	6	Toner bottle										Assembly when installing/ Replacement by user when empty
	7	Toner hopper	○	○	○	○	○	○	○	○	○	Clean the shutter area.
Fusing unit	1	Heat roller	×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [48]-3)
	2	Pressure roller	×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [46]-24)
	3	Sub heat roller	×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [46]-14)
	4	Web roller	×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [49]-42)
	5	Pressure connect roller	×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [49]-44)
	6	CL roller	×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [47]-46)
	7	CL auxiliary roller bearing	×	▲	▲	▲	▲	▲	▲	▲	▲	
	8	Cleaning sheet desk	×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [46]-23)
	9	Heat roller separation pawl	×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [48]-9)
	10	Pressure roller separation pawl	×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [47]-26)
	11	Thermistor (upper/lower)	×	×	×	×	×	×	×	×	×	Paper dust removal is required.
	12	Heat roller gear (Grease)		×	×	×	×	×	×	×	×	UKOG-0235FCZZ
	13	Sub heat roller bearing		▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [46]-7)
	14	CL roller bearing		▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [47]-45)
	15	Web bearing		▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [49]-4)
	16	Pressure connect bearing		▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [49]-8)
	17	Paper guides	○	○	○	○	○	○	○	○	○	
	18	Gears		☆	☆	☆	☆	☆	☆	☆	☆	
	19	Shaft (Grease)		☆	☆	☆	☆	☆	☆	☆	☆	UKOG-0235FCZZ
	20	Lower CL roller DG2	×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [47]-47)
	21	CL roller bearing		▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [47]-45)
Filters	1	Ozone filter		▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [75]-7)
	2	Toner filter		▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [75]-8)
Paper feed section	1	Pickup roller	×	○	○	○	○	○	○	○	○	(Note 1)
	2	Paper feed roller	×	○	○	○	○	○	○	○	○	(Note 1)
	3	Separation roller	×	○	○	○	○	○	○	○	○	(Note 1)
	4	Torque limiter	×	×	×	×	×	×	×	×	×	(Note 1)
	5	Shaft (Conductive grease)	×	☆	☆	☆	☆	☆	☆	☆	☆	UKOG-0012QSZZ

			55ppm (PM: 250K)	When calling	250 K	500 K	750 K	1000 K	1250 K	1500 K	1750 K	2000 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
					300 K	600 K	900 K	1200 K	1500 K	1800 K	2100 K	2400 K	
Unit name	No.	Part name											
Transport section/ paper exit reverse section/duplex section	1	PS follower roller	×	○	○	○	○	○	○	○	○	○	
	2	Transport rollers	×	○	○	○	○	○	○	○	○	○	
	3	Transport paper guides	○	○	○	○	○	○	○	○	○	○	
	4	Paper dust clean unit	×	▲	▲	▲	▲	▲	▲	▲	▲	▲	
	5	Discharge brush	×	×	×	×	×	×	×	×	×	×	
	6	Shaft (Conductive grease)	×	×	×	×	×	×	×	×	×	×	UKOG-0012QSZZ
Drive section	1	Gear (Grease)	×	☆	☆	☆	☆	☆	☆	☆	☆	☆	UKOG-0307FCZZ
	2	Gear (Grease)	×	☆	☆	☆	☆	☆	☆	☆	☆	☆	UKOG-0299FCZZ
	3	Gear (Grease)	×	☆	☆	☆	☆	☆	☆	☆	☆	☆	UKOG-0062FCZZ
	4	Gear (Grease)	×	☆	☆	☆	☆	☆	☆	☆	☆	☆	UKOG-0235FCZZ
	5	Gear (Conductive grease)	×	☆	☆	☆	☆	☆	☆	☆	☆	☆	UKOG-0012QSZZ
	6	Belts		×	×	×	×	×	×	×	×	×	
Picture relations	1		×	×	×	×	×	×	×	×	×	×	
Others	1	Sensors		×	×	×	×	×	×	×	×	×	
	2	Reflection sensor		○	○	○	○	○	○	○	○	○	

(Document scan section)

			55ppm (PM: 250K)	When calling	250 K	500 K	750 K	1000 K	1250 K	1500 K	1750 K	2000 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
					300 K	600 K	900 K	1200 K	1500 K	1800 K	2100 K	2400 K	
Unit name	No.	Part name											
Scanner section	1	Mirror	○	○	○	○	○	○	○	○	○	○	
	2	Lens	○	○	○	○	○	○	○	○	○	○	
	3	Reflector	○	○	○	○	○	○	○	○	○	○	
	4	Sensors	○	○	○	○	○	○	○	○	○	○	
	5	Table glass	○	○	○	○	○	○	○	○	○	○	
	6	Dust-proof glass	○	○	○	○	○	○	○	○	○	○	
	7	OC	○	○	○	○	○	○	○	○	○	○	
	8	White standard glass	○	○	○	○	○	○	○	○	○	○	
	9	Rails		☆	☆	☆	☆	☆	☆	☆	☆	☆	
	10	Drive belt		×	×	×	×	×	×	×	×	×	
	11	Drive wire		×	×	×	×	×	×	×	×	×	
	12	Pulley		×	×	×	×	×	×	×	×	×	
DSPF	Paper feed	1 Pickup roller	×	○	○	○	○	○	○	○	○	○	(Note 1)
		2 Paper feed roller	×	○	○	○	○	○	○	○	○	○	(Note 1)
		3 Separation roller	×	○	○	○	○	○	○	○	○	○	(Note 1)
		4 Torque limiter		×	×	×	×	×	×	×	×	×	(Note 1)
		5 Resist roller	×	○	○	○	○	○	○	○	○	○	
	Transport section	6 Transport roller	×	○	○	○	○	○	○	○	○	○	
		7 Exposure section (CIS unit)	×	○	○	○	○	○	○	○	○	○	
	Paper exit section	8 Paper exit roller	×	○	○	○	○	○	○	○	○	○	
	Drive section	9 Gears (Grease)	×	×	×	×	×	×	×	×	×	×	UKOG-0299FCZZ
		10 Belts		×	×	×	×	×	×	×	×	×	
	Others	11 Sensors		×	×	×	×	×	×	×	×	×	Cleaning is air spraying

(Note 1) Replacement reference: For replacement, refer to each paper feed counter value.

- Paper feed tray 1 and 2: 200K or 1 year
- Manual paper feed/paper feed tray 3 and 4: 100K or 1 year
- DSPF section: 100K or 1 year
- Torque limiter: 800K (400K for manual paper feed section)

*** (NOTE) Paper feed section roller life**

When servicing, be sure to check the paper feed counters of each paper tray and replace the rollers as needed.

When cleaning rollers it is advisable to use a wet cotton cloth to clean the rollers.

			55ppm (PM: 250K)	When calling	250 K	500 K	750 K	1000 K	1250 K	1500 K	1750 K	2000 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)	
			62ppm/70ppm (PM: 300K)		300 K	600 K	900 K	1200 K	1500 K	1800 K	2100 K	2400 K		
Unit name		No.	Part name											
Side LCC	Paperfeed separation section	1	Paper pickup roller/ Paper feed rollers	×	○	○	○	○	○	○	○	○	(Note 2)	
		2	Torque limiter	×	×	×	×	×	×	×	×	×	(Note 2)	
	Transport section	3	Transport rollers	×	○	○	○	○	○	○	○	○		
		4	Transport paper guides	○	○	○	○	○	○	○	○	○		
	Drive section	5	Gears	×	☆	☆	☆	☆	☆	☆	☆	☆	Refer to sm for LCC	
		6	Belt		×	×	×	×	×	×	×	×		
	Others	7	Sensors	×	×	×	×	×	×	×	×	×		
Saddle finisher Punch unit	Transport section	1	Transport rollers	×	○	○	○	○	○	○	○	○		
		2	Transport paper guides	×	○	○	○	○	○	○	○	○		
	Drive section	3	Gears	×	☆	☆	☆	☆	☆	☆	☆	☆	Refer to sm for Finisher	
		4	Belts		×	×	×	×	×	×	×	×		
	Staple process section	5	Knurling belt	×	○	○	○	○	○	○	○	○	(Note 3)	
		6	Paddle	×	○	○	○	○	○	○	○	○	(Note 3)	
	Others	7	Sensors	×	×	×	×	×	×	×	×	×		
		8	Discharge brush	×	×	×	×	×	×	×	×	×		
	Stapler unit												Replacement reference: Replace the unit at 500K staple.	
	Stitcher unit (Stapler unit for saddle)												Replacement reference: Replace the unit at 200K staple.	
	Punch unit												Replacement reference: Replace the unit at 1000K.	
	Staple cartridge												User replacement at every 5000 pcs.	
	Stitcher staple cartridge												User replacement at every 2000 pcs.	
	Inserter	Paperfeed separation section	1	Paper pickup roller/ Paper feed rollers	×	○	○	○	○	○	○	○	○	(Note 4)
			2	Torque limiter	×	×	×	×	×	×	×	×	×	(Note 4)
Transport section		3	Transport rollers	×	○	○	○	○	○	○	○	○		
		4	Transport paper guides	○	○	○	○	○	○	○	○	○		
Drive section		5	Gears	×	☆	☆	☆	☆	☆	☆	☆	☆	Refer to sm for Inserter	
		6	Belts		×	×	×	×	×	×	×	×		
Others		7	Sensors	×	×	×	×	×	×	×	×	×		

(Note 2) Replacement reference: For replacement, refer to each paper feed counter value.

- Paper feed roller related section: 200K or 1 year
- Torque limiter: 800K

(Note 3) Replacement reference: For replacement, refer to the finisher paper exit counter value.

- Knurling belt: 1000K
- Paddle: 1000K

(Note 4) Replacement reference: For replacement, refer to the inserter paper feed port counter value.

- Paper feed roller related section: 150K or 1 year
- Torque limiter: 400K

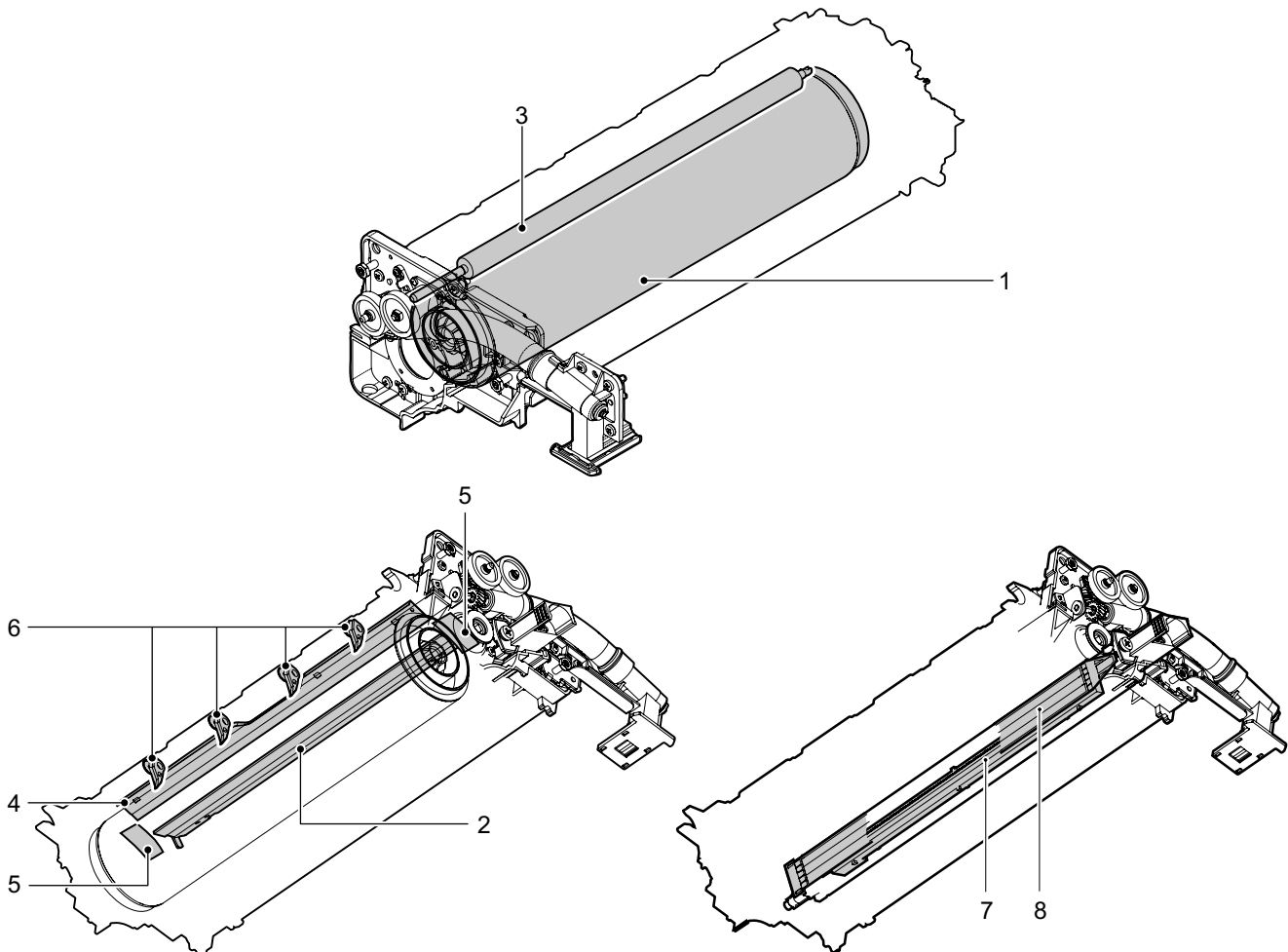
2. Details of maintenance

A. Drum peripheral section

× : Check ○ : Clean ▲ : Replace △ : Adjust ☆ : Lubricate □ : Shift position

(Clean, replace, or adjust as necessary.)

			When calling	250 K	500 K	750 K	1000 K	1250 K	1500 K	1750 K	2000 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
				300 K	600 K	900 K	1200 K	1500 K	1800 K	2100 K	2400 K	
		55ppm (PM: 250K)										
		62ppm/70ppm (PM: 300K)										
Unit name	No.	Part name										
Drum peripheral section	1	Drum	×	▲	▲	▲	▲	▲	▲	▲	▲	
	2	Cleaning blade	×	▲	▲	▲	▲	▲	▲	▲	▲	Maximum 1 year use (P/G No.: [43]-5)
	3	Cleaning brush roller	×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [43]-29)
	4	Toner reception seal	×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [43]-11)
	5	Side seal		×	▲	×	▲	×	▲	×	▲	(P/G No.: [43]-33, [43]-35)
	6	Drum separation pawl	×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [42]-33)
	7	Sawtooth	○	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [39]-7)
	8	Screen grid	×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [39]-1)

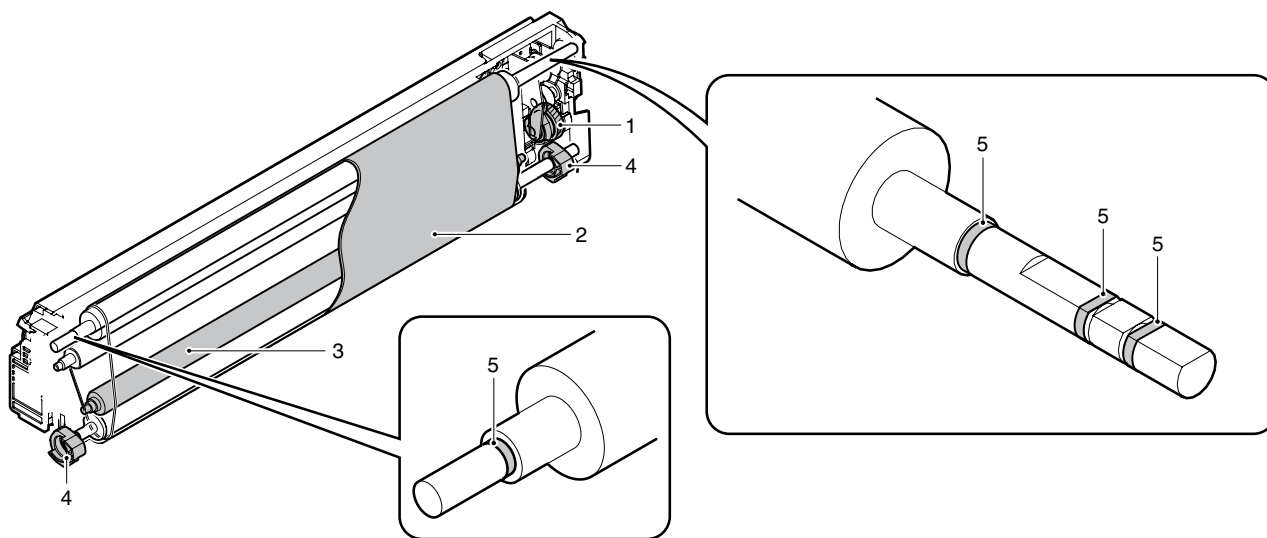


B. Transfer section

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

			When calling	250 K	500 K	750 K	1000 K	1250 K	1500 K	1750 K	2000 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
				300 K	600 K	900 K	1200 K	1500 K	1800 K	2100 K	2400 K	
		55ppm (PM: 250K)										
		62ppm/70ppm (PM: 300K)										
Unit name	No.	Part name										
Transfer section	1	Transfer drum gear	×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [45]-25)
	2	Transfer belt	○	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [45]-50)
	3	Transfer roller		▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [45]-47)
	4	Transfer roller collar		×	▲	×	▲	×	▲	×	▲	(P/G No.: [45]-48)
	5	Shaft (Conductive grease)	×	×	×	×	×	×	×	×	×	UKOG-0012QSZZ
	6	Paper guide	○	○	○	○	○	○	○	○	○	

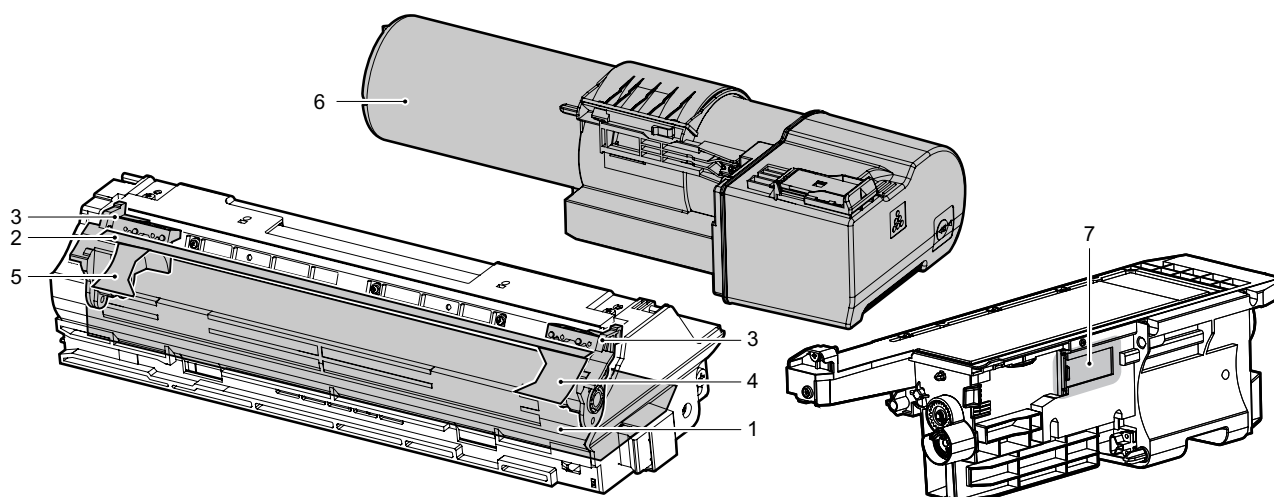
* When cleaning the transfer belt, do not use alcohol, solvent or water. Use dry cotton cloth only.



C. Developing section

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

			When calling	250 K	500 K	750 K	1000 K	1250 K	1500 K	1750 K	2000 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
				300 K	600 K	900 K	1200 K	1500 K	1800 K	2100 K	2400 K	
Unit name	No.	Part name										
Developing section	1	Developer		▲	▲	▲	▲	▲	▲	▲	▲	Supply when installing
	2	DV seal		▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [37]-5)
	3	MG holder F/R	○	○	○	○	○	○	○	○	○	
	4	DV side seal F		▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [36]-14)
	5	DV side seal R		▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [36]-13)
	6	Toner bottle										Assembly when installing/ Replacement by user when empty
	7	Toner hopper	○	○	○	○	○	○	○	○	○	Clean the shutter area.



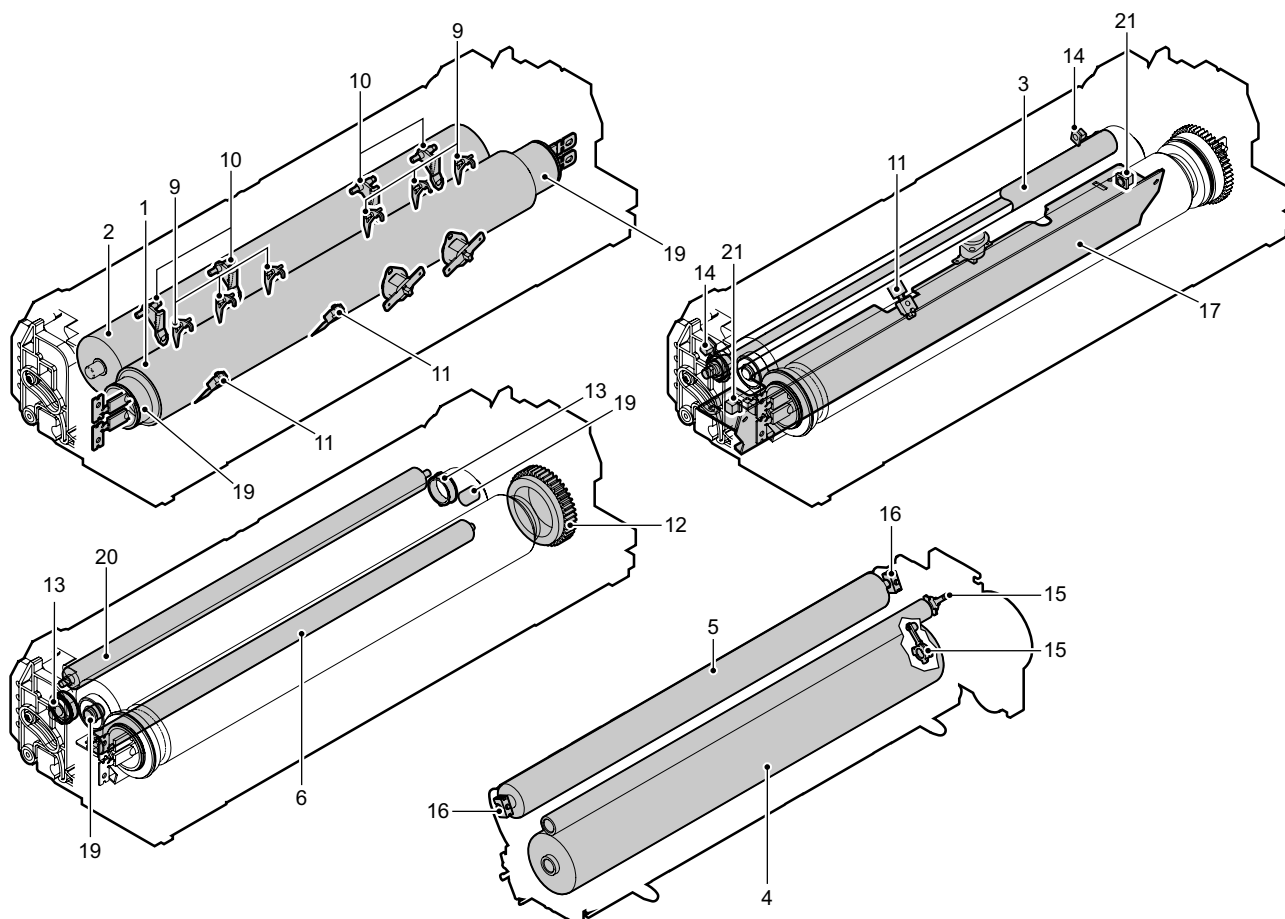
D. Fusing unit

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

Unit name	No.	Part name	When calling	55ppm (PM: 250K)		62ppm/70ppm (PM: 300K)		250 K	500 K	750 K	1000 K	1250 K	1500 K	1750 K	2000 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
								300 K	600 K	900 K	1200 K	1500 K	1800 K	2100 K	2400 K	
Fusing unit	1	Heat roller	×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [48]-3)
	2	Pressure roller	×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [46]-24)
	3	Sub heat roller	×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [46]-14)
	4	Web roller	×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [49]-42)
	5	Pressure connect roller	×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [49]-44)
	6	CL roller	×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [47]-46)
	7	CL auxiliary roller bearing	×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
	8	Cleaning sheet desk	×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [46]-23)
	9	Heat roller separation pawl	×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [48]-9)
	10	Pressure roller separation pawl	×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [47]-26)
	11	Thermistor (upper/lower)	×	×	×	×	×	×	×	×	×	×	×	×	×	Paper dust removal is required.
	12	Heat roller gear (Grease)		×	×	×	×	×	×	×	×	×	×	×	×	UKOG-0235FCZZ
	13	Sub heat roller bearing		▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [46]-7)
	14	CL roller bearing		▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [47]-45)
	15	Web bearing		▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [49]-4)
	16	Pressure connect bearing		▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [49]-8)
	17	Paper guides	○	○	○	○	○	○	○	○	○	○	○	○	○	
	18	Gears		☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	19	Shaft (Grease)		☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	UKOG-0235FCZZ
	20	Lower CL roller DG2	×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [47]-47)
	21	CL roller bearing		▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [47]-45)

* When maintenance, replace fusing web roller.

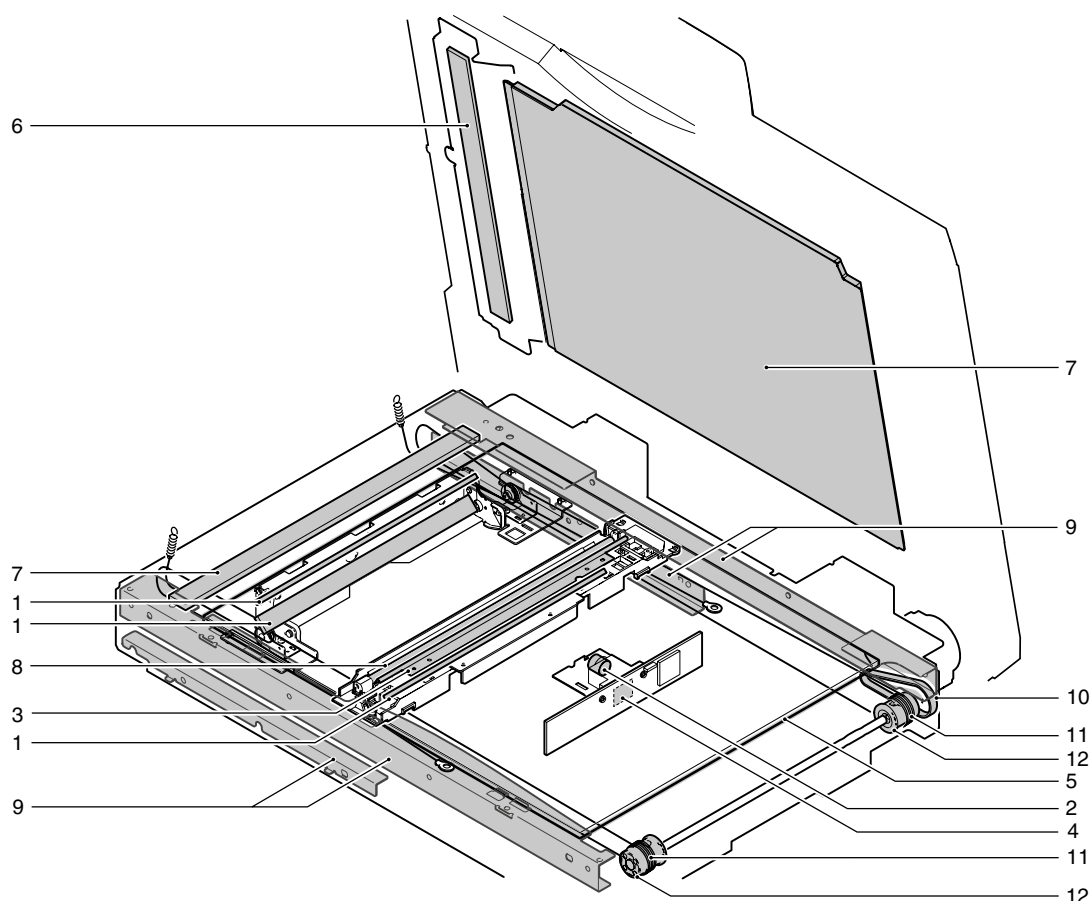
When used without replacement, the picture quality may be damaged because web roller end. [every 300K every 250K]



E. Scanner section

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

Unit name	No.	Part name	When calling	250 K	500 K	750 K	1000 K	1250 K	1500 K	1750 K	2000 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
				300 K	600 K	900 K	1200 K	1500 K	1800 K	2100 K	2400 K	
Scanner section	1	Mirror	○	○	○	○	○	○	○	○	○	Dry cotton cloth
	2	Lens	○	○	○	○	○	○	○	○	○	
	3	Reflector	○	○	○	○	○	○	○	○	○	
	4	Sensors	○	○	○	○	○	○	○	○	○	
	5	Table glass	○	○	○	○	○	○	○	○	○	
	6	Dust-proof glass	○	○	○	○	○	○	○	○	○	Recommended cleaner Dry cotton cloth
	7	OC	○	○	○	○	○	○	○	○	○	
	8	White standard glass	○	○	○	○	○	○	○	○	○	
	9	Rails		☆	☆	☆	☆	☆	☆	☆	☆	
	10	Drive belt		×	×	×	×	×	×	×	×	
	11	Drive wire		×	×	×	×	×	×	×	×	
	12	Pulley		×	×	×	×	×	×	×	×	



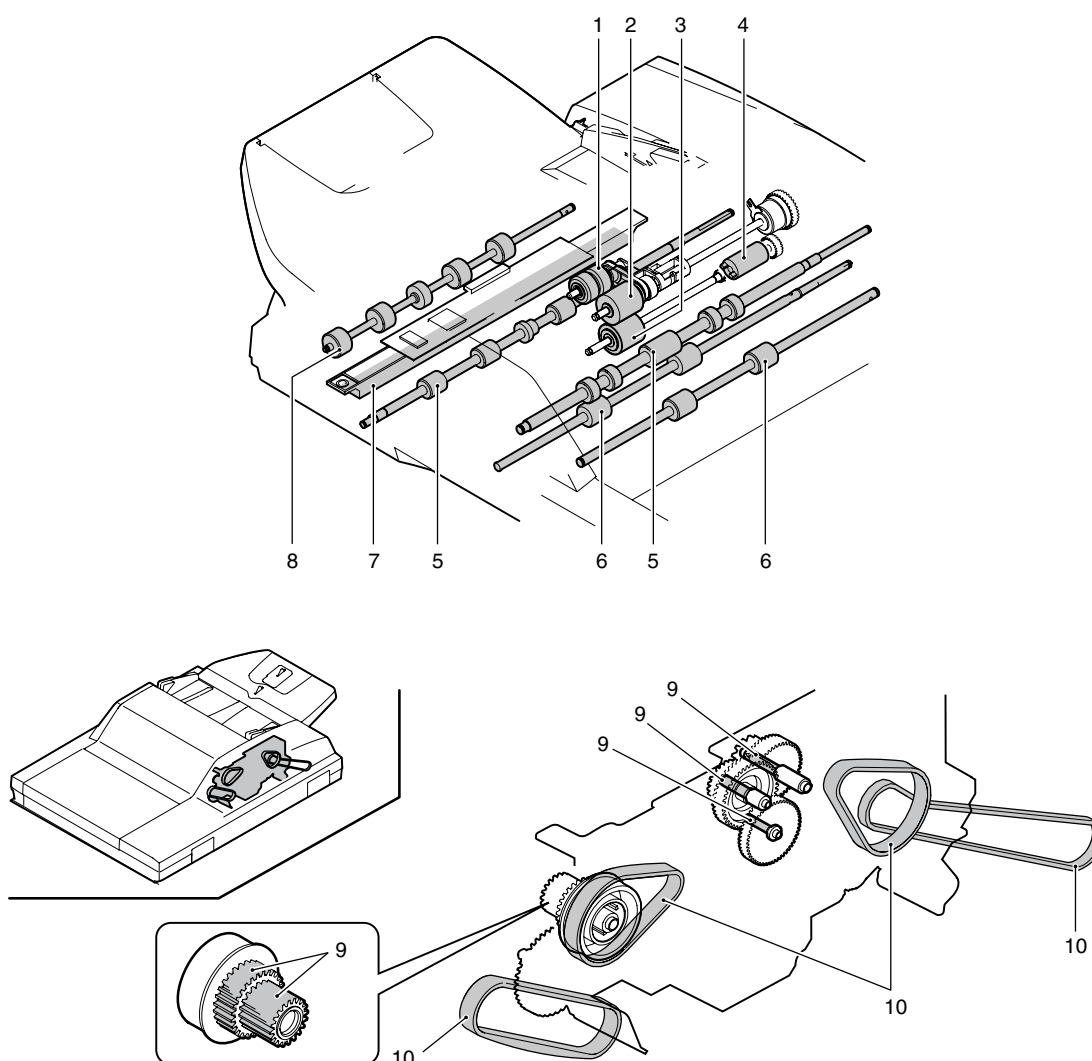
F. DSPF section

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

				When calling	250 K	500 K	750 K	1000 K	1250 K	1500 K	1750 K	2000 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
					300 K	600 K	900 K	1200 K	1500 K	1800 K	2100 K	2400 K	
Unit name	No.	Part name											
DSPF	Paper feed	1 Pickup roller	×	○	○	○	○	○	○	○	○	○	(Note 1)
		2 Paper feed roller	×	○	○	○	○	○	○	○	○	○	(Note 1)
		3 Separation roller	×	○	○	○	○	○	○	○	○	○	(Note 1)
		4 Torque limiter		×	×	×	×	×	×	×	×	×	(Note 1)
		5 Resist roller	×	○	○	○	○	○	○	○	○	○	
	Transport section	6 Transport roller	×	○	○	○	○	○	○	○	○	○	
		7 Exposure section (CIS unit)	×	○	○	○	○	○	○	○	○	○	
	Paper exit section	8 Paper exit roller	×	○	○	○	○	○	○	○	○	○	
	Drive section	9 Gears (Grease)	×	×	×	×	×	×	×	×	×	×	UKOG-0299FCZZ
		10 Belts		×	×	×	×	×	×	×	×	×	
	Others	11 Sensors		×	×	×	×	×	×	×	×	×	Clean with air

(Note 1) Replacement reference: For replacement, refer to each paper feed counter value.

- DSPF section: 100K or 1 year
- Torque limiter: 800K



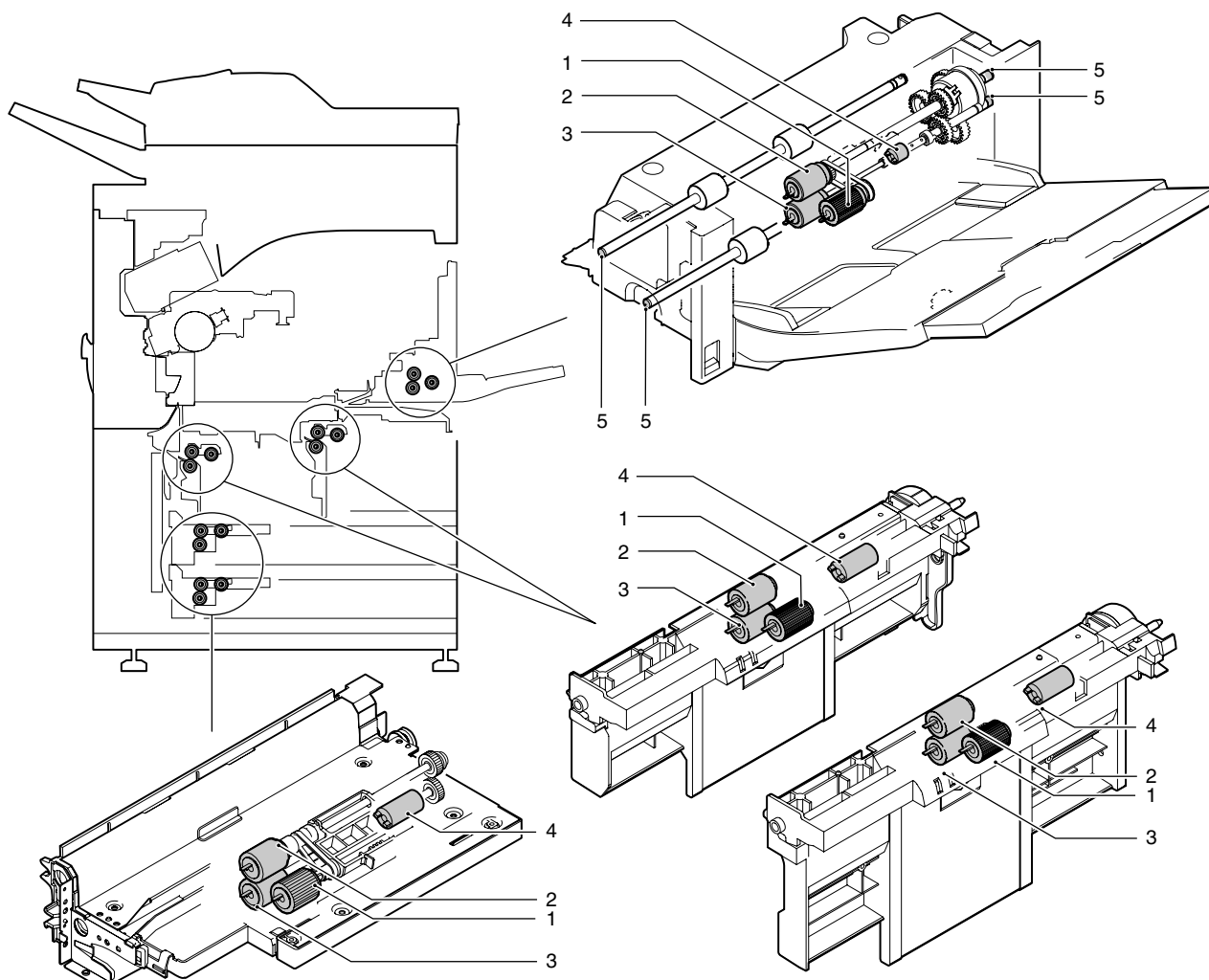
G. Paper feed section

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

Unit name	No.	Part name	When calling	55ppm (PM: 250K)								Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
				250 K	500 K	750 K	1000 K	1250 K	1500 K	1750 K	2000 K	
				300 K	600 K	900 K	1200 K	1500 K	1800 K	2100 K	2400 K	
Paper feed section	1	Pickup roller	×	○	○	○	○	○	○	○	○	(Note 1)
	2	Paper feed roller	×	○	○	○	○	○	○	○	○	(Note 1)
	3	Separation roller	×	○	○	○	○	○	○	○	○	(Note 1)
	4	Torque limiter	×	×	×	×	×	×	×	×	×	(Note 1)
	5	Shaft (Conductive grease)	×	☆	☆	☆	☆	☆	☆	☆	☆	UKOG-0012QSZZ

(Note 1) Replacement reference: For replacement, refer to each paper feed counter value.

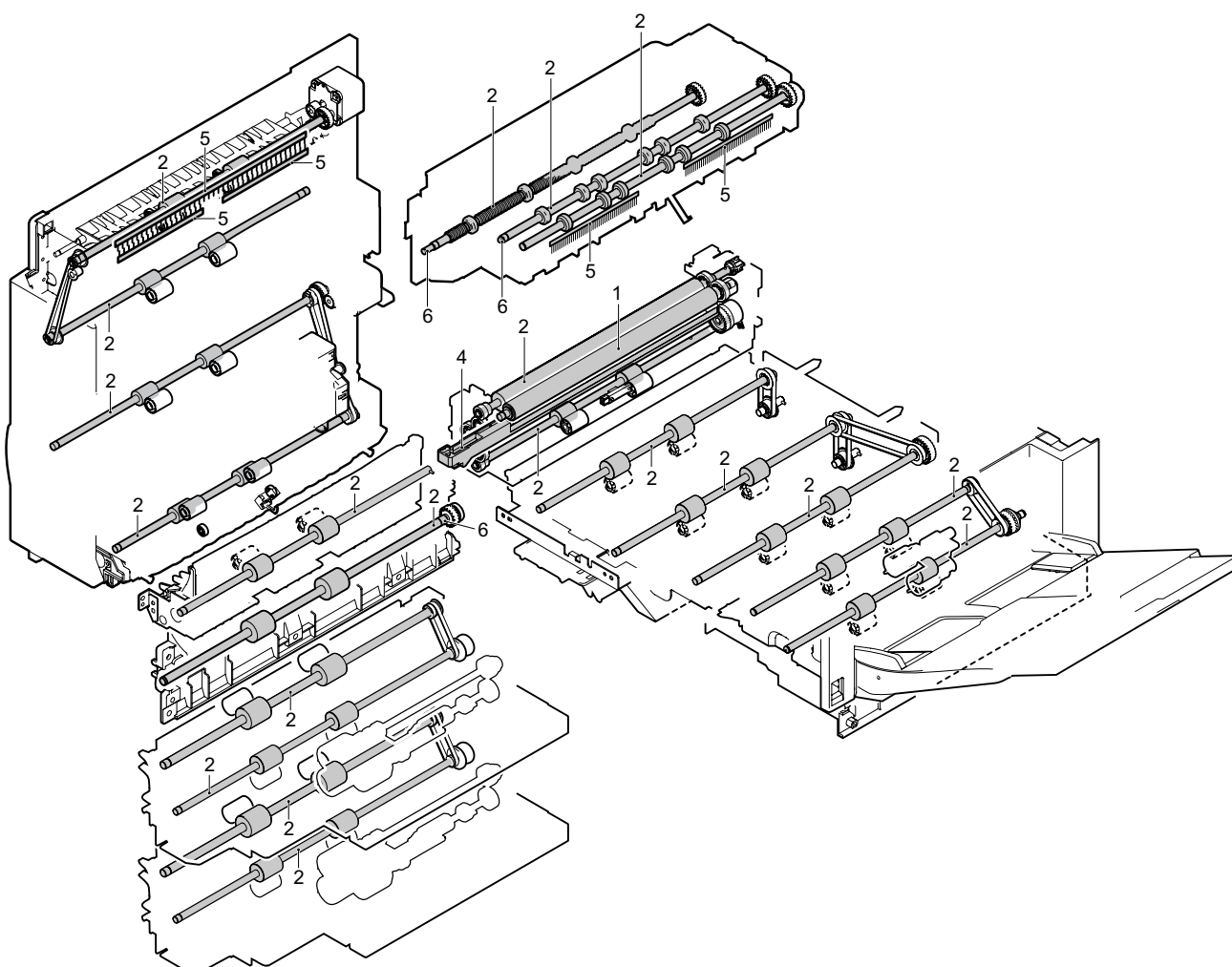
- Paper feed tray 1 and 2: 200K or 1 year
- Manual paper feed/paper feed tray 3 and 4: 100K or 1 year
- Torque limiter: 800K (400K for manual paper feed section)



H. Transport section/paper exit reverse section/duplex section

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

			When calling	250 K	500 K	750 K	1000 K	1250 K	1500 K	1750 K	2000 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
				300 K	600 K	900 K	1200 K	1500 K	1800 K	2100 K	2400 K	
		55ppm (PM: 250K)										
		62ppm/70ppm (PM: 300K)										
Unit name	No.	Part name										
Transport section/ paper exit reverse section/ duplex section	1	PS follower roller	×	○	○	○	○	○	○	○	○	
	2	Transport rollers	×	○	○	○	○	○	○	○	○	
	3	Transport paper guides	○	○	○	○	○	○	○	○	○	
	4	Paper dust clean unit	×	▲	▲	▲	▲	▲	▲	▲	▲	
	5	Discharge brush	×	×	×	×	×	×	×	×	×	
	6	Shaft (Conductive grease)	×	×	×	×	×	×	×	×	×	UKOG-0012QSZZ

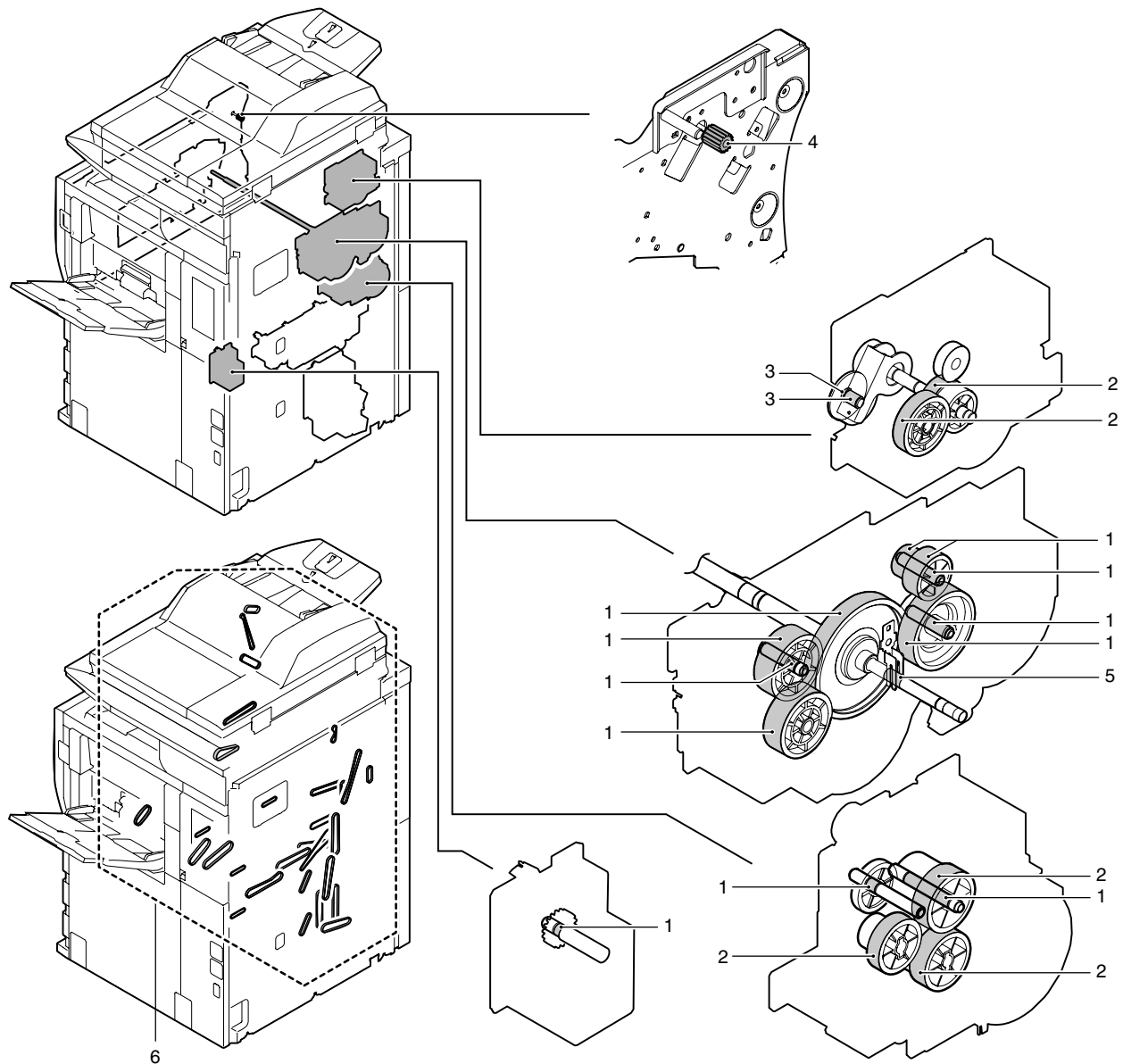


I. Drive section

× : Check ○ : Clean ▲ : Replace △ : Adjust ☆ : Lubricate □ : Shift position

(Clean, replace, or adjust as necessary.)

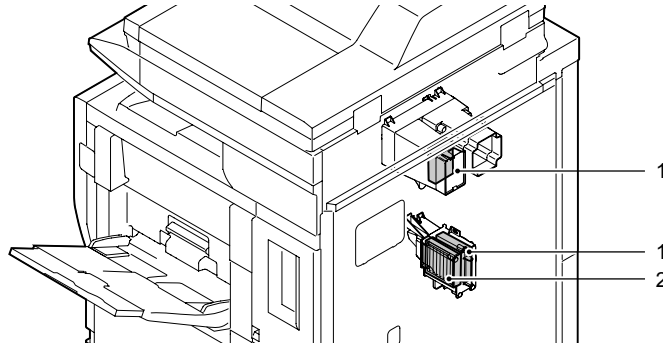
				When calling	250 K	500 K	750 K	1000 K	1250 K	1500 K	1750 K	2000 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
					300 K	600 K	900 K	1200 K	1500 K	1800 K	2100 K	2400 K	
		55ppm (PM: 250K)											
		62ppm/70ppm (PM: 300K)											
Unit name	No.	Part name											
Drive section	1	Gear (Grease)	×	☆	☆	☆	☆	☆	☆	☆	☆	☆	UKOG-0307FCZZ
	2	Gear (Grease)	×	☆	☆	☆	☆	☆	☆	☆	☆	☆	UKOG-0299FCZZ
	3	Gear (Grease)	×	☆	☆	☆	☆	☆	☆	☆	☆	☆	UKOG-0062FCZZ
	4	Gear (Grease)	×	☆	☆	☆	☆	☆	☆	☆	☆	☆	UKOG-0235FCZZ
	5	Gear (Conductive grease)	×	☆	☆	☆	☆	☆	☆	☆	☆	☆	UKOG-0012QSZZ
	6	Belts		×	×	×	×	×	×	×	×	×	



J. Filters

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

Unit name	No.	Part name	When calling	250 K	500 K	750 K	1000 K	1250 K	1500 K	1750 K	2000 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
				300 K	600 K	900 K	1200 K	1500 K	1800 K	2100 K	2400 K	
Filters	1	Ozone filter		▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [75]-7)
	2	Toner filter		▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [75]-8)



3. Other related items

A. Execution items before maintenance and servicing

Item	Simulation	
Check the developer counter value.	22	13
Check the OPC drum counter value.	22	13
Check the print count mode in each section and each operation mode.	22	1
Check the number of paper jam troubles.	22	2
Check the positions and contents of paper jams.	22	3
Check the positions and contents of paper jams (DSPF section).	22	12
Check the contents of troubles.	22	4
Print the setting values and the adjustment values.	22	6
Check the number of use of the DSPF, the scanner, the finisher, the inserter, the stapler, and the punch.	22	8
Check the number of use of each paper feed section.	22	9
Check the ROM version.	22	5

B. Mandatory maintenance and service items

The necessary items for maintenance are shown below. (The items marked with * are mandatory items.)

No.	JOB No.	Work item	Simulation	When repairing (replacing consumable parts)/maintenance					When repairing (without replacement of consumable parts)/inspecting
				When installing	When replacing the OPC drum	When replacing developer	After cleaning the scanner (read) section	Periodic maintenance	
1	-	Toner concentration reference control level setting	25-2	*		*			
2	-	The photoconductor counter is cleared.	24-7		*				
3	-	The photoconductor rotation counter is cleared.	24-11		*				
4	ADJ9	Copy image quality adjustment (check)	46-2, 9, 10, 11, 18, 31	*	*	*		*	
5	ADJ10	FAX mode print image quality adjustment (check)	46-12, 13, 14, 15, 16, 45	*	*	*		*	
6	ADJ11	Scanner mode image quality adjustment (check)	46-21, 22, 23, 24, 25, 27	*	*	*		*	

- The JOB No. indicates the title number of the adjustment item described in the chapter of the adjustments.
- Refer to the details based on this number according to necessity.

C. Execution items after maintenance and servicing

Item	Simulation	
The paper jam/trouble data are cleared.	24	1
The use quantity counter of each paper feed section is cleared.	24	2
The numbers of use of the DSPF, the scanner, the finisher, the inserter, the stapler, and the punch are cleared.	24	3
The maintenance counter is cleared.	24	4
Print the setting values and the adjustment values.	22	6

[10] ROM VERSION-UP

1. General

A. Version-up target ROM's

The version-up target ROM's are listed in the table below.

The version-up procedures of the firmware of this machine is performed without disassembling the ROM from the machine. The new program files are collectively written into the ROM's. Some new programs can be written into an optional ROM.

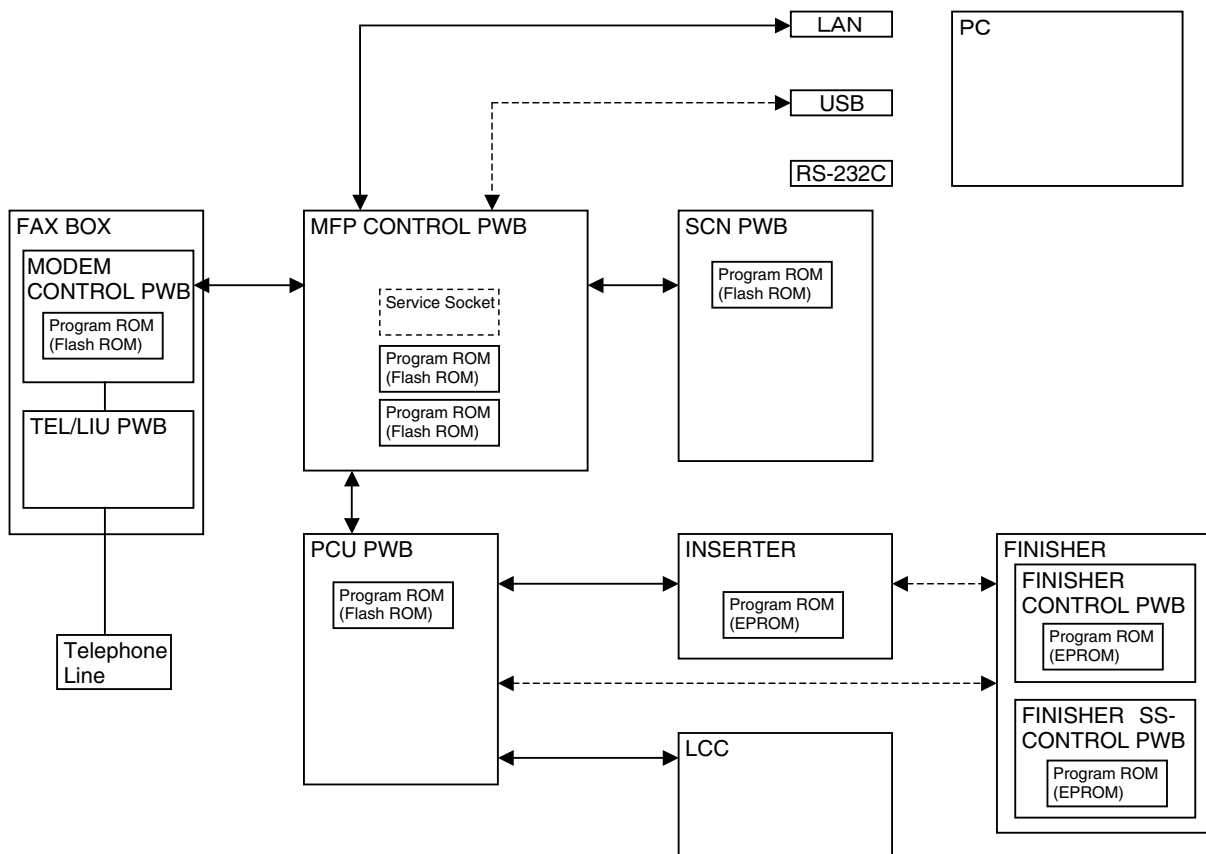
If, however, the above procedure is failed by an accident such as power interruption during the version-up procedure, use the ROM copy socket on the MFP control PWB ROM to make version-up of each ROM individually.

[Kind of ROM]

Section	Name	Type	Capacity	Replaceable
PCU PWB	PCU ROM	Flash ROM	8Mbit	Replaceable
SCN PWB	SCN ROM	Flash ROM	8Mbit	Replaceable
MFP CONTROL PWB	BOOT ROM	Flash ROM	128Mbit (64Mbit × 2)	Replaceable
	MAIN ROM	Flash ROM	64Mbit (32Mbit × 2)	Replaceable
FAX MODEM CONTROL PWB	FAX ROM	Flash ROM	8Mbit	Replaceable
FINISHER CONTROL PWB	Finisher Control ROM	EPROM	—	Replaceable
FINISHER SS-CONTROL PWB	Finisher SS-Control ROM	EPROM	—	Replaceable
INSERTER CONTROL PWB	Insertion Control ROM	EPROM	—	Replaceable

* All the Flash ROM's can be rewritten. (LAN, USB)

[Block diagram]



B. ROM version-up is required in the following cases:

ROM version-up is required in the following cases:

- 1) When improvement of performances is required.
- 2) When installing a new spare part ROM for repair to the machine.
- 3) When installing a new spare part PWB unit for repair with the ROM installed.
- 4) When there is a trouble in the ROM program and it must be repaired.

2. Precautions

A. Relationship between each ROM and version-up

When performing ROM version-up, be sure to check the combination with the version of ROM installed in the other PWB's including optional ones.

Some combinations of ROM versions may not operate the machine properly.

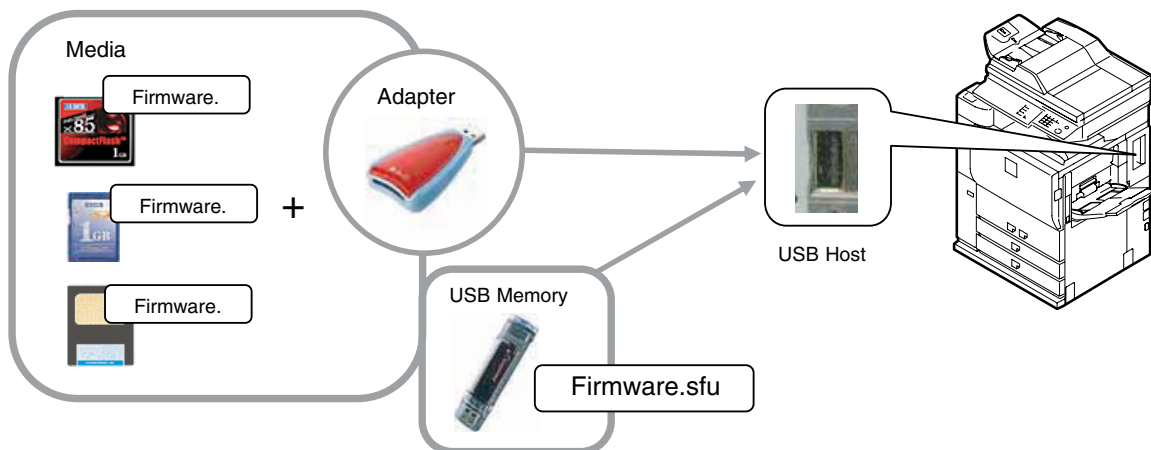
3. Necessary items for Flash ROM version-up

- A machine with ROM to be operated
- A spare PCU PWB ROM, an MFP control PWB ROM (Boot, Program), a scanner control PWB ROM (Each of which is provided with the program to allow operations.) (Used when writing the program files into the ROM is failed.)
- A PC operating with either of a USB or Ethernet port.
- USB cable or Ethernet cable. (for connection of PC and MFP control PWB)
- File2PRN.exe file (A file transfer tool for Ethernet, and USB protocols)
- USB memory device (Supported format in FAT (12/16) only)
- Version-up program (compression) file

(The SFU file for writing a program to each ROM of the PCU PWB, the MFP control PWB (boot, program), and the scanner control PWB, or the SFU file for writing all the programs collectively.)

4. Flash ROM version-up method

A. Version-up procedure 1



(1) Firmware update from USB memory device

First you must install the firmware file (xxx.sfu) to the root of a USB jump drive.

- If the firmware is in a folder, Simulation 49-01 cannot open the folder.
- Secure Jumpdrive will not work.
- If the USB memory is not inserted, "INSERT A USB MEMORY DEVICE CONTAINING MFP FIRMWARE, PLEASE USE FAT (12/16) FORMAT" is displayed.
- Non compliant to FAT32. If it's inserted, "CAN NOT SUPPORT FAT32. PLEASE USE FAT (12/16) FORMAT" is displayed.

- 1) Insert the USB memory device into the main unit.
- 2) Enter the 49-01 screen. Touch the key of the file to be updated. The screen transfers to the update screen. (In this screen, [FILE 1] is selected)

* The number of key changes depending on the number of the file in the USB memory device inserted.

```
SIMULATION 49-1
FIRMWARE UPDATE.
SELECT FIRMUP FILE, AND PRESS START.
1. FILE1.sfu
2. FILE2.sfu
3. FILE3.sfu
.
19. >>NEXT Page
```

0

- 3) Enter the file/folder number of firmware that tries to be updated with 10-key, and press [START] key. If selecting the file, "FIRMWARE UPDATE.. ARE YOU SURE ?" is displayed. ([1]: execute, [2]: get back)

```
SIMULATION 49-1
FIRMWARE UPDATE.. ARE YOU SURE?
FILE1.sfu
1. YES
2. NO
```

1

- 4) If the operation is normally completed, "COMPLETE" is displayed. When the error occurs, "ERROR" is displayed.

NOTE:

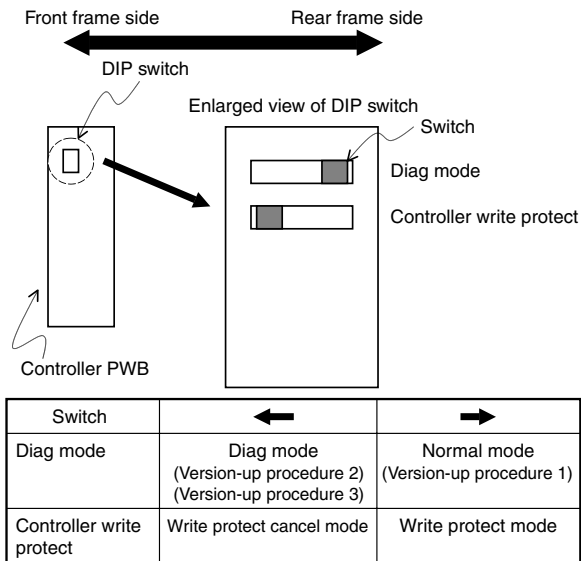
If the Imager locks up or loses power during the upgrade, it corrupt the firmware. If this occurs, you can rescue the firmware using the "C. Version-up procedure 3".

```
SIMULATION 49-1
FIRMWARE UPDATE.. COMPLETE
FILE1.sfu
```

B. Version-up procedure 2

NOTE1: MFP control PWB ROM DIP switch selection and Flash ROM slot

To make version-up of the ROM, position of the DIP switch should be below.

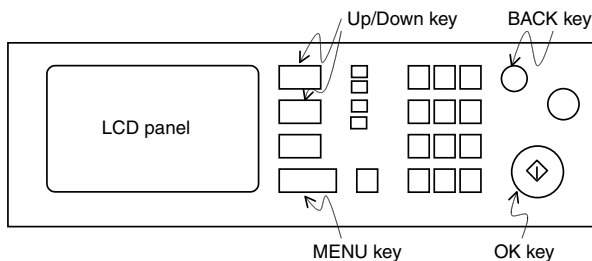


When shipping, the setting of controller write protect bit is cancel mode side.

NOTE 2: Operation panel

When entering the diag mode to write into ROM, some keys on the operation panel and the LED panel are used. Necessary information including menu items and messages is displayed on the LCD panel.

[START] key is used as [OK] key, [DOCUMENT FILING] key and [FAX/IMAGE SEND] key as up/down select keys, [JOB STATUS] key as [MENU] key, and [CLEAR] key as [BACK] key.



- 1) When performing version-up of the firmware by using the file transfer tool (File2PRN), the printer driver of the target model must be installed in advance.
- 2) When performing version-up of the firmware by using the USB I/F, take note of the following items.
Since the port for the file transfer tool (File2PRN) differs from the port for the print mode, if the port for the print mode has been already made, be careful not to mistake them. If the USB port for the print mode has been made, it is advisable to delete it in order to avoid confusion.

(Making procedures of the port for the file transfer tool (File2PRN) in the USB I/F mode)

When performing version-up of the firmware by using the USB I/F, perform the following procedures to make the port in advance.

- 1) Install the printer driver of the target model.
In this case, set the port to other than the USB mode.
- 2) Set the DIP switch to the Flash ROM version-up mode, and turn on the power.
- 3) Connect the PC and the main unit with a USB cable.
- 4) The PC detects the new hardware by Plug & Play function.

When writing the program files collectively without disassembling the ROM's from the PWB's, and when writing the program files into an optional ROM:

NOTE: The PCU ROM, the FAX ROM, and the scanner control PWB ROM must be provided with the program to operate.
An empty ROM cannot be used.

- 1) Connect the PC and the MFP control PWB with a I/F cable.
- 2) Turn on the PC and the machine.
- 3) Copy the file transfer tool and ROM program file into the same folder of the PC. (When writing with the file transfer tool File2PRN.exe)
Copy the collective ROM programming file and the file transfer tool File2PRN.exe into the folder you desire on the PC.
- 4) The following display is shown after a while from starting the machine.

Version Check

CONF: *****

- 5) Press MENU key several time to select an I/F to use from USB, Ethernet.
(Example)

Firm Update

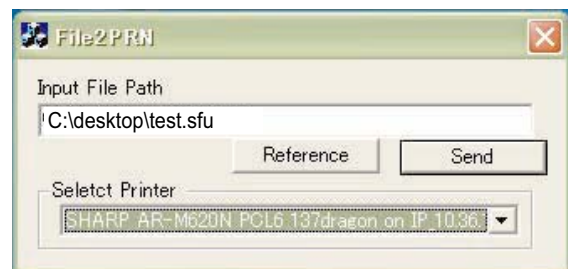
From USB

- 6) Press OK key to display the following menu.

Firm Update

Waiting Data

- 7) Transfer the program data from PC to the machine via either of USB or Ethernet.
- 8) When transferring with the file transfer tool File2PRN.exe
Start File2PRN.exe on the PC. Use this program to transfer the ROM program data from the PC to the main unit.
(Procedure)
a) Start File2PRN.exe.

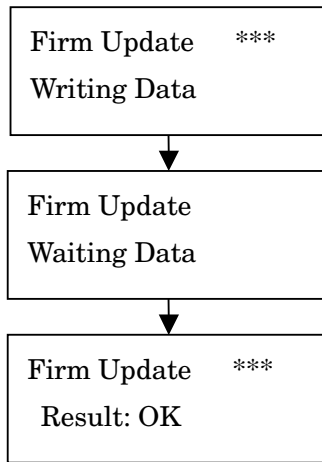


- b) Click Reference button and select a ROM program to transfer.
Select the target machine's port form Select Printer pull down list.
- c) Click Send button.
- d) The LED blinks and the LCD displays appropriate information as operation proceeds.

* When version-up of each ROM of the scanner control PWB is performed, the backlight of the display is turned off. This does not mean a trouble. Wait for a while.

- 9) When "Result: OK" is displayed after a few minutes, press Up/Down keys to check that there is no display of "Result: NG."

* When writing the program file data collectively to the machine without the FAX unit installed, "Result : NG" is displayed only to the FAX. This can be neglected.



- 10) Turn off the machine.
11) Turn on the machine, and use SIM 22-5 to check that each ROM version is properly upgraded.

C. Version-up procedure 3

As for the position of the DIP switch, refer to the B. Version-up procedure 2.

(MFP control PWB ROM slot)

The MFP control PWB ROM is provided with three Flash ROM slots: CN4, CN5, and CN6.

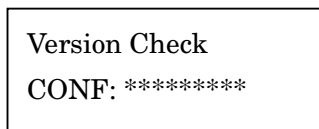
The boot ROM is installed to CN4, and the main ROM is installed to CN5. CN6 is an empty slot.

Use this empty slot of the MFP control PWB, CN6, to copy the ROM program.

When writing the program into each ROM of the PCU PWB, the FAX PWB, and the scanner control PWB individually by using an empty slot for ROM copy on the MFP control PWB ROM:

* The program write target ROM installed to the empty slot for ROM copy on the MFP control PWB ROM may be empty.
(No need to have the program data in it. The empty ROM can be used.)

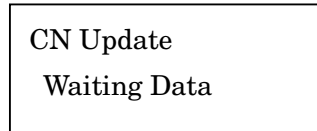
- 1) Install the write target ROM to the empty slot for ROM copy on the MFP control PWB ROM.
- 2) Connect the PC and the MFP control PWB with a I/F cable.
- 3) Turn on the PC and the machine.
- 4) Copy the file transfer tool and ROM program file into the same folder of the PC. (When writing with the file transfer tool File2PRN.exe)
Copy the collective ROM programming file and the file transfer tool File2PRN.exe into the folder you desire on the PC.
- 5) The following display is indicated after a while.



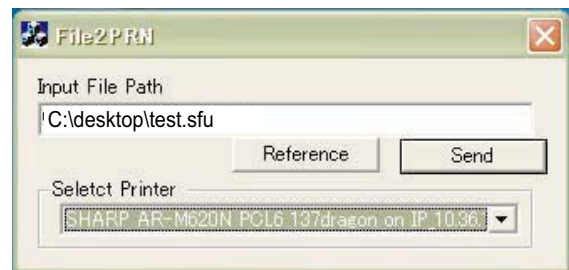
- 6) Press MENU key a few times to show the following display.



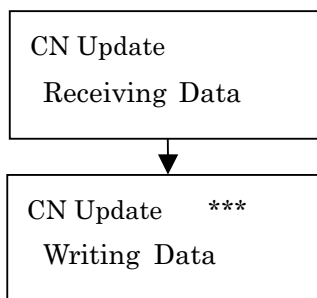
- 7) Press OK key to display the following menu.



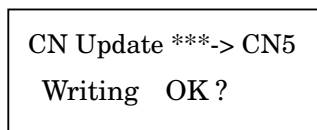
- 8) Transfer the program data from PC to the machine via either of USB or Ethernet.
9) When transferring with the file transfer tool File2PRN.exe Start File2PRN.exe on the PC. Use this program to transfer the ROM program data from the PC to the main unit.
(Procedure)
a) Start File2PRN.exe.



- b) Click Reference button and select a ROM program to transfer.
c) Select the target machine's port form Select Printer pull down list.
d) Click Send button.
e) The LED blinks and the LCD displays appropriate information as operation proceeds.
10) The LED stops flashing in a few minutes, and "Writing: OK" is displayed.



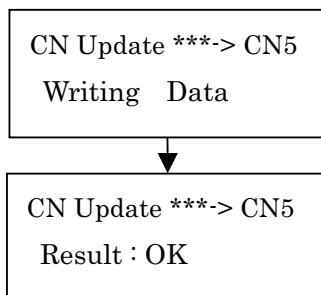
- 11) Press OK key, and the following display is shown.



- 12) "CN5" and the selection menu of slot numbers is displayed. Select "CN6" to which the target ROM is inserted to with Up/Down keys, and press OK key.

- 13) The LED flashes and the display is changed in the following sequence.

When "Result: OK" is displayed in a few minutes, press Up/Down keys to check that there is no display of "Result: NG."



- 14) Turn off the machine.
 15) Remove the ROM from the empty slot CN6 for ROM copy on the MFP control PWB ROM.
 16) Install the ROM with the revised version to the PWB.
 17) Turn on the machine, and use SIM 22-5 to check that the ROM version is normally upgraded.

* Precautions on transferring a ROM program data with the file transfer tool File2PRN
For successful transferring a ROM program data with the file transfer tool File2PRN, the following conditions should be met:

- When transferring a ROM program data with the file transfer tool File2PRN, the destination machine must be configured as a printer.
- The PC must have an appropriate printer driver installed and configured with an I/F port to use.

D. Countermeasures against "Result: NG"

Factors of "Result: NG"

The following cases may be factors of "Result: NG."

- * The DIP switch for write protect is not set properly.
- * The FAX cable is not connected. (NG for FAX)
- * ROM defect (Very rare case)

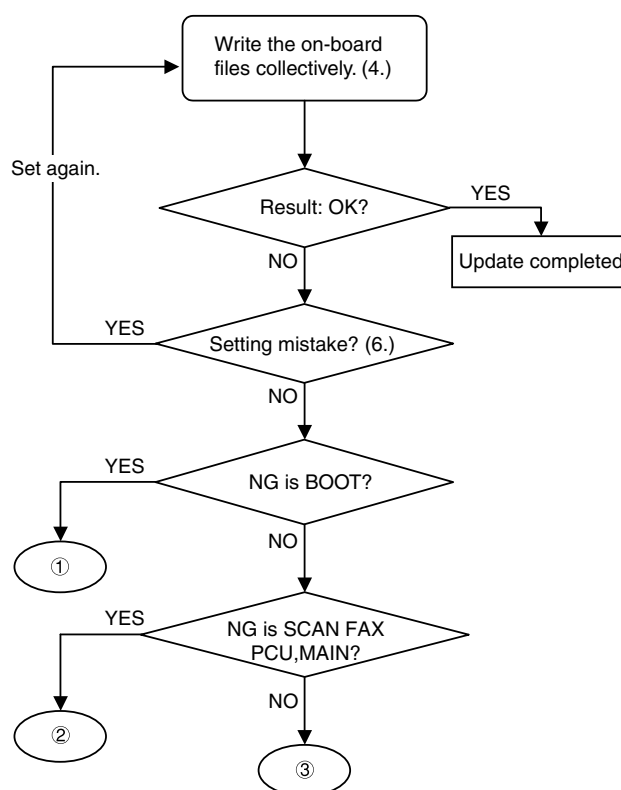
5. Turning OFF the power during the version-up procedure

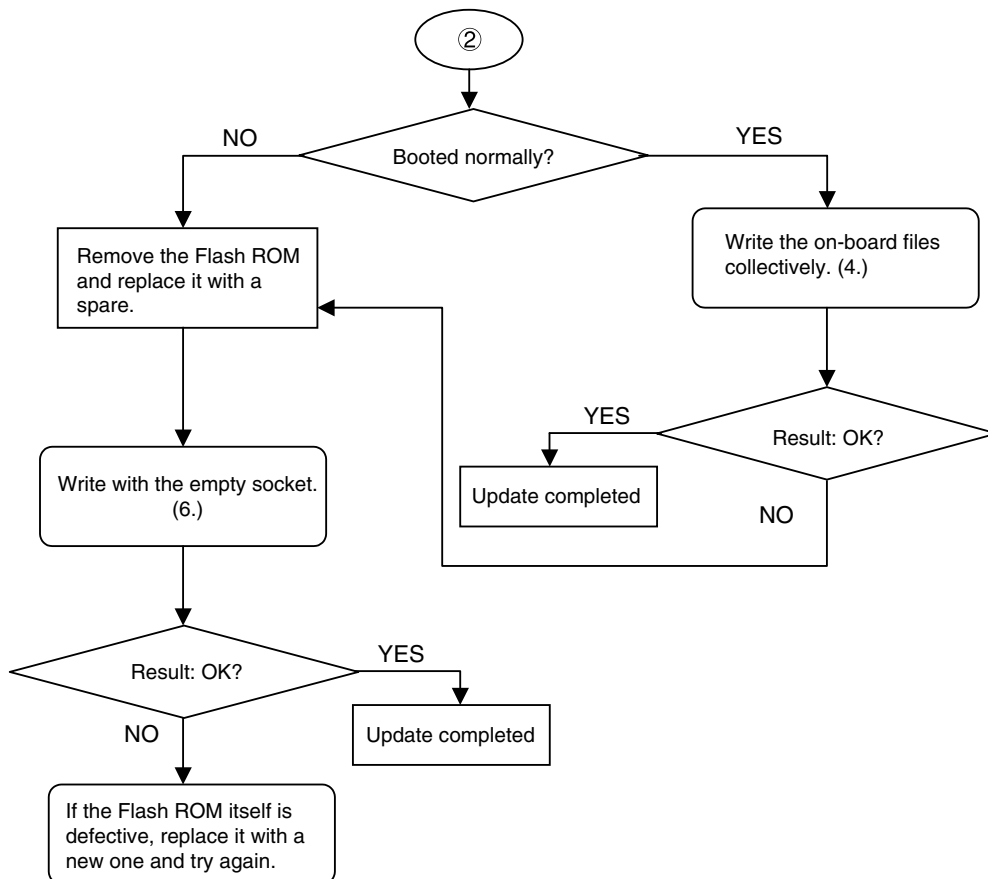
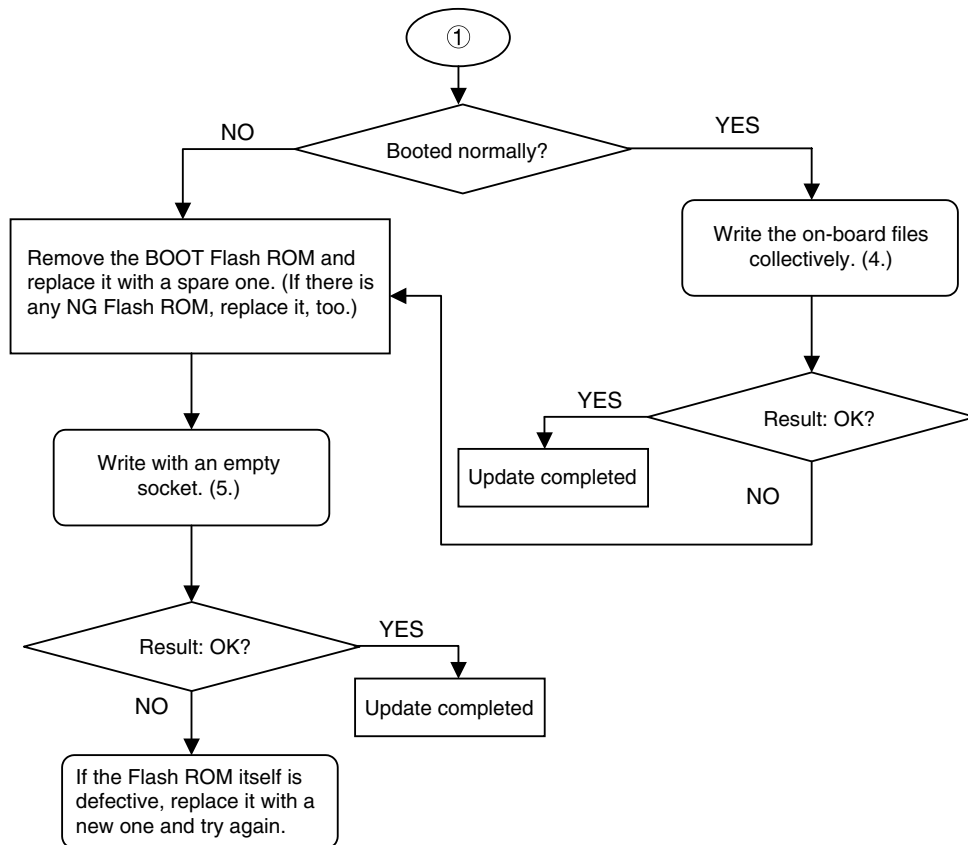
If the power is turned OFF during the version-up procedure, normal writing of data cannot be assured even though the machine can be booted again.

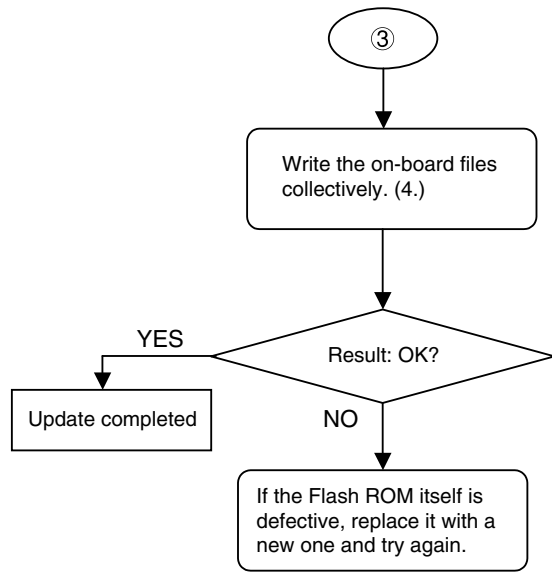
In such a case, use the spare PCU PWB ROM, the MFP control PWB ROM (BOOT, PROGRAM), and the scanner control PWB ROM each of which includes the program to be operated, and perform the version-up procedure again.

Replace with the spare PCU, the controller boot, the scanner control PWB ROM, and perform procedure "C. Version-up procedure 3" for the replaced ROM again to write data into it.

6. Version-up procedure flowchart



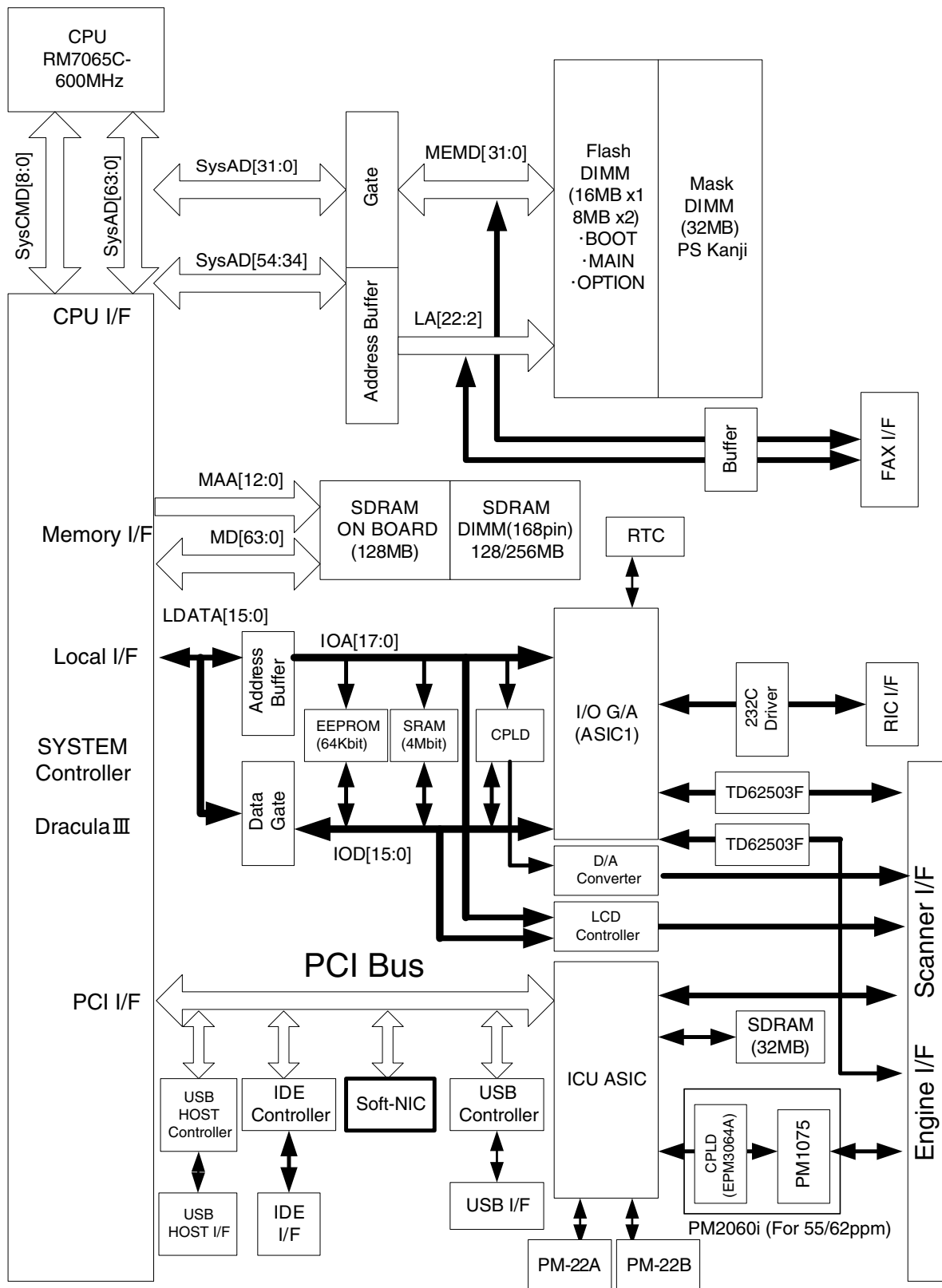




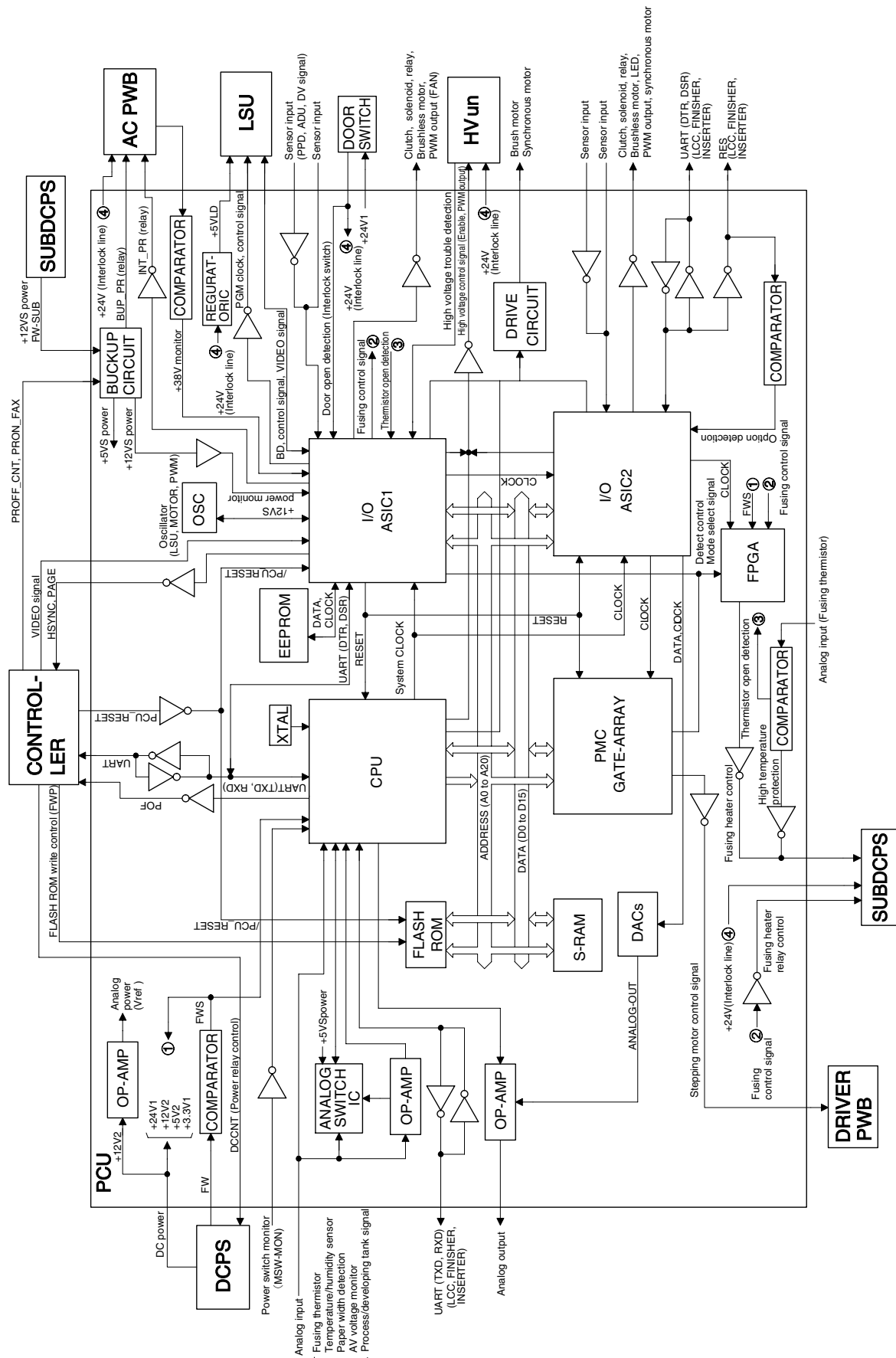
A. Overall block diagram



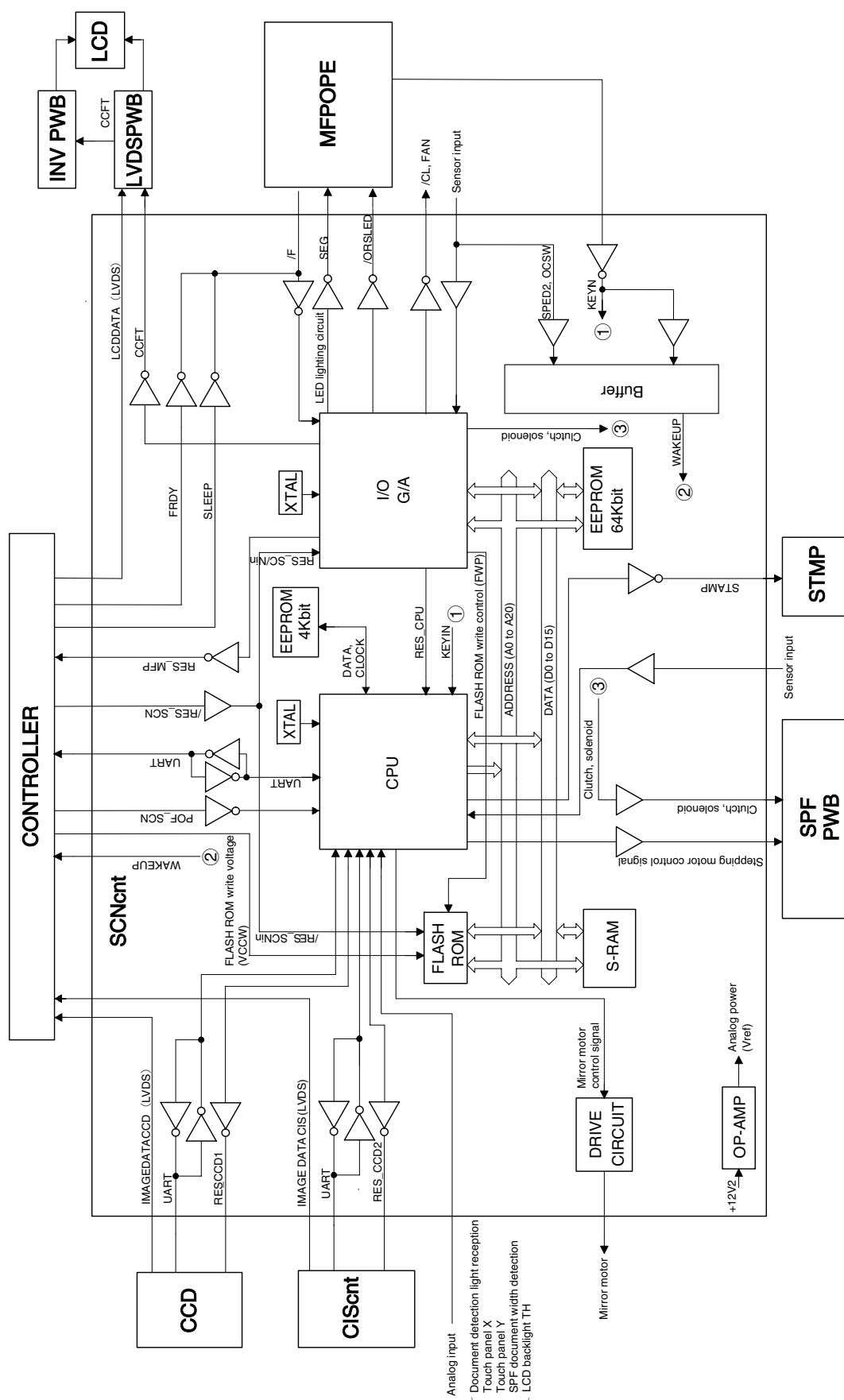
B. MFP controller



C. PCU Circuit BLOCK



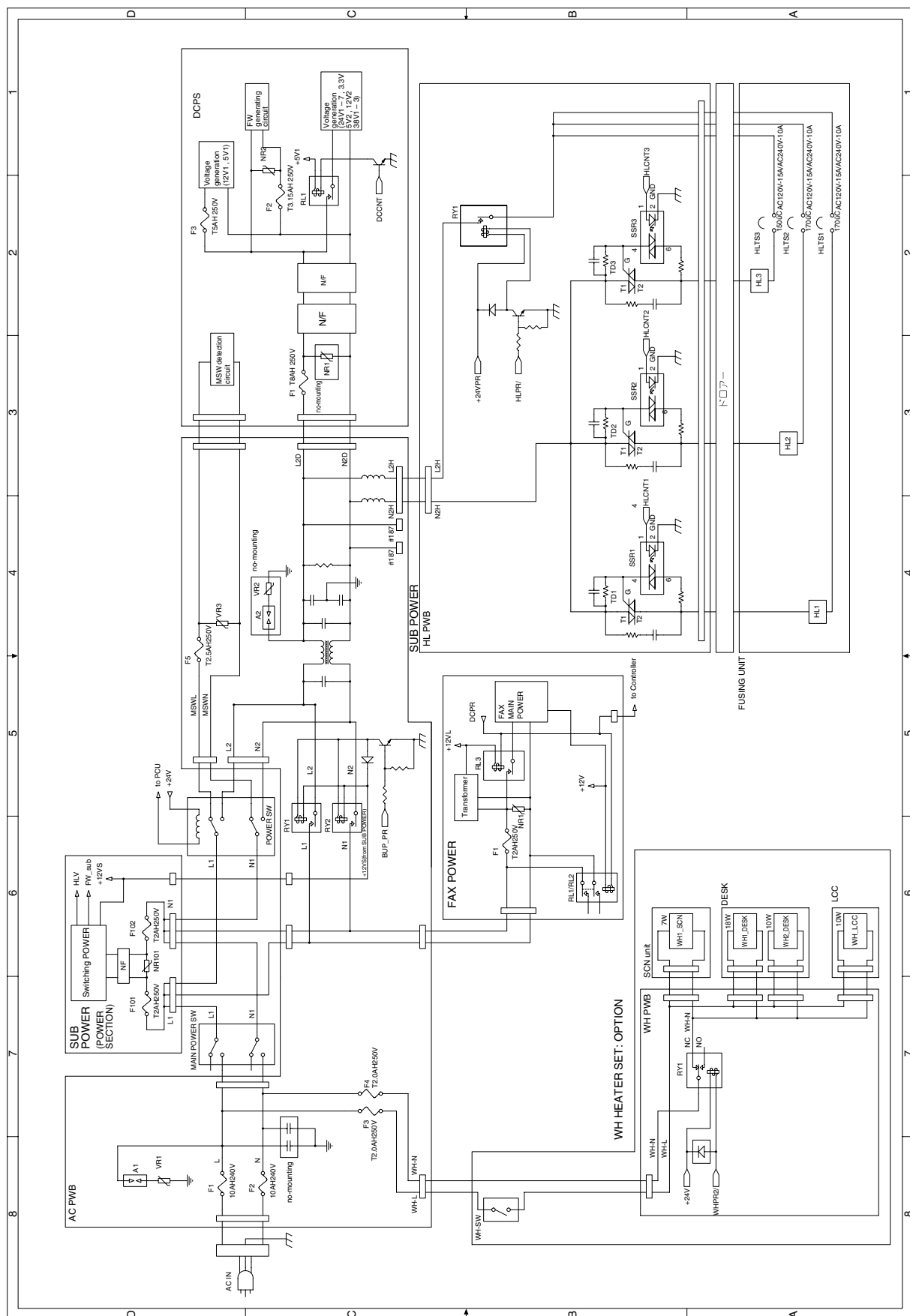
D. Scan Circuit BLOCK



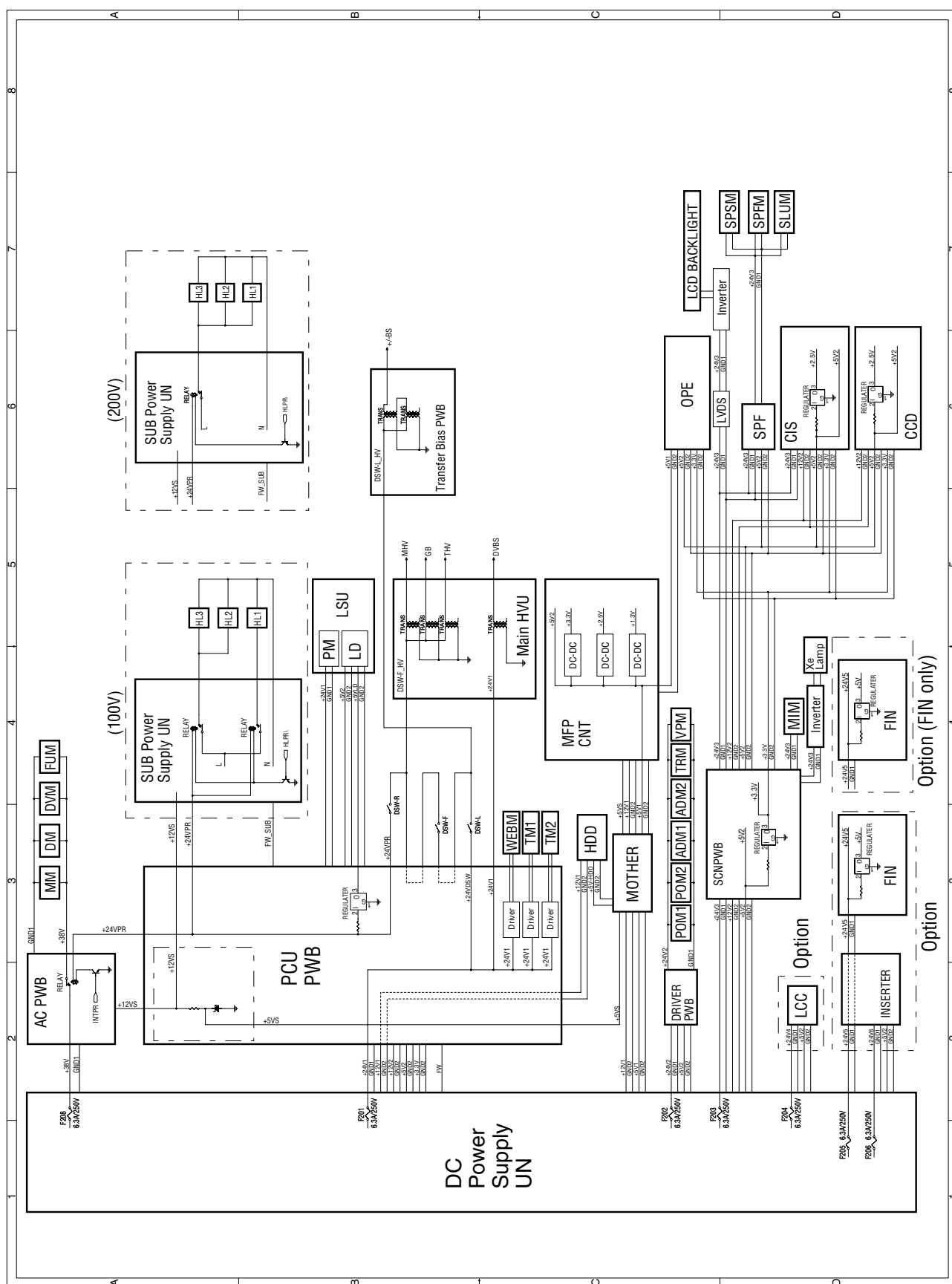
A. AC POWER LINE DIAGRAM (100V)



B. AC POWER LINE DIAGRAM (200V)



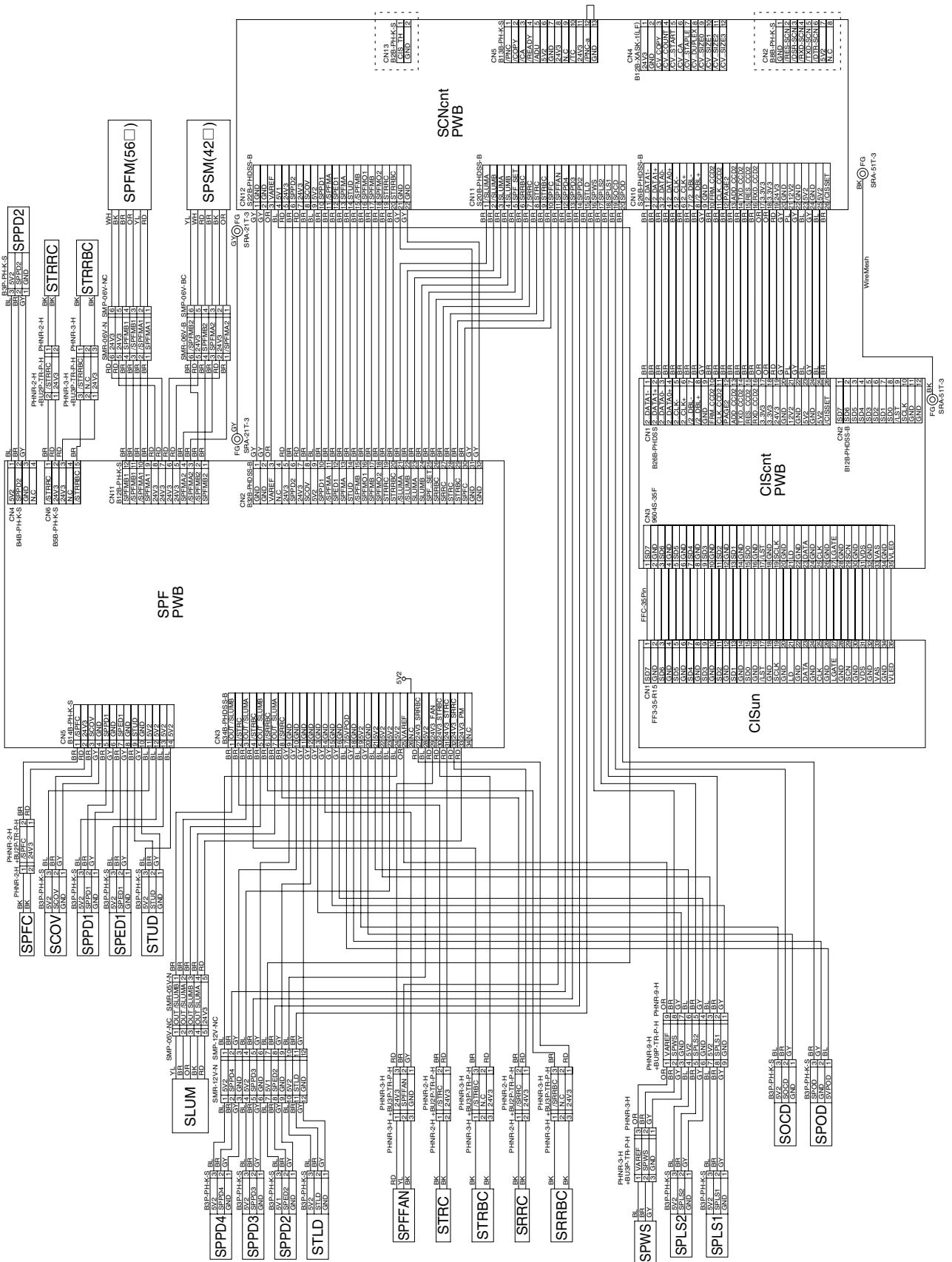
C. DC POWER LINE DIAGRAM



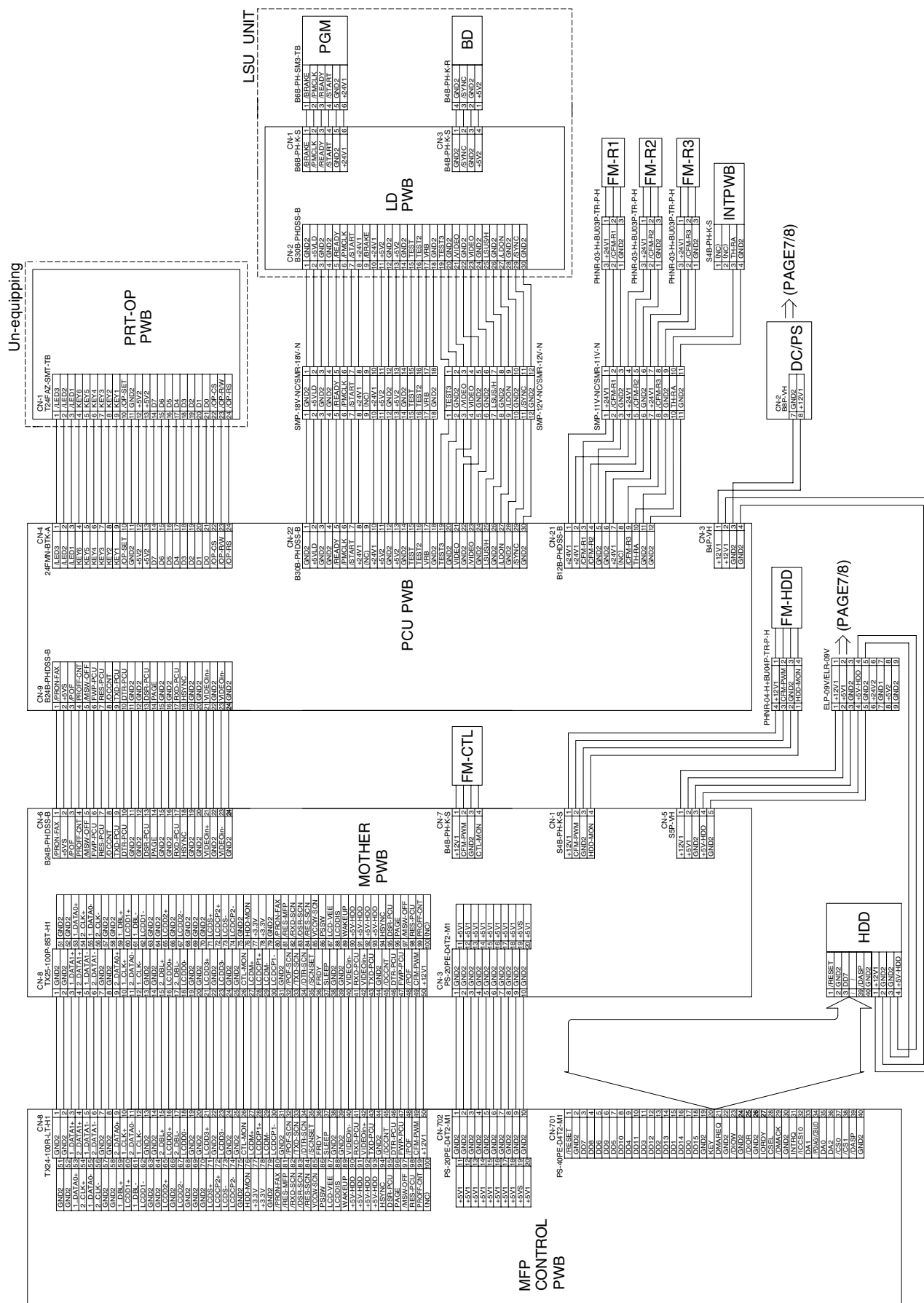
A. SCN unit section



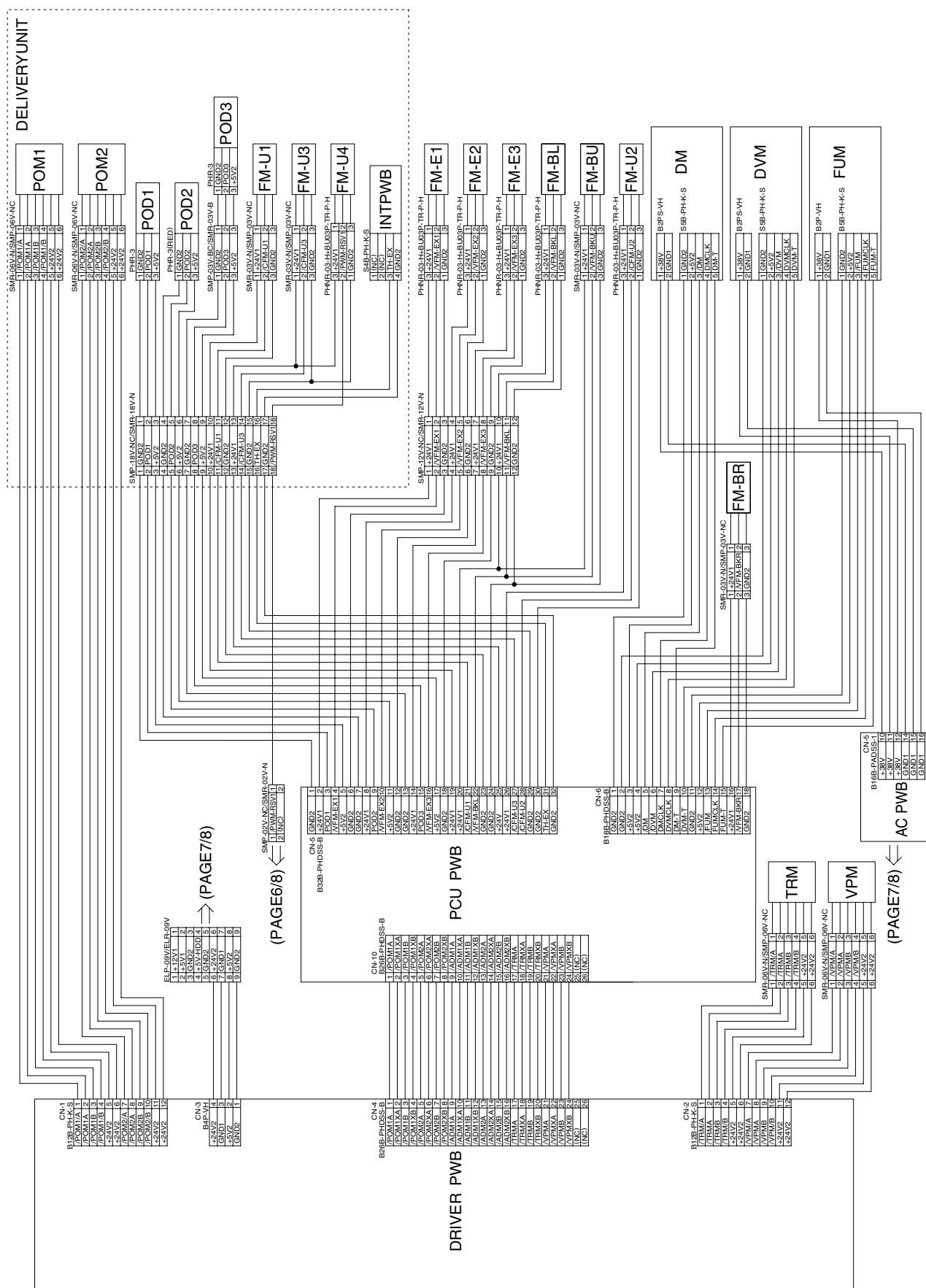
B. DSPF unit section



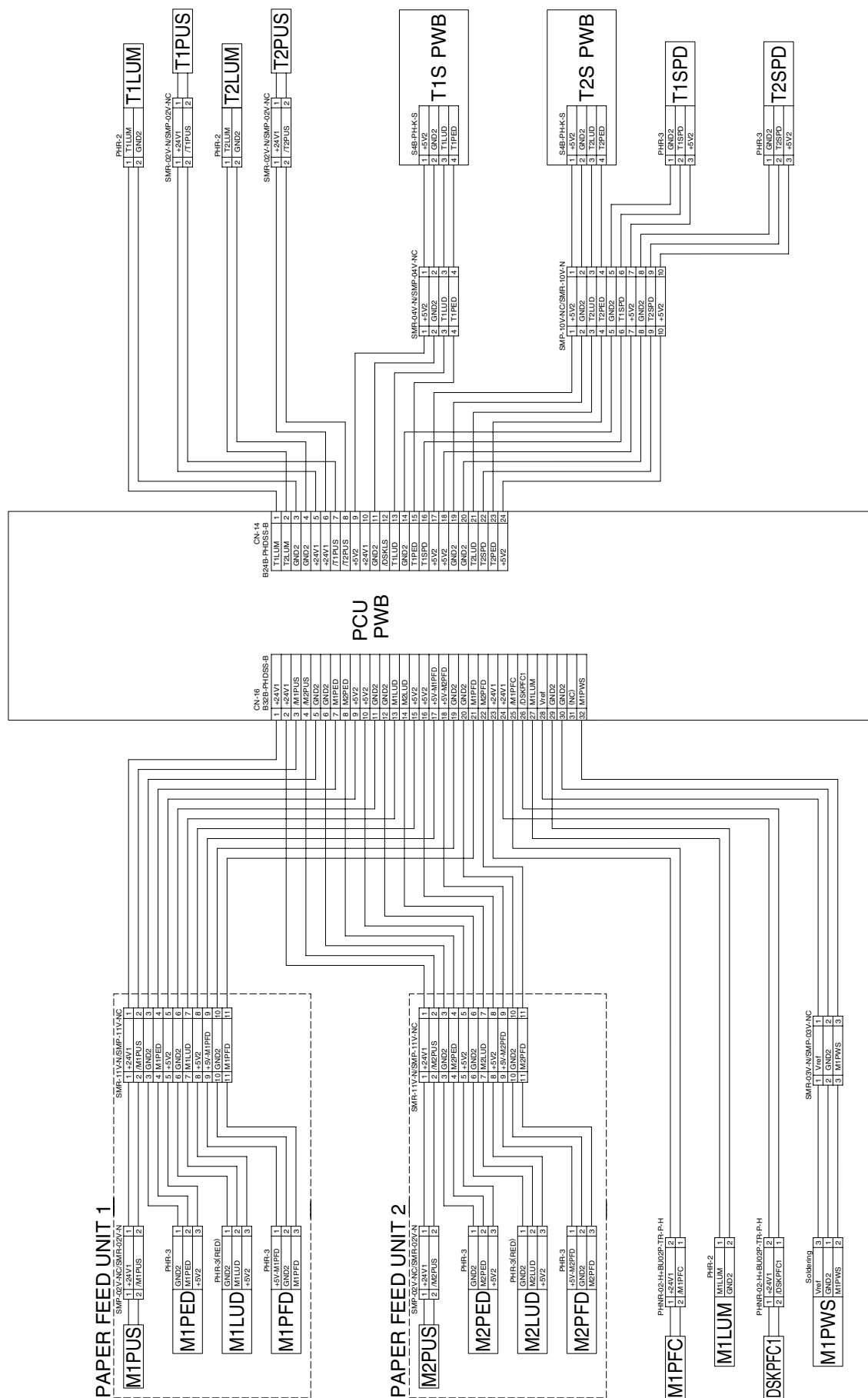
C. Image process section



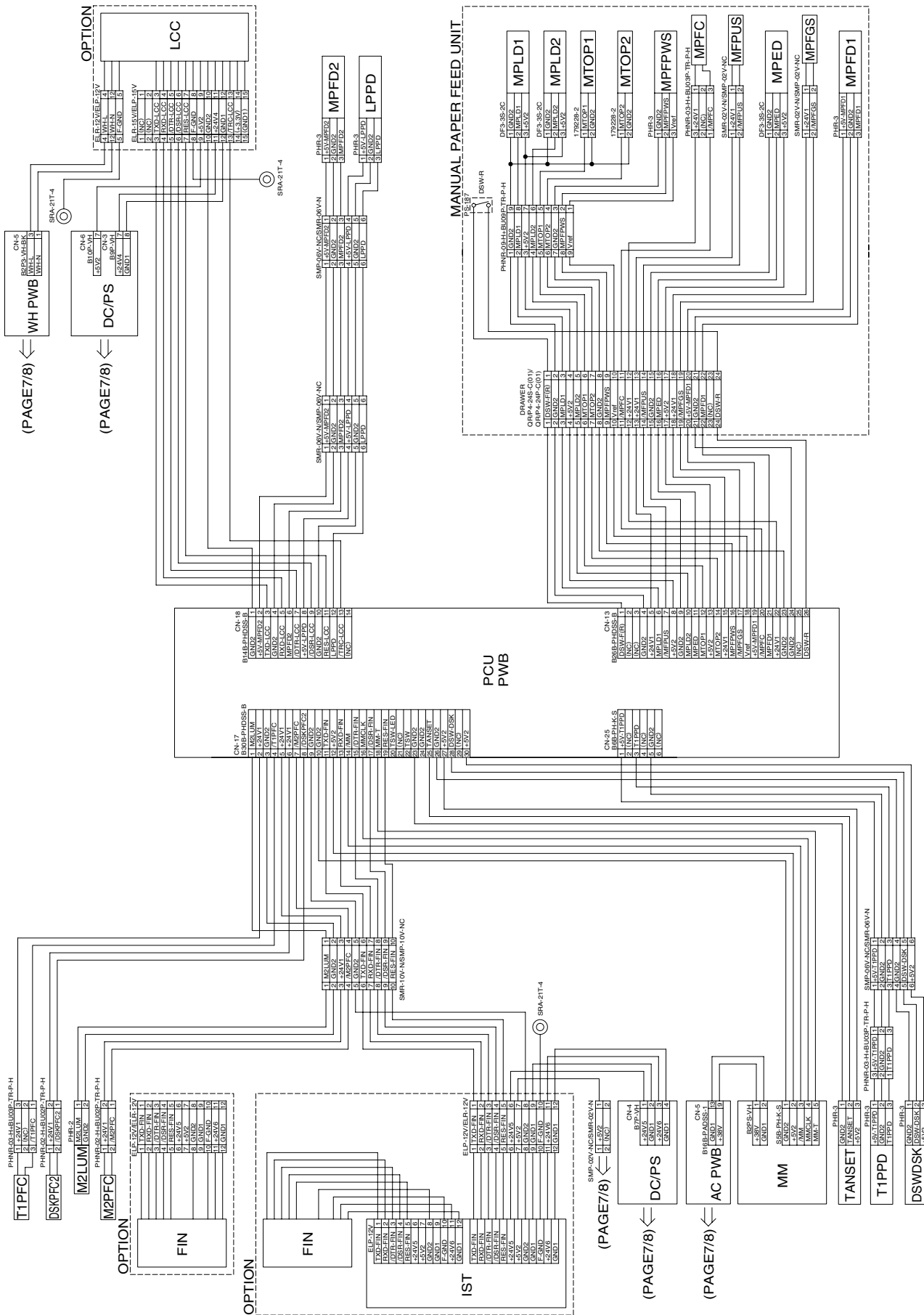
D. Paper transport section (1/2)



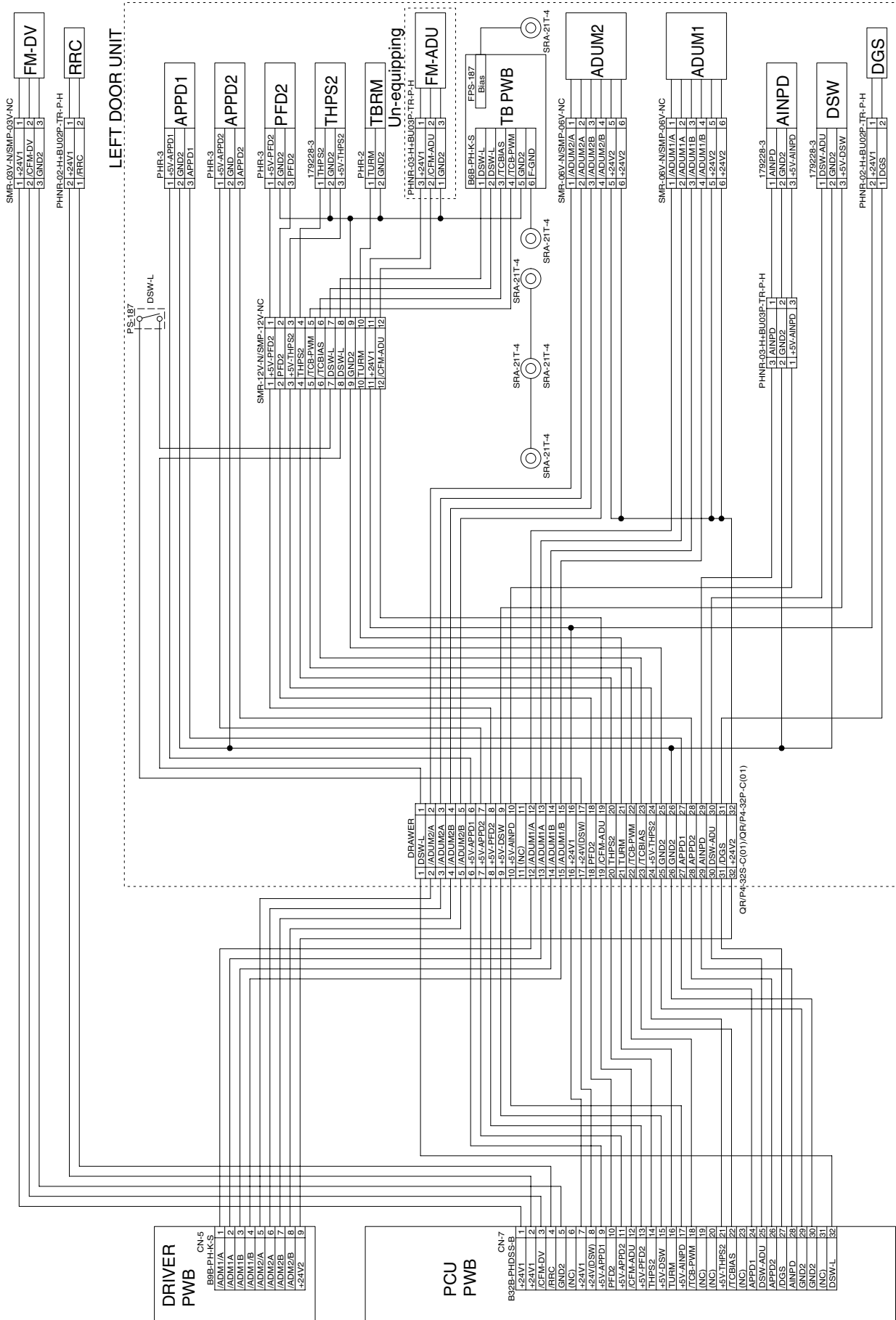
E. Paper transport section (2/2)



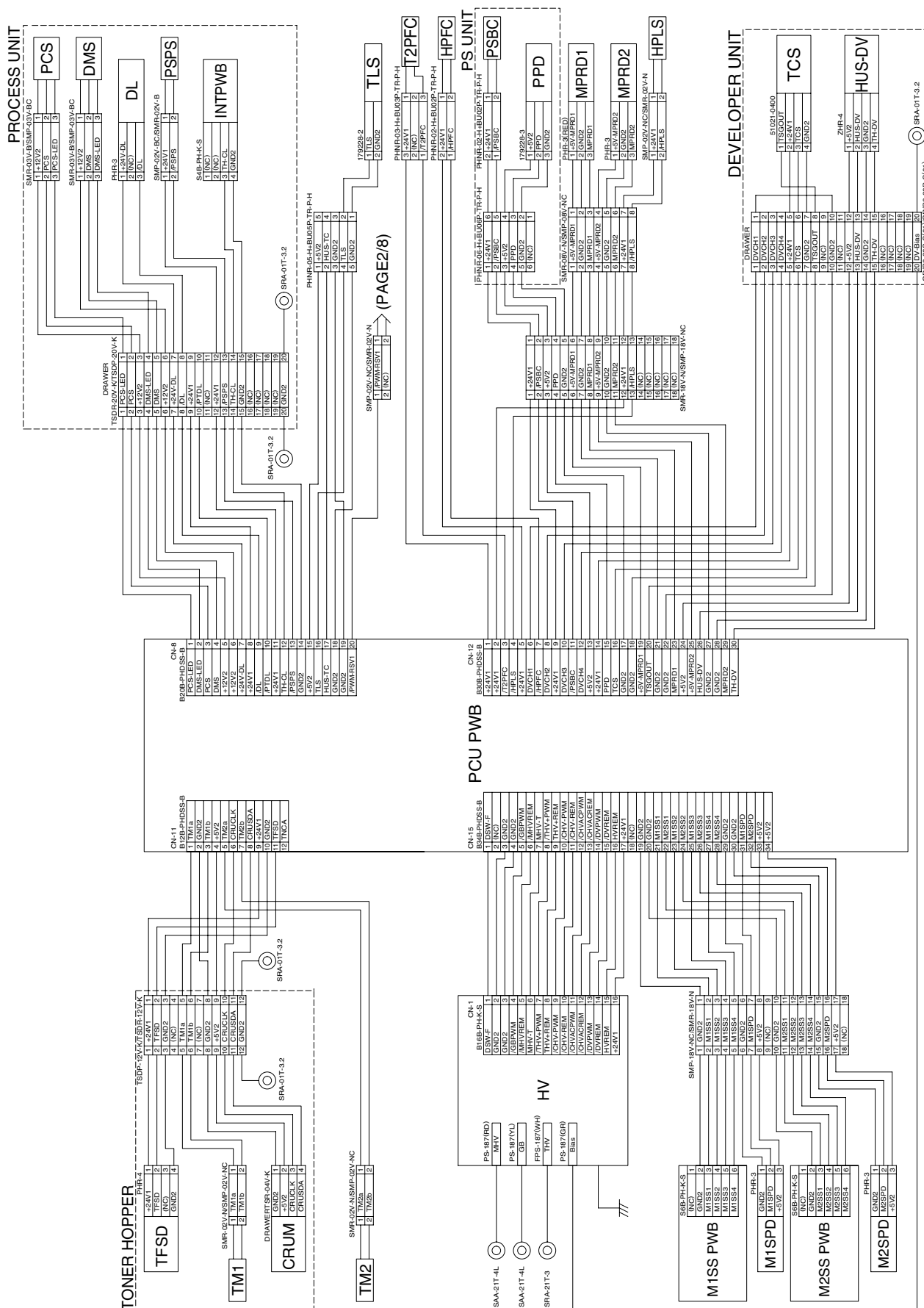
F. Transport/Option section



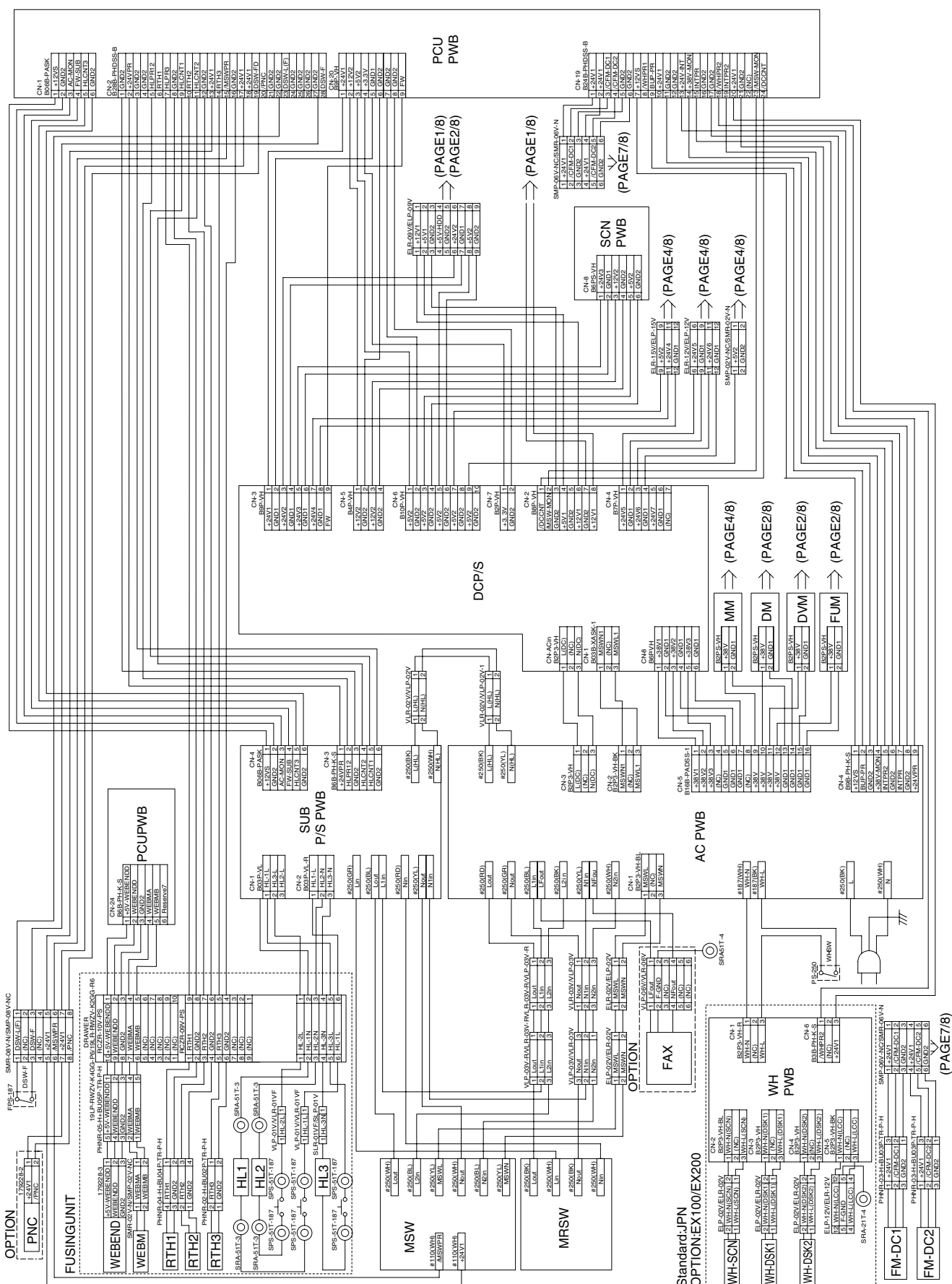
G. Left door transport section



H. Process section



I. Power source peripheral section



J. PCU connector table

CN-18		B14B-PHDD5B			
MPFD2	+5V _{MPFD2}	2	1	GND2	
	GND2	4	3	TXD-LCC	
	MPFD2	6	5	RXD-LCC	
LPPD	+5V _{LPPD}	8	7	DTR-LCC	
	GND2	10	9	/DSR-LCC	
	LPPD	12	11	RES-LCC	
	(NC)	14	13	/TRC-LCC	

CM-13	R08B-PH05S-1			
	(NC)	2 1	DSW-F(R)	
	GN02	4 3	(NC)	
	6 5	+2AV1		
	MPLD1	8 7	MPELUS	
	+5V2		GN02	
	MPLD2	10 9	MPELUS	
	12 11		MPED	
	MTOP1	14 13	+5V2	
	MTOP2	16 15	+2AV1	
	MPPFPWS	18 17	MPPFGS	
	Vref		MPFCS	
	MPFC	20 19	+5V(MPFD1)	
	+2AV1	22 21	MPFD1	
	GN02	24 23	GN02	
	DSWR	26 25	(NC)	

B32B-PHDS:5	B32B-PHDS:5			
	21	2	1	-24V1
ADU	IRFC	4	3	CFRM-DV
	IRFC	5	5	GND2
	IRFC	6	6	DSW1
	PRD2	10,9	-45VAPPD1	
	CFRM-ADU	12,1	-45VAPPD2	
	THPS2	14,13	-45VDFD2	
	TURM1	16,15	-45VDSW	
	CFRM-ADU	17,16	-45VAPPD	
	GND2	18,17	INCI	
	ADU	19,18	INCI	
ADU	IRFC	22,21	-45VTHPS2	
	ADU	24,23	FEBIAS	
	APPD2	26,25	DSW-ADU	
	IRFC	27,26	DSW1	
	IRFC	28,27	DSW2	
	IRFC	29,28	DSW3	
	IRFC	30,29	DSW4	
	IRFC	31,30	INCI	
	IRFC	32,31	INCI	
	IRFC	33,32	INCI	

CN-1	B08B-PASIK		B08B-PHDS-B									
	1 +12x5	SUB P/S		+2AVPR		2 1	GN02					
	2 GN02			GN02		3 1	GN02					
	3 AC-MON			RTH1		4 5	HLPR12					
	4 GN03			RTH2		6 7	HLPR3					
	5 HLGN03			RTH3		10 9	HLGN11					
CN-2	6 GN02			RTH4		14 13	HLGN12					
							16 15	MSWPR				
							18 17	+2AV1				
							19 NC	DSW-IF				
							20 19	DSW-IF				
							22 21	GN02				
CN-3							24 23	DSW-IF				
							26 25	GN02				
							28 27	GN02				
							30 29	DSW-IF				

CN-3		B4P-VH
1	+12V1	HDD
2	+12V1	
3	GND2	
4	GND2	

	PRT.OP	
CON-4	1 /LED3	
	2 /LED2	
	3 /LED1	
	4 KEV6	
	5 KEV5	
	6 KEV4	
	7 KEV3	
	8 KEV2	
	9 KEY1	
	10 /OP.SET	
	11 GND2	
	12 +SV2	
	13 +SV2	
	14 D7	
	15 D6	
	16 D5	
	17 D4	
	18 D3	
	19 D2	
	20 D1	
	21 D0	
	22 /OP-CS	
	23 /OP-RW	
	24 /OP-RS	

GN-20	B9P-VH
1	+24V1
2	+12V2
3	+5V2
4	+3.3V1
5	GN01
6	GN02
7	GN02
8	GN02
9	FW

CN-21		B12B-PHDSS-B			
CFM-R2	+24V1	2	1	+24V1	CFM-R1
	/CFM-R2	4	3	/CFM-R1	
	GND2	6	5	GND2	
TH-RA	(NC)	8	7	+24V1	CFM-R3
	TH-RA	10	9	/CFM-R3	
	GND2	12	11	GND2	

CON-22	B30B-PHDSS-5	+5VLD	2 1	GN22	LSU
		4 3	GN2		
		5	READY		
		7	ISTART		
		8	17		
		12	1211		
		GN2	+5V2		
		1413	+5V2		
		GN2	TEST		
		1615	TEST		
		GN2	1817		
		2018	TEST3		
		2221	VIDEO		
		2423	VIDEO		
		2625	VIDEO		
		2827	15VNC		
GN2	3029	15VNC	LSU		

CN-24	1	+5V-WEBEND0	WEB
	2	WEBEND0	
	3	GND2	
	4	WEBMA	
	5	WEBMB	
	6	Reserved	

CON-19	B2AB-PHDS5				
	+24V1	2 1	+24V1	2 1	+24V1
WH-DV	CFM-DC2	CFM-DC2	4	CFM-DC1	CFM-DC1
			6	5	GND2
		WHPR1	8	+7V5	
			10	9	BUP-PR
			12	GND2	
WH		23B-MON	14	13	+24V-INT
			16	15	23B-MON
		WHPR2	18	17	GND2
		+24V1	20	19	INTER2
		(NC)	22	GND1	
DCPS	DCPS	DCENT	24	23	MSW-MON
			26	25	DCPS

CON-14	B24B-P HDSS3			
	T2LUM	T2LUM GN2	2 1 GN2	T1LUM
	T2LUM	+24V1	6 5 GN2	T1LUM
	T2PUS	/T2PUS	8 17 T1PUS	T1PUS
	DSKLS	+24V1	10 9 +5V2	T1LUD
		/DSKLS	12 11 GN2	T1PUD
	T1SPD	14 18 T1LUD	14 18 T1LUD	
		+5V2PD	18 17 +5V2	
		GN2	20 19 GN2	T2LUD
	T2SPD	T22P1	22 21 T2LUD	T2PUD
	T2SPD	GN2	24 23 T2PUD	

CN-8	B20B-PHDS5-A			
	DMS-LED	2.1	/PCS-LED	
DMS	DMS	4.3	PCS	PCS
	+12V2	6.5	+12V2	
PTDL	+24V1	8.7	+24V1/DL	DL
	TH-CL	10.9	/DL	
TH-C/L	GN2	12.1	+24V1	PSPS
		14.3	/PSPS	
TL5	TL5	16.15	+5V2	HUS-TC
	GN2	18.17	HUS-TC	
CFM-1/4	/PMM-RSV12019	GN2		

CN-9		B24B-PHDS-5			
	+5VS	2 1	1/PRON-FAX		
MOTH	PROF-CONT	4	3	POF	
	FWP-PCU	6	5	MSW-OFF	
	D/CONT	8	7	RES-PCU	
	DTR-PCU	10	9	TXD-PCU	
	GN2	12	11	GN2	
	PAGE	14	13	DSR-PCU	
	GN2	16	15	GN2	
	GN2	18	17	DSR-PCU	
	GN2	20	19	GN2	
	GN2	22	21	VIDEO+P	
MOTH	GN2	24	23	VIDEO+P	
	GN2	26	25	GN2	

CON-15		B34E-PHDS5-1			
		INC1	2 1	DSW.F	
HV		GN02	4	3	GNP2
		MAIVREM	6	5	ABP2M
		THIV.FWM	8	7	THV.F
		CHIV.FWM	10	9	THV.FWM
		CHVACPREM	12	11	CHVACPREM
		CHVACPREM	14	13	CHVACPREM
		CHVACPREM	16	15	DVREM
		CHVACPREM	18	17	DVREM
		INC1	18	17	24V1
		GN02	20	18	GN02
M2S5		M2S1	22	21	M1S1
		M2S2	24	23	M1S2
		M2S3	26	25	M1S3
		M2S4	28	27	M1S4
		GN02	30	29	GN02
M2SPD		GN02	32	31	SPD
		GN02	34	33	SPD
		GN02	36	35	SPD

CON-16		B328-PHDS-32			
M2PUS	-2AV1	2	1	-2AV1	
M2PUS	4	3	M2PUS	4	M1PUS
M2PUS	5	7	GND2	8	M1PUS
M2PUS	8	9	GND2	10	M1PUS
M2PUS	-5V2	10	-5V2	11	M1PUS
M2L2L	GND2	12	11	GND2	M1L2L
M2L2L	M2L2L	13	14	M1L2L	M1L2L
M2PFD	-5V2	15	-5V2	16	M1PFD
M2PFD	M2PFD	17	-5V2	18	M1PFD
M2PFD	GND2	19	GND2	20	M1PFD
M2PFD	M2PFD	21	22	M1PFD	M1PFD
M2PFD	-2AV1	24	23	-2AV1	M1PFC
DSKPF01	DSKPF01	25	26	DSKPF01	M1PFC
M1PUS	M1PUS	27	28	M1PUS	M1LUM
M1PUS	M1PUS	29	30	M1PUS	M1LUM
M1PUS	M1PUS	31	32	M1PUS	M1LUM

COK-17	B30E-PHDSSE					
	2+V1	21	21	M2LM	M2LM	
	T1PFC	T1PFC	GND2			
	+2V1	6	+2V1			
DSKPF2	DSKPF2	8	M2PFC	M2PFC		
	+V2	1	YOC-FIN	YOC-FIN		
	MM	4	YOC-FIN	YOC-FIN		
MM	MM	16	OTR-FIN	OTR-FIN	FIN	
	MM-T	18	DSR-FIN	DSR-FIN		
	TSW-L	20	RES-FIN	RES-FIN		
TSW	TSW	22	NC	NC		
TSW	TSW	23	NC	NC		
	DSW-SK	24	DSW-SK	DSW-SK		
DSW-SK	DSW-SK	25	DSW-SK	DSW-SK		
	+V2	50	NC	NC		
		51	NC	NC		
		52	NC	NC		
		53	NC	NC		
		54	NC	NC		
		55	NC	NC		
		56	NC	NC		
		57	NC	NC		
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		94	NC	NC		
		95	NC	NC		
		96	NC	NC		
		97	NC	NC		
		98	NC	NC		
		99	NC	NC		
		100	NC	NC		

CKN-10	B2B6-PHDS5.5A				
POM1	POM1XA	2.1	POM1A		POM1
	POM1XB	4.3	POM1B		
POM2	POM2XA	6.5	POM2A		POM2
	POM2XB	8.7	POM2B		
ADM1	ADM1XA	10.9	ADM1A		ADM1
	ADM1XB	12.1	ADM1B		
ADM2	ADM2XA	14.3	ADM2A		ADM2
	ADM2XB	16.5	ADM2B		
TRM	TRM1XA	18.7	TRM1A		TRM
	TRM1XB	20.9	TRM1B		
VPM	VPM1XA	23.1	VPM1A		VPM
	VPM1XB	24.3	VPM1B		
	N/C	26.5	N/C		

CN-11		B12B-PHDSS-B			
CRUM	GN22	2	1	TM1a	TM1
	+SV2	4	3	TM1b	
	CRUCLK	6	5	TM2a	TM2
	CRUSDA	8	7	TM2b	
TFSD	GN2	10	9	+24V1	TFSD
TNCA	TNCA	12	11	TFSD	

CNK1.2	B30B-PHDS5				
	+24V1	21	124V1	21	T24PC
HPLS	DVCH1	6	5	124PC	
	DPVCH1	6	5	124V1	
	DVCH2	8	7	HPFC	
	DVCH3	8	7	HPFC	
DV	DVCH4	11	10	PSBC	
	DVCH5	11	10	PSBC	
	DVCH6	14	13	PSBC	
	DVCH7	14	13	PSBC	
TCS	+24V1	14	13	+5V2	
	TCS	16	15	PPD	
	GN22	18	17	GN22	
	TSGUO2	18	17	5VMPRD1	
DV	GN22	22	21	GN22	
	GN22	22	21	5VMPRD1	
	HUS-DV	24	23	5VMPRD2	
	HUS-DV	24	23	5VMPRD2	
HUS-DV	GN22	26	25	GN22	
	GN22	26	25	MPRD2	
	TH4W	30	29	MPRD2	
	TH4W	30	29	MPRD2	

CON-5	B33B-PHDS5-5			
	+2AV1	2.1	GN22	
VFM-EX1	ATFM-EX1	4.13	P0D1	P0D1
	GN2	6.1	GN2	
	GN2	6.1	GN2	
VFM-EX2	ATFM-EX2	10.9	P0D2	P0D2
	GN2	12.1	+5V2	
	+2AV1	14.1	GN2	
VFM-EX3	ATFM-EX3	16.5	P0D3	P0D3
	GN2	17.5	GN2	
	GN2	17.5	GN2	
VFM-BKL	ATFM-BKL	22.21	CFM-U1	CFM-U1
	GN2	24.2	GN2	
	+2AV1	26.25	+2AV1	
	CFM-U2	28.27	CFM-U3	CFM-U3
	GN2	30.2	GN2	
THY2	GN2	32.31	THY3	THY3

CN-6		B18B-PH0SS-B	
DWM	GND2	2 1	GND2
	+5V2	4 3	+5V2
	DWM	6 5	/DM
	DVCMCLK	8 7	DMCLK
FUM	DVM-T	10 9	DM-T
	+5V2	12 11	GND2
	FUMCLK	14 13	/FUM
VFM-BKR	+2V1	16 15	FUM-T
		18 17	/VFM-BKR

4. Signal name list

Signal name	Name	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	Remark
			"L"	"H"				
/MIMA	Scanner motor control signal (Phase /A)	Scanner motor control (Phase /A)	—	—	7	3	SCN	
/MIMB	Scanner motor control signal (Phase /B)	Scanner motor control (Phase /B)	—	—	7	4	SCN	
/SLUMB	DDSPF paper feed tray lift-up motor control signal (Phase /B)	DSPF paper feed tray lift-up motor control (Phase /B)	—	—	11	2	SCN	
/SLUMA	DSPF paper feed tray lift-up motor control signal (Phase /A)	DSPF paper feed tray lift-up motor control (Phase /A)	—	—	11	1	SCN	
/SPFMA	DSPF motor control signal (Phase /A)	DSPF motor control (Phase /A)	—	—	12	11	SCN	
/SPFMB	DSPF motor control signal (Phase /B)	DSPF motor control (Phase /B)	—	—	12	15	SCN	
/VIDEO	Image data signal	Image signal to LSU (PCU output)	—	—	22	23	PCU	
38VMON	38V monitor signal	Detection of 38V for interlock	OFF	ON	19	14	PCU	
ACMON	AC waveform monitor signal	SUB power source AC wave high value monitor (For heater lamp ON control) (Phase control)	—	—	1	3	PCU	
ADD_CCD1	CCD serial data area identification number (CCD)	Identification of address data and image data area in CCD serial data	—	—	1	66	SCN	
ADD_CCD2	CIS serial data area identification number (CIS)	Identification of address data and image data area in CIS serial data	—	—	10	13	SCN	
ADM1A	Duplex (ADU) motor 1 (Upstream side) control signal (Phase A)	Duplex (ADU) motor 1 (Upstream) control (Phase A)	—	—	10	9	PCU	
ADM1B	Duplex (ADU) motor 1 (Upstream side) control signal (Phase B)	Duplex (ADU) motor 1 (Upstream) control (Phase B)	—	—	10	11	PCU	
ADM1XA	Duplex (ADU) motor 1 (Upstream side) control signal (Phase /A)	Duplex (ADU) motor 1 (Upstream) control (Phase /A)	—	—	10	10	PCU	
ADM1XB	Duplex (ADU) motor 1 (Upstream side) control signal (Phase /B)	Duplex (ADU) motor 1 (Upstream) control (Phase /B)	—	—	10	12	PCU	
ADM2A	Duplex (ADU) motor 2 (Downstream side) control signal (Phase A)	Duplex (ADU) motor 2 (Upstream) control (Phase A)	—	—	10	13	PCU	
ADM2B	Duplex (ADU) motor 2 (Downstream side) control signal (Phase B)	Duplex (ADU) motor 2 (Upstream) control (Phase B)	—	—	10	15	PCU	
ADM2XA	Duplex (ADU) motor 2 (Downstream side) control signal (Phase /A)	Duplex (ADU) motor 2 (Upstream) control (Phase /A)	—	—	10	14	PCU	
ADM2XB	Duplex (ADU) motor 2 (Downstream side) control signal (Phase /B)	Duplex (ADU) motor 2 (Upstream) control (Phase /B)	—	—	10	16	PCU	
AINPD	Duplex (ADU) paper entry detection signal	Duplex (ADU) paper entry detection, detection of paper exit to finisher	Paper pass	—	7	28	PCU	
APPD1	Duplex (ADU) paper pass detection signal 1	Duplex (ADU) upstream paper pass detection	Paper pass	—	7	24	PCU	
APPD2	Duplex (ADU) paper pass detection signal 2	Duplex (ADU) midstream paper pass detection	Paper pass	—	7	26	PCU	
AUD	Auditor installation detection signal	Auditor installation detection	Counter available		5	5	SCN	
BUP-PRout	Power save mode relay signal	Selection of power save mode and normal power mode	Relay OFF	Relay ON	19	9	PCU	
BZR	Buzzer signal	Key touch sound buzzer signal	Ring		1	86	SCN	
CA	Clear all (Auditor) signal	Clear all (Auditor)	Clear		5	3	SCN	
CCDFAN	CCD fan motor control signal	CCD fan motor control	ON		1	17	SCN	Not used.
CCFT	Backlight control signal	Backlight control	ON		1	94	SCN	
CFM-DC1	Cooling fan motor control signal (Power source)	Power cooling fan motor control	Max. force of wind	Stop	19	3	PCU	
CFM-DC2	Cooling fan motor control signal (Power source)	Power cooling fan motor control	Max. force of wind	Stop	19	4	PCU	
CFM-DV	Cooling fan motor control signal (Developing)	Developing cooling fan motor control	Max. force of wind	Stop	7	3	PCU	
CFM-R1	Cooling fan motor control signal (LSU/Process section)	Cooling fan motor control (LSU, process section)	Max. force of wind	Stop	21	3	PCU	
CFM-R2	Cooling fan motor control signal (LSU/Process section)	Cooling fan motor control (LSU, process section)	Max. force of wind	Stop	21	4	PCU	

Signal name	Name	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	Remark
			"L"	"H"				
CFM-R3	Cooling fan motor control signal (LSU/Process section)	Cooling fan motor control (LSU, process section)	Max. force of wind	Stop	21	9	PCU	
CFM-U1	Cooling fan motor control	Cooling fan motor control (LSU, process section)	Max. force of wind	Stop	5	21	PCU	
CFM-U2	Cooling fan motor control signal (Paper exit, duplex (ADU) section) (Paper exit section rear side)	Paper exit, duplex (ADU) section cooling	Max. force of wind	Stop	5	28	PCU	
CFM-U3	Cooling fan motor control signal (Paper exit, duplex (ADU) section) (Front surface)	Paper exit, duplex (ADU) section cooling	Max. force of wind	Stop	5	27	PCU	
CHVACPWM	High voltage control output (Separation charger) (CHV)	Separation charger AC component PWM control	—	—	15	12	PCU	
CHVACREM	High voltage control output (Separation charger) (CHV)	Separation charger AC component ON/OFF control	ON	OFF	15	13	PCU	
CHV-PWM	High voltage control output (Separation charger) (CHV)	Separation charger DC component PWM control	—	—	15	10	PCU	
CHV-REM	High voltage control output (Separation charger) (CHV)	Separation charger DC component ON/OFF control	ON	OFF	15	11	PCU	
CISSET	CIS identification signal	CIS unit installation detection	CIS available	—	10	26	SCN	
CISTH	CIS temperature detection signal	CIS temperature detection	—	—	13	1	SCN	Not used.
CL1	Scanner lamp control signal	Scanner lamp control	ON	—	1	71	SCN	
CLK_CCD1	CCD serial data clock signal (CCD)	CD serial data output timing control (CCD)	—	—	1	62	SCN	
CLK_CCD2	CIS serial data clock signal (CIS)	CIS serial data output timing control (CIS)	—	—	10	11	SCN	
COPY	Copy status (Auditor)	Copy status signal (Auditor)	Copying	—	5	2	SCN	
CRUCLK	Communication CLK	CRUM communication CLK	—	—	11	6	PCU	
CRUSDA	Communication data address signal	CRUM communication data address signal	—	—	11	8	PCU	
CV_CA	Clear all signal (Coin vendor)	Clear all (Coin vendor)	Clear	—	4	6	SCN	
CV_COPY	Copy enable signal (Coin vendor)	Copy enable (Coin vendor)	Copy enable		4	3	SCN	
CV_COUNT	Count up signal (Coin vendor)	Count-up (Coin vendor)	Count UP		4	4	SCN	
CV_DUPLEX	Print count identification signal (Duplex mode) (For coin vendor)	Print count identification signal (Duplex mode) (For coin vendor) (Identification of single count or double count)	Duplex mode		4	8	SCN	
CV_SIZE0	Paper size signal 0 (Coin vendor)	Paper size 0 (Coin vendor)			4	9	SCN	Refer to the separate table (*2)
CV_SIZE1	Paper size signal 1 (Coin vendor)	Paper size 1 (Coin vendor)			4	10	SCN	
CV_SIZE2	Paper size signal 2 (Coin vendor)	Paper size 2 (Coin vendor)			4	11	SCN	
CV_SIZE3	Paper size signal 3 (Coin vendor)	Paper size 3 (Coin vendor)			4	12	SCN	
CV_STAPLE	Staple mode signal (Coin vendor)	Staple mode identification (Coin vendor)	Staple mode		4	7	SCN	
CV_START	Copy start signal (Coin vendor)	Copy start status (Coin vendor)	Copy start		4	5	SCN	
DCCNT	DC power control signal	DC power ON/OFF	OFF	ON	9 – 8 19 – 24		PCU	
DGS	Paper exit gate solenoid control signal	Paper exit gate control	Duplex	Simplex	7	27	PCU	
DL	Discharge lamp control signal	Discharge lamp control	ON	OFF	8	9	PCU	
DM	OPC drum motor rotating speed control signal (ON/OFF)	OPS drum motor ON/OFF	ON	OFF	6	5	PCU	
DMCLK	OPC drum motor rotating speed control (CLK) signal	OPC drum motor RPM control	—	—	6	7	PCU	
DMS	OPC drum marking sensor signal	OPC drum mark detection	—	—	8	4	PCU	
DMS-LED	OPC drum marking sensor LED control signal	OPC drum marking LED light quantity control	—	—	8	2	PCU	
DM-T	OPC drum motor lock detection signal	OPC drum motor lock detection	Rotation	Stop/Lock	6	9	PCU	
DSKPFC1	Paper feed tray 3/4 paper transport clutch control signal 1	Paper feed tray 3/4 paper transport control	Paper transport	—	16	26	PCU	
DSKPFC2	Paper feed tray 3/4 paper transport clutch control signal 2	Paper feed tray 3/4 paper transport control	Paper transport	—	17	8	PCU	

Signal name	Name	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	Remark
			"L"	"H"				
DSR_FIN	Serial communication control signal	Receive control	—	—	17	17	PCU	
DSR_LCC	Serial communication control signal	Receive control	—	—	18	9	PCU	
DSR_SCN	Serial I/F send enable (MFP)	Receive control	—	—	9	46	SCN	
DSW-ADU	Duplex (ADU) cover open/close detection signal	Duplex (ADU) cover open/close detection	Duplex (ADU) door open	Duplex (ADU) door close	7	25	PCU	
DSW-DSK	Left door open/close detection signal (Desk section)	Left door open/close detection (Desk section)	Desk left door open	Desk left door close	17	28	PCU	
DSW-F_HV	DC low voltage power (+24V) line signal for generating high voltage	High voltage power source (+24V)	—	High voltage available	15	1	PCU	
DSW-F	Front door open/close detection signal	Front door open/close detection	Left door open or Front door open	Left door close and Front door close	2	28	PCU	
DSW-L	Left door open/close detection signal	Left door open/close detection	Left door open	Left door close	7	32	PCU	
DSW-R	Manual feed open/close detection signal	Manual feed open/close detection	Left door open or Front door open or manual unit pull-out	Left door close and Front door close and manual unit insertion	13	26	PCU	
DTR_FIN	Serial communication control signal	Send control	—	—	17	15	PCU	
DTR_LCC	Serial communication control signal	Send control	—	—	18	7	PCU	
DTR_SCN	Serial I/F receive enable signal (MFP)	Send control	—	—	9	9	SCN	
DVCH1	DV unit identification signal 1	Detection of installation	—	—	12	6	PCU	
DVM	Developing motor control signal	Developing motor ON/OFF	ON	OFF	6	6	PCU	
DVMCLK	Developing motor rotating speed control (CLK) signal	Developing motor control RPM control	—	—	6	8	PCU	
DVM-T	Developing motor lock detection signal	Developing motor lock detection	Rotation	Stop/Lock	6	10	PCU	
DVPWM	Developing bias voltage control signal (PWM)	Developing bias PWM control	—	—	15	14	PCU	
DVREM	Developing bias control (ON/OFF) signal	Developing bias ON/OFF	ON	OFF	15	15	PCU	
F0	Operation panel LED matrix signal 0	Switching	—	—	1	78	SCN	
F1	Operation panel LED matrix signal 1	Switching	—	—	1	80	SCN	
F2	Operation panel LED matrix signal 2	Switching	—	—	1	82	SCN	
F3	Operation panel LED matrix signal 3	Switching	—	—	1	84	SCN	
FBIAS	Fusing bias output control signal	Fusing bias output ON/OFF control	ON	OFF	7	23	PCU	
FRDY	FAX LED lighting signal	LED lighting control in power save mode i FAX, FAX, nighttime mode		LED ON	9	14	SCN	
FRM_CCD1	CCD image data effective area signal (CCD)	CCD image data effective area control (CCD)	—	—	1	61	SCN	
FRM_CCD2	CIS image data effective area signal (CIS)	CIS image data effective area control (CIS)	—	—	10	10	SCN	
FUM	Fusing motor control signal	Fusing motor ON/OFF	ON	OFF	6	13	PCU	
FUMCLK	Fusing motor rotating speed control (CLK) signal	Fusing motor control CLK	—	—	6	14	PCU	
FUM-T	Fusing motor lock detection signal	Fusing motor lock detection	Rotation	Stop/Lock	6	15	PCU	
FW	AC power source full wave signal	Power monitor	—	—	20	9	PCU	
FW_SUB	Sub power source full wave signal	Sub power full wave signal	—	—	1	4	PCU	
FWP-PCU	Flash write protect signal	Flash write protect	—	—	9	6	PCU	
GBPWM	Making charger grid bias voltage (PWM) control signal	Main charger grid bias voltage (PWM) control	—	—	15	5	PCU	
HLCNT1	Upper fusing roller center heater lamp control signal	Upper fusing roller center heating control	OFF	ON	2	9	PCU	
HLCNT2	Upper fusing roller center heater lamp control signal	Upper fusing roller edges heating control	OFF	ON	2	11	PCU	

Signal name	Name	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	Remark
			"L"	"H"				
HLCNT3	Sub heat roller heater lamp control signal	Sub heat roller heater lamp control	OFF	ON	1	5	PCU	
HLPRout	Fusing heater lamp power relay control signal	Fusing heater lamp power relay control	Relay OFF	Relay ON	2	5	PCU	
HLPRout3	Fusing heater lamp power relay 3 control signal	Fusing heater lamp power relay 3 control	Relay OFF	Relay ON	2	7	PCU	
HPFC	Horizontal paper transport clutch control signal	Horizontal paper transport clutch control	Paper transport	—	12	7	PCU	
HPLS	Paper guide lock solenoid control signal	Paper guide lock solenoid control	Lock	—	12	4	PCU	
HSYNC	Horizontal sync signal	Horizontal sync	—	—	9	18	PCU	
HUS-DV	Developing humidity sensor	Developing section peripheral humidity detection	—	—	12	26	PCU	
HUS-TC	Transfer humidity sensor	Transfer section peripheral humidity detection	—	—	8	17	PCU	
HVREMout	High voltage control output control signal (MC/DV/TC)	High voltage ON/OFF control signal (MC/DV/TC)	OFF	ON	15	16	PCU	
INTPR2out	Interlock power relay "RY5" control signal	AC PWB relay "RY5" control (38V line interlock relay)	Relay OFF	Relay ON	19	19	PCU	
INTPRout	Interlock power relay "RY4" control signal	AC PWB relay "RY4" control (38V line interlock relay)	Relay OFF	Relay ON	19	15	PCU	
LDON	Laser ON/OFF control signal	Laser ON/OFF control	—	—	22	27	PCU	
LED0	Document size detection LED control signal 1	Document size detection LED control	—	—	3	5	SCN	
LED1	Document size detection LED control signal 0	Document size detection LED control	—	—	3	6	SCN	
LPPD	LCC paper pass detection signal	Detection of paper entry from LCC	Paper pass	—	18	12	PCU	
LSU_S/H	Laser beam horizontal sync signal	Laser beam horizontal position timing control	—	—	22	25	PCU	
M1LUD	Paper tray upper limit detection signal (Paper feed tray 3)	Paper tray upper limit detection (Paper feed tray 3)	Upper limit	—	16	13	PCU	
M1LUM	Lift-up motor control signal (Paper feed tray 3)	Lift-up motor control (Paper feed tray 3)	Stop	Up	16	27	PCU	
M1PED	Paper empty detection signal (Paper feed tray 3)	Paper empty detection (Paper feed tray 3)	Paper empty	Paper present	16	7	PCU	
M1PFC	Paper feed clutch (M1) control signal (Paper feed tray 3)	Paper feed tray 3 paper feed control	Paper transport	—	16	25	PCU	
M1PFD	Paper pass detection signal (Multi paper feed tray 3)	Paper feed tray 3 paper pass detection	Paper pass	—	16	21	PCU	
M1PUS	Paper pickup solenoid control signal (Paper feed tray 3)	Paper pickup roller control (Paper feed tray 3)	Roller UP	Paper feed	16	3	PCU	
M1PWS	Paper feed tray paper width detection signal (Paper feed tray 3)	Multi paper feed tray paper width detection (Paper feed tray 3)	—	—	16	32	PCU	
M1SPD	Paper remaining quantity detection signal (Paper feed tray 3)	Paper remaining quantity detection (Multi paper feed tray 3)	—	Remaining paper quantity 66% or less	15	31	PCU	
M1SS1	Paper size detection signal (Paper feed tray 3)	Paper size detection (Paper feed tray 3)	—	—	15	21	PCU	Refer to the separate table (*1)
M1SS2	Paper size detection signal (Paper feed tray 3)	Paper size detection (Paper feed tray 3)	—	—	15	23	PCU	
M1SS3	Paper size detection signal (Paper feed tray 3)	Paper size detection (Paper feed tray 3)	—	—	15	25	PCU	
M1SS4	Paper size detection signal (Paper feed tray 3)	Paper size detection (Paper feed tray 3)	—	—	15	27	PCU	
M2LUD	Paper tray upper limit detection signal (Paper feed tray 4)	Paper tray upper limit detection (Paper feed tray 4)	—	Upper limit detection	16	14	PCU	
M2LUM	Lift-up motor control signal (Paper feed tray 4)	Lift-up motor control (Paper feed tray 4)	Stop	Up	17	1	PCU	
M2PED	Paper empty detection signal (Paper feed tray 4)	Paper empty detection (Paper feed tray 4)	Paper empty	Paper present	16	8	PCU	
M2PFC	Paper feed clutch (M1) control signal (Paper feed tray 4)	Paper feed tray 4 paper feed control	Paper transport	—	17	7	PCU	
M2PFD	Paper pass detection signal (Multi paper feed tray 4)	Paper feed tray 4 paper pass detection	Paper pass	—	16	22	PCU	
M2PUS	Paper pickup solenoid control signal (Paper feed tray 4)	Paper pickup roller control (Paper feed tray 4)	Roller UP	Paper feed	16	4	PCU	

Signal name	Name	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	Remark
			"L"	"H"				
M2SPD	Paper remaining quantity detection (Paper feed tray 4) signal	Paper remaining quantity detection (Paper feed tray 4)	—	Remaining paper quantity 66% or less	15	32	PCU	
M2SS1	Paper size detection signal (Paper feed tray 4)	Paper size detection (Paper feed tray 4)	—	—	15	22	PCU	Refer to the separate table (*1)
M2SS2	Paper size detection signal (Paper feed tray 4)	Paper size detection (Paper feed tray 4)	—	—	15	24	PCU	
M2SS3	Paper size detection signal (Paper feed tray 4)	Paper size detection (Paper feed tray 4)	—	—	15	26	PCU	
M2SS4	Paper size detection signal (Paper feed tray 4)	Paper size detection (Paper feed tray 4)	—	—	15	28	PCU	
MFPUS	Paper pickup solenoid (MFP) control signal (Manual paper feed)	Paper pickup solenoid (MPF) control (Manual paper feed)	Paper feed with the roller down	—	13	7	PCU	
MHPS	Scanner home position sensor signal	Scanner home position detection	—	Home position	6	1	SCN	
MHVREM	Main charger control signal	Main charger ON/OFF	ON	OFF	15	6	PCU	
MHV-T	Main charger trouble detection signal	Main charger trouble detection	Trouble, no MHV	Normal	15	7	PCU	
MIMA	Scanner motor control signal (Phase A)	Scanner motor control (Phase A)	—	—	7	1	SCN	
MIMB	Scanner motor control signal (Phase B)	Scanner motor control (Phase B)	—	—	7	2	SCN	
MM	Main motor control signal	Main motor ON/OFF control	ON	OFF	17	14	PCU	
MMCLK	Main motor rotating speed control (CLK) signal	Main motor RPM control	—	—	17	16	PCU	
MM-T	Main motor lock detection signal	Main motor lock detection	Rotation	Stop/Lock	17	18	PCU	
MPED	Manual feed paper empty detection signal	Manual paper feed tray paper empty detection	Paper present	Paper empty	13	11	PCU	
MPFC	Paper feed clutch control signal (Manual feed)	Manual feed tray paper feed roller control	Paper feed	—	13	20	PCU	
MPFD1	Manual feed paper pass detection signal 1	Manual tray paper pass detection	—	Paper pass	13	21	PCU	
MPFD2	Manual feed paper pass detection signal 2	Manual tray and LCC paper pass detection	Paper pass	—	18	6	PCU	
MPFGS	Manual feed gate solenoid control signal	Manual feed gate control	Paper pass enable	Stopper	13	17	PCU	
MPFPWS	Manual feed paper width detection signal	Manual feed paper width detection	—	—	13	16	PCU	
MPLD1	Manual feed paper length detection signal 1	Manual paper feed tray paper length detection (Short)	—	Paper present	13	6	PCU	
MPLD2	Manual feed paper length detection signal 1	Manual paper feed tray paper length detection (Long)	—	Paper present	13	10	PCU	
MPRD1	Paper feed tray 2 paper pass detection signal 1	Manual feed/paper feed tray 2/ LCC paper pass detection	Paper pass	—	12	23	PCU	
MPRD2	Paper feed tray 2 paper pass detection signal 2	Manual feed/paper feed tray 2/ LCC paper pass detection	Paper pass	—	12	29	PCU	
MSWMON	MSW monitor signal	Main switch monitor	—	—	19	23	PCU	
MSWOFF	MSW OFF signal	Main switch OFF signal	—	—	9	5	PCU	
MSWPR	Main switch power relay control signal	Main switch power relay control	Relay ON	Relay OFF	2	15	PCU	
MTOP1	Manual tray pull-out position detection signal 1	Manual paper feed tray pull-out position detection (Storing position)	Store	—	13	12	PCU	
MTOP2	Manual tray pull-out position detection signal 2	Manual paper feed tray pull-out position detection (Pull-out position)	Pull out	—	13	14	PCU	
OCSW	DSPF open/close detection signal	Document size detection trigger	Close	—	3	3	SCN	
PAGE	Page signal	Print timing control for controller (Output for every page)	—	—	9	14	PCU	
PAGE1	Image effective area signal (CCD)	Indicates image data area of one page. (CCD)	—	—	1	68	SCN	
PAGE2	Image effective area signal (CIS)	Indicates image data area of one page. (CIS)	—	—	10	12	SCN	
PCS	Image density sensor signal	Detection of density of toner patch on the OPC drum	—	—	8	3	PCU	
PCS-LED	Image density sensor LED current control signal	Image density sensor LED light emitting quantity control	—	—	8	1	PCU	
PCU_DSR	Serial communication control signal	Send control signal (Serial communication)	—	—	9	13	PCU	
PCU_DTR	Serial communication control signal	Receive control signal (Serial communication)	—	—	9	10	PCU	

Signal name	Name	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	Remark
			"L"	"H"				
PCU_RES	PCU reset signal	PCU reset by the controller	Operation enable	Reset	9	7	PCU	
PCU_RXD	Serial communication send data signal	Send data to the controller	—	—	9	17	PCU	
PCU_TXD	Serial communication receive data signal	Receive data from the controller	—	—	9	9	PCU	
PD	Document size detection signal	OC document size detection analog signal	—	—	1	74	SCN	
PDSEL0	Document detection select signal 0	Document size detection signal select	—	—	1	72	SCN	
PDSEL1	Document detection select signal 1	Document size detection signal select	—	—	1	21	SCN	
PDSEL2	Document detection select signal 2	Document size detection signal select	—	—	1	22	SCN	
PFD2	Paper pass detection signal 2	Paper pass detection (Left door unit) from duplex (ADU)/ No. 1, 3, 4 paper feed tray	Paper pass	—	7	10	PCU	
PGMCLK	LSU motor RPM control signal (CLK)	LSU motor RPM control	—	—	22	6	PCU	
PNC	Count-up signal (Auditor)	Count up (Auditor)	Count UP	—	5	1	SCN	
PNC-a	Count-up signal (Personal counter)	Count up (Personal counter)	—	—	2	20	PCU	
POD1	Paper exit detection 1 signal	Paper exit detection from fusing	Paper pass	—	5	3	PCU	
POD2	Paper exit detection 2 signal	Paper pass detection from paper exit	Paper pass	—	5	9	PCU	
POD3	Paper exit detection 3 signal	Paper exit detection to upper section paper exit tray (Full detection)	—	Paper pass (Full detection)	5	15	PCU	
POF	Power OFF status signal	Power OFF status	Power OFF	Power ON	9	3	PCU	
POF_SCN	Power off signal	Power OFF status signal (Output from PCU)	Power OFF	—	9	43	SCN	
POM1A	Paper exit motor 1 (Fusing side) control signal (Phase A)	Paper exit unit (Fusing side) paper transport	—	—	10	1	PCU	
POM1B	Paper exit motor 1 (Fusing side) control signal (Phase B)	Paper exit unit (Fusing side) paper transport	—	—	10	3	PCU	
POM1XA	Paper exit motor 1 (Fusing side) control signal (Phase /A)	Paper exit unit (Fusing side) paper transport	—	—	10	2	PCU	
POM1XB	Paper exit motor 1 (Fusing side) control signal (Phase /B)	Paper exit unit (Fusing side) paper transport	—	—	10	4	PCU	
POM2A	Paper exit motor 2 (Fusing side) control signal (Phase A)	Paper exit unit (paper exit side) paper transport	—	—	10	5	PCU	
POM2B	Paper exit motor 2 (Fusing side) control signal (Phase B)	Paper exit unit (paper exit side) paper transport	—	—	10	7	PCU	
POM2XA	Paper exit motor 2 (Fusing side) control signal (Phase /A)	Paper exit unit (paper exit side) paper transport	—	—	10	6	PCU	
POM2XB	Paper exit motor 2 (Fusing side) control signal (Phase /B)	Paper exit unit (Paper exit side) paper transport	—	—	10	8	PCU	
PPD	Resist roller front paper pass detection signal	Paper pass detection in front of resist roller	Paper pass	—	12	15	PCU	
PROFF_CNT	BUP-PR control signal (Main power OFF signal)	Main power OFF signal (output from controller)	—	End	9	4	PCU	
PRON_FAX	BUP-PR control signal (Main power ON signal)	Main power ON signal (Output front FAX unit)	Boot	—	9	1	PCU	
PSBC	Resist roller brake clutch control signal	Resist roller brake clutch control	—	Paper transport enable	12	11	PCU	
PSPS	Separation solenoid control signal	Separation solenoid control	Separation	—	8	13	PCU	
PWM-RSV1	Cooling fan motor control signal (Paper exit duplex (ADU) section (Top surface))	Paper exit, duplex (ADU) section cooling	Max. blowing capacity	Stop	8	20	PCU	
READY	LSU motor lock detection signal	LSU motor lock detection	Rotation	Stop/Lock	22	5	PCU	
READY	Copy enable signal (Auditor)	Copy enable (Auditor)	Copy enable	—	5	4	SCN	
RES_CCD1	Reset signal (CCD)	Reset (CCD)	—	Reset	1	64	SCN	
RES_CCD2	Reset signal (CIS)	Reset (CIS)	—	Reset	10	15	SCN	
RES_FIN	Finisher reset signal	Finisher reset	Operation enable	Reset	17	19	PCU	
RES_LCC	LCC reset signal	LCC reset	Operation enable	Reset	18	11	PCU	
RES_MFP	Main unit reset signal (MFP)	Not used.	Reset	—	9	12	SCN	
RES_SCN	Scanner reset signal	Scanner reset (output from controller)	Reset	—	9	44	SCN	

Signal name	Name	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	Remark
			“L”	“H”				
RRC	Resist roller clutch control signal	Resist roller clutch control (The relative position of print image and paper is controlled.)	Paper transport	—	7	4	PCU	
RTH1	Heat roller temperature detection signal	Heat roller temperature detection (Center section)	—	—	2	6	PCU	
RTH2	Pressure roller temperature detection signal	Pressure roller temperature detection (Edge section)	—	—	2	10	PCU	
RTH3	Sub heat roller temperature detection signal	Sub heat roller temperature detection	—	—	2	14	PCU	
RXD_CCD1	Serial I/F data (CCD)	Serial I/F data (CCD-scanner control PWB)	—	—	1	65	SCN	
RXD_CCD2	Serial I/F data (CIS)	Serial I/F data (CCD-scanner control PWB)	—	—	10	16	SCN	
RXD_FIN	Serial I/F data (FINISHER)	Serial I/F data (Finisher-PCU PWB)	—	—	17	13	PCU	
RXD_LCC	Serial I/F data (LCC)	Serial I/F data (LCC-PCU PWB)	—	—	18	5	PCU	
RXD_SCN	Serial I/F data (Scanner control PWB)	Serial I/F data (Scanner control PWB - Controller)	—	—	9	45	SCN	
SCNSET	Scanner control PWB identification signal	Scanner control PWB installation detection	Scanner available	—	9	47	SCN	
SCOV	DSPF cover switch signal	DSPF cover open/close detection	—	Close	12	8	SCN	
SEG0	Operation panel LED matrix signal 0	Operation panel LED matrix	—	—	1	24	SCN	
SEG1	Operation panel LED matrix signal 1	Operation panel LED matrix	—	—	1	75	SCN	
SEG2	Operation panel LED matrix signal 2	Operation panel LED matrix	—	—	1	76	SCN	
SLEEP	Energy-saving mode display signal	LED lighting signal in energy saving mode	—	LED ON	9	15	SCN	
SLUMA	DSPF tray lift-up motor control signal (Phase A)	DSPF tray lift-up motor control (Phase A)	—	—	11	3	SCN	
SLUMB	DSPF tray lift-up motor control signal (Phase B)	DSPF tray lift-up motor control (Phase B)	—	—	11	4	SCN	
SOCD	DSPF open/close detection signal	DSPF open/close detection		Close	11	19	SCN	
SPED1	DSPF document empty detection signal	DSPF document empty detection	Paper present		12	12	SCN	
SPED2	DSPF document detection signal	DSPF document detection	Paper present		11	14	SCN	
SPFC	DSPF paper feed clutch control signal	DSPF paper feed clutch control		ON	11	10	SCN	
SPFFAN	DSPF fan motor control signal	DSPF fan motor control	ON		11	11	SCN	
SPFMA	DSPF paper feed, paper transport motor control signal (Phase A)	DSPF paper feed, paper transport motor control (Phase A)	—	—	12	13	SCN	
SPFMB	DSPF paper feed, paper transport signal (Phase B)	DSPF paper feed, paper transport motor control (Phase B)	—	—	12	17	SCN	
SPFMO1	DSPF paper feed, paper transport motor current control signal 1	DSPF paper feed, paper transport motor current control	Power down		12	16	SCN	
SPFMO2	DSPF paper feed, paper exit motor current control signal 2	DSPF paper feed, paper transport motor current control	Power down		12	18	SCN	
SPFSET	DSPF identification signal	DSPF installation detection	DSPF available		11	5	SCN	
SPLS1	DSPF document length detection signal 1	DSPF document length detection (Short)		Paper present	11	18	SCN	
SPLS2	DSPF document length detection signal 2	DSPF document length detection (Long)		Paper present	11	17	SCN	
SPOD	DSPF paper exit detection signal	DSPF paper exit detection	Paper exit		11	20	SCN	
SPPD1	DSPF document paper pass detection 1 signal	DSPF document paper pass detection 1	Paper present		12	10	SCN	
SPPD2	DSPF document paper pass detection 2 signal	DSPF document paper pass detection 2	Paper present		12	6	SCN	
SPPD3	DSPF document paper pass detection 3 signal	DSPF document paper pass detection 3	Paper present		11	13	SCN	
SPPD4	DSPF document paper pass detection 4 signal	DSPF document paper pass detection 4	Paper present		11	12	SCN	
SPWS	DSPF document size (Width) detection analog data signal	DSPF document size (Width) detection	—	—	11	16	SCN	
SRRBC	DSPF resist roller brake clutch control signal	DSPF resist roller brake clutch control		ON	11	6	SCN	
SRRRC	DSPF resist roller clutch control signal	DSPF resist roller clutch control		ON	11	7	SCN	
START	LSU motor control signal	LSU motor ON/OFF	ON	OFF	22	7	PCU	

Signal name	Name	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	Remark
			"L"	"H"				
STLD	DSPF document tray lower limit detection signal	DSPF document tray lower limit detection		Lower limit	11	15	SCN	
STMPS	Stamp solenoid control signal	Stamp solenoid control		Stamp ON	1	48	SCN	
STRBC	DSPF paper transport clutch control signal	DSPF paper transport roller brake clutch control		ON	11	9	SCN	
STRC	DSPF paper transport clutch control signal	DSPF paper transport clutch control		ON	11	8	SCN	
STRRBC	DSPF paper transport resist brake clutch control signal	DSPF paper transport resist brake clutch control		ON	12	20	SCN	
STRRC	DSPF paper transport resist clutch control signal	DSPF paper transport resist clutch control		ON	12	19	SCN	
STSET	Stamp identification signal	Stamp Yes/No detection	Stamp available		1	47	SCN	
STUD	DSPF document tray upper limit detection signal	DSPF document tray upper limit detection		Upper limit	12	14	SCN	
SYNC	LSU horizontal sync detection signal	LSU horizontal sync detection (BD sensor signal)	—	—	22	29	PCU	
T1LUD	Paper feed tray upper limit detection signal (Paper feed tray 1)	Paper feed tray upper limit (Paper feed tray 1)	Upper limit	—	14	13	PCU	
T1LUM	Paper tray lift-up motor control signal (Paper feed tray 1)	Paper tray lift-up control (Paper feed tray 1)	Stop	Up	14	1	PCU	
T1PED	Paper empty detection signal (Paper feed tray 1)	Paper presence detection (Paper feed tray 1)	Paper empty	Paper present	14	15	PCU	
T1PFC	Paper feed clutch control signal (Paper feed tray 1)	Paper feed clutch control (Paper feed tray 1)	Paper transport	—	17	4	PCU	
T1PPD	Paper pass detection signal (Paper feed tray 1)	Paper pass detection from paper feed tray 1	Paper pass	—	25	3	PCU	
T1PUS	Paper pick-up solenoid control signal (Paper feed tray 1)	Paper pickup solenoid control (Paper feed tray 1)	Roller UP	Paper feed	14	7	PCU	
T1SPD	Paper remaining quantity detection signal (Paper feed tray 1)	Paper remaining quantity detection (Paper feed tray 1)	—	Remaining paper quantity 66% or less	14	16	PCU	
T2LUD	Paper tray upper limit detection signal (Paper feed tray 2)	Paper tray upper limit detection (Paper feed tray 2)	Upper limit	—	14	21	PCU	
T2LUM	Paper tray lift-up motor control signal (Paper feed tray 2)	Paper tray lift-up motor control (Paper feed tray 2)	Stop	Up	14	2	PCU	
T2PED	Paper empty detection signal (Paper feed tray 2)	Paper presence detection (Paper feed tray 2)	Paper empty	Paper present	14	23	PCU	
T2PFC	Paper clutch control signal (Paper feed tray 2)	Paper feed clutch control (Paper feed tray 2)	Paper transport	—	12	3	PCU	
T2PUS	Paper pickup solenoid control signal (Paper feed tray 2)	Paper pickup solenoid control (Paper feed tray 2)	The roller lifts up.	Paper feed	14	8	PCU	
T2SPD	Paper remaining quantity detection signal (Paper feed tray 2)	Paper remaining quantity detection (Paper feed tray 2)	—	Remaining paper quantity 66% or less	14	22	PCU	
TANSET	Paper feed tray 1/2 (Tandem tray) detection signal	Paper feed tray 1, 2 (Tandem tray) insertion detection	Pull out	Insert	17	25	PCU	
TCBIAS	Transfer belt cleaning output control signal (ON/OFF)	Transfer belt cleaning bias ON/OFF control	ON	OFF	7	22	PCU	
TCBPWM	Transfer belt cleaning output control signal (PWM)	Transfer belt cleaning bias output voltage PWM control	—	—	7	18	PCU	
TCS	Toner density detection signal	Toner density detection	—	—	12	16	PCU	
TFSD	Toner remaining quantity detection signal	Toner hopper remaining quantity detection	Remaining quantity large	Remaining quantity small	11	11	PCU	
TH	LCD temperature sensor signal	LCD temperature detection	—	—	1	93	SCN	
TH-CL	OPC drum cleaner temperature sensor signal	OPC drum cleaner peripheral temperature detection	—	—	8	12	PCU	
TH-DV	Developing humidity detection signal	Developing section humidity detection	—	—	12	30	PCU	
TH-EX	Paper exit unit temperature sensor	Paper exit unit peripheral temperature detection	—	—	5	31	PCU	
THPS1	Transfer belt contact/separation home position sensor 1	Transfer belt separation home position detection 1	—	Contact	7	6	PCU	Not used.
THPS2	Transfer belt contact/separation home position sensor 2	Transfer belt separation home position detection 2	—	Contact	7	14	PCU	

Signal name	Name	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	Remark
			“L”	“H”				
TH-RA	Machine temperature detection signal	Machine temperature detection	—	—	21	10	PCU	
THV+PWM	Transfer charger output control signal (THV)	Transfer charger output control (PWM control)	—	—	15	8	PCU	
THV+REM	Transfer charger control signal (THV)	Transfer charger ON/OFF control	ON	OFF	15	9	PCU	
TLS	Waste toner pipe lock detection signal	Waste toner pipe lock detection	—	Lock (Tilt)	8	16	PCU	
TM1A	Toner motor 1 control signal	Toner motor 1 ON/OFF control	—	—	11	1	PCU	
TM1B	Toner motor 1 control signal	Toner motor 1 ON/OFF control	—	—	11	3	PCU	
TM2A	Toner motor 2 control signal	Toner motor 2 ON/OFF control	—	—	11	5	PCU	
TM2B	Toner motor 2 control signal	Toner motor 2 ON/OFF control	—	—	11	7	PCU	
TNCA	Waste toner full detection signal	Waste toner full detection	—	—	11	12	PCU	Not used.
TRC_LCC	LCC paper feed timing signal	LCC paper feed timing control (Output from PCU)	—	—	18	13	PCU	
TRMA	Transfer roller 15 drive motor control signal (Phase A)	Transport roller 15 drive motor control	—	—	10	17	PCU	
TRMB	Transfer roller 15 drive motor control signal (Phase B)	Transport roller 15 drive motor control	—	—	10	19	PCU	
TRMXA	Transfer roller 15 drive motor control signal (Phase /A)	Transport roller 15 drive motor control	—	—	10	18	PCU	
TRMXB	Transfer roller 15 drive motor control signal (Phase /B)	Transport roller 15 drive motor control	—	—	10	20	PCU	
TSGOUT	Toner den misty sensor gain control signal	Toner density sensor gain control	—	—	12	20	PCU	
TURM	Transfer separation motor control signal	Transfer unit separation control	Stop	Contact/Release	7	16	PCU	
TXD_CCD1	Serial I/F data (CCD)	Serial I/F data (Scanner control PWB - CCD)	—	—	1	63	SCN	
TXD_CCD2	Serial I/F data (CCD)	Serial I/F data (Scanner control PWB - CCD)	—	—	10	14	SCN	
TXD_FIN	Serial I/F data (Finisher)	Serial I/F data (PCU PWB - Finisher)	—	—	17	11	PCU	
TXD_LCC	Serial I/F data (LCC)	aerial I/F data (Controller - Scanner control PWB)	—	—	18	3	PCU	
TXD_SCN	Serial I/F data (Scanner control PWB)	Serial I/F data (Controller - Scanner control PWB)	—	—	9	8	SCN	
VCCW_SCN	Scanner flash ROM write protect signal	Scanner flash ROM write protect		Write enable	9	10	SCN	
VFM-BKL	Exhaust fan motor control signal (Rear left)	Exhaust fan motor control signal (O ³ exhaust process section heat exhaust)	Max. force of wind	Stop	5	22	PCU	
VFM-BKR	Exhaust fan motor control signal (Rear right)	Exhaust fan motor control signal (Exhaust duplex (ADU) section cooling)	Max. force of wind	Stop	6	17	PCU	
VFM-EX1	Exhaust fan motor control signal (LSU top plate front side)	Exhaust fan motor control signal (O ³ exhaust process section heat exhaust)	Max. force of wind	Stop	5	4	PCU	
VFM-EX2	Exhaust fan motor control signal (LSU top plate center)	Exhaust fan motor control signal (O ³ exhaust process section heat exhaust)	Max. force of wind	Stop	5	10	PCU	
VFM-EX3	Exhaust fan motor control signal (LSU top plate rear side)	Exhaust fan motor control signal (O ³ exhaust process section heat exhaust)	Max. force of wind	Stop	5	16	PCU	
VIDEO	Image signal	Image signal to LSU	—	—	20	21	PCU	
VIDEOin-	Image signal	Image signal from controller to PCU PWB	—	—	9	21	PCU	
VIDEOin+	Image signal	Image signal from controller to PCU PWB	—	—	9	23	PCU	
VPMA	Paper transport motor control signal (Phase A)	Paper vertical transport motor control (Phase A)	—	—	10	21	PCU	
VPMB	Paper transport motor control signal (Phase B)	Paper vertical transport motor control (Phase B)	—	—	10	23	PCU	
VPMXA	Paper transport motor control signal (Phase /A)	Paper vertical transport motor control (Phase /A)	—	—	10	22	PCU	
VPMXB	Paper transport motor control signal (Phase /B)	Paper vertical transport motor control (Phase /B)	—	—	10	24	PCU	
VRB	Laser power control signal	Laser power control	—	—	22	17	PCU	
WAKE UP	Reset trigger signal from energy-saving mode	Reset trigger from energy saving mode	Energy-save reset		9	11	SCN	
WEB END	WEB END sensor signal	WEB paper end (Replace) detection	—	END detection	24	2	PCU	
WEBMA	WEB motor control signal	Web motor ON/OFF control	—	—	24	4	PCU	

Signal name	Name	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	Remark
			"L"	"H"				
WEBMB	WEB motor control signal	Web motor ON/OFF control	—	—	24	5	PCU	
WHPR2	Dehumidifier heater power relay 2 control signal	Dehumidifier heater control	Relay ON	Relay OFF	19	18	PCU	
XH	Touch panel area identification signal (Vertical direction)	Touch panel area identification (Vertical direction) X axis	—	—	1	96	SCN	
XL	Touch panel coordinates signal (Vertical direction)	Touch panel coordinates identification (Vertical direction) X axis	—	—	1	46	SCN	
YH	Touch panel area identification signal (Horizontal direction)	Touch panel area identification (Horizontal direction) Y axis	—	—	1	45	SCN	
YL	Touch panel coordinate signal (Horizontal direction)	Touch panel coordinates identification (Horizontal direction) Y axis	—	—	1	95	SCN	

	Vertical size detection: Connector level				Paper size		
Multi-stage tray 1	M1SS1	M1SS2	M1SS3	M1SS4	AB series	Inch series	China series
Multi-stage tray 2	M2SS1	M2SS2	M2SS3	M2SS4			
1	L	L	H	L	B5	Extra	K16
2	H	L	H	L	A4 A5R	LT INVR	A4 A5R
3	H	L	L	L	B5R	EX-R	K16R
4	H	H	L	L	A4R	LTR	A4R
5	L	H	L	L	Foolscap	Extra	Foolscap
6	L	H	L	H	B4	LGL	K8
7	L	L	L	H	A3	WLT	
0	H	H	H	H	Tray not installed		

No.	CV_SIZE3	CV_SIZE2	CV_SIZE1	CV_SIZE0	Paper size
0	0	0	0	0	none
1	0	0	0	1	A3
2	0	0	1	0	A4
3	0	0	1	1	LT
4	0	1	0	0	B4
5	0	1	0	1	LG
6	0	1	1	0	WLT
7	0	1	1	1	INV
8	1	0	0	0	B5
9	1	0	0	1	Extra
10	1	0	1	0	A5
11	1	0	1	1	F4
12	1	1	0	0	A4R
13	1	1	0	1	B5R
14	1	1	1	0	LTR
15	1	1	1	1	A5R

[12] OTHERS

1. System settings

A. Count specification

(1) Paper exit system counter

Counter	Count-up timing	Count-up number						Clear
		Single-side copy		Duplex copy				
		Paper feed tray - Main unit paper exit		Paper feed tray - ADU		ADU - Paper feed tray		
		Small size	Large size	Small size	Large size	Small size	Large size	
Total counter (Note)	When transfer is completed	1	2 (1)	1	2 (1)	1	2 (1)	-
Maintenance counter	When transfer is completed	1	2 (1)	1	2 (1)	1	2 (1)	Sim24-4
Developer counter	When transfer is completed	1	2 (1)	1	2 (1)	1	2 (1)	Sim24-5
All valid paper counter (Note)	When paper exit	1	2 (1)	-	-	2	4 (2)	-
Copy counter (Copy valid paper)	When paper exit	1	2 (1)	-	-	2	4 (2)	Sim24-6
FAX counter	When paper exit	1	2 (1)	-	-	2	4 (2)	Sim24-10
Print counter	When paper exit	1	2 (1)	-	-	2	4 (2)	Sim24-9
Internet FAX counter	When paper exit	1	2 (1)	-	-	2	4 (2)	Sim24-15
Document filing counter	When paper exit	1	2 (1)	-	-	2	4 (2)	Sim24-15
Right side paper exit counter	When center paper exit	1	2 (1)	-	-	2	4 (2)	-
Other counter (Self print, etc.)	When paper exit	1	2 (1)	-	-	2	4 (2)	Sim24-9

Large size: A3, 11 x 17. (Greater size than paper length 384mm)

* (): Count-up number when setting to the large size single count up.

(2) Document, finishing, paper feed system counter

Counter		Mode	Count event	Count-up condition	Clear
SPF counter		All modes	SPF paper feed number	Count is made when starting SPF paper pick.	Sim24-3
Finish stamp counter		FAX send Internet FAX send	Finish stamp use number	Count is made when stamp is ON.	Sim24-3
Staple counter		All modes (Including inserter stand alone process)	Staple number	Count is made when bundle exit process is completed. Double count is made when stapling two positions. In the inserter stand alone mode, count is made when process is completed.	Sim24-3
Punch counter		All modes (Including inserter stand alone process)	Punch number	Count is made when bundle exit process is completed. 1 count regardless of the kind of the punch unit (2-hole, 3-hole, etc.) In the inserter stand alone mode, count is made when process is completed.	Sim24-3
Saddle staple counter		All modes (Including inserter stand alone process)	Saddle staple number	Count is made when bundle exit process is completed. Only one count is added. In the inserter stand alone mode, count is made when process is completed.	Sim24-3
Scan total counter		All modes	Scan number	Count is made when scan is completed.	Sim24-3
ADU counter		All modes	ADU paper feed number	Count is made when paper feed from the ADU section is started.	Sim24-2
Inserter counter		All modes (Including inserter offline process)	Inserter tray paper feed number	Count is made when paper feed from the inserter tray is started. In the inserter stand alone mode, count is made when process is completed.	Sim24-3
Paper feed counter	Manual paper feed tray	All modes	Tray paper feed number	Count is made when paper feed from each tray is started.	Sim24-2
	Paper feed tray 1				Sim24-2
	Paper feed tray 2				Sim24-2
	Paper feed tray 3				Sim24-2
	Paper feed tray 4				Sim24-2
	LCC				Sim24-2

(3) Send system counter

Counter	Mode	Count event	Count-up condition	Clear
Accumulated number of FAX send	G3 FAX send	Number of send	Except for the serial transmit operation, one reservation is counted as one communication. For the serial transmit operation, count is made for each communication individually. • Recall is not included. • Polling is counted as a number of send.	Sim24-10
Accumulated page number of FAX send	G3 FAX send	Total page number of send	In the serial transmit operation, each communication is counted as one individually. In bulletin board send, the page number of send is counted.	Sim24-10
Accumulated time of FAX send	G3 FAX send	Send time 4 (Including resending time.)		Sim24-10
Accumulated page number of scanner scan	Scan to E-mail send SHARP DESK send FTP send	Page number of scan	Even in the serial transmit operation, the page number of one scan is counted. (The number of receivers is not counted.) In case of a send error (excluding document jam) E-mail → Not counted. SHARP DESK/FTP → Counted.	Sim24-15
Accumulated number of mail send	Scan to E-mail send	Number of mails reached to destination servers	Even in the serial transmit operation, the page number of one scan is counted. (The number of receivers is not counted.) Cancel and network error are not counted.	Sim24-15
Accumulated number of FTP send	SHARP DESK send FTP send	Number of send reached to destination servers	Mails transmitted by FTP send are counted in the accumulated number of mail send. Even in the serial transmit operation, the page number of one scan is counted. (The number of receivers is not counted.) Cancel and network error are also counted.	Sim24-15
Accumulated number of internet FAX send	Internet FAX send	Page number of send	Even in the serial transmit operation, the page number of one scan is counted. (The number of receivers is not counted.) The final send result is counted. A send error is counted. Cancel and CE error are not counted.	Sim24-15
Accumulated number of internet FAX receive	Internet FAX send	Page number of scan	Even in the serial transmit operation, the page number of one scan is counted. (The number of receivers is not counted.) The final send result is counted. A communication error (except for document jam) is counted. Cancel and CE error are not counted. A send (transfer, F code relay broadcast) without document scan is not counted.	Sim24-15
Scanner trial counter	Internet FAX send Scan to E-mail send SHARP DESK send FTP send	Page number of scan	Count is made for every scan of page. Count is made even when send is not completed. The operation is terminated when the count number exceeds 500.	—
Page number of Scan to HDD	When reading SCAN TO HDD	HDD storage page number		Sim24-15
Accumulated number of SMB send	SCAN to SMB send	Number of send reached to SMB	Even in the serial transmit operation, the page number of one scan is counted. (The number of receivers is not counted.) Cancel and network error are also counted.	Sim24-15

(4) Receive system counter

Counter	Mode	Count event	Count-up condition	Clear
The accumulated page number of FAX receive print	G3 FAX receive	Total output page number	The FAX separator sheet is also counted. When polling, the number of received pages is counted. Count by size and count in recovery are the same as the copier specifications. (Counted by the print system.)	Sim24-10
Accumulated time of FAX receive	G3 FAX receive	Receive time		Sim24-10
Accumulated number of internet FAX receive	Internet FAX receive	Receive number	A normal mail receive is also counted. Count is made regardless of normal or abnormal. Count is made regardless of print result.	Sim24-15
Accumulated page number of internet FAX receive print	Internet FAX receive	Total receive output number	Count is made when output is made on a normal mail receive. Print of mail text is not counted. The FAX separator sheet is also counted. Count by size and count in recovery are the same as the copier specifications. (Counted by the print system.)	Sim24-15

(5) Department counter

Operation content	Data location				Conforming count mode (SIM 26-5)			Count-up condition
	MFP control PWB	FAX	Scanner control PWB	PCU PWB	TOTAL	Maintenance	DV	
Copy counter	●				■			
Print counter	●				■			
FAX send page number counter	●				■			Department FAX send page number • In the serial transmit operation, each communication is counted as one individually.
Network scanner counter	●				—	—	—	Department network scanner scan page number • iFAX and network scanner • Even in the serial transmit operation, the page number of one scan is counted. (The number of receivers is not counted.)
I-FAX send page number counter	●				■			Department FAX send page number • In the serial transmit operation, each communication is counted as one individually.
Document filing counter	●				■			

(6) Printer job count-up specification

	Total use page number counter		Department counter		
	PRINTS	OTHERS	Key operation number	Driver specification account number	OTHERS
Printer job (Without account administration)	○	—	—	—	—
Printer job (With account specification) *	○	—	—	○	—
Printer job (Without account specification) *	○	—	—	—	○
Notice in printer job (Without account administration)	○	—	—	—	—
Notice in printer job (With account specification) *	○	—	—	—	○
Notice in printer job (Without account specification) *	○	—	—	—	○
List print	—	○	—	—	—
Total use page number print	—	○	—	—	—
Each department total page number print	—	○	—	—	—
Engine self print	—	—	—	—	—

* When there is "NO" in account administration, or when there is not "NO."

(7) Total counter specifications

The total count viewed from the user and the counter used for charging are "Total output counter (total valid paper counter)."

	Total output Counter	Total Counter
Display when the copy key is ON.	■	—
List print	■	—
Valid paper counter to send to serial RIC	■	—
Total counter to send to serial RIC	■	—
E-RIC mail text counter	■	—
E-RIC attached file	■	■
	(Counter for the first send)	(Counter to send in the midst of packet)
SIMULATION	Displayed/printed as Total output.	Displayed/printed as Total

(8) Blank paper count specification

Mode	Print mode	Count attribute		Blank paper count setting (SIM 26-52)				Remark
		Print surface		0: NO		1: YES		
		Front surface	Back surface	Small size	Large size	Small size	Large size	
Normal	Without print (Invalid paper exit)	×	—	0	0	0	0	
	Without print (Blank paper insertion)	△	—	0	0	1	2 (1) *1	
	Single face print (Single face mode)	○	—	1	2 (1) *1	1	2 (1) *1	SS/DS
	Single face print (Duplex mode)	○	×	1	2 (1) *1	1	2 (1) *1	SD (Odd number of documents)
	Duplex print	○	○	2	4 (2) *1	2	4 (2) *1	SD (Even number of documents)/DD
Front cover	Without print	△	—	0	0	1	2 (1) *1	
	With print (Single face)	○	—	1	2 (1) *1	1	2 (1) *1	
	With print (Duplex)	○	○	2	4 (2) *1	2	4 (2) *1	
Back cover	Without print	×	△	0	0	1	2 (1) *1	
	With print (Single face)	×	○	1	2 (1) *1	1	2 (1) *1	
	With print (Duplex)	○	○	2	4 (2) *1	2	4 (2) *1	
Insert paper	Without print	△	—	0	0	1	2 (1) *1	
	With print (Single face)	○	—	1	2 (1) *1	1	2 (1) *1	
	With print (Duplex)	○	○	2	4 (2) *1	2	4 (2) *1	
OHP insert paper	Without print	—	—	0	0	1	2 (1) *1	
	With print (Single face)	○	—	1	2 (1) *1	1	2 (1) *1	
	With print (Duplex)	—	—	—	—	—	—	Duplex print inhibition

* Large size: A3, 11 x 17. (Greater size than paper length 384mm)

*1: Follows SIM 26-5 (Count-up mode). (Default: Double count-up (Set value: 2))

(): Large size single count-up setting (Count-up number when set to 1.)

○: Counts up.

×: Does not count up.

△: Follows SIM 26-52 setting.

0: Does not count up. (Japan/SCA default) 1: Counts up. (Other default)

—: Out of target (No print process)

(9) Consumables counter specification

Counter	Count-up timing	Count-up number						Clear
		Simplex print		Duplex print				
		Paper feed tray – Main unit paper exit		Paper feed tray – ADU		ADU – Paper feed tray		
		Small size	Large size	Small size	Large size	Small size	Large size	
OPC drum counter	When transfer is completed	1	2 (1)	1	2 (1)	1	2 (1)	Sim24-7
OPC drum rotation counter (sec)	When transfer is completed	—	—	—	—	—	—	Sim24-11
Developer counter	When transfer is completed	1	2 (1)	1	2 (1)	1	2 (1)	Sim24-5
Developing roller rotation counter (sec)	When transfer is completed	—	—	—	—	—	—	Sim24-11
Toner counter	When transfer is completed	1	2 (1)	1	2 (1)	1	2 (1)	—
Toner supply counter (sec)	When transfer is completed	—	—	—	—	—	—	—

(10) Reset and set for supply counters

Work item	Simulation	Reset item	Included Test Command
Setting the toner concentration control level	SIM 25-2	Developer counter	SIM 24-5
		DV unit running time counter (sec)	SIM 24-11
Reset the OPC drum counter	SIM 24-7	OPC drum counter	—
Reset the Developer counter	SIM 24-5	Developer counter	—
Reset the OPC drum running time counter (sec)	SIM 24-11	OPC drum running time counter (sec)	—
Reset the DV running time counter (sec)	SIM 24-11	DV unit running time counter (sec)	—

B. Location and display of each counter data

Simulation Code		Operation content	Data size	Data location				Conforming count mode (Sim26-5)			Count-up condition
Main	Sub			MFP control PWB	FAX	Scanner control PWB	PCU PWB	TOTAL	Maintenance	DV	
22	01	Each counter display (Total/ Maintenance/Developer/ SPF/ Staple/ Tray)									Count is made when the main unit paper exit is started. (When POP2 is ON) Refer to the "Count Specifications."
		1 : Total counter					●	■			
		2 : Drum cartridge counter					●			■	
		3 : Toner cartridge counter					●			■	
		4 : Deve cartridge counter					●			■	
		5 : Maintenance counter					●		■		
		6 : Total output page number counter					●	■			
		7 : Copy counter		●				■			
		8 : Printer counter		●				■			
		9 : FAX output counter		●				■			
		10 : I-FAX output counter		●				■			
		11 : Document filing output Counter		●				■			
		12 : Right side output counter		●			●	■			
		13 : Other print counter		●				■			
	02	Jam/ Trouble counter display									Count is made when an event occurs. (A jam by closing the door during paper transport is not counted.)
		1 : PAPER JAM		●				—	—	—	
		2 : SPF JAM		●				—	—	—	
		3 : TROUBLE		●				—	—	—	Count is made when an event occurs. (Follows the trouble count method of SIM 26-35.)
	08	Document, staple counter display				●		—	—	—	One count is made every time when SPF document is paper feed. One count is made every time when scan is completed. One count for every stapling (Stapling at two positions is counted as 2.) One count for every punching One count for every paper pick-up One count for every paper pick-up One count for every paper pick-up
		1 : SPF document feed page number				●		—	—	—	
		2 : Scan number					●	—	—	—	
		3 : Staple number					●	—	—	—	
		4 : Punch number				●		—	—	—	
		5 : SPF finish stamp number					●	—	—	—	
		6 : Saddle staple number					●	—	—	—	
	09	7 : Inserter number					●	—	—	—	
		Paper feed counter display					●	—	—	—	One count for every paper pick-up One count for every paper pick-up One count for every paper pick-up One count for every paper pick-up One count for every paper pick-up One count for every paper transport start from ADU. One count for every paper pick-up
		1 : Paper feed tray 1 (Tandem Left)					●	—	—	—	
		2 : Paper feed tray 2 (Tandem Right)					●	—	—	—	
		3 : Paper feed tray 3					●	—	—	—	
		4 : Paper feed tray 4					●	—	—	—	
		5 : MFT (Manual paper feed tray)					●	—	—	—	
		6 : ADU					●	—	—	—	
		7 : LCC					●	—	—	—	

Simulation Code		Operation content	Data size	Data location				Conforming count mode (Sim26-5)			Count-up condition
Main	Sub			MFP control PWB	FAX	Scanner control PWB	PCU PWB	TOTAL	Maintenance	DV	
22	11	FAX send/receive counter display									
		1 : FAX send (Send counter)	32bit	●				—	—	—	Accumulated page number of send • Except for the serial transmit operation, one reservation is counted as one communication. • For the serial transmit operation, count is made for each communication individually. • Recall is not included. • Saved in the FAX-SRAM.
		2 : FAX receive (Receive counter)	32bit	●				—	—	—	Accumulated number • Count is made regardless of normal or abnormal completion. • Saved in the 32bit counter and the FAX-SRAM.
		3 : FAX output (FAX print counter)	32bit	●				■			The accumulated page number of FAX receive print Count by size and count in recovery are the same as the copier specifications. • Counted by the print system. Refer to the "Count Specifications."
		4 : FAX send images (Send page number)	32bit	●				—	—	—	Accumulated page number of send • In the serial transmit operation, each communication is counted as one individually. • Saved in the 32bit counter and the FAX-SRAM.
		5 : Send time (Send time)	48bit					—	—	—	hhhhhhh:mm:ss Saved in the FAX-SRAM.
		6 : Receive time (Receive time)	48bit	●				—	—	—	hhhhhhh:mm:ss Saved in the FAX-SRAM.
	13	Process section count data display									
		1 : Drum counter					●			■	Refer to the "Count Specifications." (Same as the developer counter.)
		2 : Drum rotating time					●	—	—	—	Count for every second of rotation
		3 : Toner counter					●			■	Refer to the "Count Specifications." (Same as the developer counter.)
		4 : Toner supply time					●	—	—	—	Count for every second of rotation
		5 : Developer counter					●			■	Refer to the "Count Specifications." (Same as the developer counter.)
		6 : Developer rotating time					●	—	—	—	Count for every second of rotation
	19	Display of counters related to the network scanner									
		1 : Network scanner document scan page number counter	32bit	●				—	—	—	Accumulated page number of scanner scan • The page number of normal completion of i FAX, E-mail, and FTP (DESK) send. • In sequential broadcast, count is made when one destination send is normally completed. • In case of a communication error: (Except for document jam) For i FAX and E-mail, send is canceled and no page is sent. Therefore count is not made. For FTP (DESK), though send is canceled, data reached in the server remains, and only the page number of send is counted. • Saved in the FAX-SRAM.

Simulation Code		Operation content	Data size	Data location				Conforming count mode (Sim26-5)			Count-up condition
Main	Sub			MFP control PWB	FAX	Scanner control PWB	PCU PWB	TOTAL	Maintenance	DV	
22	19	2 Mail send counter	32bit	●				—	—	—	Accumulated number of mail send <ul style="list-style-type: none"> The number of send mails of iFAX, E-mail, and FTP is counted. Even in the serial system, one scan is counted. (The number of receivers is not counted.) The number of mails reached to the server is counted. Since server data are deleted in case of send cancel or a network error, count is not made. Saved in the FAX-SRAM.
		3 FTP send counter	32bit	●				—	—	—	Accumulated number of FTP send <ul style="list-style-type: none"> The page number of FTP (DESK) send is counted. Even in the serial transmit operation, the page number of one scan is counted. (The number of receivers is not counted.) The number of mails reached to the server is counted. In case of send cancel or a network error, the server data cannot be deleted. Therefore, count is made. Saved in the FAX-SRAM.
		4 I-FAX original (Scan page number counter)	32bit	●				—	—	—	Accumulated page number of internet FAX scan <ul style="list-style-type: none"> A communication error (except for document jam) is counted. Cancel and CE error are not counted. A send (Transfer, F code relay broadcast) without document scan is not counted. Saved in the FAX-SRAM.
		5 I-FAX send (Send counter)	32bit	●				—	—	—	Accumulated number of internet FAX send <ul style="list-style-type: none"> A send error is counted. Resend is not counted. Cancel and CE error are not counted. Saved in the 32bit counter and the FAX-SRAM.
		6 I-FAX receive (Receive counter)	32bit	●				■	—	—	Accumulated number of internet FAX send <ul style="list-style-type: none"> A normal mail receive is also counted. Saved in the 32bit counter and the FAX-SRAM.
		7 I-FAX output (Print page number counter)	32bit	●				—	—	—	Accumulated page number of internet FAX receive print Count by size and count in reprint after a jam are the same as the copier specifications.
		8 SCAN TO HDD (Save page number counter)	32bit	●				—	—	—	Page number of SCAN TO HDD save <ul style="list-style-type: none"> The page number of documents saved to HDD is counted.

2. Web setting service mode

A. Outline

The Web setting service mode provides the following functions:

- Font / Form Download
- Device Cloning

These functions are used to backup the user data and the key operator program setting data, and to import backup data to another machine.

By using these functions, two or more machines can be set in the same conditions in a short time.

- i-Fax Setup

This function is used to backup i-Fax receive data to the FTP server.

By using this function, receive data are backed up to the FTP server when they cannot be printed by some reasons (paper empty, toner empty, paper jam, etc.) and can be printed out after recovery of the machine.

After completion of printing the backup data, they are deleted from the FTP server.

- Password Setup

Recheck and input the password and press [Submit] button.

B. Operating procedures

Entering the Web setting mode

- 1) Boot the browser software.
- 2) Enter "xxx.xxx.xxx.xxx (IP address)/xxxx_xxxxx.html" and press ENTER key.
- 3) Enter the user name and the password, and press OK button.

(NOTE):

The default user name and the default password are as follows:

User name: service Password: shArp

* The password can be optionally changed in the following procedures:

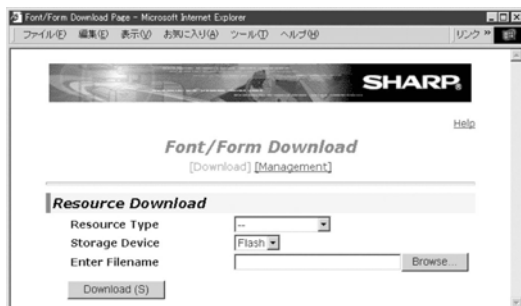
- 1) Enter "xxx.xxx.xxx.xxx(IP address)/password_setting.html" and press ENTER key.
- 2) Enter a new password.
- 3) Enter the new password again in the check column.
- 4) Press SUBMIT button.

C. Description

(1) Font/Form Download

(Font download)

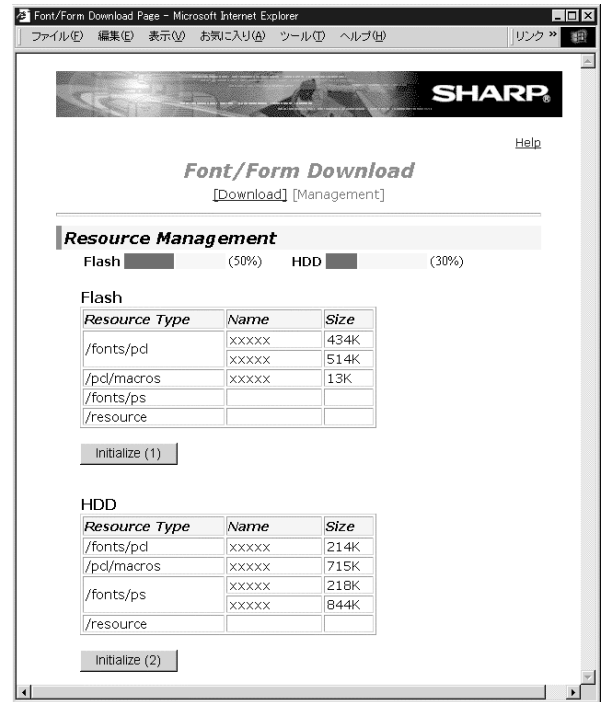
- 1) Press "xxx.xxx.xxx.xxx (IP address)/font_down.html" and press ENTER key.
- 2) Enter the user name and the password, and press OK button.



- 3) Select "Download" menu.
- 4) Select Resourced type.
- 5) Select Storage Device.
- 6) Select Font file.
- 7) Press "Download" button.

(Check or delete of downloaded font)

- 1) Press "xxx.xxx.xxx.xxx (IP address)/font_down.html" and press ENTER key.
- 2) Enter the user name and the password, and press OK button.
- 3) Select Management menu.



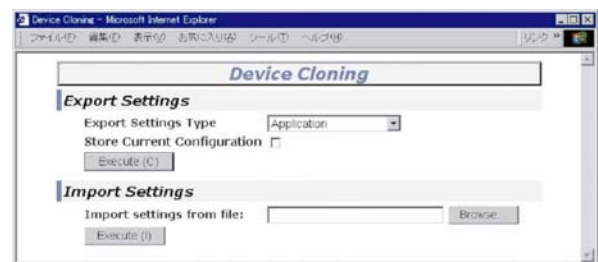
The list of downloaded fonts and the used percentage of the font area in the memory device are displayed.

Press "Initialize" button and press Yes key, and the downloaded fonts will be deleted.

(2) Device Cloning

(Backup)

- 1) Press "xxx.xxx.xxx.xxx (IP address)/device_cloning.html" and press ENTER key.
- 2) Enter the user name and the password, and press OK button.



- 3) Select an item to be backed up.
(Application / Key operator setting)
- 4) Press Execute key.
- 5) Press Save button. (File download mode)
- 6) Select the destination of save.
- 7) Press Save button.

(Import)

- 1) Press "xxx.xxx.xxx.xxx (IP address)/device_cloning.html" and press ENTER key.
- 2) Enter the user name and the password, and press OK button.
- 3) Select the backed up file (xxxx.bin).
- 4) Press Execute key.
The backed up data (setup data) are written into the machine.

(3) I-Fax Setup

- 1) Press "xxx.xxx.xxx.xxx (IP address)/i-FAX_ftp.html" and press ENTER key.
- 2) Enter the user name and the password, and press OK button.



- 3) Enter the FTP server address to which i-Fax receive data are backed up.
- 4) Enter the directory.
- 5) Enter the user name
- 6) Enter the password.
- 7) Press SUBMIT button.

(4) Password Setup

- 1) Page of the password change for the serviceman.



Counts regardless of normal or abnormal.

(/password setting html)

3. Paper JAM code

A. Paper jam judgment conditions

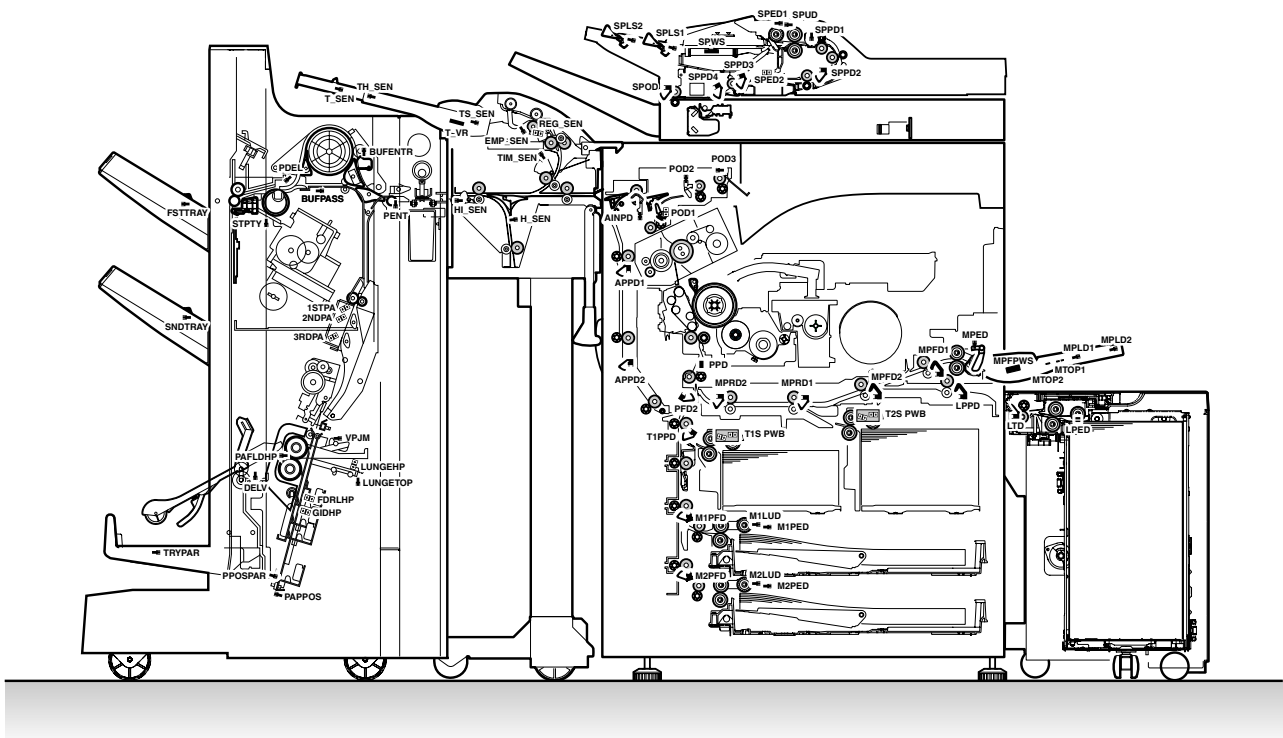
JAM code	Content	JAM detection method		JAM judge time (JAMTST - JAMJD)	
		JAM detection timer start trigger (JAMTST)	JAM judge dedector (JAMJD)	55/62 PPM MODEL (335mm/s)	70 PPM MODEL (395mm/s)
TRAY1	Tray 1 paper feed jam (PFD2 not-reached)	T1PFC ON	PFD2 ON	1608ms	1516ms
PFD2_NM1	PFD2 not-reached jam (Tray 3 feed paper)	VPM ON (When the paper lead edge comes to 40mm in front of the transport roller 13, VPM turns ON.)	PFD2_NM1	541ms	480ms
PFD2_NM2	PFD2 not-reached jam (Tray 4 feed paper)	VPM ON (When the paper lead edge comes to 40mm in front of the transport roller 13, VPM turns ON.)	PFD2_NM2	541ms	480ms
PFD2_NAD	PFD2 not-reached jam (ADU re-feed paper)	APPD2 ON	PFD2_NAD	819ms	710ms
PPD_NMF	PPD1 not-reached jam (Manual feed tray feed paper)	MPRD2 ON	PPD ON	429ms	364ms
PPD_NT1	PPD1 not-reached jam (Tray 1 feed paper)	PFD2 ON	PPD ON	352ms	298ms
PPD_NT2	PPD1 not-reached jam (Tray 2 feed paper)	MPRD2 ON	PPD ON	429ms	364ms
PPD_NM1	PPD1 not-reached jam (Tray 3 feed paper)	PFD2 ON	PPD ON	352ms	298ms
PPD_NM2	PPD1 not-reached jam (Tray 4 feed paper)	PFD2 ON	PPD ON	352ms	298ms
PPD_NLC	PPD1 not-reached jam (LCC paper feed paper)	MPRD2 ON	PPD ON	429ms	364ms
PPD_NAD	PPD1 not-reached jam (ADU re-feed paper)	PFD2 ON	PPD ON	352ms	298ms
POD1_N	POD1 not-reached jam	RRC ON	POD1 ON	943ms	800ms
POD2_N	POD2 not-reached jam	POD1 ON	POD2 ON	429ms	364ms
AINPD_N (Saddle)	ADU paper entry sensor not-reached jam	DGS ON (When the paper lead edge is transported to 30mm apart from the switchback operation start position.)	AINPD_ON (Saddle)	435ms	435ms
AINPD_N (Other)	ADU paper entry sensor not-reached jam	DGS ON (When the paper lead edge is transported to 30mm apart from the switchback operation start position.)	AINPD_ON (Other)	318ms	318ms
APPD1_N	ADU transport sensor 1 not-reached jam	AINPD ON	APPD1ON	292ms	292ms
APPD2_N	ADU transport sensor 2 not-reached jam	APPD1 ON + 90mm	APPD2 ON	375ms	375ms
DESK1	Tray 3 paper feed jam (M1PFD not-reached)	M1PFC ON	M1PFD ON	1531ms	1450ms
DESK2	Tray 4 paper feed jam (M2PFD not-reached)	M2PFC ON	M2PFD ON	1531ms	1450ms
M1PFD_N2	M1PFD not-reached jam (Tray 4 feed paper)	M2PFD ON	M1PFD ON	513ms	435ms
MPRD2_N2	MPRD2 not-reached jam (Tray 2 feed paper)	VPM ON (When the paper lead edge comes to 40mm in front of the transport roller 4, VPM turns ON.)	MPRD2 ON	467ms	417ms
MPRD2_NM	MPRD2 not reached jam (Manual paper feed tray feed paper)	VPM ON (When the paper lead edge comes to 40mm in front of the transport roller 4, VPM turns ON.)	MPRD2 ON	467ms	417ms
MPRD2_NL	MPRD2 not-reached jam (LCC paper feed paper)	VPM ON (When the paper lead edge comes to 40mm in front of the transport roller 4, VPM turns ON.)	MPRD2 ON	467ms	417ms
TRAY2	Tray 2 paper feed jam (MPRD1 not-reached)	T2PFC ON	MPRD1 ON	1519ms	1440ms
MPRD1_NM	MPRD1 not-reached jam (Manual paper feed tray feed paper)	MPFD2 ON	MPRD1 ON	564ms	478ms
MPRD1_NL	MPRD1 not-reached jam (LCC paper feed paper)	MPFD2 ON	MPRD1 ON	564ms	478ms
MPFD2_NM	MPFD2 not-reached jam (Manual paper feed tray feed paper)	MPFD1 ON	MPFD2 ON	570ms	483ms
MPFD2_NL	MPFD2 not-reached jam (LCC paper feed paper)	LPPD ON	MPFD2 ON	677ms	574ms
BPT	Manual tray feed jam (MPFD1 not-reached)	MPFC ON	MPFD1 ON	1367ms	1311ms
LPPD_N	LPPD not-reached jam	LTD ON (LCC)	LPPD ON	1447ms	1379ms

JAM code	Content	JAM detection method		JAM judge time (JAMTST - JAMJD)	
		JAM detection timer start trigger (JAMTST)	JAM judge dedector (JAMJD)	55/62 PPM MODEL (335mm/s)	70 PPM MODEL (395mm/s)
PFD2_ST1	PFD2 remaining jam (Tray 1 feed paper)	RRC ON	PFD2 OFF (PFD2 paper rear edge detection) + 65mm	PFD2 OFF (PFD2 paper rear edge detection) + 65mm	
PFD2_SM1	PFD2 remaining jam (Tray 3 feed paper)	M1PFD OFF (When paper is transported by 50mm from M1PFD paper rear edge detection.)	PFD2 OFF	671ms	569ms
PFD2_SM2	PFD2 remaining jam (Tray 4 feed paper)	M1PFD OFF (When paper is transported by 50mm from M1PFD paper rear edge detection.)	PFD2 OFF	671ms	569ms
PFD2_SAD	PFD2 remaining jam (ADU re-feed paper)	RRC ON	PFD2 OFF (PFD2 paper rear edge detection) + 65mm	PFD2 OFF (PFD2 paper rear edge detection) + 65mm	
PPD_ST1	PPD1 remaining jam (Tray 1 feed paper)	PFD2 OFF	PPD OFF	352ms	298ms
PPD_ST2	PPD1 remaining jam (Tray 2 feed paper)	MPRD2 OFF	PPD OFF	429ms	364ms
PPD_SM1	PPD1 remaining jam (Tray 3 feed paper)	PFD2 OFF	PPD OFF	352ms	298ms
PPD_SM2	PPD1 remaining jam (Tray 4 feed paper)	PFD2 OFF	PPD OFF	352ms	298ms
PPD_SLC	PPD1 remaining jam (LCC paper feed paper)	MPRD2 OFF	PPD OFF	429ms	364ms
PPD_SAD	PPD1 remaining jam (ADU re-feed paper)	PFD2 OFF	PPD OFF	352ms	298ms
PPD_SMF	PPD1 remaining jam (Manual feed tray feed paper)	MPRD2 OFF	PPD OFF	429ms	364ms
POD1_S (Right paper exit, infinite form)	POD2 not-reached jam	PPD OFF	POD1 OFF	1128ms	956ms
POD1_S (Left paper exit)	POD2 not-reached jam	PPD OFF	POD1 OFF	1128ms	956ms
POD2_SR	POD2 remaining jam (When paper is discharged on the right side of the machine.)	POD1 OFF	POD2 OFF	429ms	364ms
POD2_SL	POD2 remaining jam (When paper is discharged on the left side of the machine.)	POM1 ON (Switchback start)	POD2 OFF	Paper length + 115mm	
AINPD_S (Saddle paper exit)	ADU paper entry sensor remaining jam	POD2 OFF	AINPD OFF	187ms	187ms
AINPD_S (Other)	ADU paper entry sensor remaining jam	POD2 OFF	AINPD OFF	187ms	187ms
APPD1_S	ADU transport sensor 1 remaining jam	AINPD OFF	APPD1 OFF	292ms	292ms
APPD2_S	ADU transport sensor 2 remaining jam	LD ON	APPD2 OFF (APPD2 paper rear edge detection) + 65mm	APPD2 OFF (APPD2 paper rear edge detection) + 65mm	
M1PFD_S1	M1PFD remaining jam (Tray 3 feed paper)	M1PFD ON	M1PFD OFF	Paper length + 65mm	
M1PFD_S2	M1PFD remaining jam (Tray 4 feed paper)	M2PFD OFF	M1PFD OFF	513ms	435ms
M2PFD_S	M2PFD remaining jam	M2PFD ON	M2PFD OFF	Paper length + 65mm	
MPRD2_S2	MPRD2 remaining jam (Tray 2 feed paper)	MPRD1 OFF	MPRD2 OFF	653ms	554ms
MPRD2_SM	MPRD2 remaining jam (Manual paper feed tray feed paper)	MPRD1 OFF	MPRD2 OFF	653ms	554ms
MPRD2_SL	MPRD2 remaining jam (LCC paper feed paper)	MPRD1 OFF	MPRD2 OFF	653ms	554ms
MPRD1_S2	MPRD1 remaining jam (Tray 2 feed paper)	MPRD1 ON	MPRD1 OFF	Paper length + 65mm	
MPRD1_SM	MPRD1 remaining jam (Manual paper feed tray feed paper)	MPFD2 OFF	MPRD1 OFF	564ms	478ms
MPRD1_SL	MPRD1 remaining jam (LCC paper feed paper)	MPFD2 OFF	MPRD1 OFF	564ms	478ms
MPFD2_SM	MPFD2 remaining jam (Manual paper feed tray feed paper)	MPFD1 OFF	MPFD2 OFF	570ms	483ms

JAM code	Content	JAM detection method		JAM judge time (JAMTST - JAMJD)	
		JAM detection timer start trigger (JAMTST)	JAM judge dedector (JAMJD)	55/62 PPM MODEL (335mm/s)	70 PPM MODEL (395mm/s)
MPFD2_SL	MPFD2 remaining jam (LCC paper feed paper)	LPPD OFF	MPFD2 OFF	1447ms	1379ms
MPFD1_S	MPFD1 remaining jam	MPFD1 ON	MPFD1 OFF	Paper length + 65mm	
LPPD_S	LPPD remaining jam	LTD OFF (LCC paper feed complete)	LPPD ON	1447ms	1379ms
PPD_PRI	PPD1 jam (Image ready request is not sent from ICU.)	Image data send ready request command is sent. (PCU to MFP CONTROL)	Image data send ready status is sent. (MFP CONTROL to PCU)	30000ms	30000ms
LPPD_LCC	LPPD jam (No reply in a certain time after preliminary paper feed from LCC and issuing the paper feed command.)	Preliminary paper feed request command is sent. (PCU to LCC)	Preliminary paper feed start status is sent. (LCC to PCU)	70sec	70sec

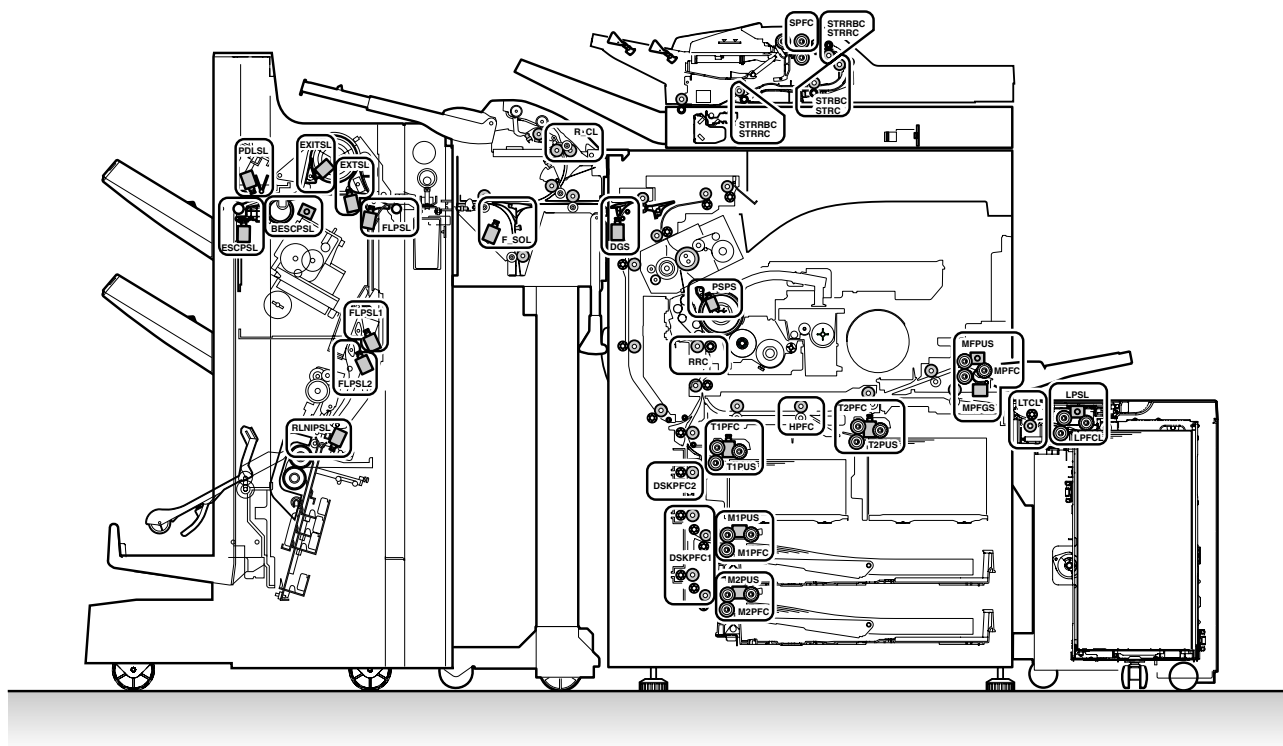
[Sensor (cross-section)]

sensor cross section



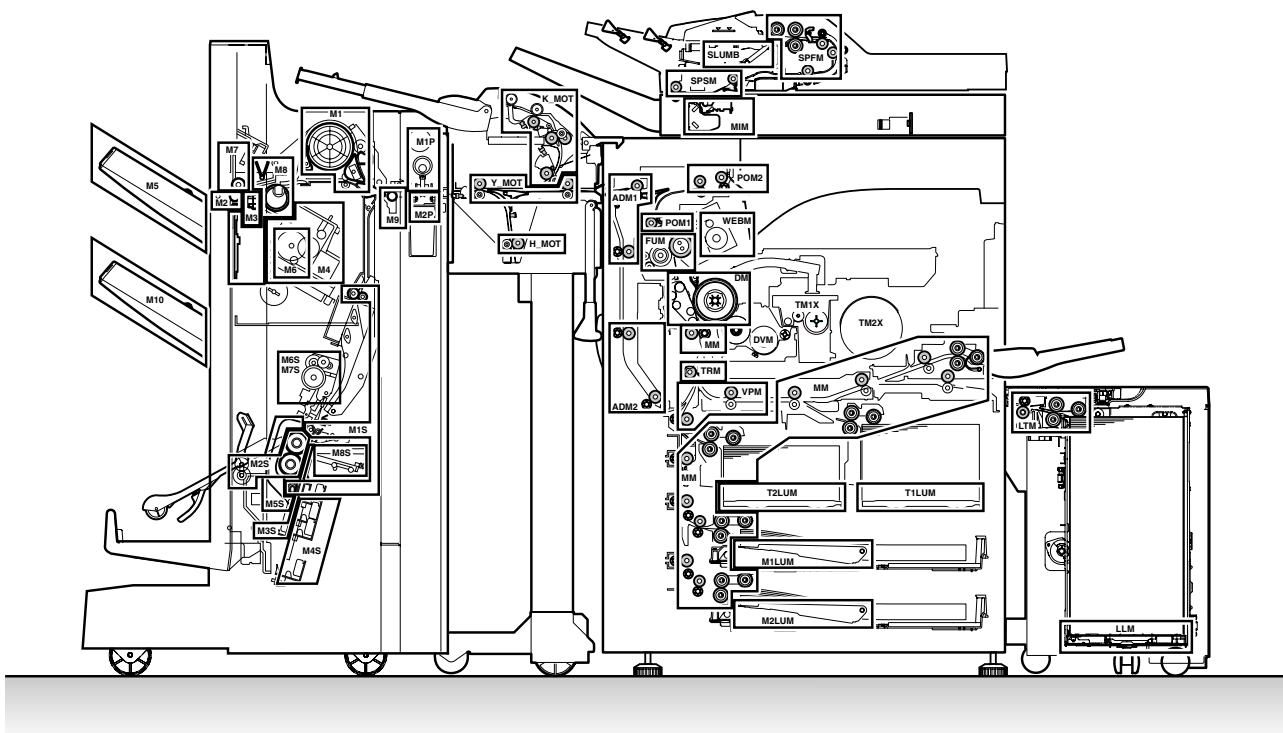
[Clutch/Solenoid (cross-section)]

clutch/solenoid cross section



[Motor (cross-section)]

motor cross section



B. Inserter (AR-CF2) paper jam judgment conditions

JAM code	Name	JAM detection method		JAM judge distance
		JAM detection start trigger	JAM judge detector	
REG_SEN_N	Resist sensor not-reached JAM	Separation start	Resist sensor ON	(Distance from pick descending start to resist sensor ON) × 5
REG_SEN_S	Resist sensor remaining JAM	Transport start from the take-up position (*1)	Resist sensor OFF	Max. document length (WLT) - (Resist sensor OFF to take-up position) + 200mm
TIM_SEN_N	Timing sensor not-reached JAM	Resist sensor ON	Timing sensor ON	Distance from resist sensor ON to timing sensor ON + 200mm
TIM_SEN_S	Timing sensor remaining JAM	Resist sensor OFF	Timing sensor OFF	Distance from resist sensor OFF to timing sensor OFF + 200mm
HI_SEN_NI	Paper exit sensor remaining JAM (Inserter paper feed)	Timing sensor ON	Reverse sensor ON	Distance from timing sensor ON to paper exit sensor ON + 200mm
HI_SEN_NP	Paper exit sensor notreached JAM (Main unit paper feed)	Main unit paper exit command receive	Reverse sensor ON	Distance from main unit side to paper exit sensor ON + 500mm
HI_SEN_S	Paper exit sensor remaining JAM (Main unit paper feed)	After passing by 20mm from the paper exit sensor ON	Paper exit sensor OFF	Max. document length (WLT) + 200mm
	Paper exit sensor remaining JAM (Inserter paper feed)	Timing sensor OFF	Paper exit sensor OFF	Distance from timing sensor OFF to paper exit sensor OFF + 200mm
H_SEN_NIN	Reverse sensor notreached JAM (When entering the reverse path)	Timing sensor ON	Reverse sensor ON	Distance from timing sensor ON to reverse sensor ON + 100mm
H_SEN_NOUT	Reverse sensor notreached JAM (When exiting from the reverse path)	Switchback start	Reverse sensor ON	Distance from reverse stop position (*2) to reverse sensor ON + 100mm
H_SEN_SIN	Reverse sensor remaining JAM (When entering the reverse path)	Timing sensor OFF	Reverse sensor OFF	Distance from timing sensor OFF to reverse sensor OFF + 100mm
H_SEN_SOUT	Reverse sensor remaining JAM (When exiting from the reverse path)	After passing 20mm from the reverse sensor ON	Reverse sensor OFF	Max. Document length (WLT) + 100mm

*1) The take-up position is 30mm downstream from the vertical path transport roller.

*2) The reverse stop position is 20mm downstream from the reverse sensor.

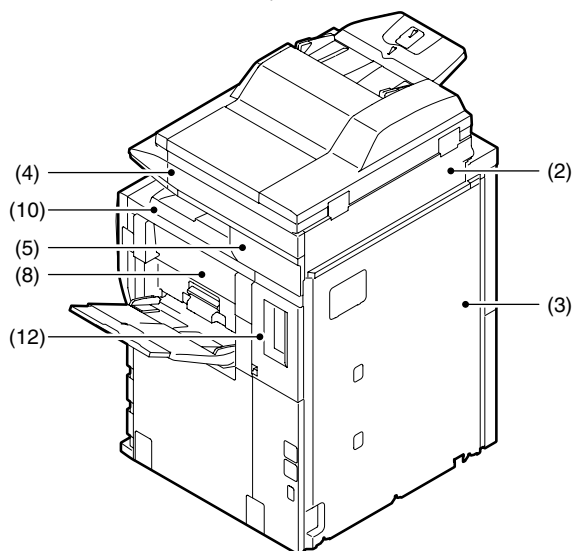
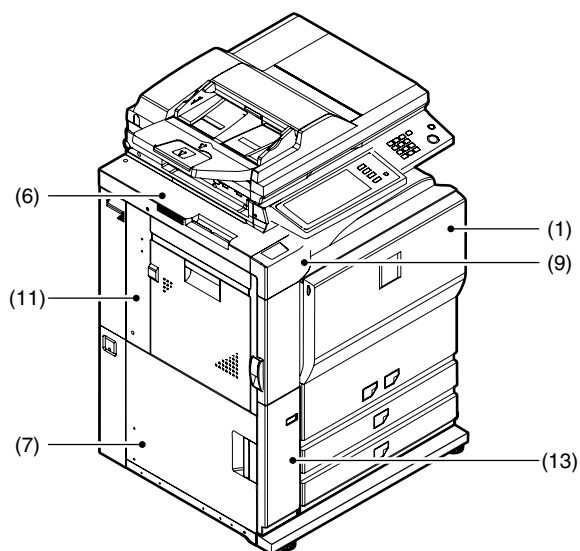
JAM code	Content	JAM detection method		JAM judgment time (Stacker: LTR horizontal size Saddle: LTR vertical size)
		JAM detection timer start trigger	JAM judge detector	Common to 55/62, 70PPM MODELS (Main unit paper exit speed: Stacker: 800mm/s Saddle: 420mm/s)
FES_N	FINISHER entry port remaining JAM	Main unit paper exit command receive	The paper entry sensor is not turned ON within the specified time.	500ms
FES_S	FINISHER entry port remaining JAM	Entry port sensor ON	The paper entry sensor is not turned OFF within the specified time.	540ms
	FINISHER buffer sensor notreached JAM	Entry port sensor ON	The buffer sensor is not turned ON within the specified time.	688ms
	FINISHER buffer sensor remaining JAM	Buffer sensor ON	The buffer sensor is not turned OFF within the specified time.	540ms
	FINISHER paper exit sensor not-reached JAM	Entry port sensor ON	The paper exit sensor is not turned ON within the specified time.	Straight path transport: 453ms Buffer path transport: 815ms
	FINISHER paper exit sensor remaining JAM	Entry port sensor ON	The paper exit sensor is not turned OFF within the specified time.	840ms
FFPS_N	FINISHER saddle transport path sensor remaining JAM	Entry port sensor ON	The saddle transport path sensor is not turned ON within the specified time.	914ms
FFPS_S	FINISHER saddle transport path sensor remaining JAM	Saddle transport path sensor ON	The saddle transport path sensor is not turned OFF within the specified time.	996ms
	FINISHER saddle paper exit sensor not-reached JAM	Folding edge sensor ON (Completion of thrust operation)	The saddle transport sensor is not turned ON though paper is transported in the specified distance.	180mm (Twice as much as the normal distance)
	FINISHER saddle paper exit sensor remaining JAM	Saddle paper exit sensor ON	The saddle paper exit sensor is not turned OFF though paper is transported in the specified distance.	209.25mm (1.5 times as much as the normal distance)
FEXIT_S	FINISHER bundle exit remaining JAM	Start of bundle exit to the stack tray	The staple tray sensor is not turned OFF within the specified time.	1000ms
FSTPL	FINISHER Stacker staple JAM	Start of stacker stapling	When the staple HP sensor does not sense ON within the specified time from staple HP sensor OFF in stapling process, and when the staple HP sensor detects ON in reverse rotation after stopping the stapler.	500ms

JAM code	Content	JAM detection method		JAM judgment time (Stacker: LTR horizontal size Saddle: LTR vertical size)
		JAM detection timer start trigger	JAM judge detector	Common to 55/62, 70PPM MODELS (Main unit paper exit speed: Stacker: 800mm/s Saddle: 420mm/s)
FSTPL	FINISHER saddle staple JAM	Start of saddle stapling	When the staple HP sensor does not sense ON within the specified time from stapler HP sensor OFF in stapling process, and when the staple HP sensor detects ON in reverse rotation after stopping the stapler.	500ms
FPNCH	FINISHER punch JAM	Punch HP OFF after starting punching	The punch HP sensor does not turn ON within the specified time.	200ms
FDOP	FINISHER door open JAM	One of finisher doors open	Finisher door open is detected in finishing process.	---

[A] EXTERNAL OUTFIT

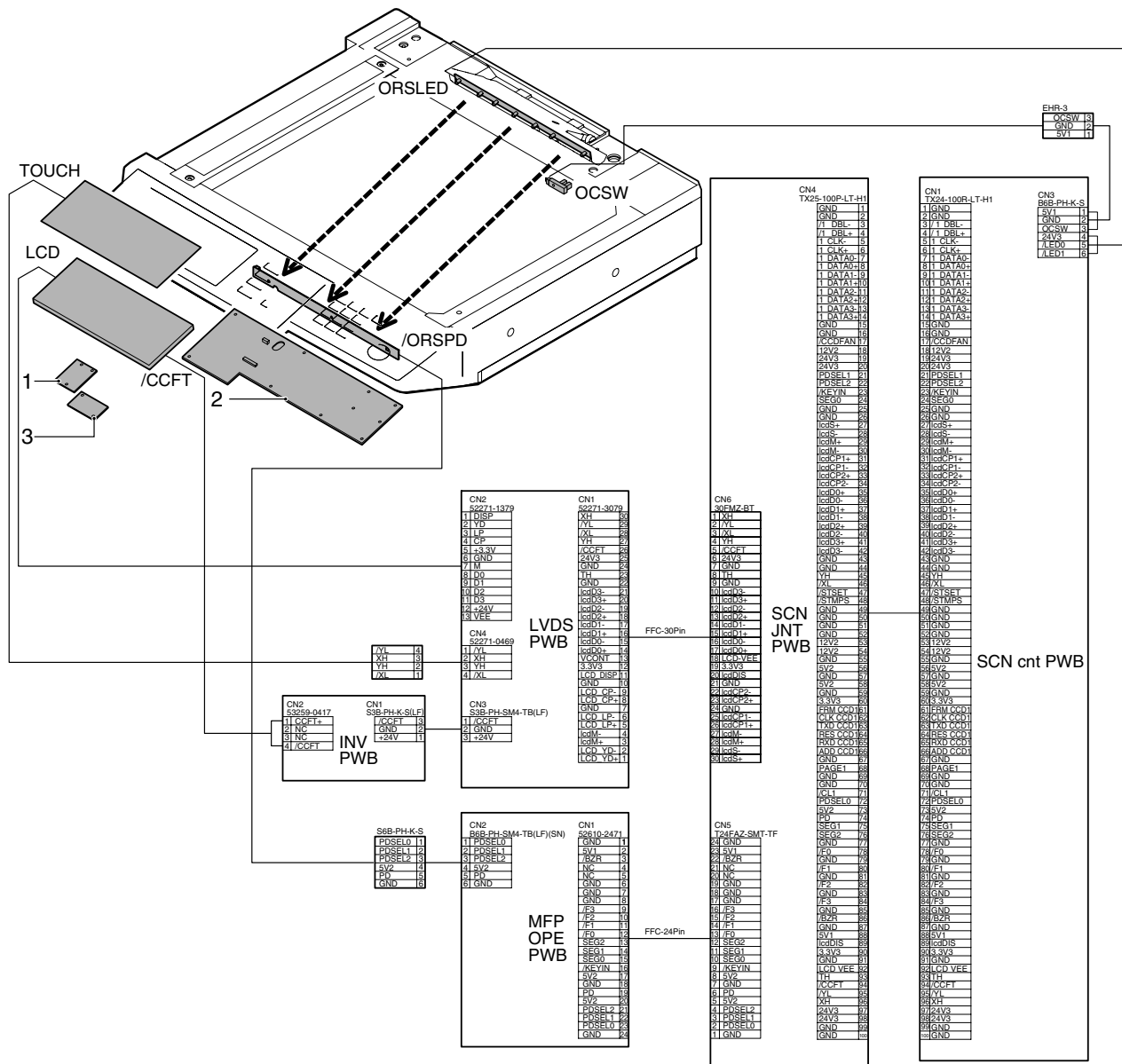
Disassembly of each external outfit part refer to each section.

No.	Parts
(1)	Front cabinet
(2)	Rear cabinet upper
(3)	Rear cabinet
(4)	Right side cabinet upper
(5)	Right side cabinet lower
(6)	Top left cabinet
(7)	Left lower cabinet
(8)	Right cabinet center
(9)	Front cabinet upper
(10)	Paper exit tray cabinet
(11)	Left cabinet upper
(12)	Right cabinet upper
(13)	Left front cabinet



[B] OPERATION PANEL

1. Electrical and mechanism relation diagram



Code	Signal name	Name	Function/Operation	Type	NOTE
LCD		LCD unit	Displays the various menu and information.		
TOUCH		Touch panel	Executes the various adjustments and the setting operation.		
ORSLED		Document size detection light emitting PWB	Generates the document size detection signal.		
ORSPD		Document size detection light reception PWB	Generates the document size detection signal.		
OCSW	OCSW	SPF open/close detector	Trigger for document size detection.	Transmission type	Sensor
/CCFT	/CCFT	LCD backlight	Backlight for LCD.	Cold Cathode Fluorescent Tube	

No.	Name	Function/Operation
1	LVDS PWB	Generates the LCD display signal.
2	Operation control PWB	Controls the display operation panel.
3	INV PWB	Generates a high voltage for backlight.

2. Operational descriptions

A. Outline

This section describes various types of settings, display and operation.

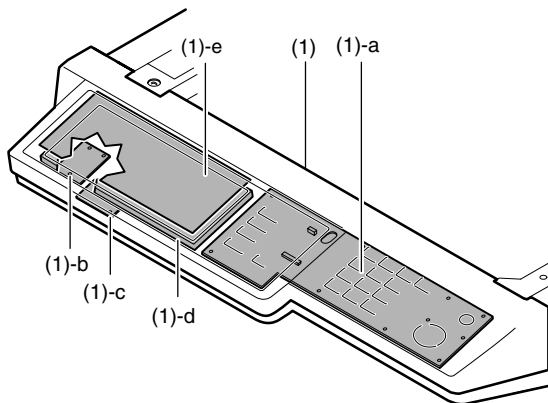
The LCD display section is controlled by the MFP CONTROL PWB.

The touch panel, operation keys and LED display are controlled by the SCANNER CONTROL PWB.

3. Disassembly and assembly

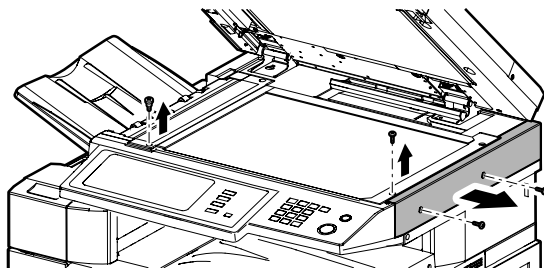
A. Operation panel

No.	Unit	No.	Parts
(1)	Operation panel unit	a	Operation control PWB
		b	LVDS PWB
		c	LCD INV-J PWB
		d	LCD unit
		e	Touch panel

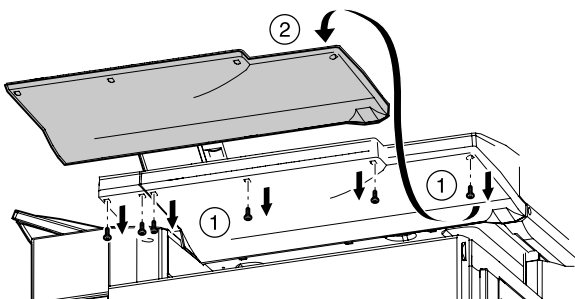


(1) Operation panel unit

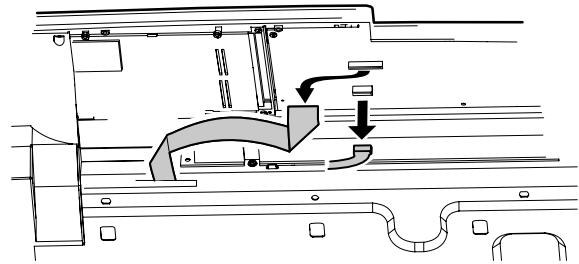
- 1) Remove the screws. Remove the upper right cabinet.



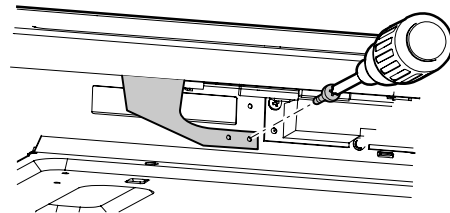
- 2) Remove the cover of the operation section.



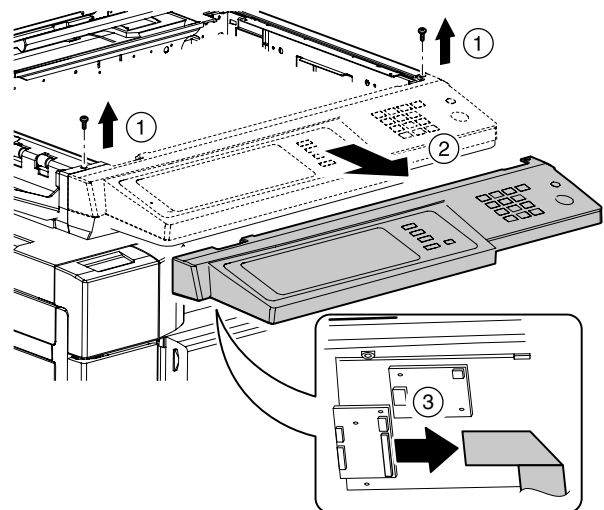
- 3) Disconnect each cables.



- 4) Remove the earth terminal.

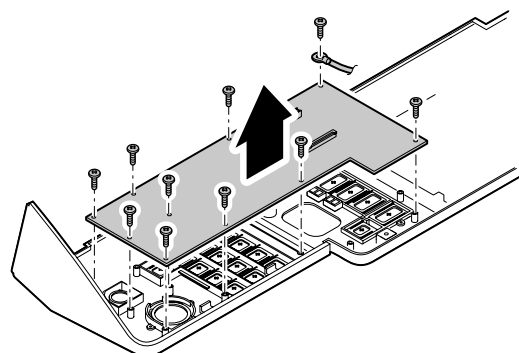


- 5) Disconnect the cable while saving an operation panel unit.



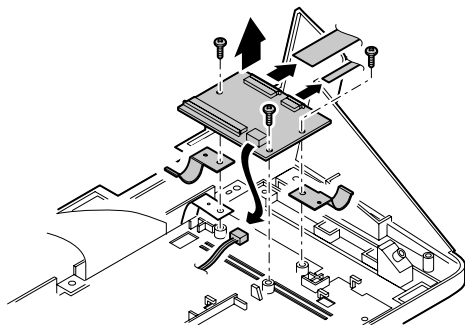
a. Operation control PWB

- 1) Remove the operation panel unit.
(See "(1) Operation panel unit")
- 2) Remove the earth terminal.
- 3) Remove the operation control PWB.



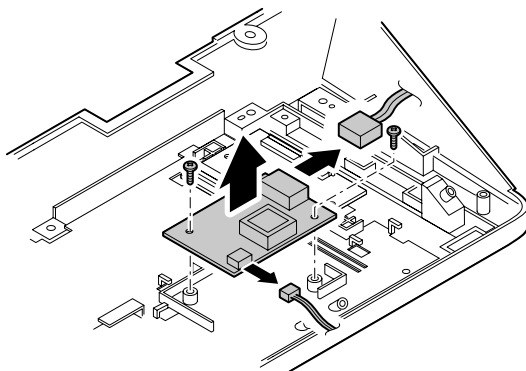
b. LVDS PWB

- 1) Remove the operation panel unit.
(See "(1) Operation panel unit")
- 2) Disconnect each cables.
- 3) Remove the LVDS PWB.



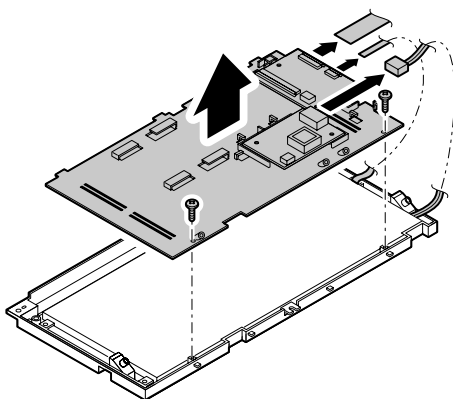
c. LCD INV-J PWB

- 1) Remove the operation panel unit.
(See "(1) Operation panel unit")
- 2) Disconnect each cables.
- 3) Remove the LCD INV-J PWB.

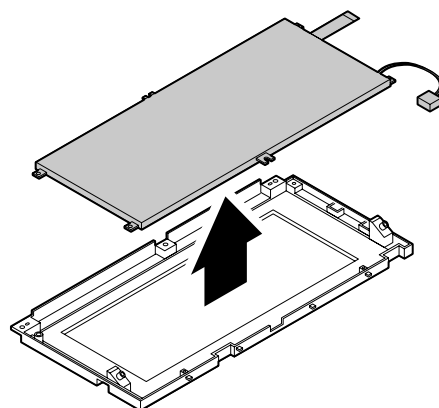


d. LCD unit

- 1) Remove the operation panel unit.
(See "(1) Operation panel unit")
- 2) Disconnect each cables.
- 3) Remove the LCD cover.

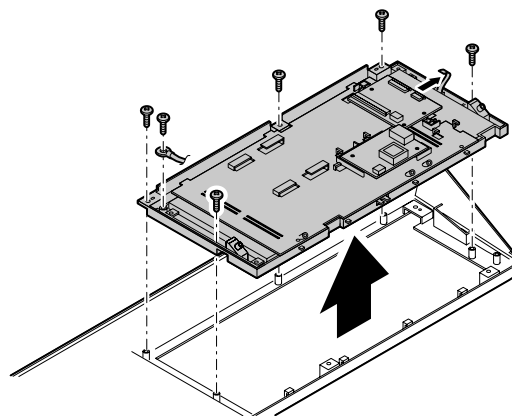


- 4) Remove the LCD unit.

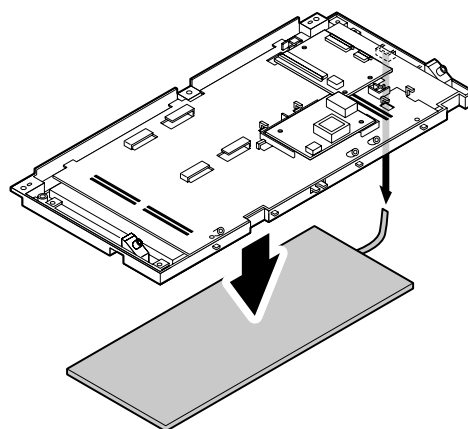


e. Touch panel

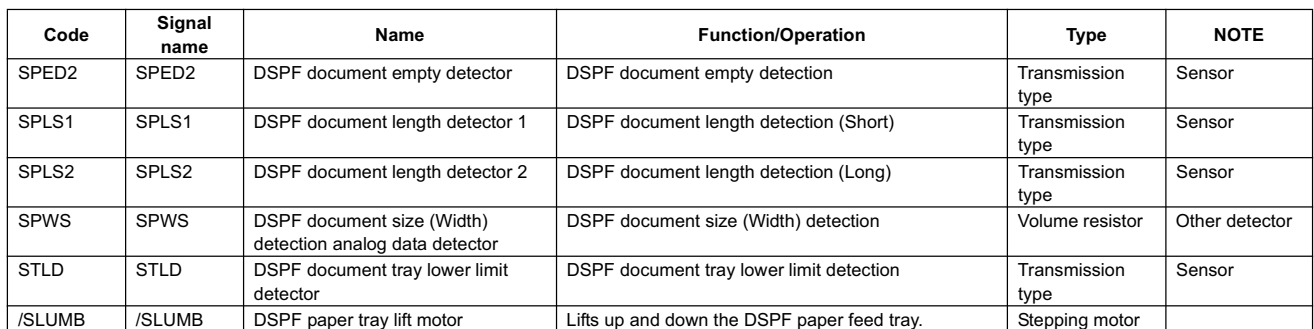
- 1) Remove the operation panel unit.
(See "(1) Operation panel unit")
- 2) Disconnect the flat cable.
- 3) Remove the earth wire.
- 4) Remove the LCD unit.



- 5) Remove the touch panel.



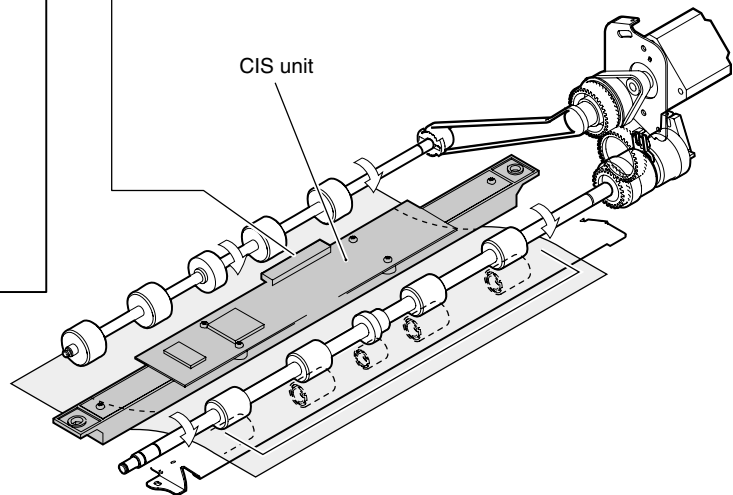
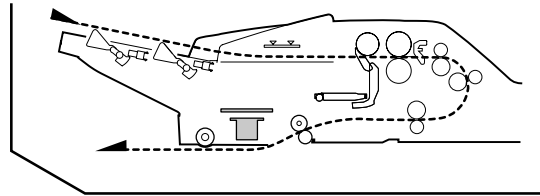
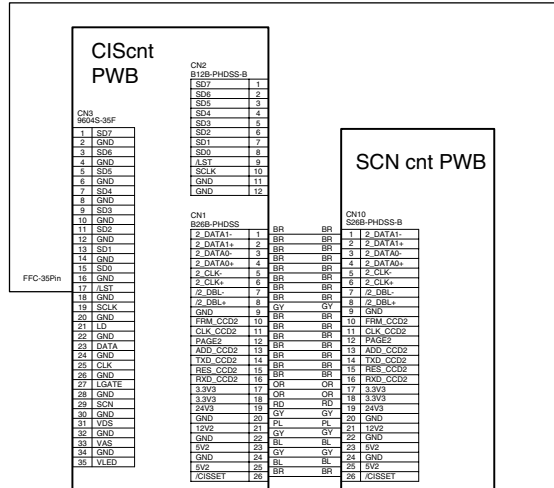
A. The paper feed tray section



[illegible]

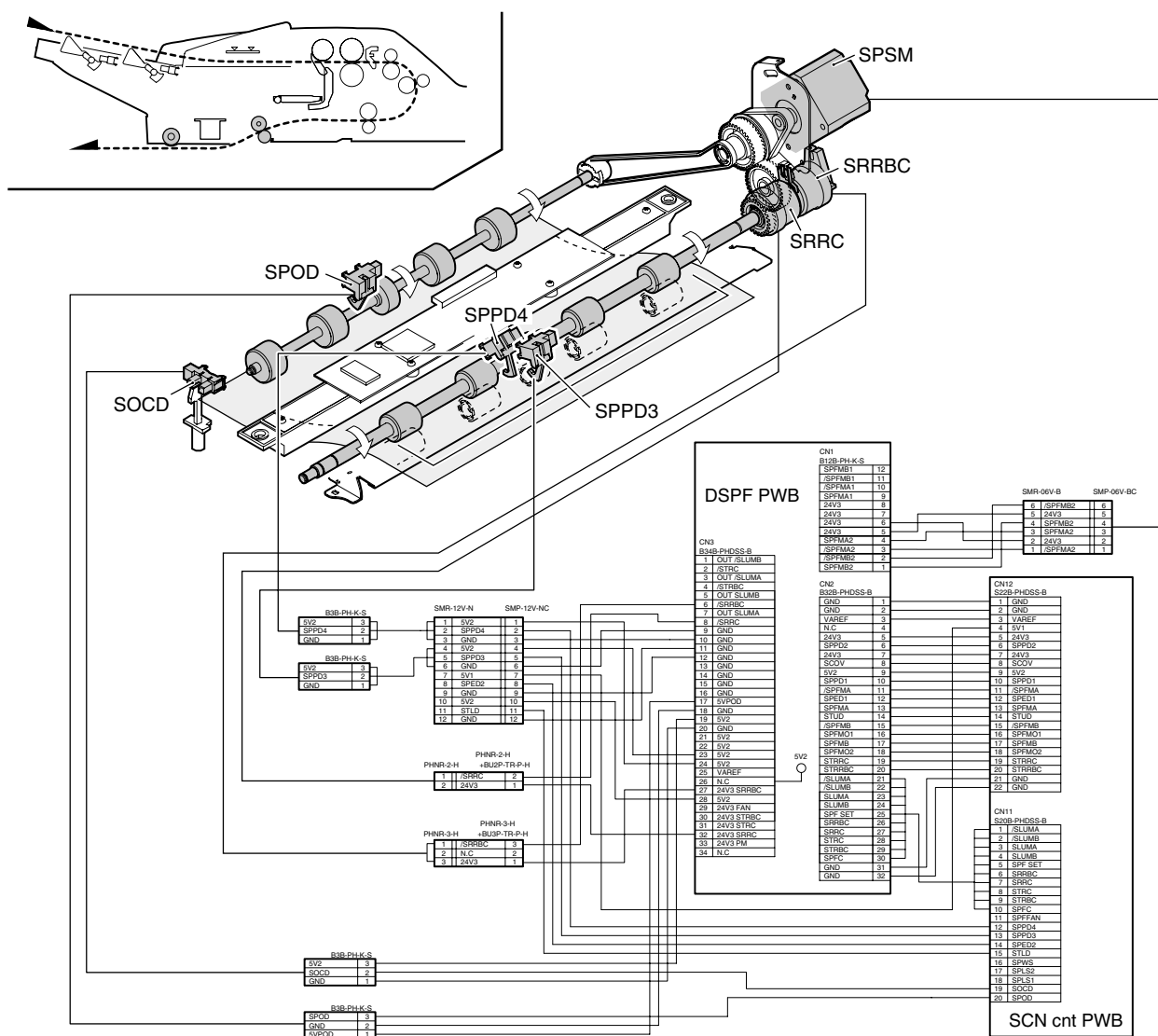
MX-M700N DSPF SECTION C-2
WWW.SERVICE-MANUAL.NET

C. CIS section



Code	Signal name	Name	Function/Operation	Type	NOTE
CIS	CIS	CIS control PWB/CIS unit	Scans document images (back surface) and controls the CIS unit.		

D. Paper exit section



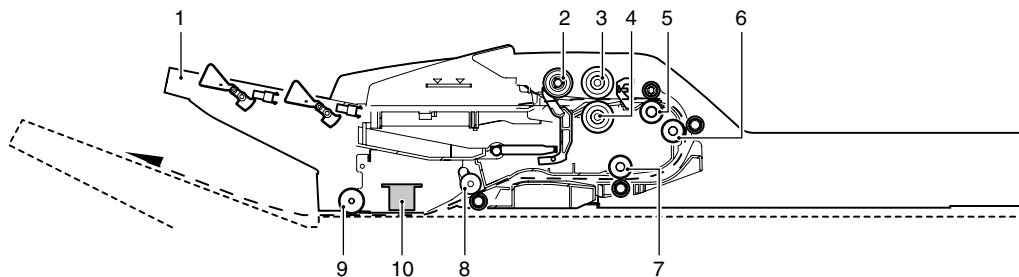
Code	Signal name	Name	Function/Operation	Type	NOTE
SOCD	SOCD	DSPF open/close detector	DSPF open/close detector	Transmission type	Sensor
SPOD	SPOD	DSPF paper exit detector	DSPF paper exit detection	Transmission type	Sensor
SPPD3	SPPD3	DSPF document paper pass detector 3	DSPF document paper pass detection 3	Transmission type	Sensor
SPPD4	SPPD4	DSPF document paper pass detector 4	DSPF document paper pass detection 4	Transmission type	Sensor
SRRRC	SRRRC	DSPF No.2 resist roller clutch	DSPF transport roller 3 ON/OFF control	Electromagnetic clutch	
SRRBC	SRRBC	DSPF No.2 resist roller brake clutch	DSPF transport roller 3 braking	Electromagnetic clutch	
SPSM	LSPFH2	DSPF paper exit motor	DSPF paper exit motor (DSPF)	Stepping motor	

2. Operational descriptions

A. Outline

Sheet documents are automatically fed and transported for continuous scanning.

The front and the back surfaces of duplex sheet documents can be scanned at a time.



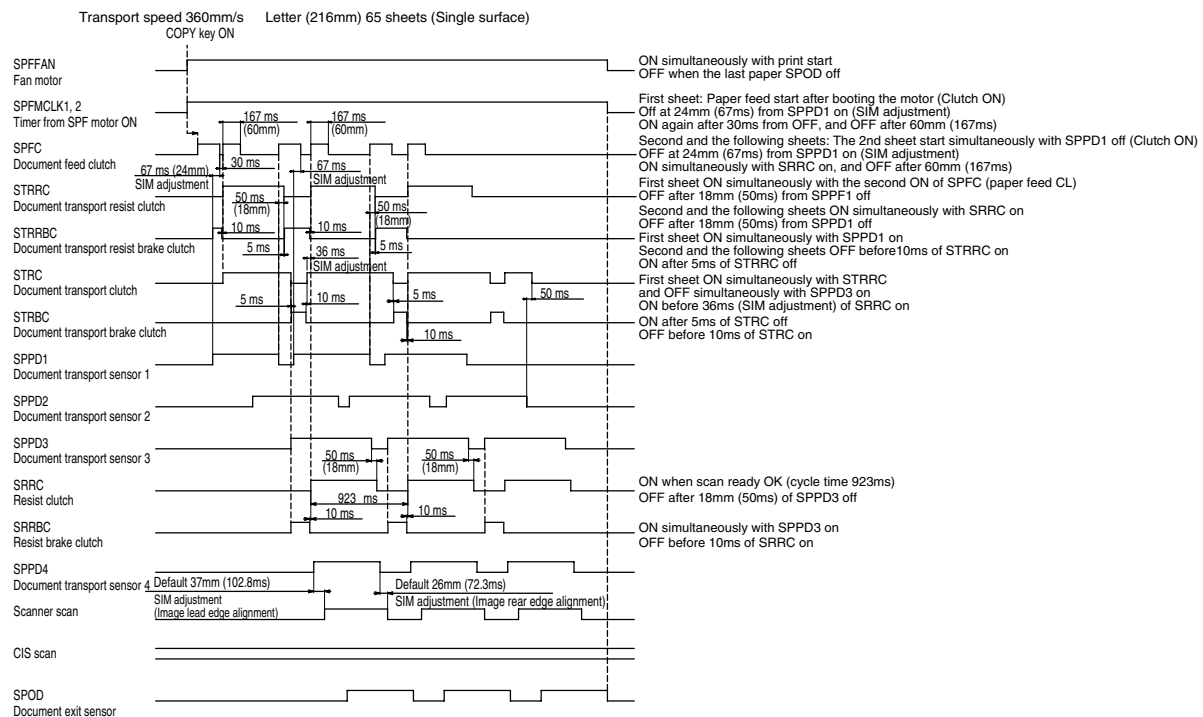
No.	Name	Function/Operation
1	Document tray	Paper feed tray for documents. Max. loading capacity of documents: 150 sheets (80g/m ²) or 19.5mm or less.
2	Pickup roller	Picks up a document and transports it to the document feed roller.
3	Document feed roller	Feeds documents.
4	Separation roller	Separates paper to prevent against double feed.
5	No.1 resist roller (Drive)	Performs document feed resist.
6	Transport roller 1 (Drive)	Transports documents.
7	Transport roller 2 (Drive)	Transports documents.
8	No.2 resist roller (Drive)	Makes synchronization between the document lead edge and the scan start position.
9	Paper exit roller (Drive)	Discharges documents.
10	CIS unit	Scans the back surface of a document.

B. Timing chart

To increase the document replacement speed, preliminary feed is performed for the second and the following documents when two or more documents of A4/Letter size or smaller are scanned.

For this purpose, each transport roller is provided with a clutch to perform independent control.

In addition, an electromagnetic brake is employed for each transport roller because it reduces the motor load when compared with the mechanical brake.



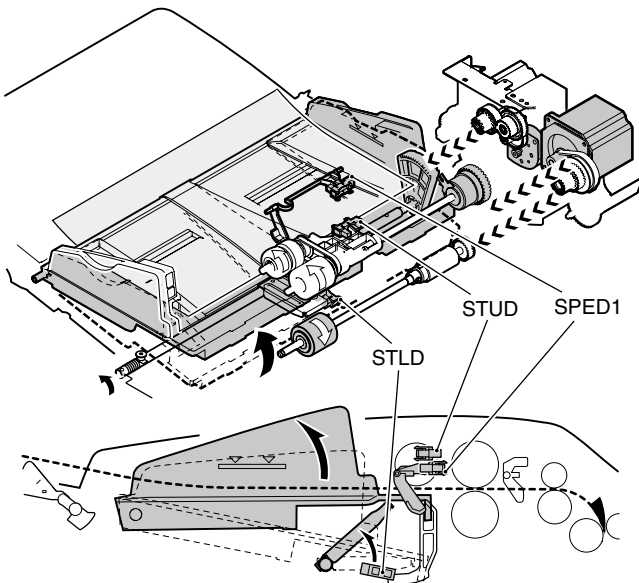
C. Document tray lift operation

When a job is started, the document tray is lifted until a document at the top in the document tray turns on the document upper limit sensor (STUD).

The pressure between the document at the top in the document tray and the take-up roller is maintained at a constant level to improve the paper feed capability.

When paper to be scanned is exhausted, the document empty sensor (SPED1) turns off and the document tray moves down automatically until the lower limit sensor detects it.

Up and down movements of the document tray are performed by the lift motor (normal rotation, reverse rotation) and the lift gear.



D. Document feed, transport, scan, paper exit, and operating speed

The document fed by the take-up roller is sent through the paper feed roller and the transport roller to the resist roller section.

In the resist roller section, the document lead edge and the scan start position are synchronized.

The document is transported to the scan section. After being scanned, the document is discharged to the document exit tray by the paper exit roller.

The document transport speed varies depending on the scan mode and the scan magnification ratio as shown below.

Scanning mode	Magnification ratio	Document transport speed
Single surface scan	Up to 117%	360mm/sec
Single surface scan	118% or above	220mm/sec
Duplex scan	Up to 100%	220mm/sec
Duplex scan	101% or above	110mm/sec

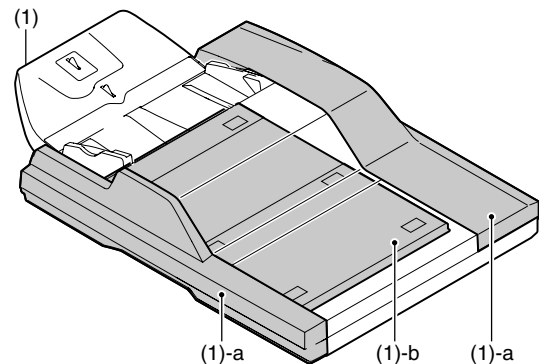
E. The original scan

The CIS (Contact Image Sensor) unit is the contact type image scan sensor, and is assembled to the DSPF to scan document images. The LED light in the CIS unit is radiated to a document, and the reflected light is passed through the lens to the photoelectric conversion elements to form images. (Pixel: 7196 pixels, resolution: 600dpi) The CIS and the CCD assembled in the lens unit allow simultaneous scan of duplex surfaces of a document.

3. Disassembly and assembly

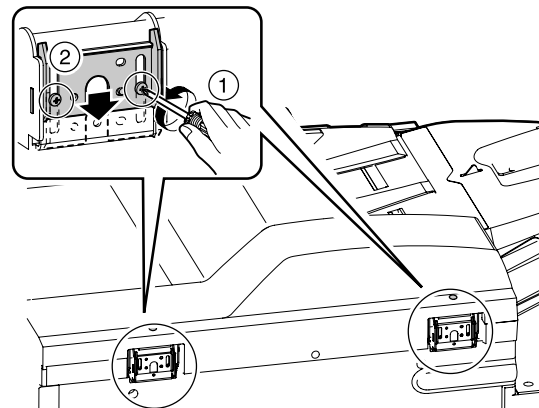
A. External outfit section

No.	Unit	No.	Parts
(1)	DSPF unit	a	Cabinet
		b	Document mat

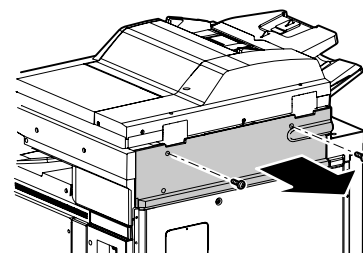


(1) DSPF unit

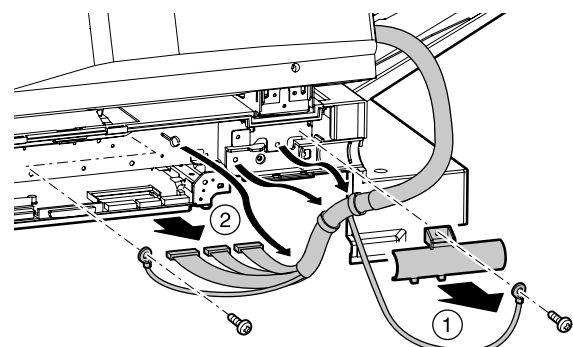
- 1) Push down the fixing plate.



- 2) Remove the rear cover.

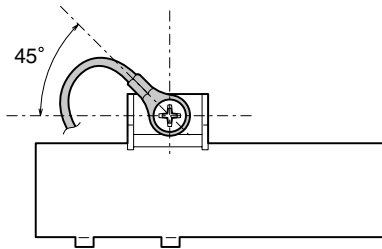


- 3) Remove the harness.

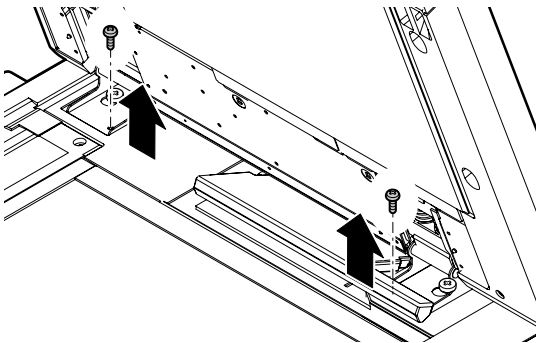


[Note for assembly]

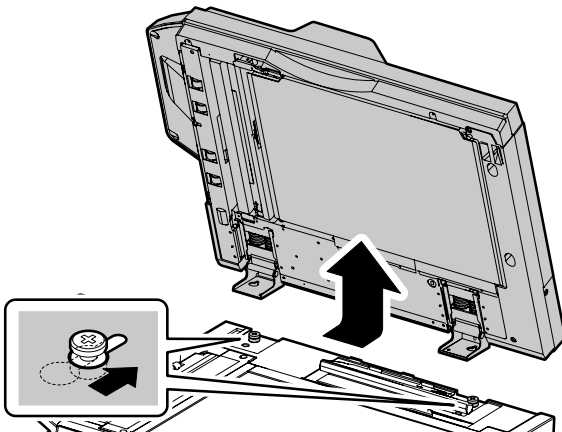
- Install the earth terminal in the direction shown in the figure below.



- 4) Remove the fixing screw.

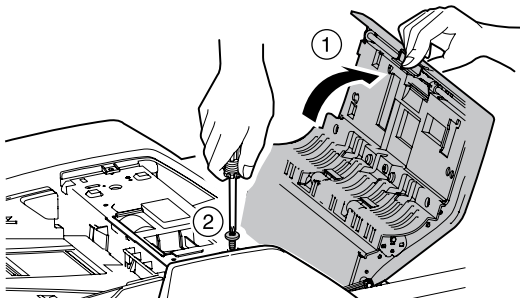


- 5) Remove the DSPF.

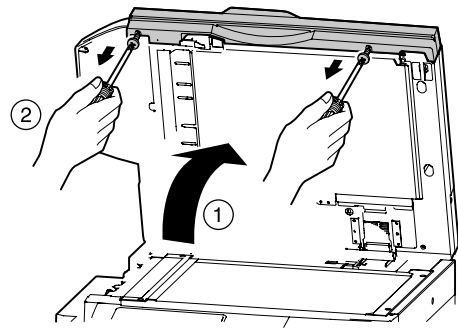


a. Cabinet

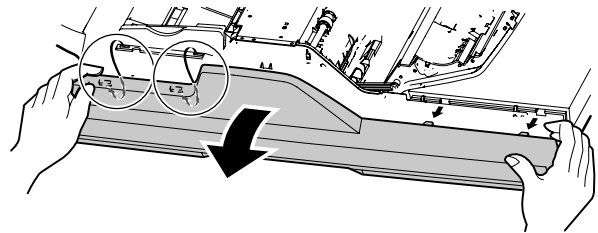
- 1) Open the cover, and remove the screws.



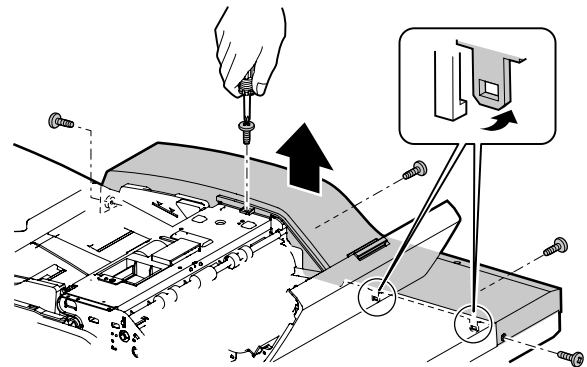
- 2) Open the DSPF, and remove the screws.



- 3) Unhook the claws on the tray side to remove the front cover.

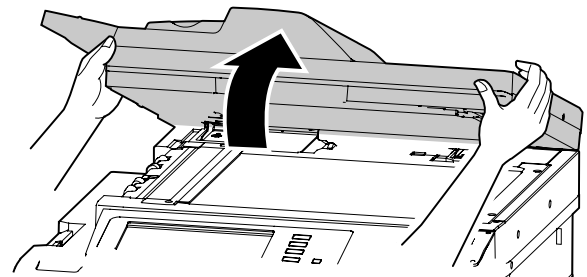


- 4) Remove the rear cover.

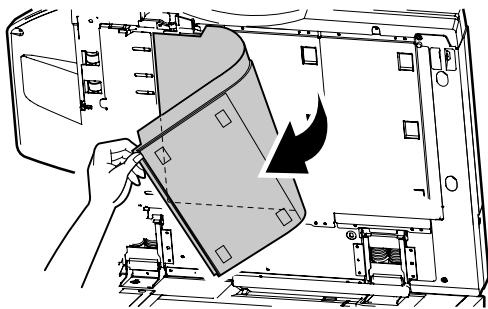


b. Document mat

- 1) Open the DSPF.

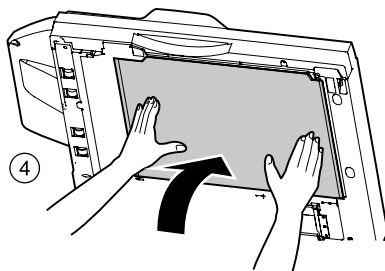
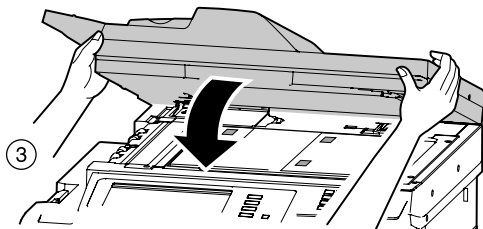
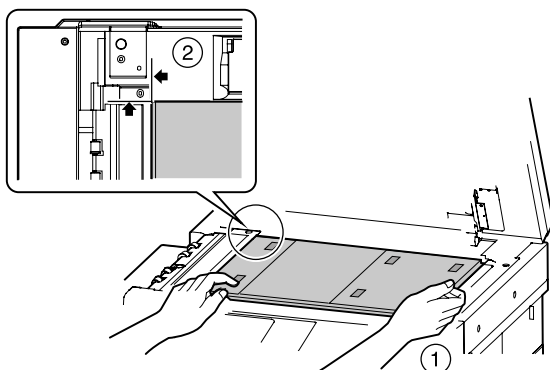


- 2) Remove the mat.



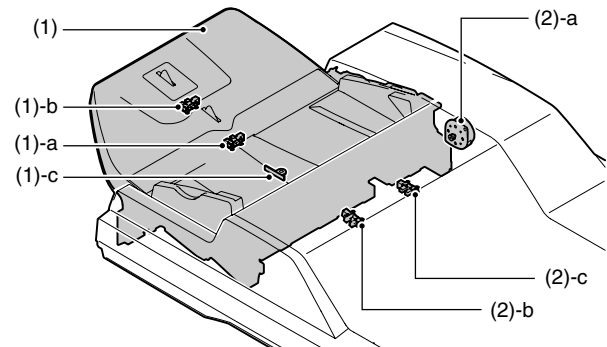
[Caution when attaching]

- Place the mat on the document base glass surface; close the DSPF to attach the mat; then open again and apply pressure by hand to attach.



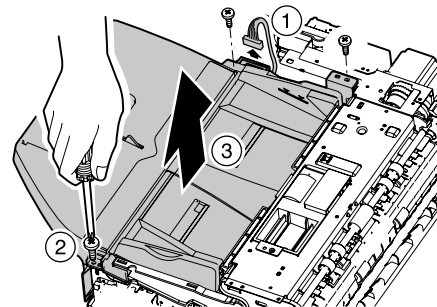
B. The paper feed tray section

No.	Unit	No.	Parts
(1)	Document tray unit	a	DSPF document length detector 1
		b	DSPF document length detector 2
		c	DSPF document size (Width) detection analog data detector
(2)	Others	a	DSPF paper tray lift motor
		b	DSPF paper tray lower limit detector
		c	DSPF document empty detector



(1) The document tray section

- 1) Remove the cabinet. (See "A-(1)-a. Cabinet")
- 2) Disconnect the connector, and remove the document tray unit.

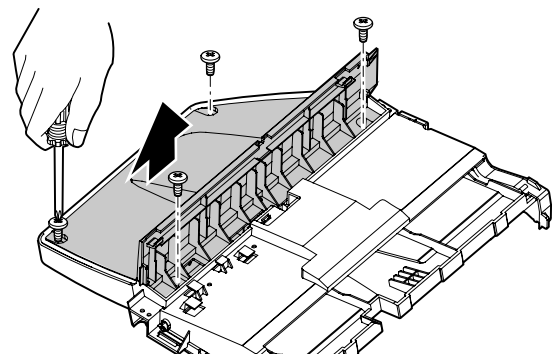


a. DSPF document length detector 1

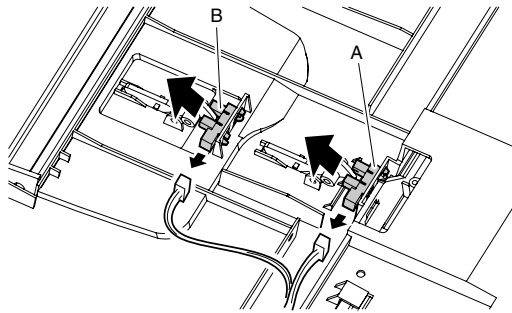
b. DSPF document length detector 2

c. DSPF document size (Width) detection analog data detector

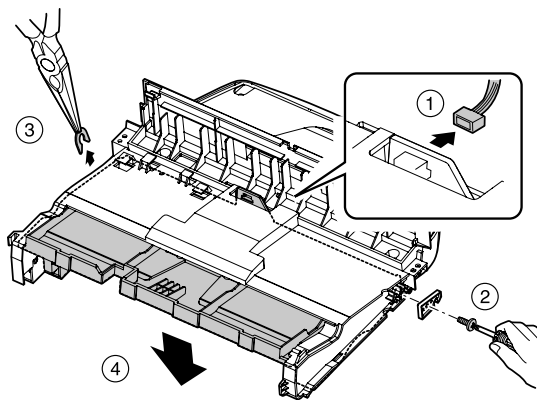
- 1) Remove the cabinet. (See "A-(1)-a. Cabinet")
- 2) Remove the document tray unit. (See "B-(1) Document tray unit")
- 3) Remove the screw, and remove the cover.



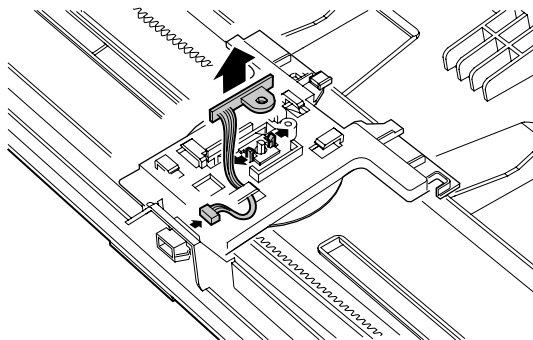
- 4) Disconnect the connector, and remove the DSPF document length detector 1 (A) and the DSPF document length detector 2 (B).



- 5) Remove the rotation tray unit.



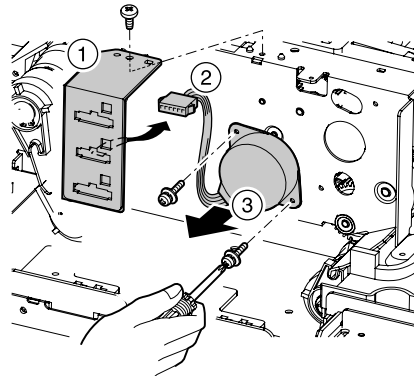
- 6) Remove the DSPF document size (width) detection analog data detector.



(2) Others

a. DSPF paper tray lift motor

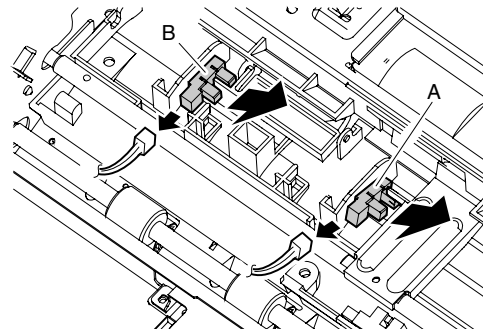
- 1) Remove the rear cover. (See "A-(1)-a. Cabinet")
- 2) Remove the DSPF paper tray lift motor.



b. DSPF paper tray detector

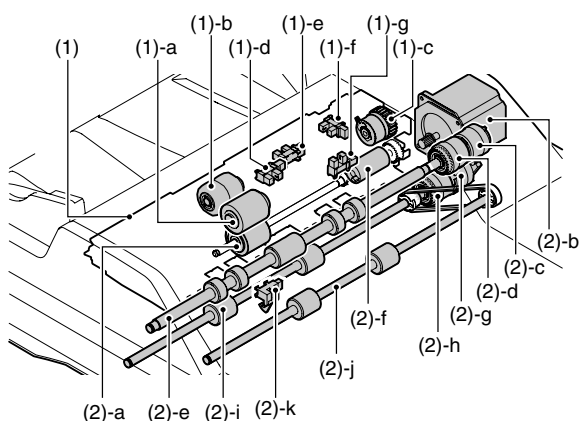
c. DSPF document empty detector

- 1) Remove the cabinet. (See "A-(1)-a. Cabinet")
- 2) Remove the document tray unit. (See "B-(1) Document tray unit")
- 3) Disconnect the connector, and remove the DSPF paper tray detector (A) and the DSPF document empty detector (B).



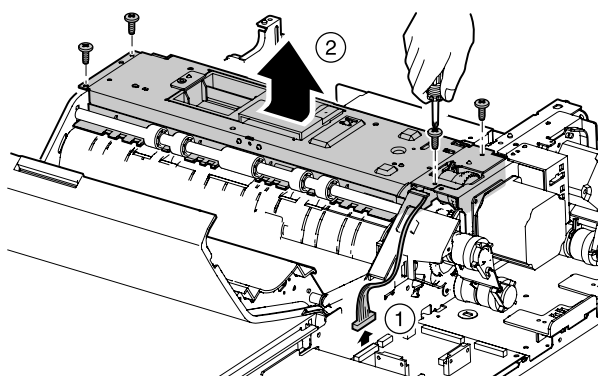
C. Paper feed and paper transport section

No.	Unit	No.	Parts	Maintenance
(1)	Paper feed unit	a	Paper feed roller	× ○
		b	Pickup roller	× ○
		c	DSPF paper feed clutch	
		d	DSPF document tray upper limit detector	
		e	DSPF document upper limit detector	
		f	DSPF cover switch	
		g	DSPF document paper pass detector 1	
(2)	Others	a	Separation roller	× ○
		b	DSPF paper feed/paper transport motor	
		c	DSPF resist roller brake clutch	
		d	DSPF resist roller clutch	
		e	No.1 resist roller (Drive)	× ○
		f	Torque limiter	×
		g	DSPF paper transport roller 2 brake clutch	
		h	DSPF paper transport roller 2 clutch	
		i	Transport roller 2 (Drive)	× ○
		j	Transport roller 1 (Drive)	× ○
		k	DSPF document paper pass detector 2	



(1) Paper feed unit

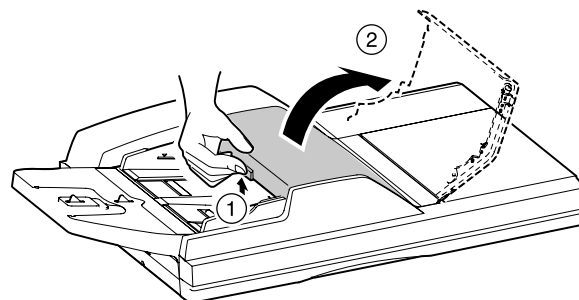
- 1) Remove the cabinet. (See "A-(1)-a. Cabinet")
- 2) Disconnect the connector, and remove the paper feed unit.



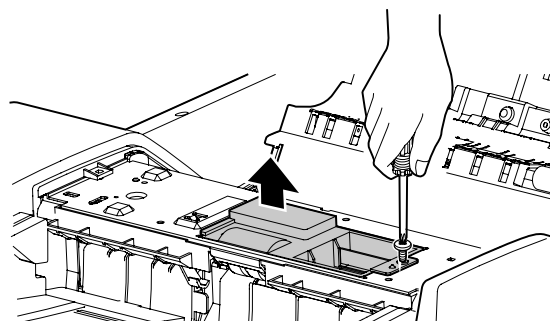
a. Paper feed roller

b. Pickup roller

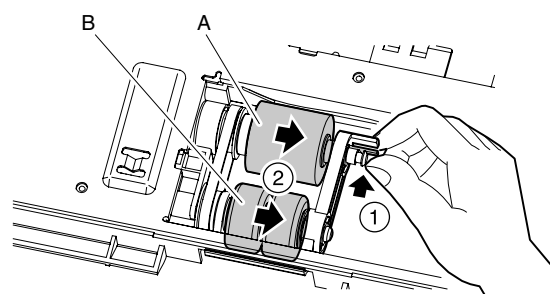
- 1) Pull up the lever and open the upper cover.



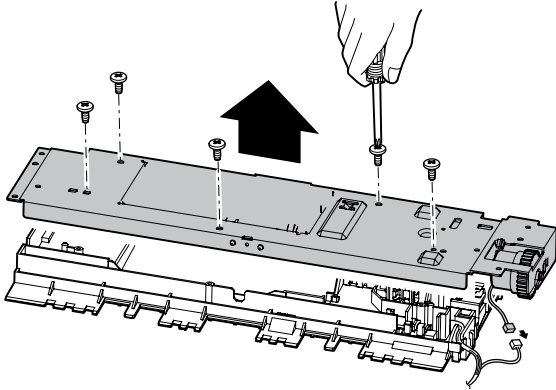
- 2) Remove the roller cover.



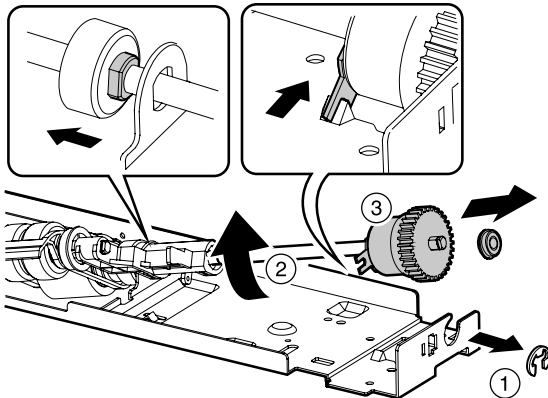
- 3) Remove the pawl, and remove the paper feed roller (A) and pickup roller (B).



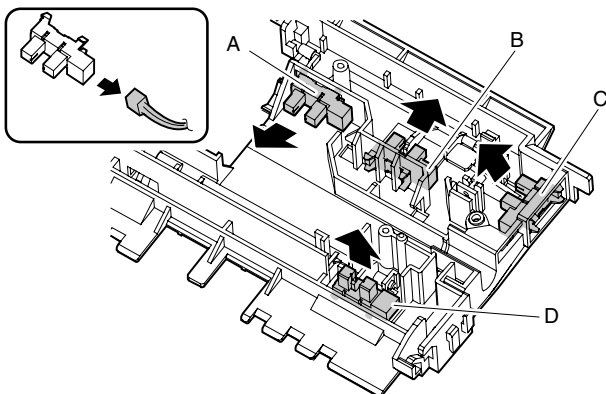
- c. DSPF paper feed clutch
 - d. DSPF document tray upper limit detector
 - e. DSPF document upper limit detector
 - f. DSPF cover switch
 - g. DSPF document paper pass detector 1
- 1) Remove the cabinet. (See "A-(1)-a. Cabinet")
 - 2) Remove the document feed tray unit.
(See "C-(1) Paper feed unit")
 - 3) Remove the cover.



- 4) Remove the E-ring, and remove the DSPF the paper feed clutch.



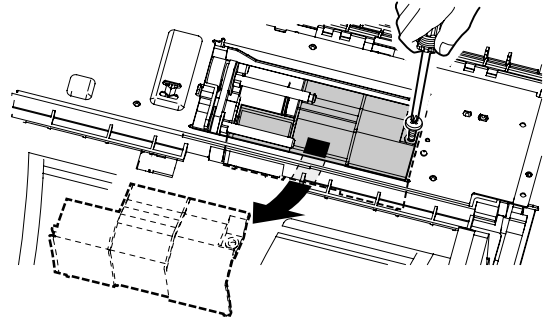
- 5) Disconnect the connector, and remove the DSPF document tray upper limit detector (A), the DSPF document upper limit detector (B), the DSPF cover switch (C), and the DSPF document paper pass detector 1 (D).



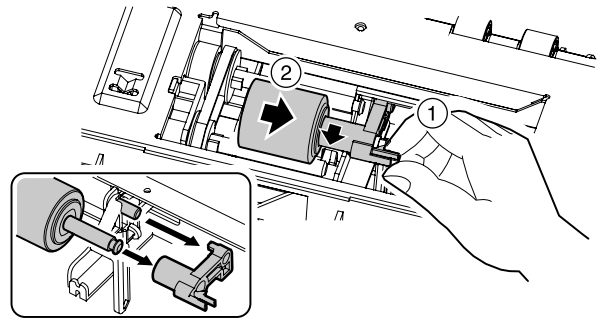
(2) Others

a. Separation roller

- 1) Remove the paper feed roller and the pickup roller.
(See "C-(1)-a. Paper feed roller" and "C-(1)-b. Pickup roller")
- 2) Remove the cover.



- 3) Unhook the claw to remove the support. Remove the reverse roller.

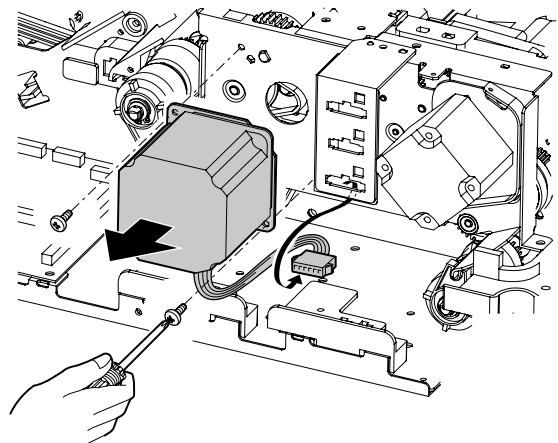


[Caution when attaching]

- Rotate the roller into the pin slot.

b. DSPF paper feed/paper transport motor

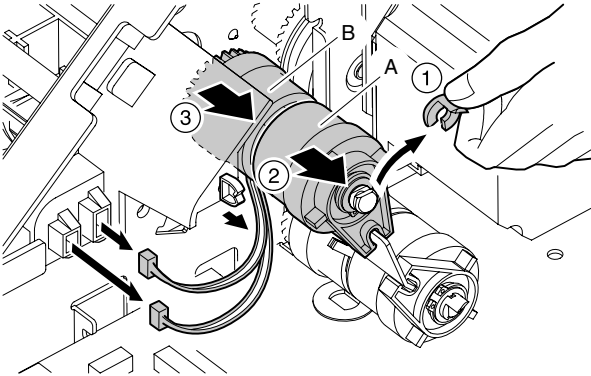
- 1) Remove the rear cover. (See "A-(1)-a. Cabinet")
- 2) Remove the DSPF paper feed/paper transport motor.



c. DSPF resist roller brake clutch

d. DSPF resist roller clutch

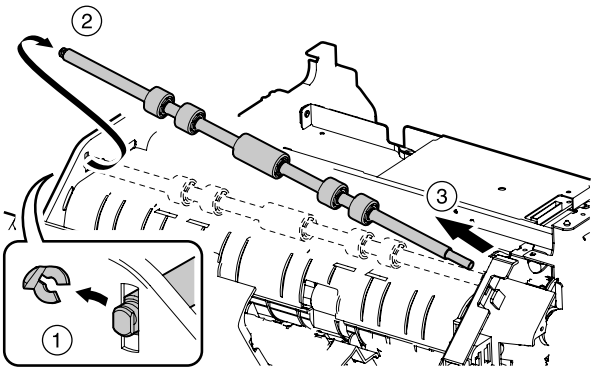
- 1) Remove the rear cover. (See "A-(1)-a. Cabinet")
- 2) Disconnect the connector, and remove the clamp, the plastic E-ring, the DSPF resist roller brake clutch (A), and the DSPF resist roller clutch (B).



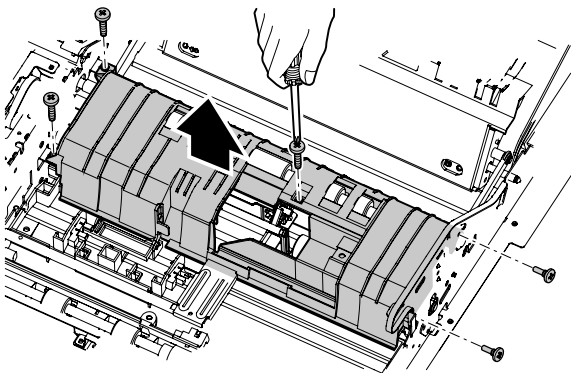
e. No.1 resist roller (Drive)

f. Torque limiter

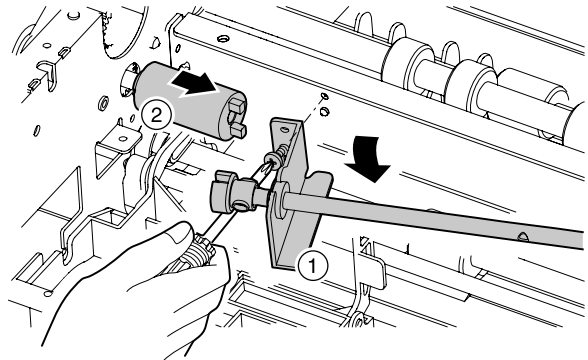
- 1) Remove the cabinet. (See "A-(1)-a. Cabinet")
- 2) Remove the document feed tray unit. (See "C-(1) Paper feed unit")
- 3) Remove the plastic E-ring in the arrow direction and remove the No. 1 resist roller idle.



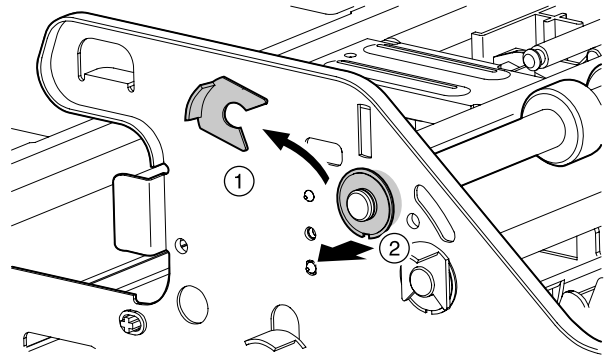
- 4) Remove the separation roller. (See "C-(2)-a. Separation roller")
- 5) Remove the paper feed paper guide lower unit in the arrow direction.



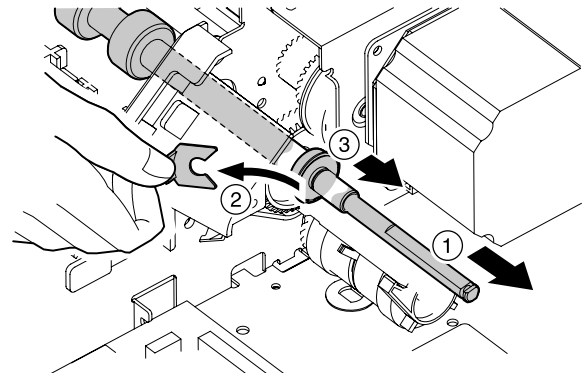
- 6) Remove the bearing reception fixture, and remove the torque limiter.



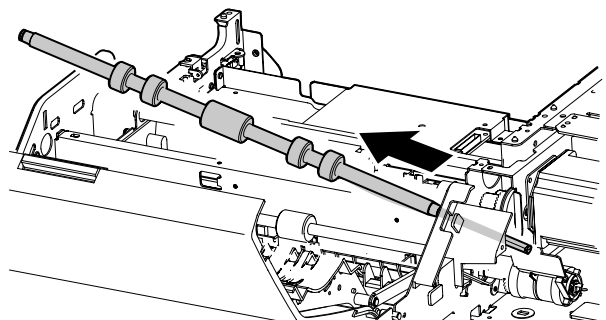
- 7) Remove the electromagnetic clutch. (See "C-(2)-c. DSPF resist roller brake clutch")
- 8) Remove the resin E-ring, and remove the bearing.



- 9) Slide the No. 1 resist roller drive in the arrow direction, and remove the plastic E-ring.



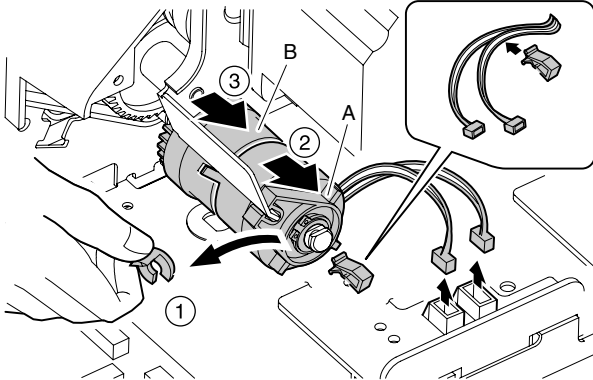
- 10) Remove No. 1 resist roller (Drive) in the arrow direction.



g. DSPF paper transport roller 2 brake clutch

h. DSPF paper transport roller 2 clutch

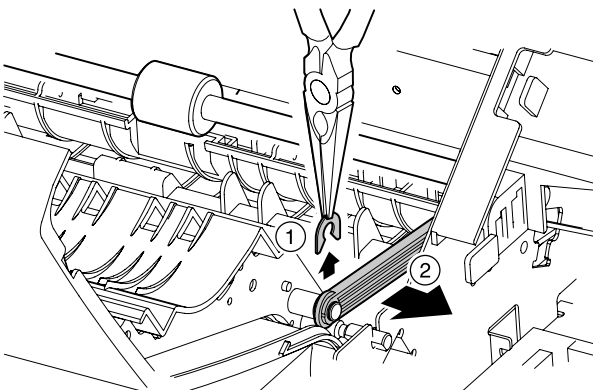
- 1) Remove the rear cover. (See "A-(1)-a. Cabinet")
- 2) Disconnect the connector, and remove the plastic E-ring, the DSPF paper transport roller 2 brake clutch (A), and the DSPF paper transport roller 2 clutch (B).



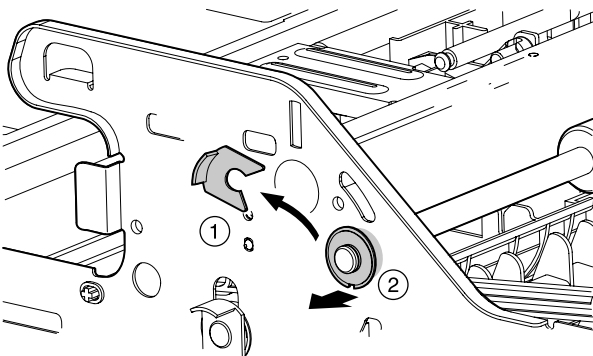
i. Transport roller 2 (Drive)

j. Transport roller 1 (Drive)

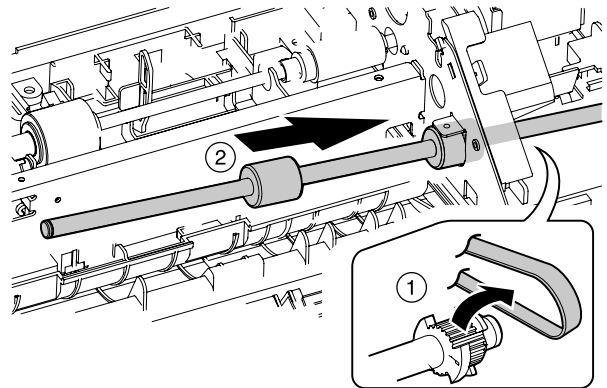
- 1) Remove the cabinet. (See "A-(1)-a. Cabinet")
- 2) Remove the paper feed tray unit. (See "C-(1) Paper feed unit")
- 3) Remove the No. 1 resist roller idle and the paper feed paper guide lower unit. (See "C-(2)-e. No. 1 resist roller (Drive)")
- 4) Remove the resin E-ring on cover, and remove link lever.



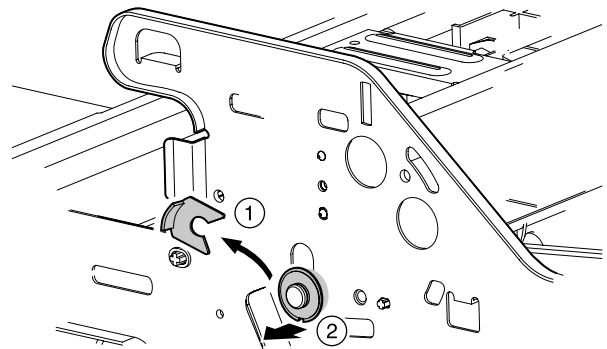
- 5) Remove the resin E-ring, and remove the bearing.



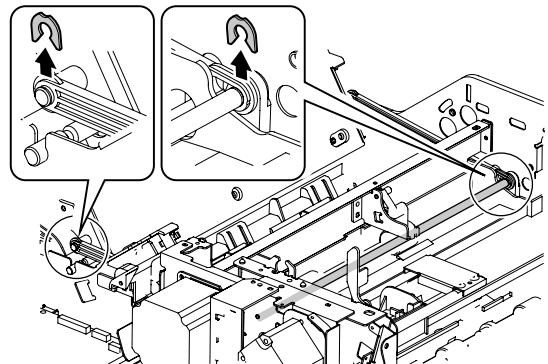
- 6) Remove the belt. Remove No. 1 resist roller (Drive).



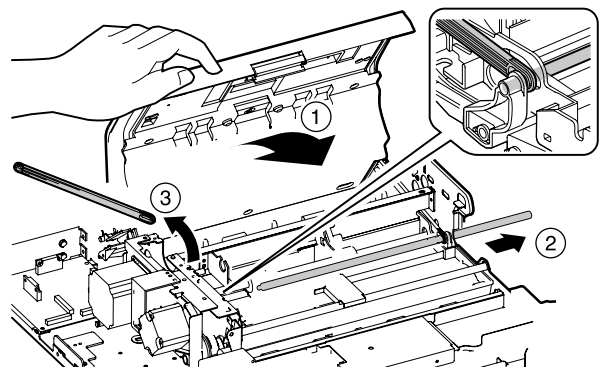
- 7) Remove the resin E-ring, and remove the bearing.



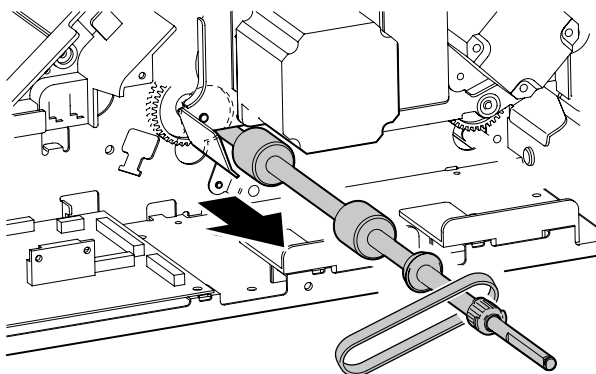
- 8) Remove the electromagnetic clutch.
(See "C-(2)-g. DSPF paper transport roller 2 brake clutch" and "C-(2)-h. DSPF paper transport roller 2 clutch")
- 9) Remove the resin E-ring on shaft side.



- 10) Remove the lever and shaft.

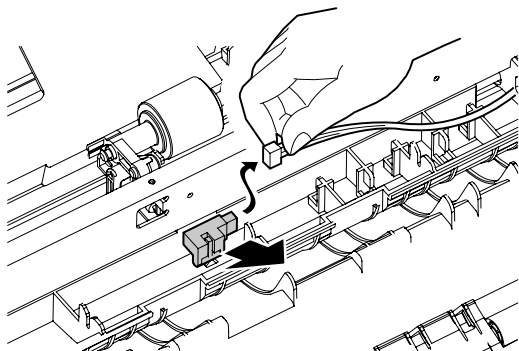


11) Remove Transport roller 2 (Drive).



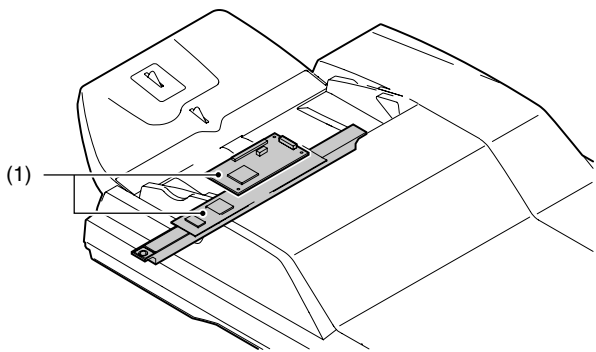
k. DSPF document paper pass detector 2

- 1) Remove the cabinet. (See "A-(1)-a. Cabinet")
- 2) Remove the document feed tray unit.
(See "C-(1) Paper feed unit")
- 3) Remove the No. 1 resist roller idle, the paper feed paper guide lower unit, and the No. 1 resist roller drive.
(See "C-(2)-e. No. 1 resist roller (Drive)")
- 4) Remove the transport roller 1 (Drive).
(See "C-(2)-j. Transport roller 1 (Drive)".)
- 5) Disconnect the connector, and remove the DSPF document paper pass detector 2.



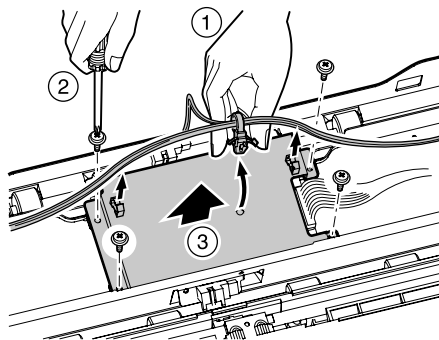
D. CIS section

No.	Parts	Maintenance
(1)	CIS control PWB/CIS unit	× ○

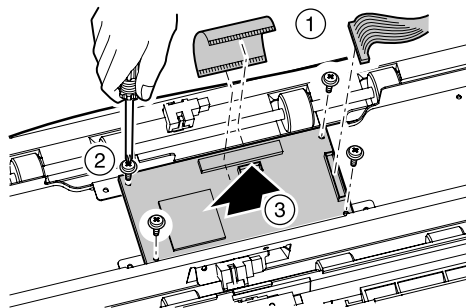


(1) CIS control PWB/CIS unit

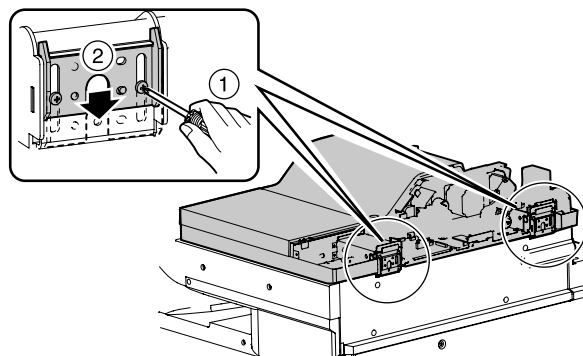
- 1) Remove the cabinet. (See "A-(1)-a. Cabinet")
- 2) Remove the document tray unit.
(See "B-(1) Document tray unit")
- 3) Remove the harness. Remove the PWB cover.



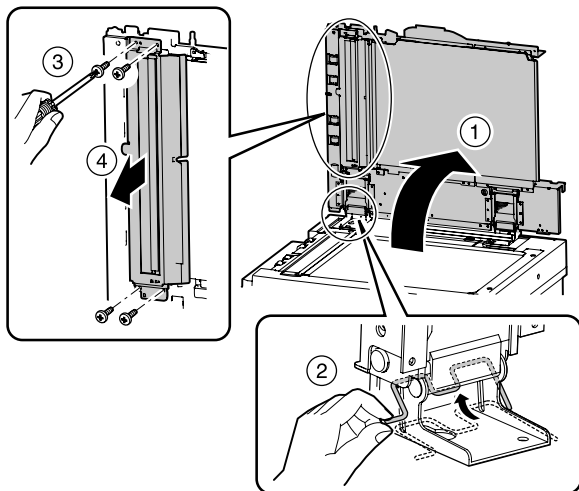
- 4) Remove each cables, and remove the PWB.



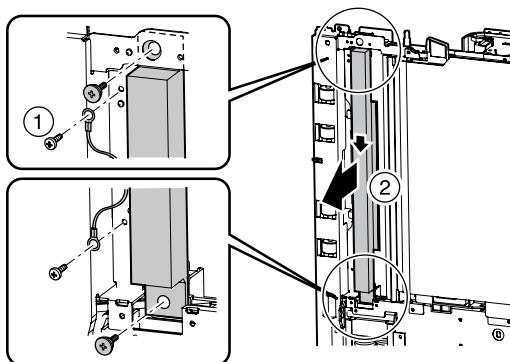
- 5) Loosen the hinge screws to lower the two fittings.



- 6) Open the DSPF, attach the DSPF drop preventing stopper, and remove the paper guide.

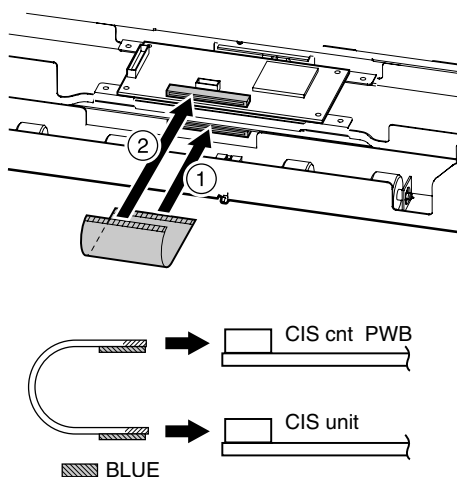


- 7) Remove the earth, and remove the CIS.

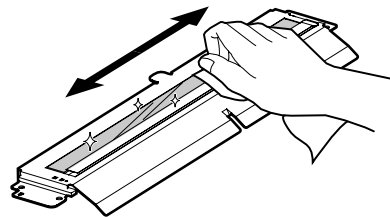


[Note installing]

- When assembling the flat cable, first attach the lower side then the upper side.

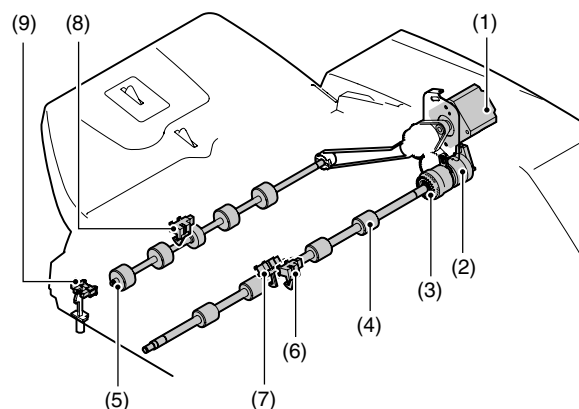


- Clean the paper guide glass surface.



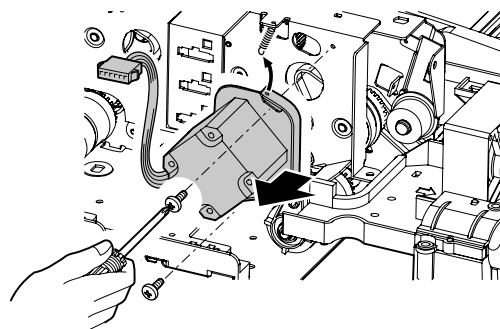
E. Paper exit section

No.	Parts	Maintenance
(1)	DSPF paper exit motor	
(2)	DSPF paper transport roller 3 brake clutch	
(3)	DSPF paper transport roller 3 clutch	
(4)	No.2 resist roller (Drive)	× ○
(5)	Paper exit roller (Drive)	× ○
(6)	DSPF document paper pass detector 3	
(7)	DSPF document paper pass detector 4	
(8)	DSPF paper exit detector	
(9)	DSPF open/close detector	



(1) DSPF paper exit motor

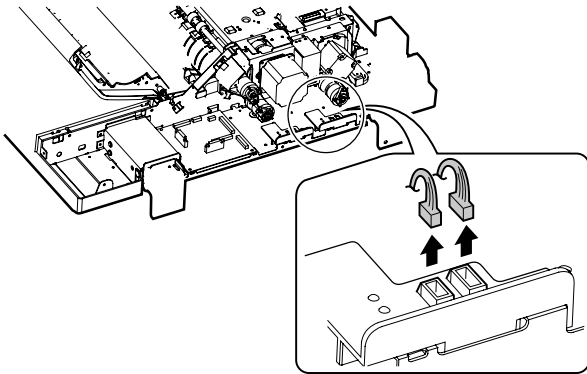
- Remove the rear cover. (See "A-(1)-a. Cabinet")
- Remove the tension SP and remove the DSPF paper feed/paper transport motor.



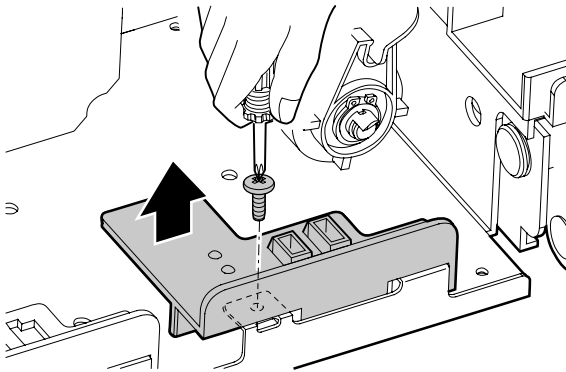
(2) DSPF paper transport roller 3 brake clutch

(3) DSPF paper transport roller 3 clutch

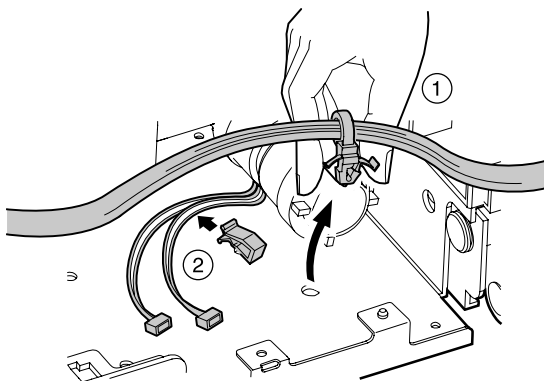
- 1) Remove the rear cover. (See "A-(1)-a. Cabinet")
- 2) Remove the connectors.



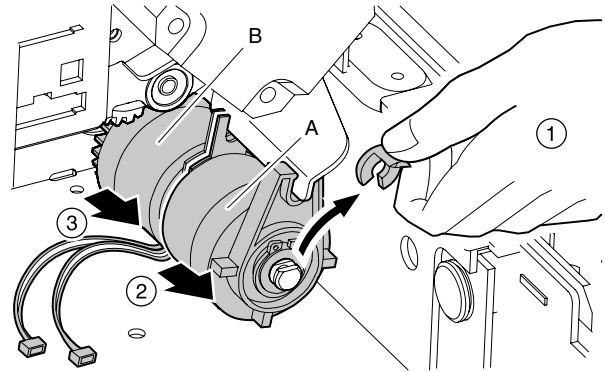
- 3) Remove the connector base.



- 4) Remove the super snap band to remove the cable.

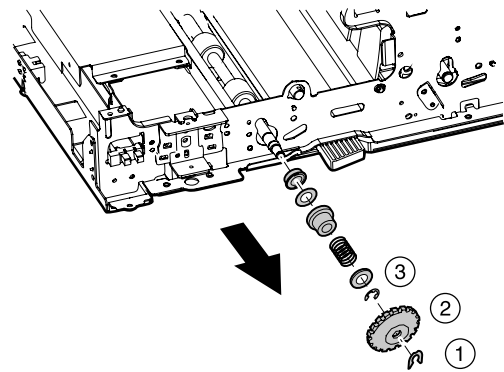


- 5) Remove the resin E-ring, and remove the DSPF paper transport roller 3 brake clutch (A), and the DSPF paper transport roller 3 clutch (B).

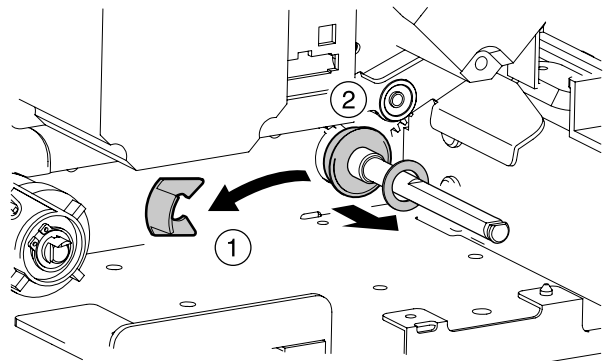


(4) No.2 resist roller (Drive)

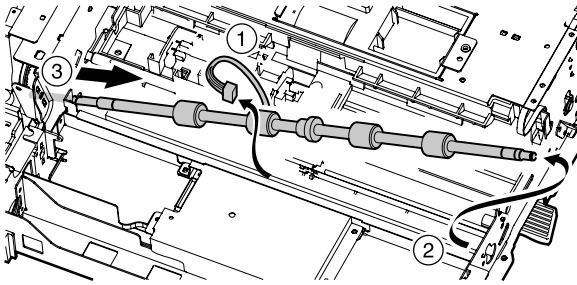
- 1) Remove the cabinet. (See "A-(1)-a. Cabinet")
- 2) Remove the document tray unit. (See "B-(1) Document tray unit")
- 3) Remove the resin E-ring, and jam disengage knob.



- 4) Remove the electromagnetic clutch. (See "E-(2) DSPF paper transport roller 3 brake clutch")
- 5) Remove the rear side bearing to remove the resin E-ring spacer.

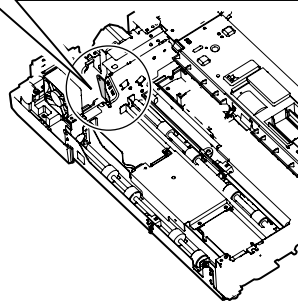
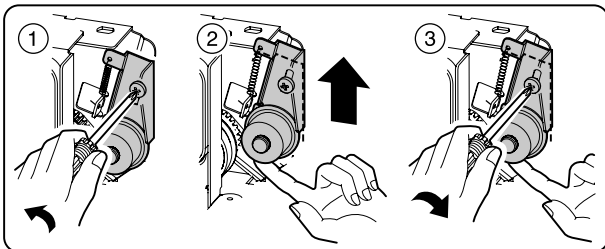


- 6) Disconnect the connector, and remove the No. 2 resist roller drive in the arrow direction.

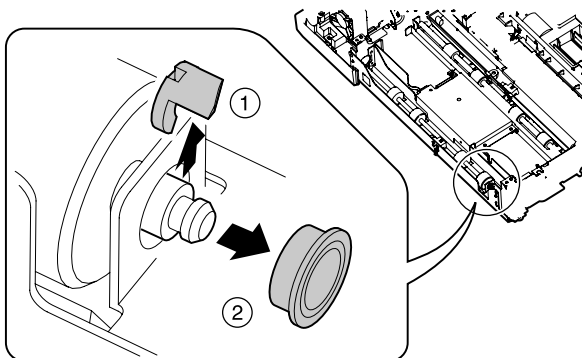


(5) Paper exit roller (Drive)

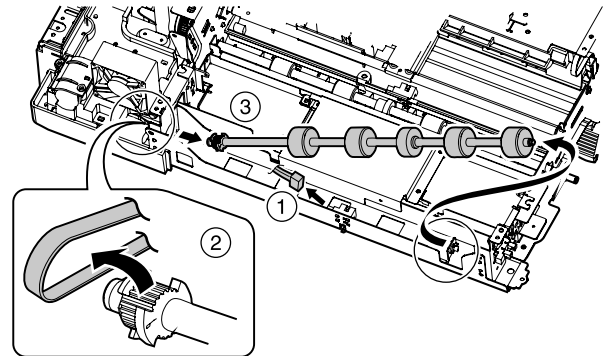
- 1) Remove the cabinet. (See "A-(1)-a. Cabinet")
- 2) Remove the document tray unit. (See "B-(1) Document tray unit")
- 3) Loosen the screw, and lift the belt tension roller, and fix them with the screws.
* When fixing, apply a tension to the spring.



- 4) Remove the resin E-ring, and remove the bearing.



- 5) Disconnect the connector, and remove the paper exit roller (Drive) in the arrow direction.



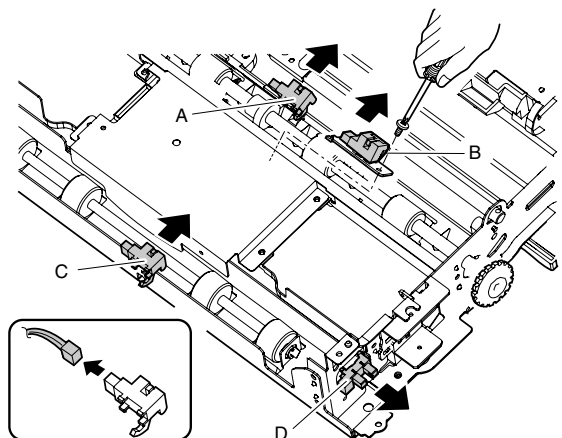
(6) DSPF document paper pass detector 3

(7) DSPF document paper pass detector 4

(8) DSPF paper exit detector

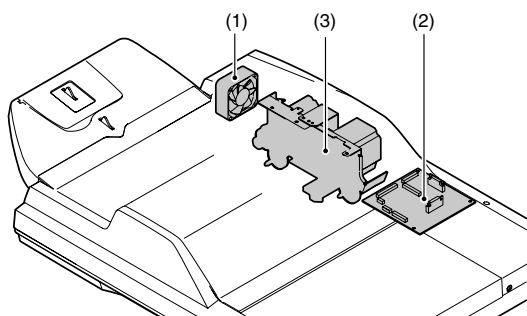
(9) DSPF open/close detector

- 1) Remove the cabinet. (See "A-(1)-a. Cabinet")
- 2) Remove the document tray unit. (See "B-(1) Document tray unit")
- 3) Disconnect the connectors, and remove the DSPF document paper pass detector 3 (A), the DSPF document paper pass detector 4 (B), the DSPF paper exit detector (C), and the DSPF open/close detector (D).



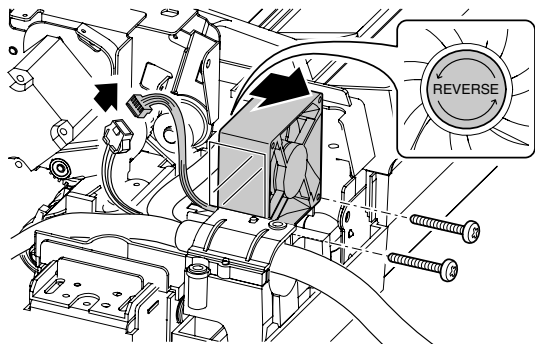
F. Others

No.	Parts
(1)	DSPF fan motor
(2)	DSPF PWB
(3)	Drive unit



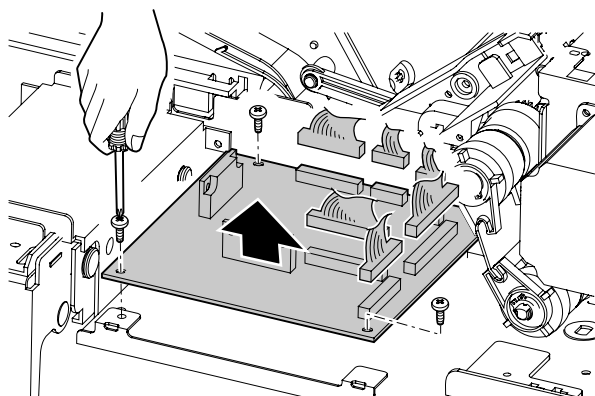
(1) DSPF fan motor

- 1) Remove the rear cover. (See "A-(1)-a. Cabinet")
- 2) Disconnect the connector, and remove the DSPF fan motor.



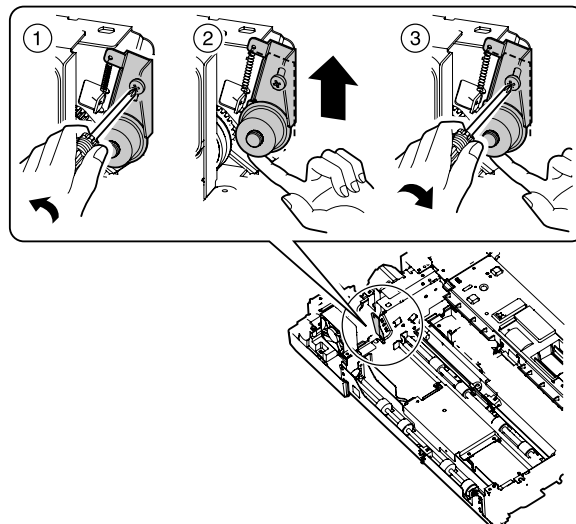
(2) DSPF PWB

- 1) Remove the rear cover.
(See "A-(1)-a. Cabinet")
- 2) Disconnect the connector, and remove the DSPF PWB.

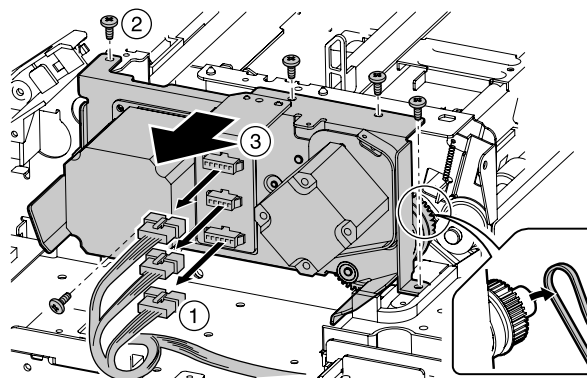


(3) Drive unit

- 1) Remove the rear cover. (See "A-(1)-a. Cabinet")
 - 2) Remove the electromagnetic clutch.
 - 3) Loosen the screw, and lift the belt tension roller, and fix them with the screws.
- * When fixing, apply a tension to the spring.



- 4) Remove the drive unit.



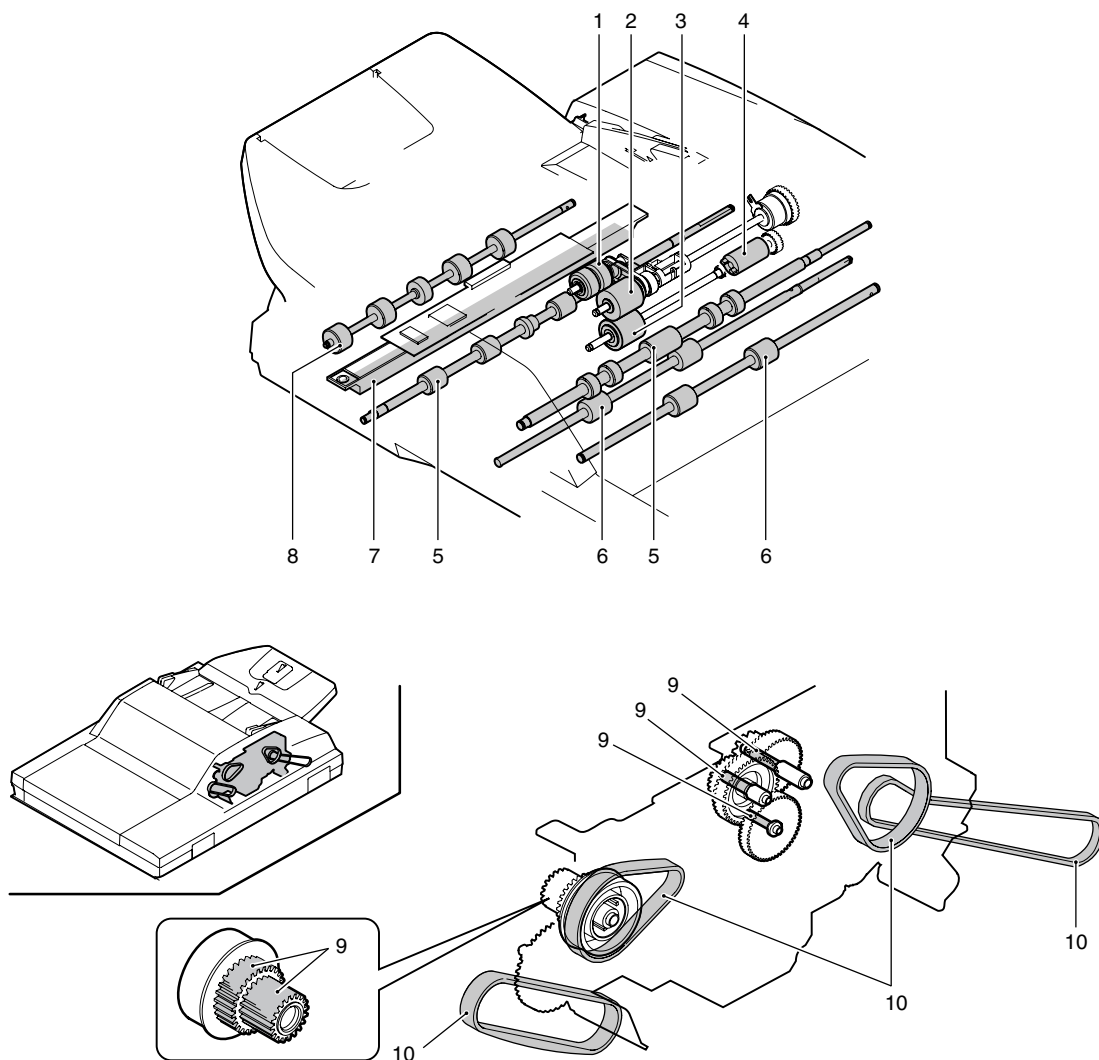
4. Maintenance

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

				When calling	250 K	500 K	750 K	1000 K	1250 K	1500 K	1750 K	2000 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
					300 K	600 K	900 K	1200 K	1500 K	1800 K	2100 K	2400 K	
Unit name	No.	Part name											
DSPF	Paper feed	1 Pickup roller	×	○	○	○	○	○	○	○	○	○	(Note 1)
		2 Paper feed roller	×	○	○	○	○	○	○	○	○	○	(Note 1)
		3 Separation roller	×	○	○	○	○	○	○	○	○	○	(Note 1)
		4 Torque limiter		×	×	×	×	×	×	×	×	×	(Note 1)
		5 Resist roller	×	○	○	○	○	○	○	○	○	○	
	Transport section	6 Transport roller	×	○	○	○	○	○	○	○	○	○	
		7 Exposure section (CIS unit)	×	○	○	○	○	○	○	○	○	○	
	Paper exit section	8 Paper exit roller	×	○	○	○	○	○	○	○	○	○	
	Drive section	9 Gears (Grease)	×	×	×	×	×	×	×	×	×	×	UKOG-0299FCZZ
		10 Belts		×	×	×	×	×	×	×	×	×	
	Others	11 Sensors		×	×	×	×	×	×	×	×	×	Cleaning is air spraying

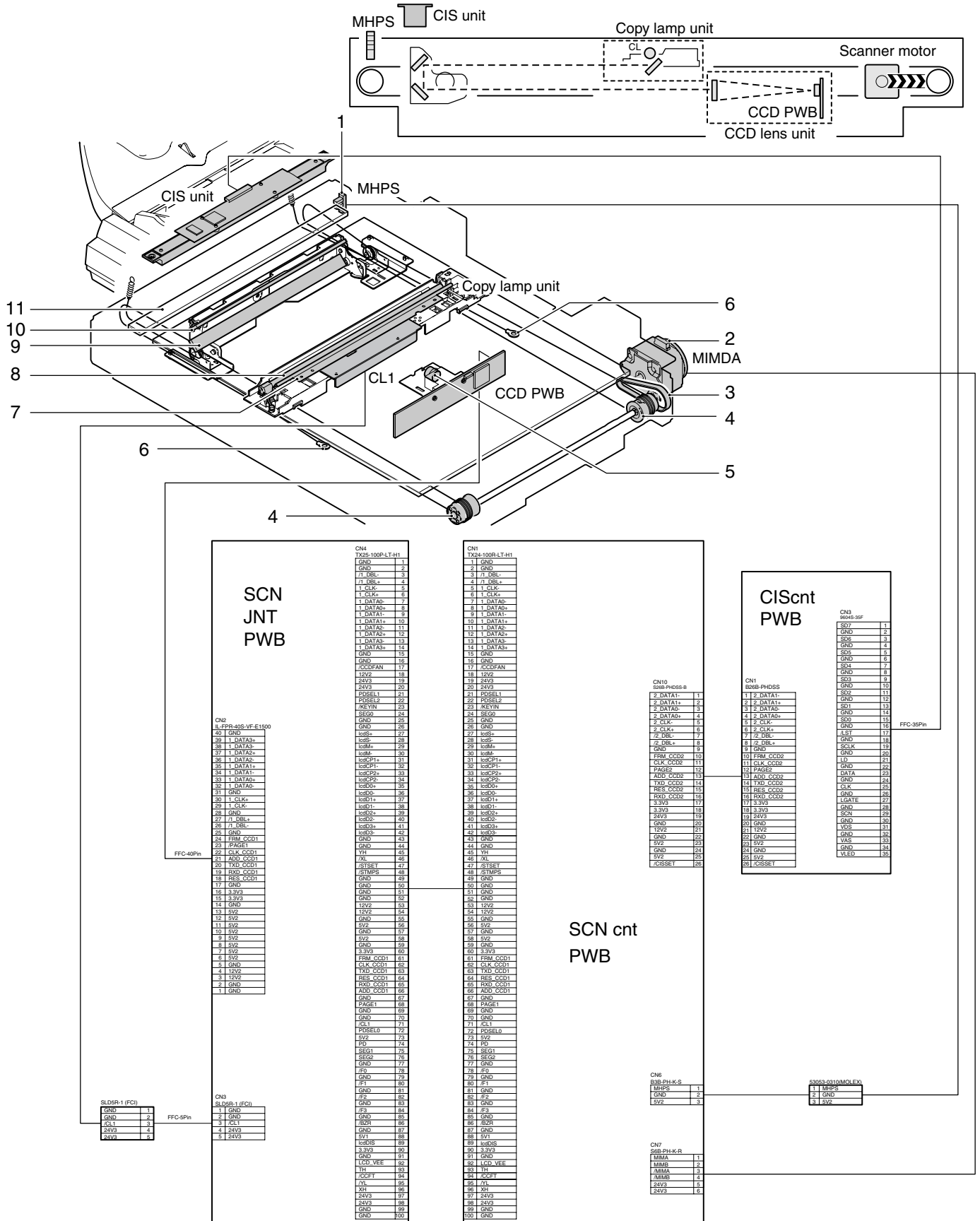
(Note 1) Replacement reference: For replacement, refer to each paper feed counter value.

- DSPF section: 100K or 1 year
- Torque limiter: 800K



[D] SCANNER SECTION

1. Electrical and mechanism relation diagram



Code	Signal name	Name	Function/Operation	Type	NOTE
MIM	MIM	Scanner (reading) motor	Drives the scanner (reading) section.	Stepping motor	
MHPS	MHPS	Scanner home position sensor detector	Scanner home position detection.	Transmission type	Sensor
CIS unit		CIS unit	Contact-type image scan sensor unit. Back document image scan.		
CCD PWB		CCD PWB	Front document image scan. (Document table/DSPF mode) Converts the document images (optical signals) into electrical signals.		
CL1	CL1	Scanner lamp	Illuminates the document. (Xenon lamp)		

No.	Name	Function/Operation
1	Scanner drive belt	Transmits the scanner motor power to the scanner unit.
2	Pulley	Drives the scanner drive wire.
3	Lens	Reduces the document images (optical) and radiates them onto the CCD.
4	Scanner drive wire	Transmits the scanner motor power to the copy lamp unit and the mirror base unit.
5	Reflector	Condenses the copy lamp lights.
6	No. 3 mirror	Assures the optical path from No. 2 mirror to the CCD.
7	No. 2 mirror	Assures the optical path from No. 1 mirror to No. 3 mirror.
8	White balance sheet for DSPF (CIS)/ DSPF scanning glass	The white reference sheet for scanning with the CIS unit.
9	CIS unit	Contact-type image scan sensor unit. Back document image scan.
10	CCD PWB	Front document image scan. (Document table/DSPF mode) Converts the document images (optical signals) into electrical signals.

2. Operational descriptions

A. Outline

There are following three methods of scanning documents in this machine.

- Place a document on the table glass. The copy lamp unit is operated to radiate copy lamp light onto the document, scanning the document with the CCD.
- The DSPF feeds a document. The copy lamp light is radiated onto the document which is stopped at the specified position and the document is scanned by the CCD.
- The DSPF feed a document. The LED light of the CIS unit which is attached to the DSPF is radiated to the back of the document, and the document is scanned by the CIS.

B. Description

(1) CCD/Lens unit

This machine employs the reduction optical-type line CCD (Charge Coupled Device) of scan resolution of 600dpi and 7400 pixels.

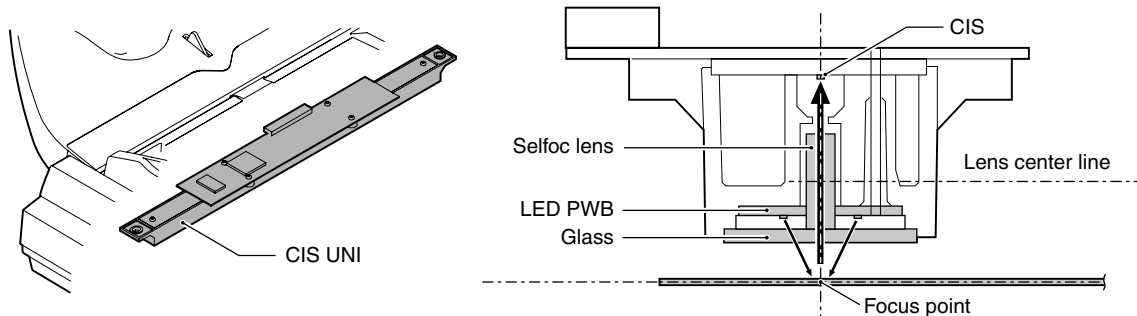
CCD scan is performed by shifting the scan positions sequentially by the carriage unit (lamp and mirror) scan or moving the document with the DSPF.

Lights reflected by the document are reflected by each mirror to form images on CCD elements through the reduction-type lens. The CCD converts the optical energy into electrical energy (analog). (Photoelectric conversion)

(2) CIS unit

The image sensor which scans back document images is attached to the DSPF. The close-contact type image sensor (Contact Image Sensor) with scan resolution of 600dpi and 7196 pixels is employed.

For the CIS to scan documents, the scan position is sequentially shifted by shifting the document by the DSPF, and the LED light in the unit is radiated to the back of the document, and photo energy is converted into electric energy (analog signal).

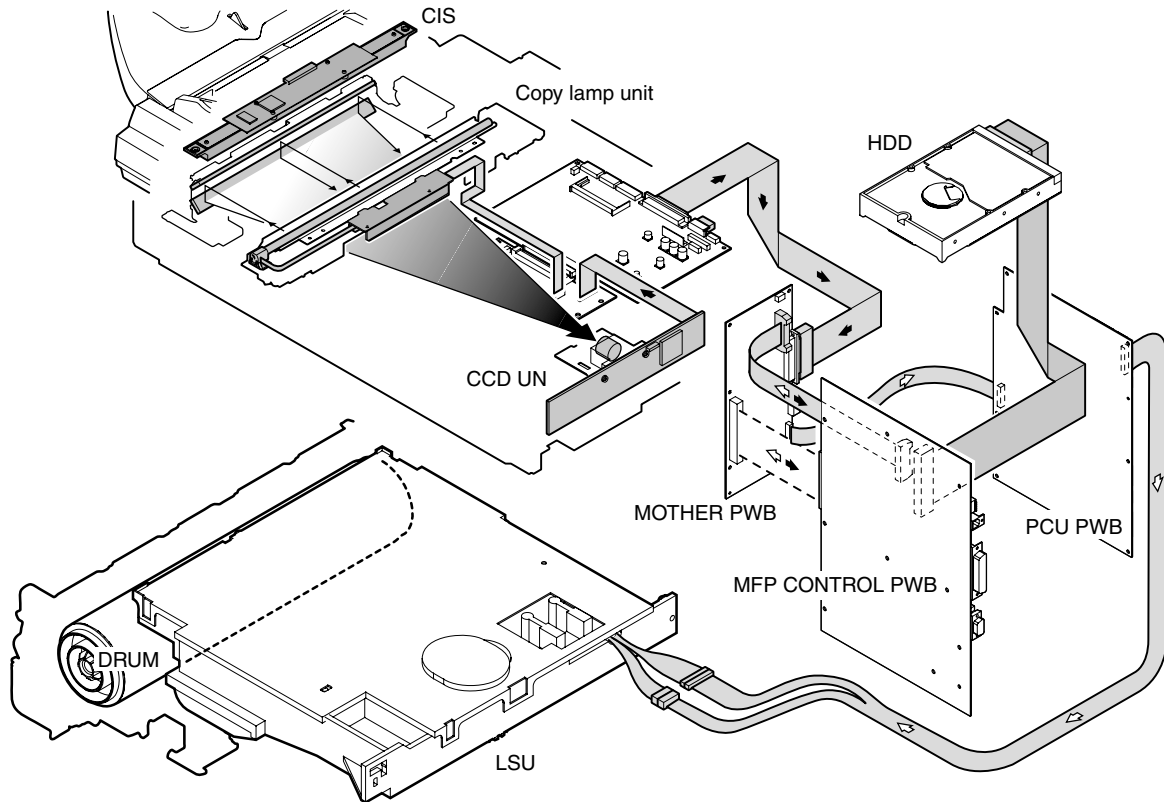


(3) Image signal flow

The image signal converted into electric energy (analog signal) is A-D converted on the CCD PWB. Image processes such as white balance and shading correction are performed on the scanner control PWB. The image signal is then sent through the mother board to the MFP control PWB.

In the MFP control PWB, image process is performed according to the setting content of the operation panel. The image data are converted into laser lighting signals (VIDEO signals), and sent through the mother PWB and the PCU to the LSU (Laser Scan Unit).

In the LSU, the VIDEO signals are converted into laser beams, which are radiated onto the drum.



(4) Carriage (lamp unit) shift (scan) speed

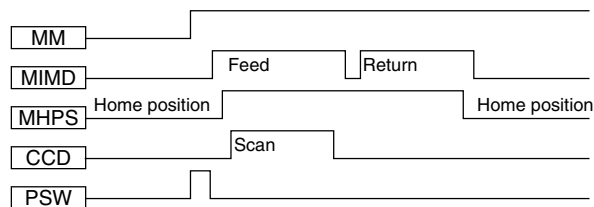
The carriage scan speed depends on the copy magnification ratio.

Speed up to 171% = 220mm/s

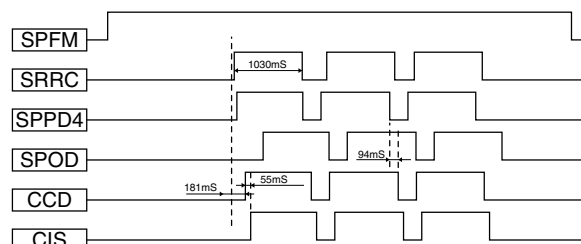
Speed of 172% - 400% = 110mm/s

(5) Timing chart

Platen timing chart



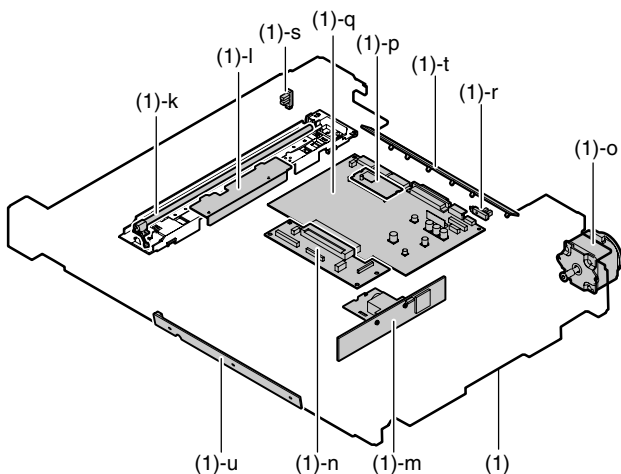
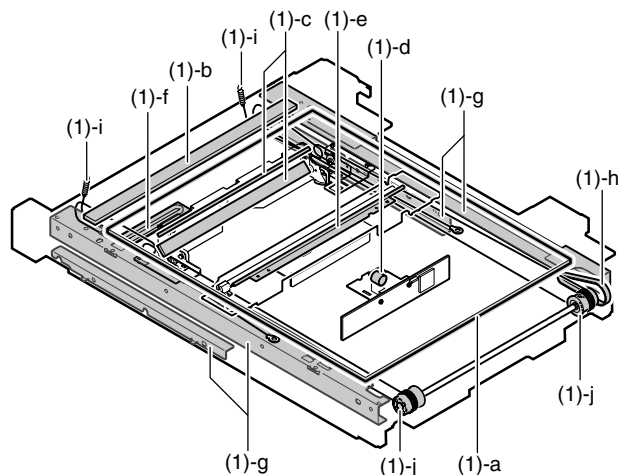
DSPF duplex timing chart



3. Disassembly and assembly

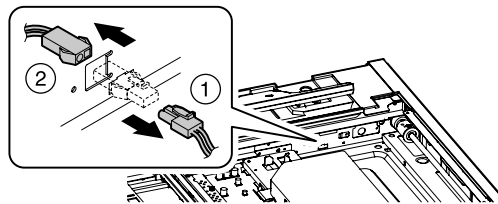
A. Scanner section

No.	Unit	No.	Parts	Maintenance
(1)	Scanner unit	a	Table glass	○
		b	Slit glass (DSPF scan mode)	○
		c	Mirror	○
		d	Lens	○
		e	Reflector	○
		f	Scanner dry heater	
		g	Rails	☆
		h	Drive belt	×
		i	Drive wire	×
		j	Pulley	×
		k	Scanner lamp	
		l	Inverter PWB	
		m	CCD PWB lens unit	○
		n	Scanner relay PWB	
		o	Scanner motor	
		p	Scanner FLASH PWB	
		q	Scanner control PWB	
		r	DSPF open/close detector	
		s	Scanner home position sensor detector	
		t	Document size detection light emitting PWB	
		u	Document size detection light reception PWB	

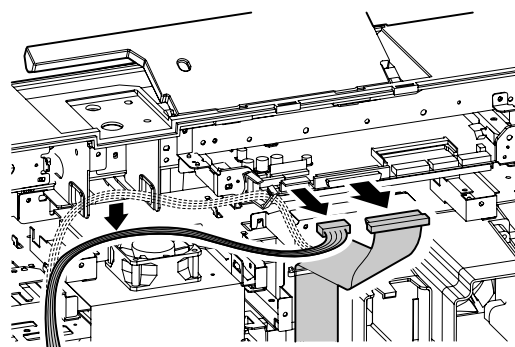


(1) Scanner unit

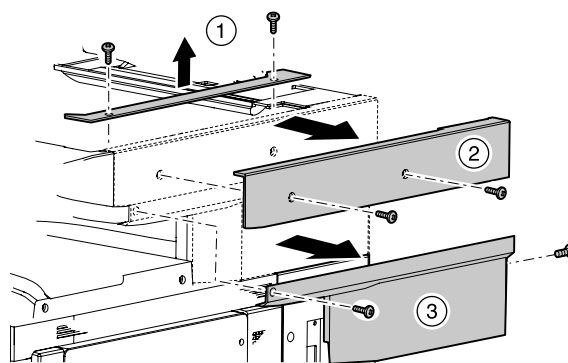
- 1) Remove the DSPF unit.
(See "A-(1) DSPF unit" in the "DSPF section")
- 2) Remove the table glass. (See "a. Table glass")
- 3) Remove the panel lock connector. (For dehumidifier heater)



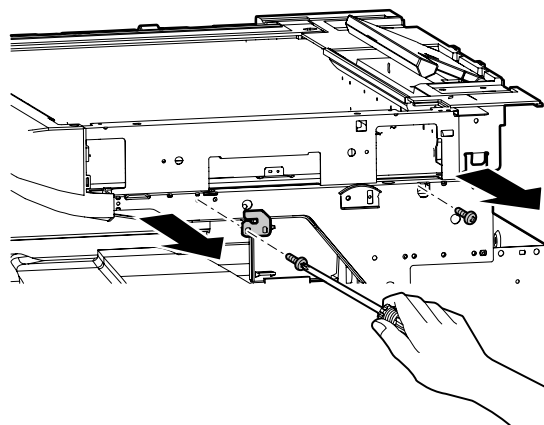
- 4) Remove the flat cable, the connector, and harness from the cable clamp.



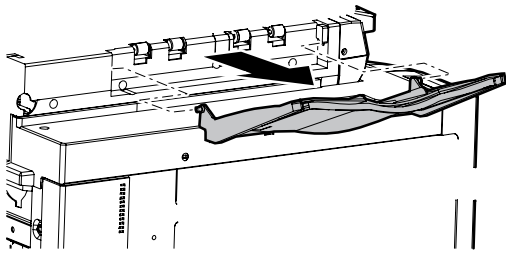
- 5) Remove the right side cabinets upper and lower.



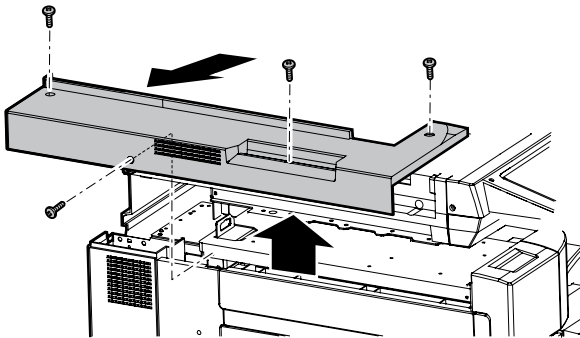
- 6) Remove the screw and the fixing plate.



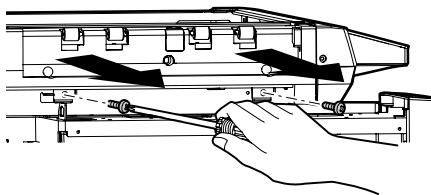
- 7) Remove the tray.



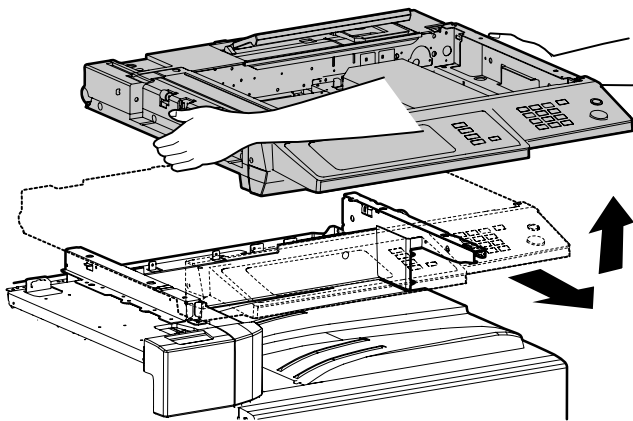
- 8) Remove the left side cabinets front and rear.



- 9) Remove the screws.



- 10) Hold the both sides of the scanner base, and slide it toward you to remove.

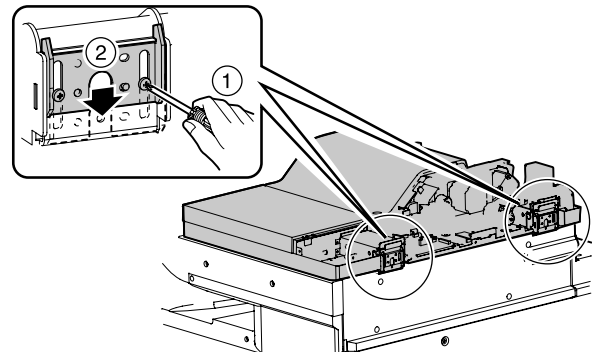


a. Table glass

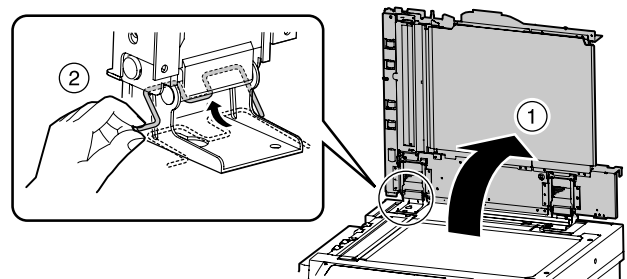
b. White standard glass

(When scanner internal maintenance)

- 1) Loosen the screws in the hinge section, and lower the two metal fixtures.



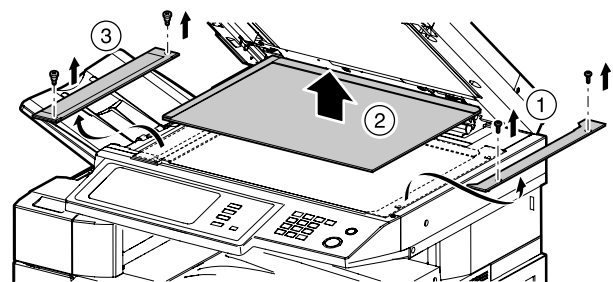
- 2) Open the DSPF, and slide the DSPF drop-preventing stopper pin of the Hinge L to the drop preventing position.



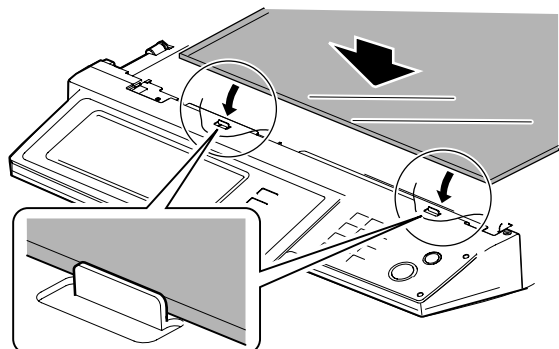
- 3) Remove the right glass holder.

- 4) Using a cloth, etc. on the right glass surface to prevent fingerprints, remove the cover.

- 5) Remove the white reference glass unit.



* When assembling or disassembling the table glass, check that the glass does not cover the steel plate on the front side.

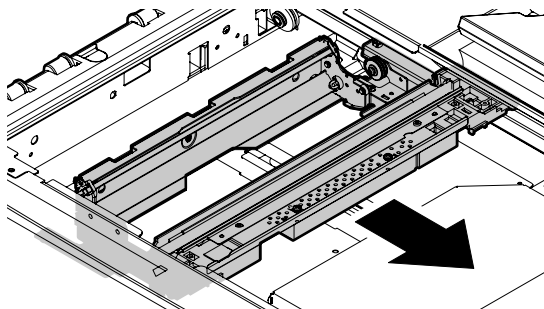


c. Mirror

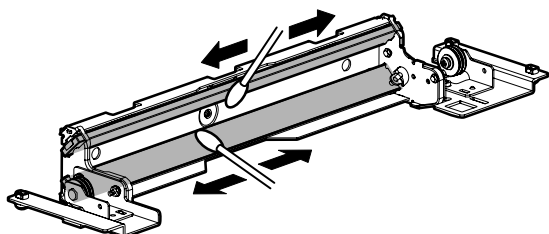
d. Lens

e. Reflector

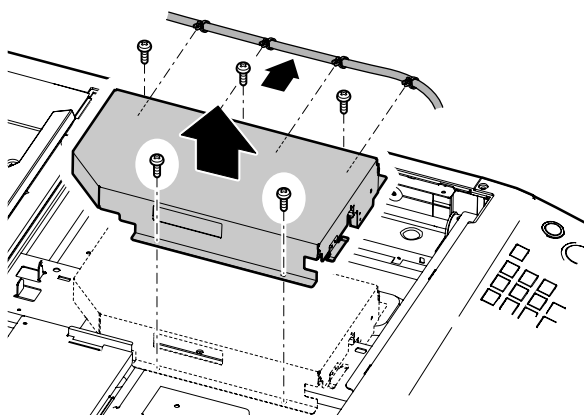
- 1) Remove the table glass. (See "a. Table glass")
- 2) Move the lamp unit.



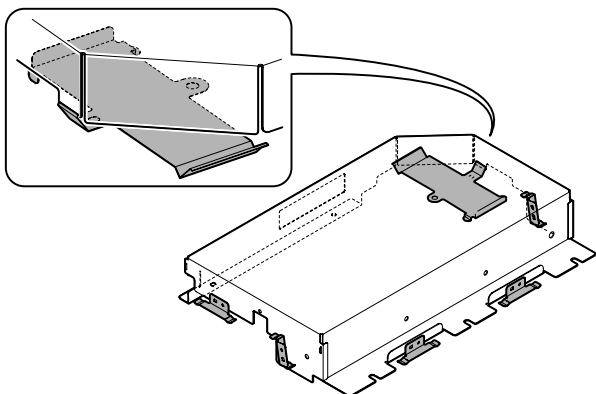
- 3) Clean mirrors 2 and 3.



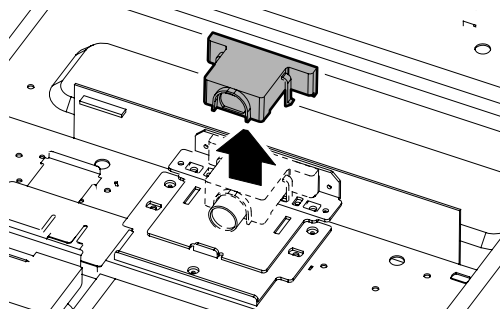
- 4) Remove the harnesses clamp and the dark box.



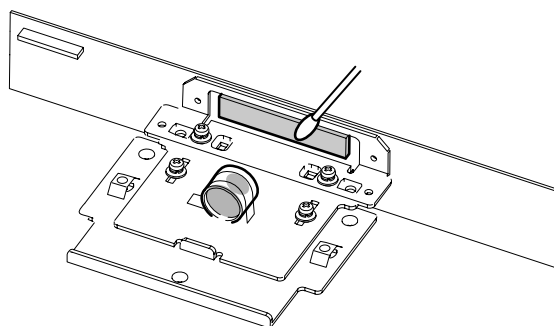
* When attaching the dark box cover, check to insure that the blade spring is in the original position.



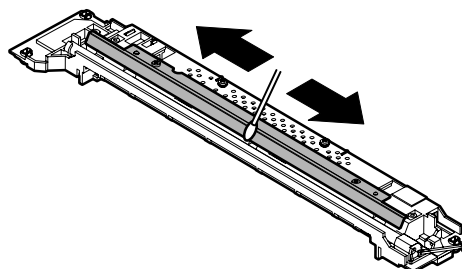
- 5) Remove the lens cover.



- 6) Carry out cleaning of the lens and CCD.

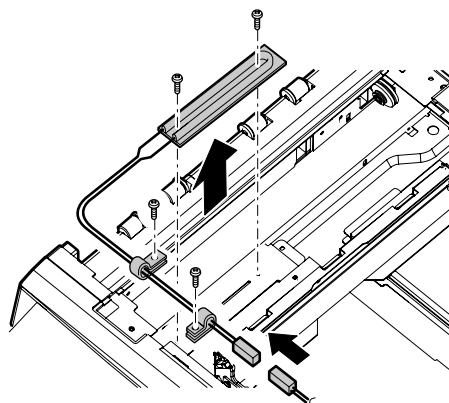


- 7) Carry out cleaning of the reflector.



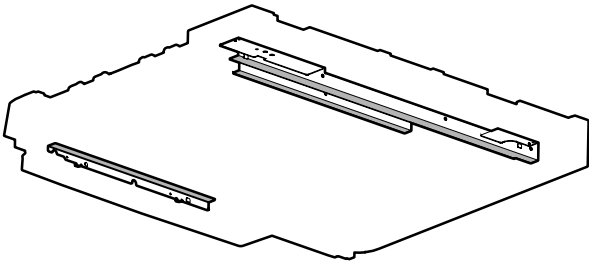
f. Scanner dry heater

- 1) Remove the table glass. (See "a. Table glass")
- 2) Shift the lamp unit, and remove the dark box. (See "c. Mirror")
- 3) Remove the dark box and remove the harness clamp, and remove the scanner dry heater.



g. Rails

- 1) Remove the table glass. (See "a. Table glass")
- 2) Grease up the rails.

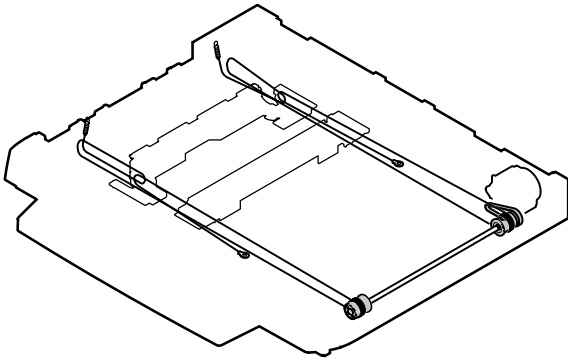


h. Drive belt

i. Drive wire

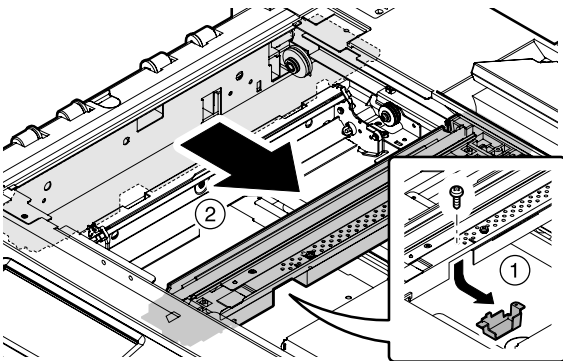
j. Pulley

- 1) Remove the table glass. (See "a. Table glass")
- 2) Check the drive belt, drive wire and pulley.

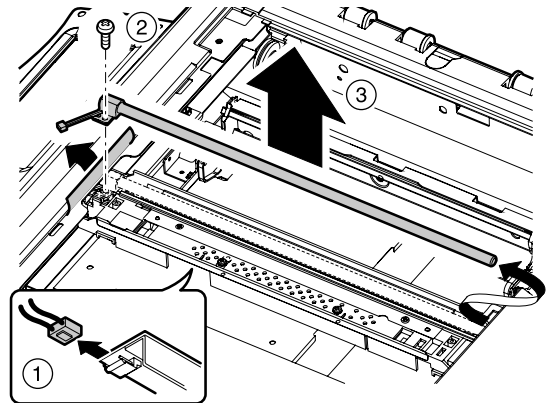


k. Scanner lamp

- 1) Remove the table glass. (See "a. Table glass")
- 2) Remove the core guide to shift the optical lamp unit to the base plate cutout section.

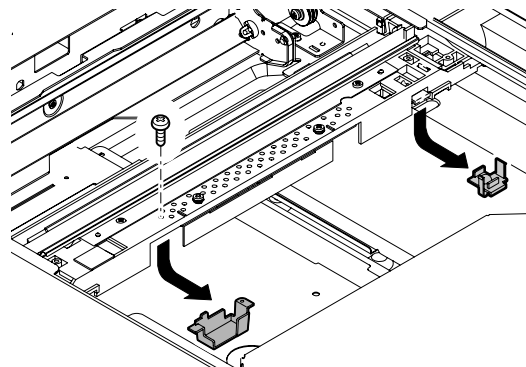


- 3) Remove the connector in front side.
- 4) Turn up the cutout mylar and remove the screw; then shift the lamp holder to the front side and take out the lamp from above on the rear side.
- 5) Remove the harness connector from the hole on the front side.

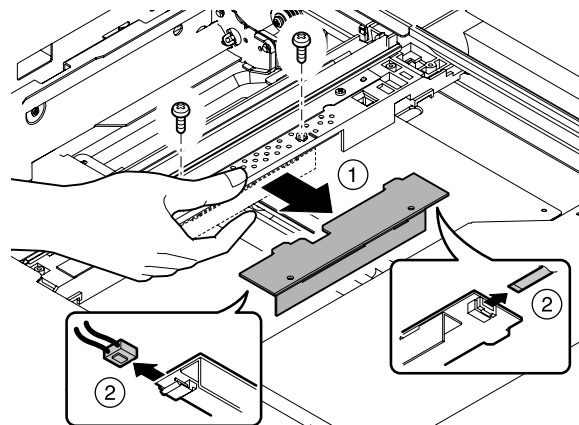


l. Inverter PWB

- 1) Remove the table glass. (See "a. Table glass")
- 2) Remove the core guide.
- 3) Unhook the claw to remove the plastic members on the rear side.



- 4) While holding to prevent from falling, remove the screw fixing to remove the inverter PWB.
- 5) Disconnect the lamp connectors.
- 6) Release the connector lock on the inverter PWB to remove the FC cable.

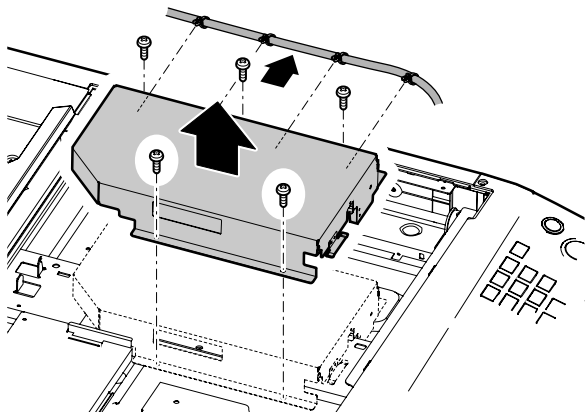


[Caution when attaching]

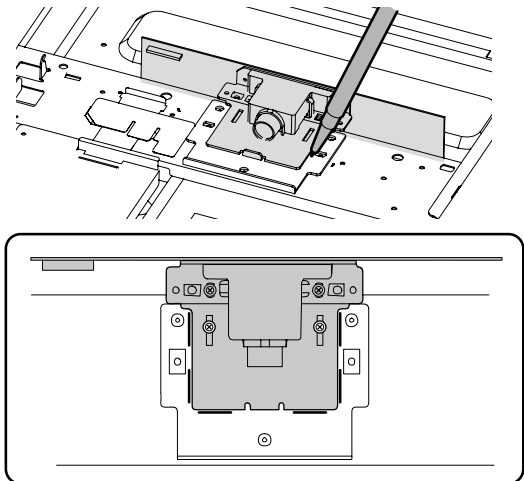
- Place each harness on the rib.

m. CCD PWB lens unit

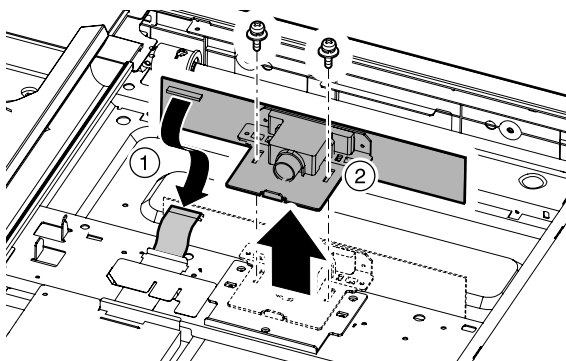
- 1) Remove the table glass. (See "a. Table glass")
- 2) Remove the harnesses clamp and the dark box.



- 3) Mark the lens unit plate position by pen.



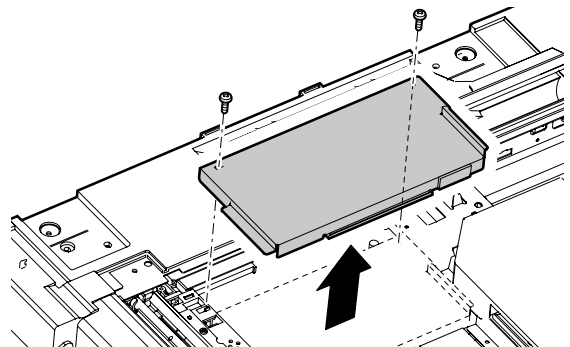
- 4) Release the connector lock on the CCD PWB to remove the FC cable.
- 5) Remove the screw to remove the CCD PWB lens unit.



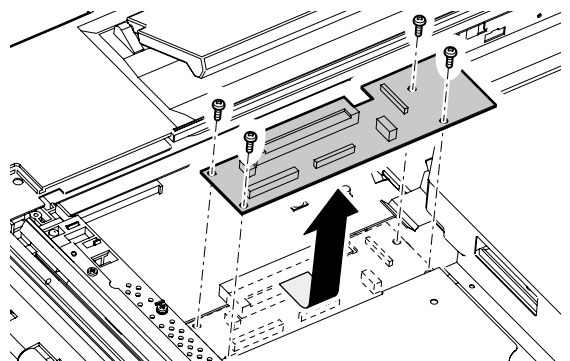
- 6) Attach the CCD PWB lens unit to the marked position.

n. Scanner relay PWB

- 1) Remove the table glass. (See "a. Table glass")
- 2) Remove the harness cover B.

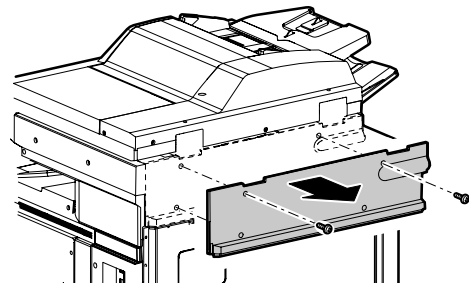


- 3) Disconnect the connector, and remove the scanner interface PWB.

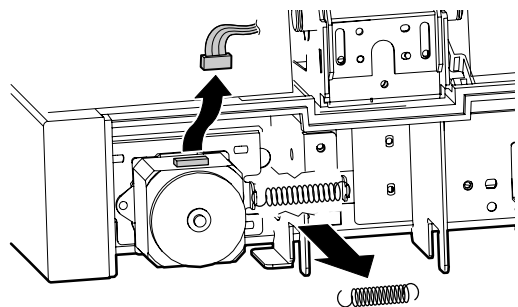


o. Scanner motor

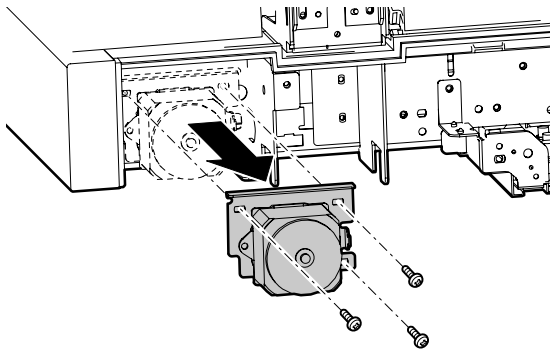
- 1) Remove the rear cabinet.



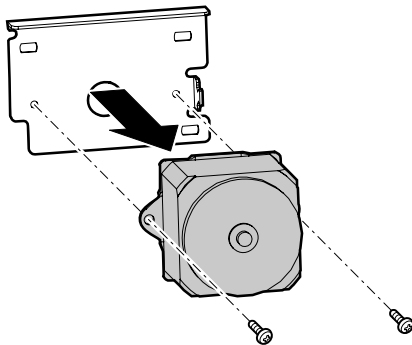
- 2) Remove the spring and disconnect the connector.



- 3) Remove the scanner motor unit.



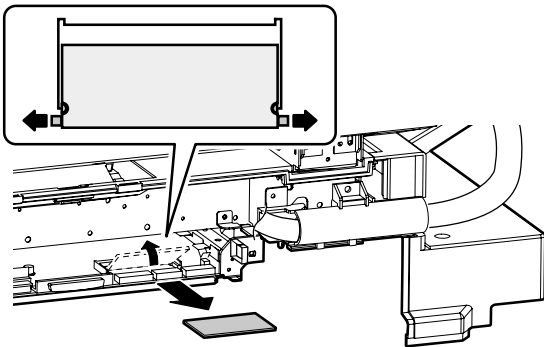
- 4) Remove the scanner motor.



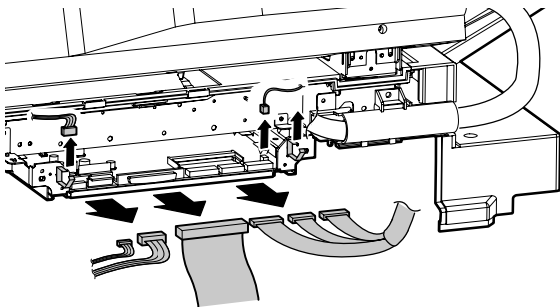
p. Scanner FLASH PWB

q. Scanner control PWB

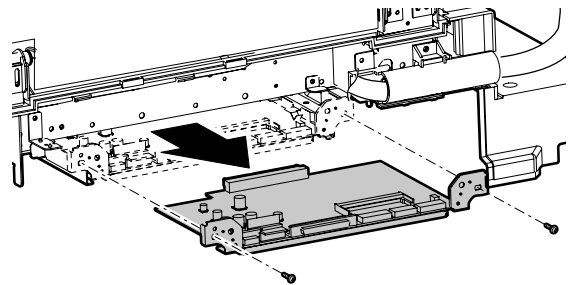
- 1) Remove the rear cabinet. (See "o. Scanner motor")
- 2) Release the lock, and remove the scanner FLASH PWB.



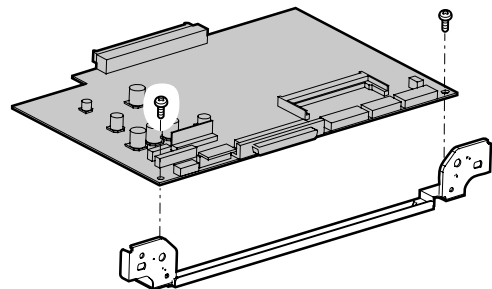
- 3) Remove the clamp, and disconnect the connector.
- * Do not disconnect the PCN harness connector.



- 4) Remove the scanner control PWB unit.



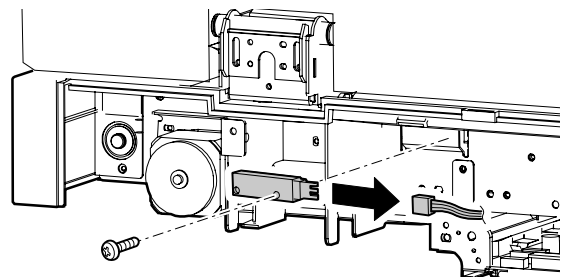
- 5) Remove the scanner control PWB.



r. DSPF open/close detector

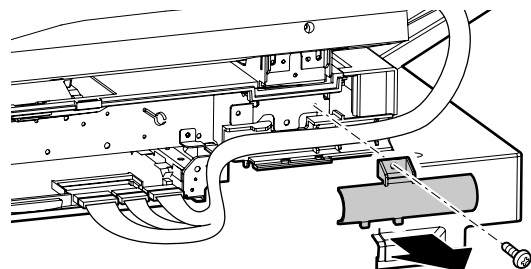
- 1) Remove the rear cabinet. (See "o. Scanner motor")
- 2) Disconnect the connector, and remove the DSPF open/close detector.

* When disconnecting the connector, hold the housing section and slide straightly to remove.

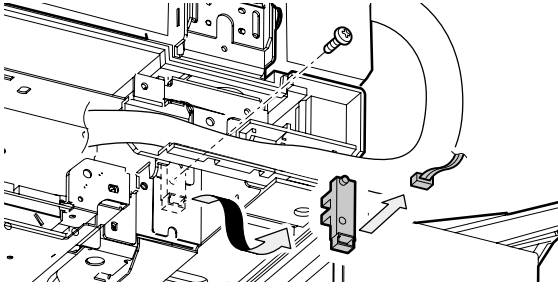


s. Scanner home position sensor detector

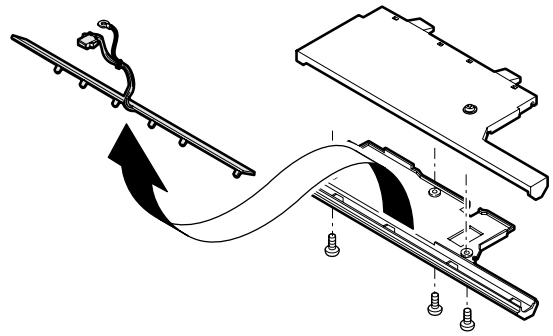
- 1) Remove the rear cabinet. (See "o. Scanner motor")
- 2) Remove the DSPF harness holder B.



- 3) Disconnect the connector, and remove the scanner home position sensor.

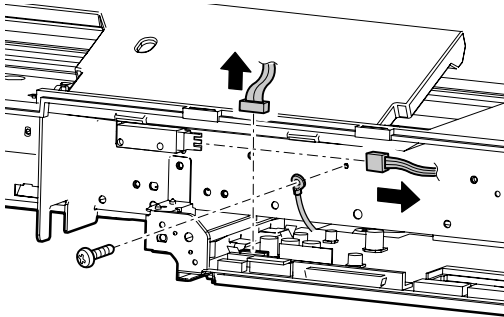


- 4) Remove the document detection arm lower, and remove the document detection light emitting unit.



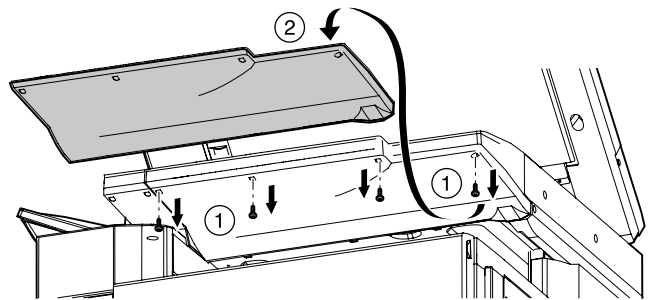
t. Document size detection light emitting PWB

- 1) Remove the DSPF unit.
(See "A-(1) DSPF unit" in the "DSPF section")
- 2) Disconnect the connector and the earth terminal, and remove the upper cabinet rear.

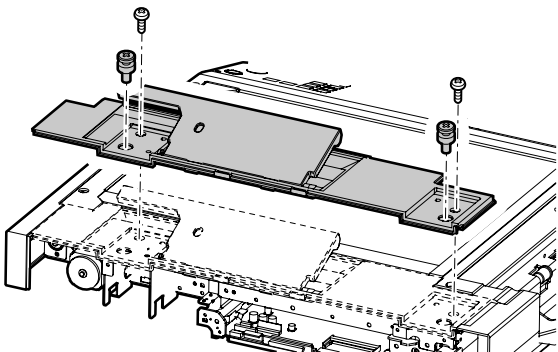


u. Document size detection light reception PWB

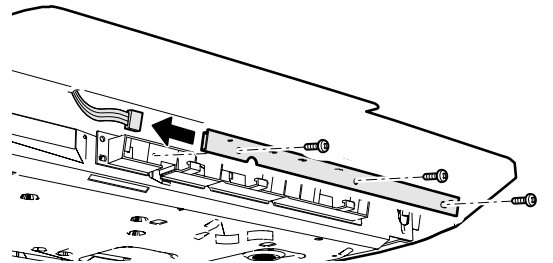
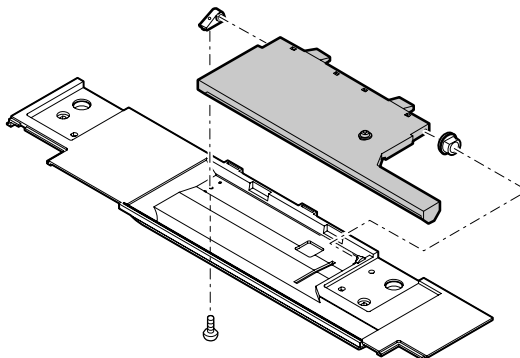
- 1) Remove the operation base plate A.



- 2) Remove the document size detection light receiving PWB, and disconnect the connector.



- 3) Remove the document detection fulcrum TIG, and remove the document detection arm unit.



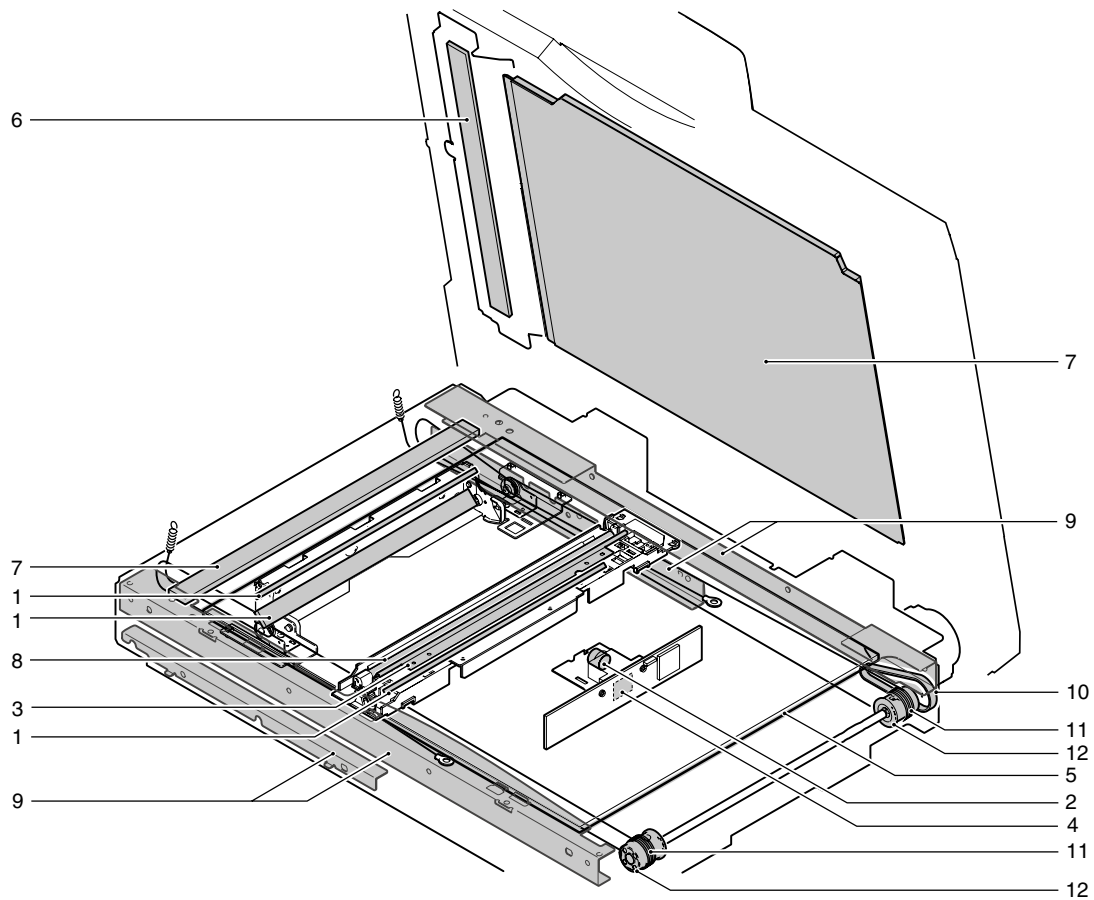
[Note for assembly]

- First, connect the harness to the PWB, and check that PWB parts are properly connected. Then attach the PWB to the PWB holder.

4. Maintenance

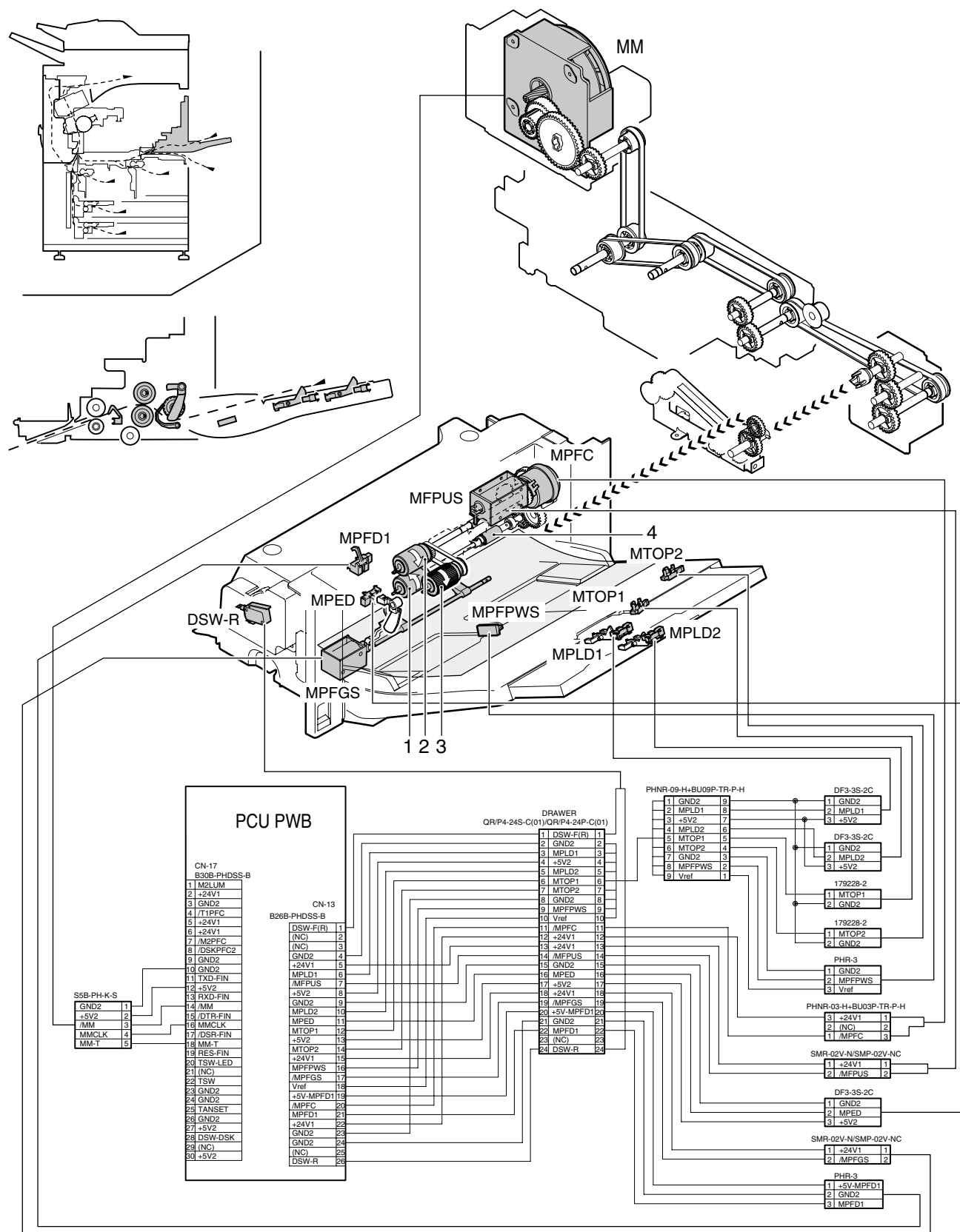
X: Check O: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position
(Clean, replace, or adjust according to necessity.)

			When calling	250 K	500 K	750 K	1000 K	1250 K	1500 K	1750 K	2000 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
				300 K	600 K	900 K	1200 K	1500 K	1800 K	2100 K	2400 K	
Unit name	No.	Part name										
Scanner section	1	Mirror	O	O	O	O	O	O	O	O	O	
	2	Lens	O	O	O	O	O	O	O	O	O	
	3	Reflector	O	O	O	O	O	O	O	O	O	
	4	Sensors	O	O	O	O	O	O	O	O	O	
	5	Table glass	O	O	O	O	O	O	O	O	O	
	6	Dust-proof glass	O	O	O	O	O	O	O	O	O	
	7	OC	O	O	O	O	O	O	O	O	O	
	8	White standard glass	O	O	O	O	O	O	O	O	O	
	9	Rails		☆	☆	☆	☆	☆	☆	☆	☆	
	10	Drive belt		X	X	X	X	X	X	X	X	
	11	Drive wire		X	X	X	X	X	X	X	X	
	12	Pulley		X	X	X	X	X	X	X	X	



[E] MANUAL PAPER FEED SECTION

1. Electrical and mechanism relation diagram



Code	Signal name	Name	Function/Operation	Type	NOTE
MPED	MPED	Manual feed paper empty detector	Manual paper feed tray paper empty detection	Transmission type	Manual paper feed unit
MPFD1	MPFD1	Manual feed paper pass detector 1	Manual tray paper pass detection	Transmission type	Paper transport system sensor
MPFPWS	MPFPWS	Manual feed paper width detector	Manual feed paper width detection	Volume resistor	Analog detector
MPLD1	MPLD1	Manual feed paper length detector 1	Manual paper feed tray paper length detection (Paper feed side)	Transmission type	Manual paper feed unit
MPLD2	MPLD2	Manual feed paper length detector 2	Manual paper feed tray paper length detection (Outside)	Transmission type	Manual paper feed unit
MTOP1	MTOP1	Manual tray pull-out position detector 1	Manual paper feed tray pull-out position detection (Storing position)	Contact type	Manual paper feed unit
MTOP2	MTOP2	Manual tray pull-out position detector 2	Manual paper feed tray pull-out position detection (Pull-out position)	Contact type	Manual paper feed unit
DSW-R	DSW-R	Manual feed unit open/close Switch	Manual paper feed unit open/close detection, Main charger power source, Developing bias power line open/close.	Micro switch	
MPFC	MPFC	Paper feed clutch (Manual paper feed)	Controls the manual paper feed section paper feed roller ON/OFF.	Electromagnetic clutch	
MFPUS	MFPUS	Paper pickup solenoid (Manual paper feed)	Presses the paper pickup roller onto paper.	Electromagnetic solenoid	
MPFGS	MPFGS	Manual paper feed gate solenoid	Manual feed gate solenoid open/close control.	Electromagnetic solenoid	

No.	Name	Function/Operation
1	Separation roller (Manual paper feed tray)	Separates paper to prevent against double feed.
2	Paper feed roller (Manual paper feed tray)	Feeds paper to the paper transport section.
3	Paper pickup roller (Manual paper feed tray)	Sends paper to the paper feed roller.
4	Torque limiter	A fixed level of resistance is applied to the paper separation roller to prevent against double feed.

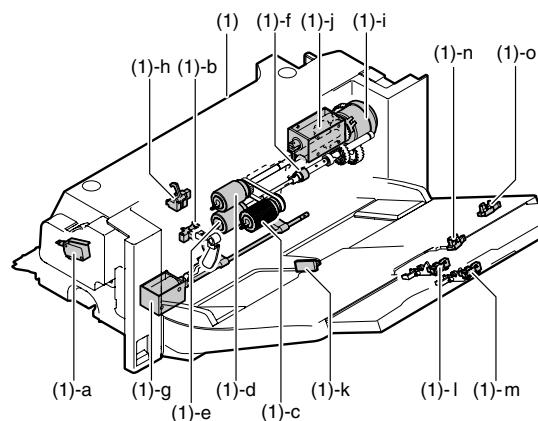
2. Operational descriptions

A. Outline

The paper feed tray 1 holds 900 sheets, the paper feed tray 2 holds 1,300 sheets, the multi-purpose paper feed tray 3 holds 500 sheets, the paper feed tray 4 holds 500 sheets, and the manual paper feed tray holds 100 sheets. Those paper feed units are standard provisions.

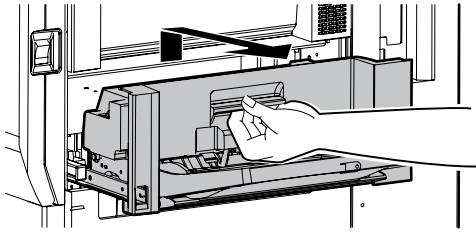
3. Disassembly and assembly

No.	Unit	No.	Parts	Maintenance
A	Multi manual paper feed tray unit	a	Manual paper feed unit open/close switch	
		b	Manual feed empty detector	
		c	Pickup roller	× ○
		d	Paper feed roller	× ○
		e	Separation roller	× ○
		f	Torque limiter	×
		g	Manual feed gate solenoid	
		h	Manual feed paper pass detector 1	
		i	Paper feed clutch	
		j	Paper pickup solenoid	
		k	Manual paper width size detection PWB	
		l	Manual feed paper length detector 1	
		m	Manual feed paper length detector 2	
		n	Manual tray pull-out position detector 1	
		o	Manual tray pull-out position detector 2	

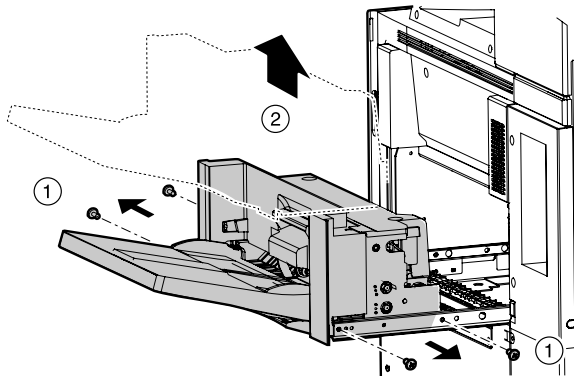


A. Multi manual paper feed tray unit

- 1) Pull out the multi manual paper feed tray unit.

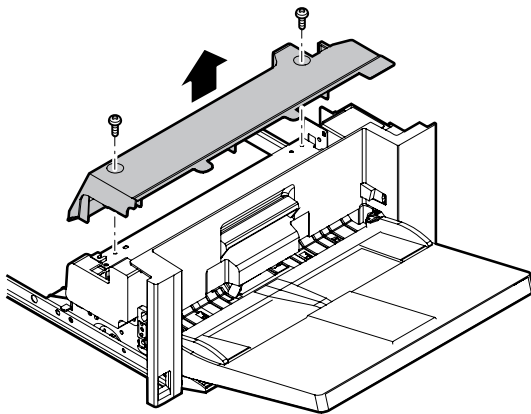


- 2) Remove the multi manual paper feed tray unit from the left and right accurate.

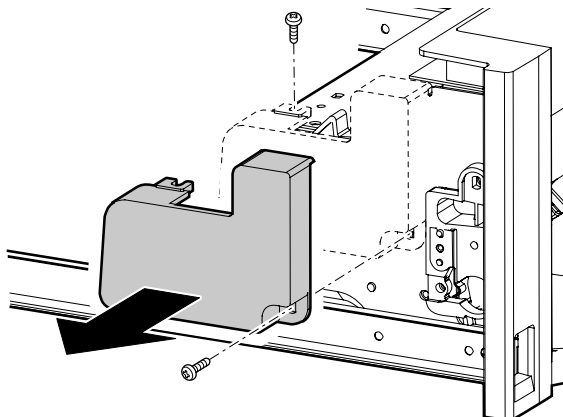


(1) Manual paper feed unit open/close switch

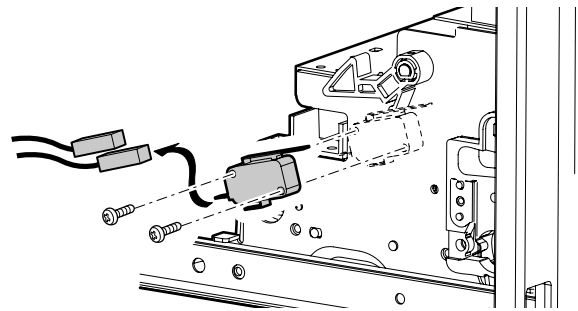
- 1) Pull out the multi manual paper feed tray unit.
(See "A. Multi manual paper feed tray unit")
- 2) Remove the manual feed upper cover.



- 3) Remove the manual feed front cover.

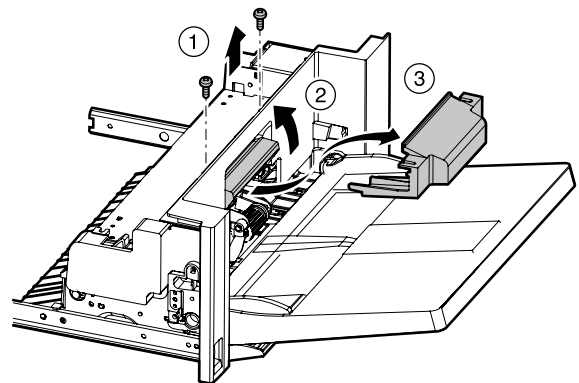


- 4) Remove the manual paper feed unit open/close switch.

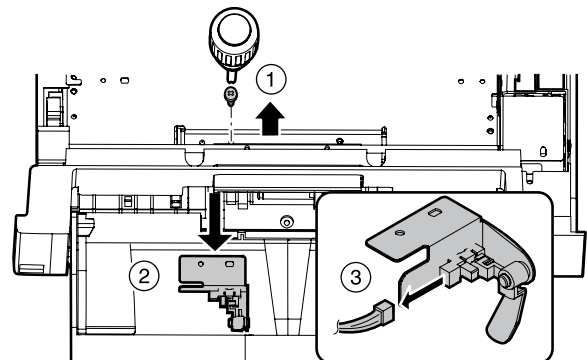


(2) Manual feed empty detector

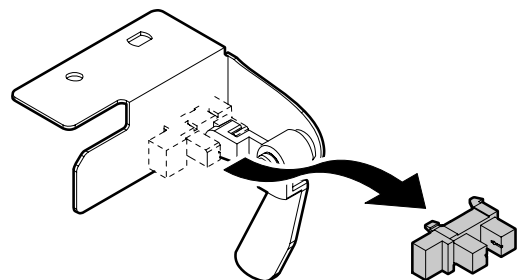
- 1) Pull out the multi manual paper feed tray unit.
(See "A. Multi manual paper feed tray unit")
- 2) Remove the manual feed upper cover.
(See "A-(1) Manual paper feed unit open/close switch")
- 3) Remove the pickup cover.



- 4) Remove the actuator unit.



- 5) Remove the manual feed empty detector.

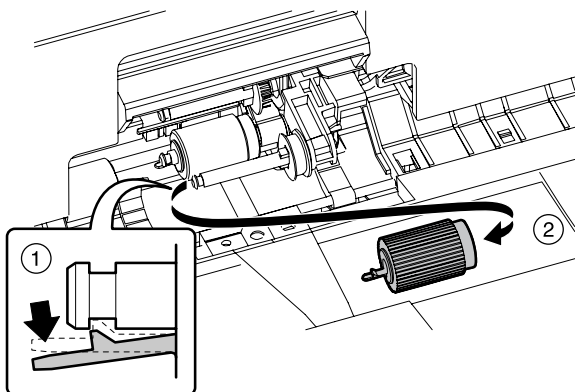


(3) Pickup roller

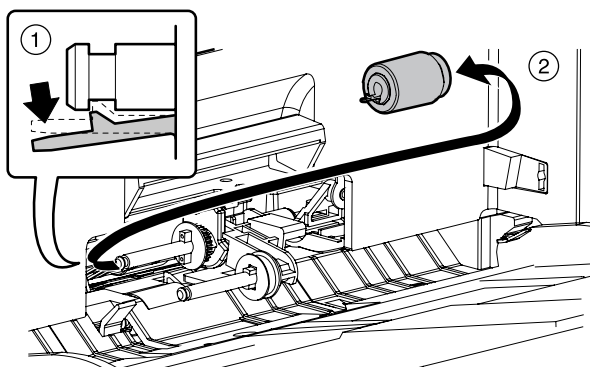
(4) Paper feed roller

(5) Separation roller

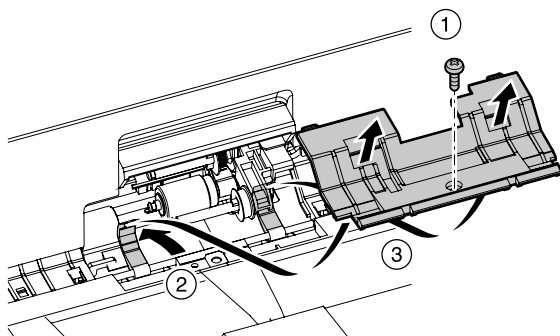
- 1) Pull out the multi manual paper feed tray unit.
(See "A. Multi manual paper feed tray unit")
- 2) Remove the actuator unit.
(See "A-(2) Manual empty detector")
- 3) Unhook the claw to remove the pickup roller.



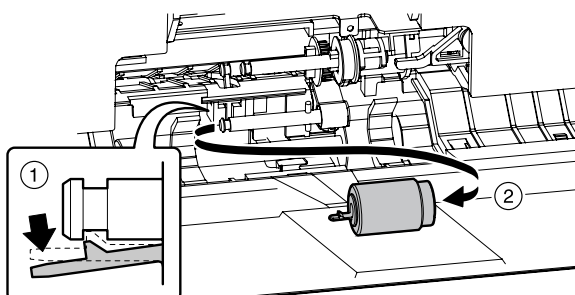
- 4) Unhook the claw to remove the paper feed roller.



- 5) Remove the separation roller cover.

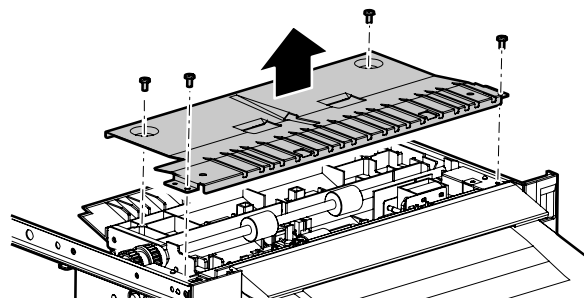


- 6) Remove the separation roller.

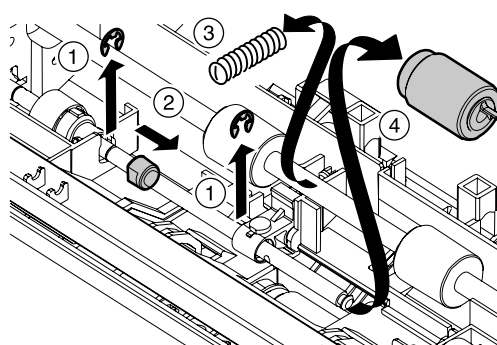


(6) Torque limiter

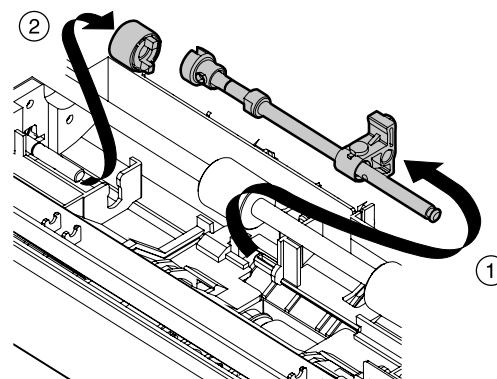
- 1) Pull out the multi paper feed tray unit.
(See "A. Multi manual paper feed tray unit")
- 2) Remove the bottom cover.



- 3) Remove the separation roller.

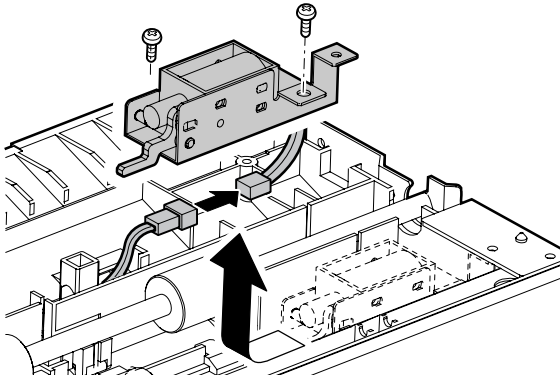


- 4) Remove the separation roller shaft, and remove the torque limiter.

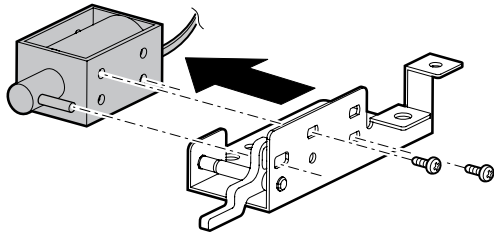


(7) Manual feed gate solenoid

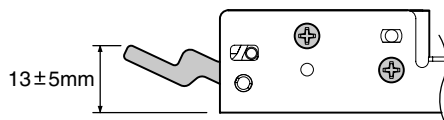
- 1) Remove the multi manual paper feed tray unit. (See "A. Multi manual paper feed tray unit")
- 2) Remove the bottom cover. (See "A-(4) Torque limiter")
- 3) Disconnect the connector, and remove the manual paper feed gate solenoid unit.



- 4) Remove the manual gate solenoid.

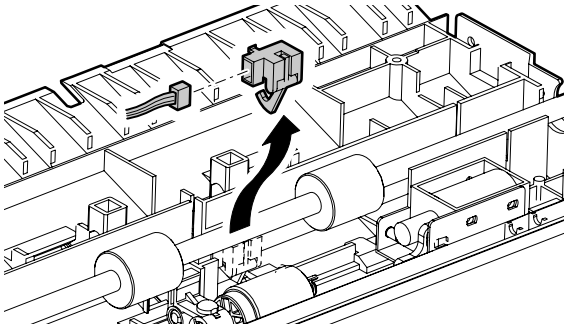


* When assembling, tighten the screw so that the lever tip is at $13 \pm 0.5\text{mm}$ from the frame edge with the solenoid plunger pulled.



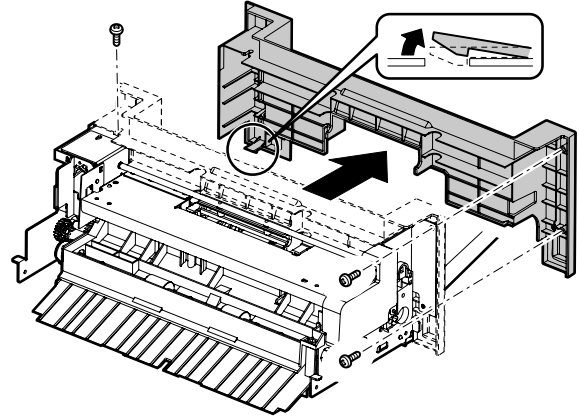
(8) Manual feed paper pass detector 1

- 1) Remove the multi manual paper feed tray unit. (See "A. Multi manual paper feed tray unit")
- 2) Remove the bottom cover. (See "A-(4) Torque limiter")
- 3) Disconnect the connector, and remove the manual paper feed paper pass detector 1.

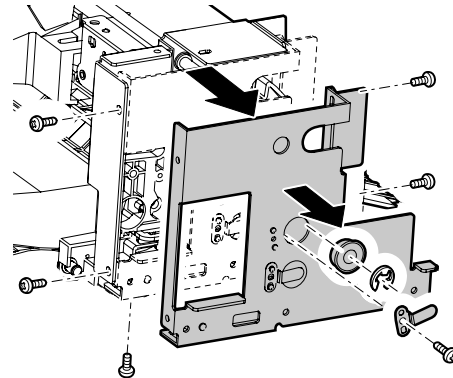


(9) Paper feed clutch

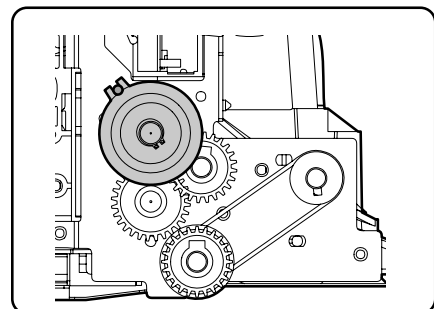
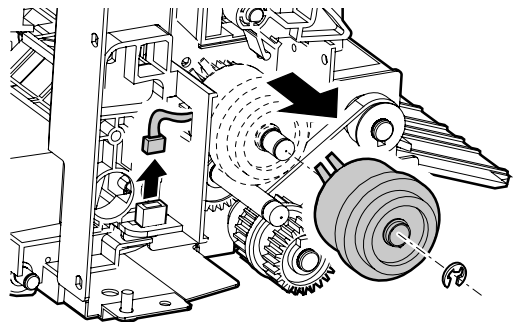
- 1) Remove the multi manual paper feed tray unit. (See "A. Multi manual paper feed tray unit")
- 2) Remove the upper cover. (See "A-(1) Pickup roller")
- 3) Remove the front cover.



- 4) Remove the interface pass earth plate, the E-ring, and the bearing, and remove the manual paper feed mounting plate.



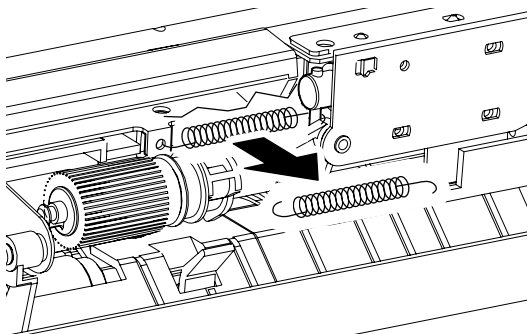
- 5) Remove the connector and E-ring, and remove the paper feed clutch.



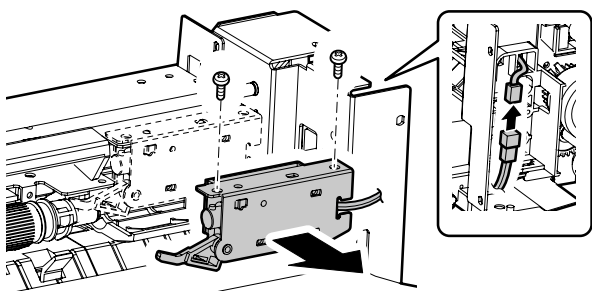
* When assembling, fit the rotation stopper of the paper feed clutch with the clutch fixing screw.

(10) Paper pickup solenoid

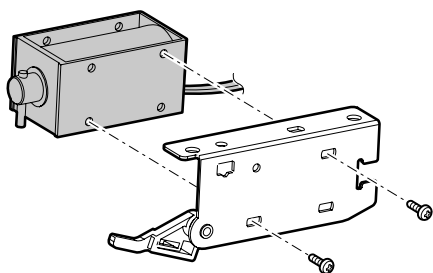
- 1) Remove the multi manual paper feed tray unit.
(See "A. Multi manual paper feed tray unit")
- 2) Remove the manual paper feed upper cover and the pickup upper cover. (See "A-(1) Pickup roller")
- 3) Remove the front cover, and remove the manual paper feed mounting plate. (See "A-(7) Paper feed clutch")
- 4) Remove the spring.



- 5) Disconnect the connector, and remove the paper pickup solenoid unit.

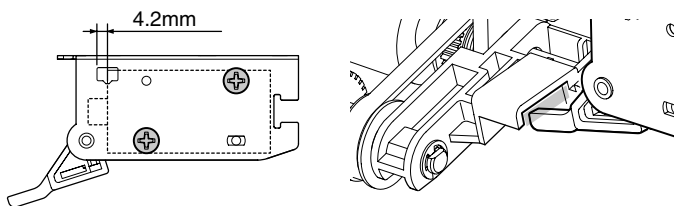


- 6) Remove the paper pickup solenoid.



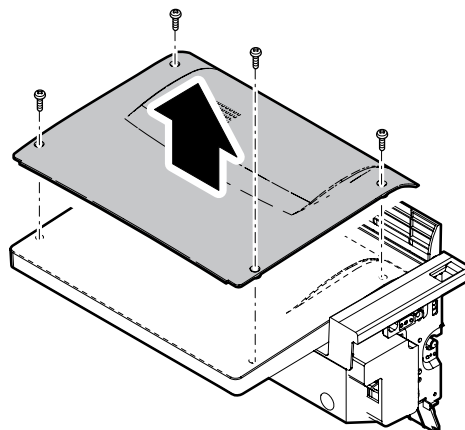
[Note installing]

Check that there is a clearance when the solenoid plunger is pulled.

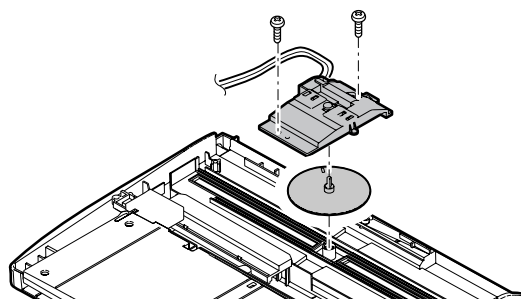


(11) Manual paper width size detection PWB

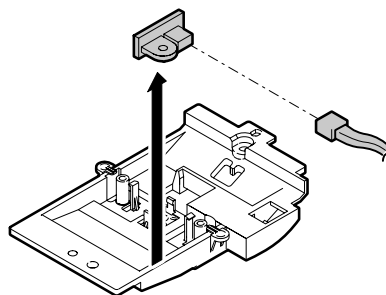
- 1) Remove the multi manual paper feed tray unit.
(See "A. Multi manual paper feed tray unit")
- 2) Remove the multi tray 250 lower.



- 3) Remove the width detection mounting plate.



- 4) Remove the pawl and the connector, and remove the manual paper feed VR PWB.



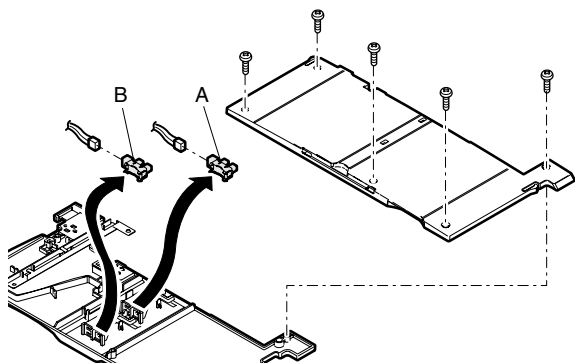
(12) Manual feed paper length detector 1

(13) Manual feed paper length detector 2

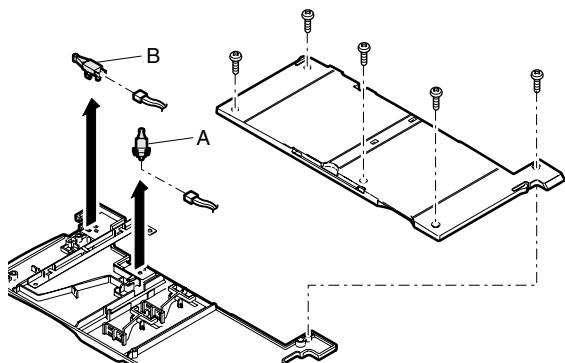
(14) Manual tray pull-out position detector 1

(15) Manual tray pull-out position detector 2

- 1) Remove the multi manual paper feed tray unit.
(See "A. Multi manual paper feed tray unit")
- 2) Remove the multi tray 250 lower.
(See "A-(11) Manual paper width detection PWB")
- 3) Remove the manual tray lower.
- 4) Disconnect the connector, and remove the manual feed paper length detector 1 (A) and manual feed paper length detector 2 (B).

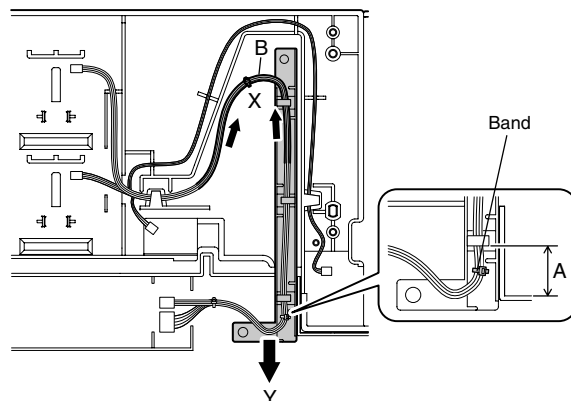


- 5) Disconnect the connector, and remove the manual paper feed tray pull-out position detector 1(A) and the manual paper feed tray pull-out position detector 2 (B).

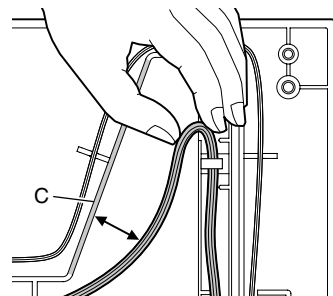


B. Others

- 1) Slide the harness holder in the direction of Y and install it. The band must be in the range of A. Pull section B in the arrow direction to give a slack to the harness.



- 2) Fold the harness with your fingers and check that the harness keeps the folded shape along the holder when it is released. Rib C must be separated from the harness.



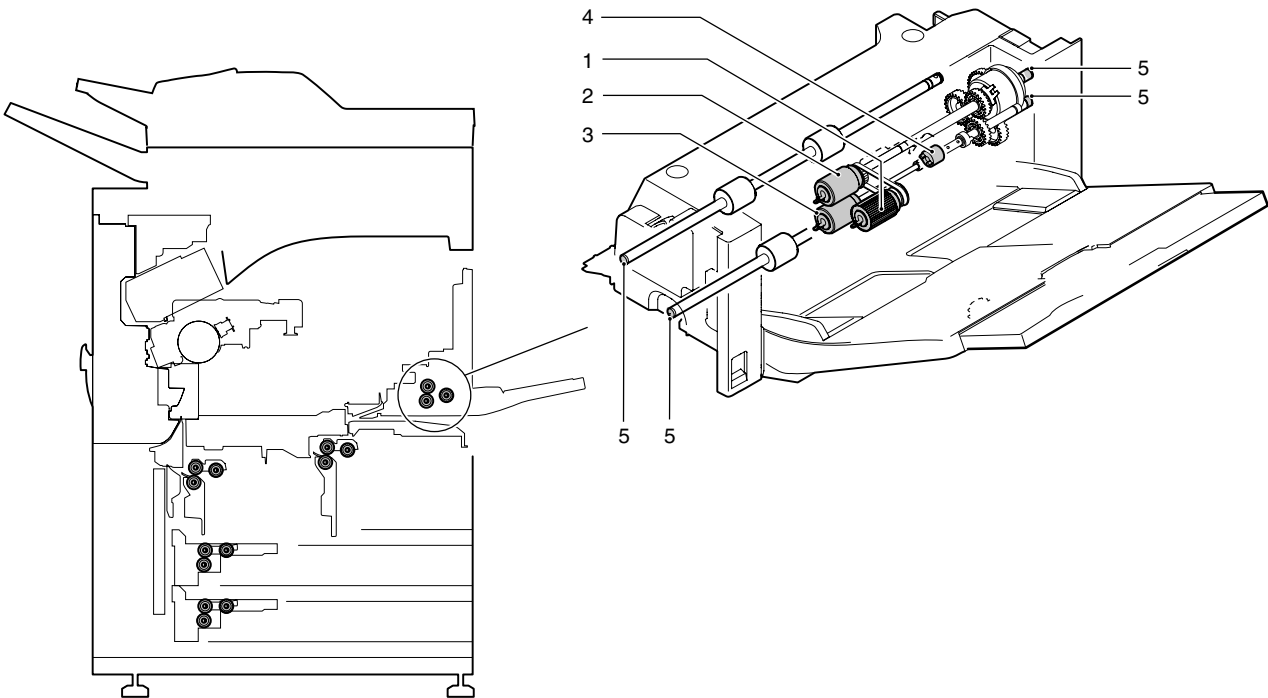
4. Maintenance

X: Check O: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position
 (Clean, replace, or adjust according to necessity.)

		55ppm (PM: 250K)	When calling	250 K	500 K	750 K	1000 K	1250 K	1500 K	1750 K	2000 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
		62ppm/70ppm (PM: 300K)		300 K	600 K	900 K	1200 K	1500 K	1800 K	2100 K	2400 K	
Unit name	No.	Part name										
Multi manual paper feed	1	Pickup roller	×	○	○	○	○	○	○	○	○	(Note 1)
	2	Paper feed roller	×	○	○	○	○	○	○	○	○	(Note 1)
	3	Separation roller	×	○	○	○	○	○	○	○	○	(Note 1)
	4	Torque limiter	×	×	×	×	×	×	×	×	×	(Note 1)
	5	Shaft (Conductive grease)	×	☆	☆	☆	☆	☆	☆	☆	☆	UKOG-0012QSZZ

(Note 1) Replacement reference: For replacement, refer to each paper feed counter value.

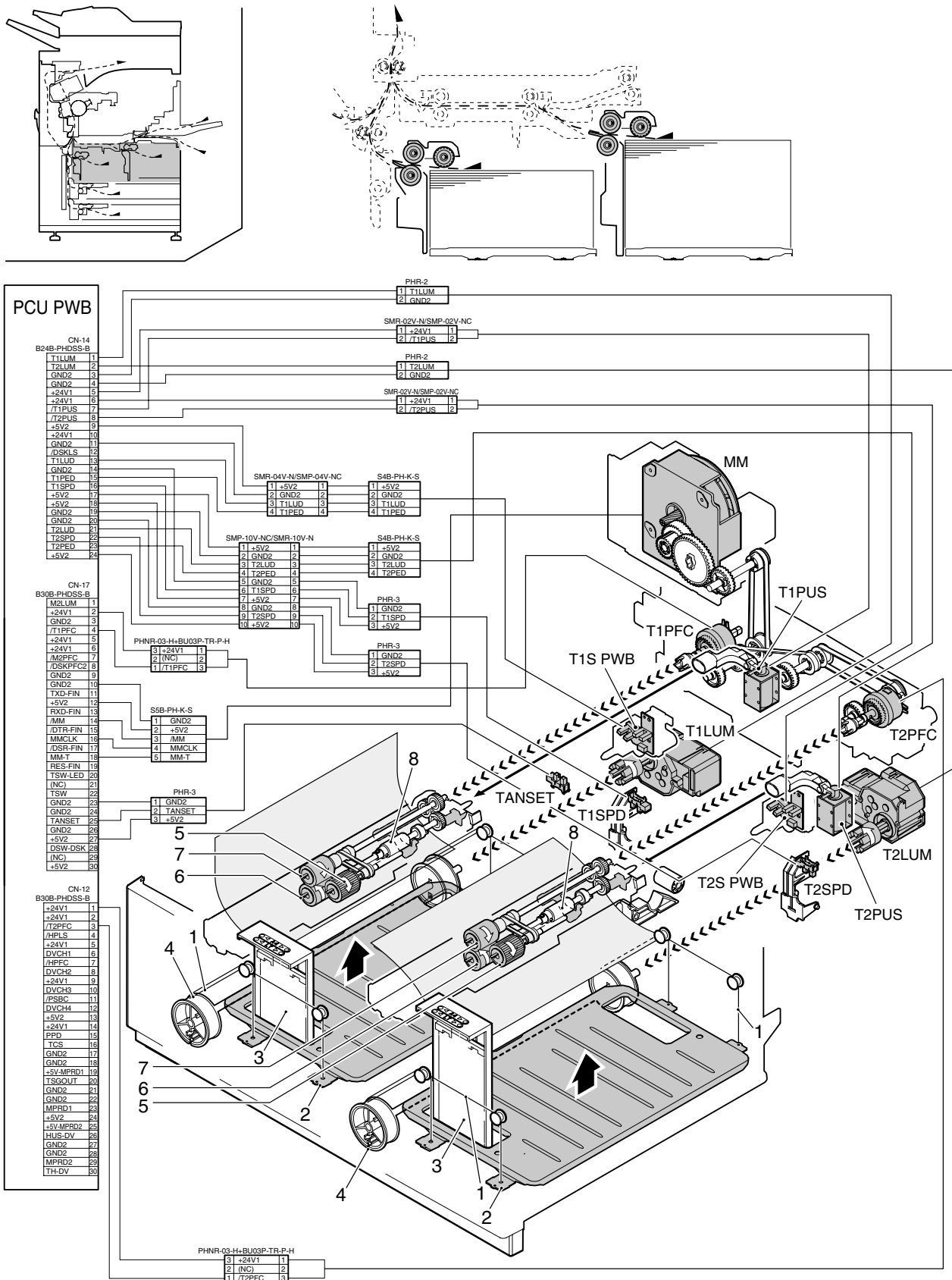
- Manual paper feed: 100K or 1 year
- Torque limiter: 400K



[F] TRAY PAPER FEED SECTION

1. Electrical and mechanism relation diagram

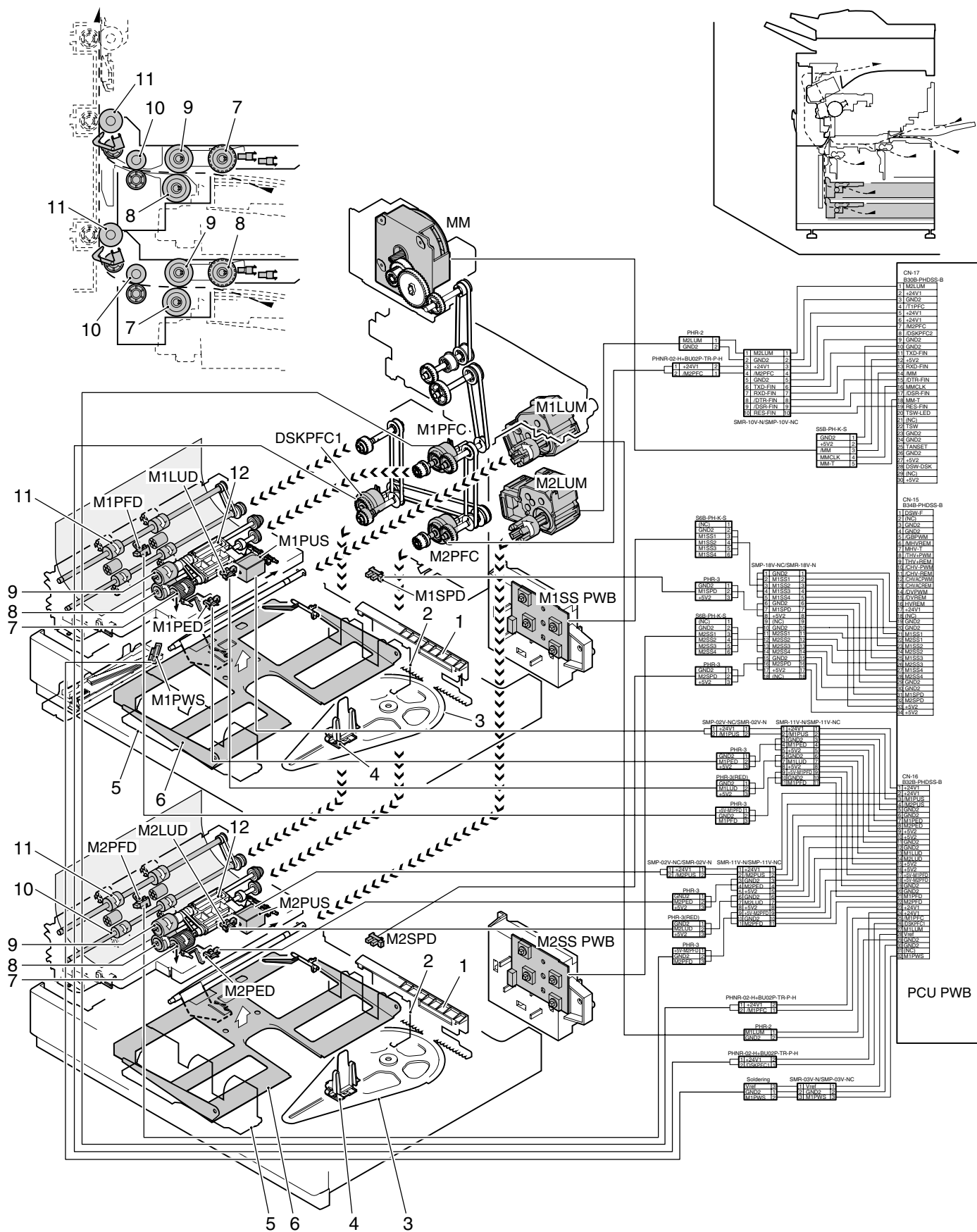
A. Paper feed tray 1, 2 section



Code	Signal name	Name	Function/Operation	Type	NOTE
T1SPD	T1SPD	Paper remaining quantity detector (Paper feed tray 1)	Paper remaining detection (Paper feed tray 1)	Transmission type	Paper feed tray remaining quantity sensor
T2SPD	T2SPD	Paper remaining quantity detector (Paper feed tray 2)	Paper remaining detection (Paper feed tray 2)	Transmission type	Paper feed tray remaining quantity sensor
TANSET	TANSET	Paper feed tray1, 2 (1, 2 tray unit) detection signal	Paper feed tray1, 2 (1, 2 tray unit) insertion detection	Transmission type	Paper feed tray system sensor
T1PFC	T1PFC	Paper feed clutch (Paper feed tray 1)	Paper feed tray 1 section roller ON/OFF control	Electromagnetic clutch	
T2PFC	T2PFC	Paper feed clutch (Paper feed tray 2)	Paper feed tray 2 section roller ON/OFF control	Electromagnetic clutch	
T1LUM	T1LUM	Paper feed tray lift-up motor (Paper feed tray 1)	Drives the lift plate of the paper feed tray.	DC brush motor	Selection of Rotation mode/ Brake mode
T2LUM	T2LUM	Paper feed tray lift-up motor (Paper feed tray 2)	Drives the lift plate of the paper feed tray.	DC brush motor	Selection of Rotation mode/ Brake mode
T1PUS	T1PUS	Paper pickup solenoid (Paper feed tray 1)	Presses the paper pickup roller onto paper.	Electromagnetic solenoid	
T2PUS	T2PUS	Paper pickup solenoid (Paper feed tray 2)	Presses the paper pickup roller onto paper.	Electromagnetic solenoid	
MM	MM	Main motor	Drives the paper feed trays 1, 2, 3, and 4, and the manual paper feed section.	DC brushless motor	Paper pass
T1S PWB	T1S PWB	Detector PWB (Paper feed tray 1, 2 paper feed unit) (Paper feed tray 1)	Paper tray upper limit detection and paper empty detection		
T2S PWB	T2S PWB	Detector PWB (Paper feed tray 1, 2 paper feed unit) (Paper feed tray2)	Paper tray upper limit detection and paper empty detection		

No.	Name	Function/Operation
1	Lift wire	Transmits the paper tray lift motor to power the paper feed tray.
2	Paper feed table	Paper is put on this table.
3	Paper feed tray unit 1, 2 regulation plates L/R	Regulates the paper width to restrict skew to the minimum.
4	Pulley	Transmits the paper tray lift-up motor power to the paper feed tray.
5	Paper pickup roller	Sends paper to the paper feed roller.
6	Separation roller	Separates paper to prevent against double feed.
7	Paper feed roller	Feeds paper to the paper transport section.
8	Torque limiter	Provides a certain level of resistance power for the paper separation roller rotation to prevent against double feed.

B. Paper feed tray 3, 4 section



Code	Signal name	Name	Function/Operation	Type	NOTE
M1LUD	M1LUD	Paper feed tray upper limit detector (Paper feed tray 3)	Paper tray upper limit detection (Paper feed tray 3)	Transmission type	Paper feed tray system sensor
M1PED	M1PED	Paper empty detector (Paper feed tray 3)	Paper empty detection (Paper feed tray 3)	Transmission type	Paper feed tray system sensor
M1PFD	M1PFD	Paper pass detector (Multi Paper feed tray 3)	Paper feed tray 3 paper pass detection	Transmission type	Paper transport system sensor
M1PWS	M1PWS	Paper feed tray paper width detector (Paper feed tray 3)	Paper width detection of multi Paper feed tray (Paper feed tray 3)	Slide resistor	Analog detector
M1SPD	M1SPD	Paper remaining quantity detector (Paper feed tray 3)	Paper remaining detection (Multi Paper feed tray 3)	Transmission type	Paper feed tray remaining quantity sensor
M2LUD	M2LUD	Paper Paper feed tray upper limit detector (Paper feed tray 4)	Paper tray upper limit detection (Paper feed tray 4)	Transmission type	Paper feed tray system sensor
M2PED	M2PED	Paper empty detector (Paper feed tray 4)	Paper empty detection (Paper feed tray 4)	Transmission type	Paper feed tray system sensor
M2PFD	M2PFD	Paper pass detector (Multi Paper feed tray 4)	Paper feed tray 4 paper pass detection	Transmission type	Paper transport system sensor
M2SPD	M2SPD	Paper remaining quantity detector (Paper feed tray 4)	Paper remaining quantity detection (Paper feed tray 4)	Transmission type	Paper feed tray remaining quantity sensor
M1PFC	M1PFC	Paper feed clutch (Paper feed tray 3)	Paper feed tray 3 section roller ON/OFF control	Electromagnetic clutch	
M2PFC	M2PFC	Paper feed clutch (Paper feed tray 4)	Paper feed tray 4 section roller ON/OFF control	Electromagnetic clutch	
DSKPFC1	DSKPFC1	Paper feed tray 3, 4 paper transport clutch 1	Paper feed tray 3, 4 section paper transport roller ON/OFF control	Electromagnetic clutch	
M1PUS	M1PUS	Paper pickup solenoid (Paper feed tray 3)	Presses the paper pickup roller onto paper.	Electromagnetic solenoid	
M2PUS	M2PUS	Paper pickup solenoid (Paper feed tray 4)	Presses the paper pickup roller onto paper.	Electromagnetic solenoid	
MM	MM	Main motor	Drive the paper feed tray 1, 2, 3 and 4, and the manual paper feed section.	DC brush-less motor	Paper pass
M2SS PWB		Paper size detection PWB	Paper remaining detection		

No.	Name	Function/Operation
1	Paper size detection plate	Changes its own position in conjunction with the paper size (length) adjustment lever. By this operation, the paper size detector detects the paper size.
2	Paper width guide R	Suppresses skew to the minimum by restricting the paper width.
3	Paper size detection rotation plate	Changes its own position in conjunction with the paper size (length) adjustment lever. By this operation, the paper size detection plate position is changed and the paper size detector detects the paper size.
4	Paper size (length) guide plate	Regulates the paper size (length).
5	Paper width guide L	By restricting the paper width, skew is restricted to the minimum.
6	Lift plate	Lifts the paper to maintain the paper feed position at the fixed position.
7	Paper pickup roller	Sends paper to the paper transport section.
8	Separation roller	Separate paper to prevent against double feed
9	Paper feed roller	Feeds paper to the paper transport section.
10	transport roller 8 (Paper feed tray 3) transport roller 5 (Paper feed tray 4)	Transports paper from the paper feed tray 3 to the transport rollers 9 and 10. Transports paper from the paper feed tray 4 to the transport rollers 6 and 7.
11	transport roller 10 (Paper feed tray 3) transport roller 7 (Paper feed tray 4)	Transports paper from the transport rollers 7 and 8 to the transport roller 11. Transports paper from the transport roller 5 to the transport roller 10.
12	Torque limiter	Provides a certain level of resistance power for the paper separation roller rotation to prevent against double feed.

2. Operational descriptions

A. Outline

Paper feed tray 1 holds 900 sheets, paper feed tray 2 holds 1,300 sheets.

The multi-purpose paper feed tray 3 holds 550 sheets, the paper feed tray 4 holds 550 sheets, and the manual paper feed tray holds 100 sheets. Those paper feed units are standard provisions.

B. Paper feed tray 1, 2 section

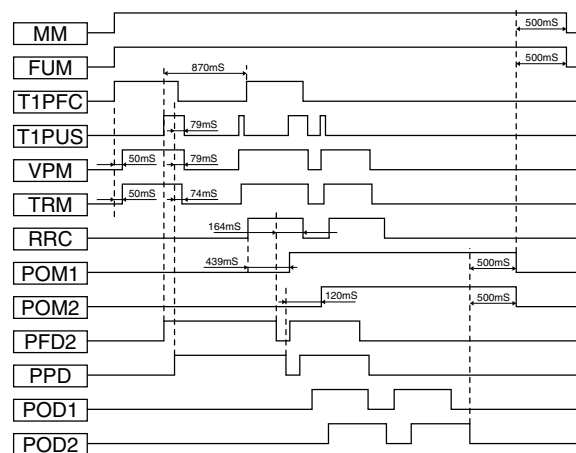
(1) Paper feed operation

a. Preliminary operation before paper feed

- 1) Set paper in the tray, and insert the tray into the machine. The tray sensor turns on.
- 2) The lift-up motor operates to lift the tray.
- 3) The paper upper limit sensor turns on to stop the tray at the specified position.

b. Paper feed operation

- 1) When copy/print operation is started, the motors (MM, FUM, VPM, and TRM) and the clutch (TRC) are turned on to turn on the solenoid (T1PUS) at the timing of paper pickup. This rotates and falls the take-up roller to pick up paper.
- 2) At the same time, the paper feed roller rotates to feed paper to the transport section. At that time, the separation roller rotates to prevent against double feed of paper.



C. Paper size of paper feed trays detection method

(1) Paper size of paper feed trays detection method

a. Paper feed tray1, 2 paper feed unit (Paper feed tray 1, 2)

The paper feed tray 1 is used exclusively for A4 (11 x 8.5) paper size. The paper feed tray 2 is used for A4, 11 x 8.5, or B5 paper size. To change the paper size, change the paper guide and change the set value of SIM 26-2.

(2) Paper size of paper feed trays detection method

a. Multi-purpose paper feed tray (Paper feed tray 3), 500 sheets paper feed tray (Paper feed tray 4)

1) Paper width detection

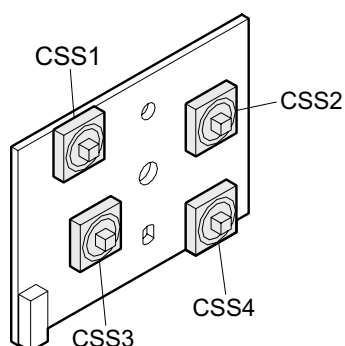
The paper width is calculated with the VR voltage value (A/D conversion value) linked with the side guide plate.

Paper width and paper size (set in the range of standard value ± 6 [mm]).

Width size Detection pattern	Paper size	Standard [mm]	Range[mm]
A	A3/A4	297.0	303.0 to 291.0
B	WLT/LT	279.4	285.4 to 273.4
C	B4/B5	257.0	263.0 to 251.0
D	LG/LTR/Foolscap	215.9	221.9 to 209.9
E	A4R	210.0	216.0 to 204.0
F	Exective-R	184.1	190.1 to 178.1
G	B5R	182.0	188.0 to 176.0

2) Paper size detection

The paper size detection is made by the combination of the cassette paper size detector 1 to 4.



Relationship between each paper size detector detection and paper size

Vertical size detection Pattern	Detection SW state				AB size	Inch size	Width of detection range
	CSS1	CSS2	CSS3	CSS4			
1	ON	ON	OFF	ON	B5	Extra	147.0 to 198.0
2	OFF	ON	OFF	ON	A4	LT	198.0 to 237.0
3	OFF	ON	ON	ON	B5R	EX-R	237.0 to 274.0
4	OFF	OFF	ON	ON	A4R	LTR	274.0 to 314.0
5	ON	OFF	ON	ON	Foolscap	Extra	314.0 to 347.0
6	ON	OFF	ON	OFF	B4	LGL	347.0 to 389.0
7	ON	ON	ON	OFF	A3	WLT	389.0 to 432.8
0	OFF	OFF	OFF	OFF	Paper feed tray not attached		

3) Size detection combinations

Paper size	Width detection pattern	Vertical detection pattern
B5	C	1
A4	A	2
B5R	G	3
A4R	E	4
Foolscap	D	5
B4	B	6
A3	A	7
LT	B	2
EX-R	F	3
LTR	D	4
LGL	D	6
WLT	B	7

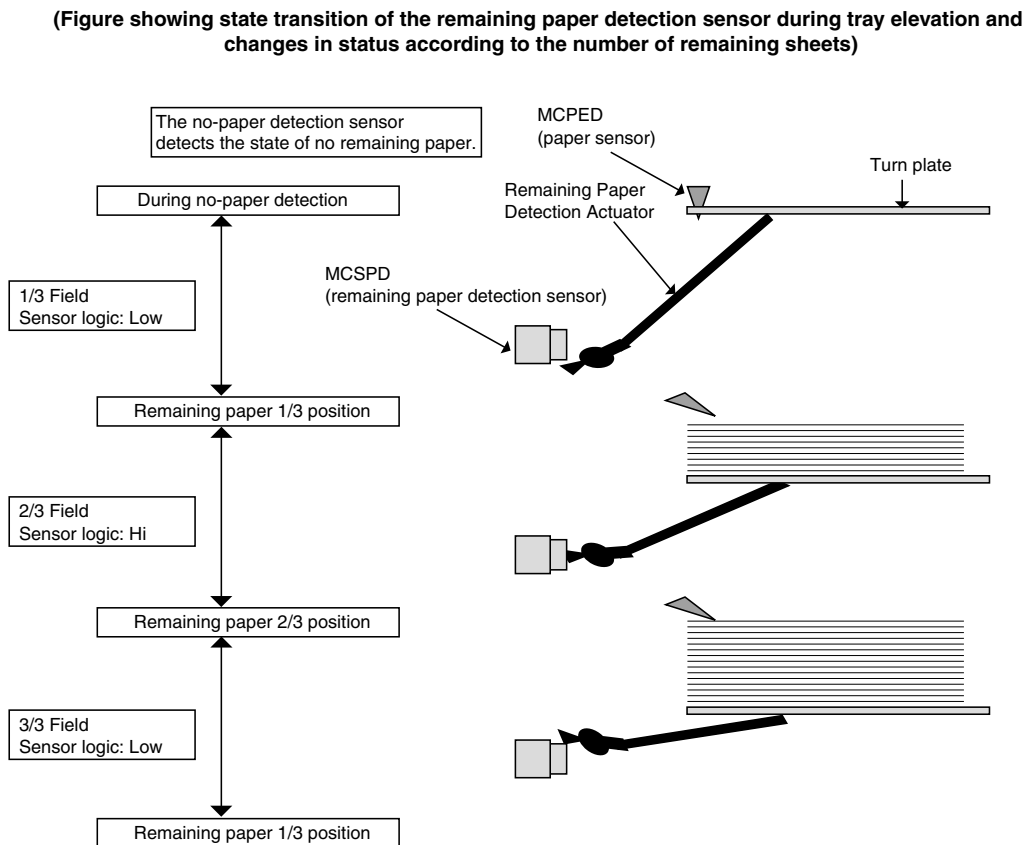
D. Paper remaining detection

(1) Paper remaining detection

Remaining paper detection is performed according to four stages, i.e. three stages with paper and one stage with no paper, and the result is displayed.

(2) Detection method

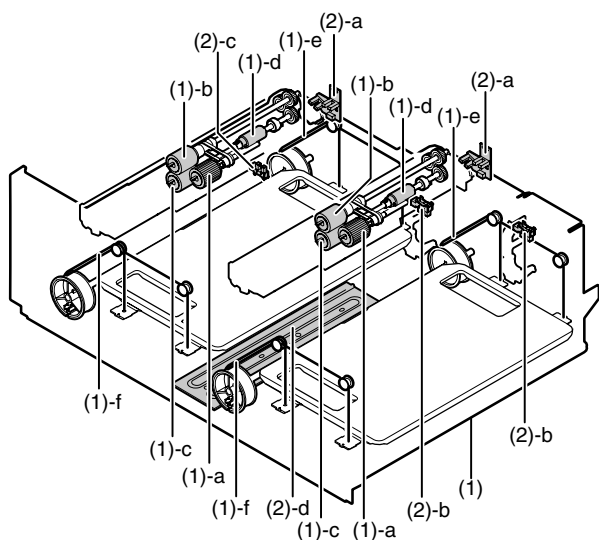
The number of remaining sheets is determined according to the number of times the remaining paper sensor changes from the time the paper feed tray starts lifting up to the time when the upper detection sensor comes ON.



3. Disassembly and assembly

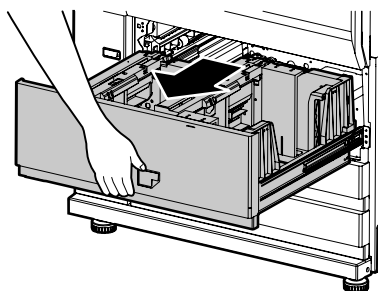
A. Paper feed tray 1, 2 section

No.	Unit	No.	Parts	Maintenance
(1)	Paper feed unit (Paper feed tray 1, 2)	a	Pickup roller	× ○
		b	Paper feed roller	× ○
		c	Separation roller	× ○
		d	Torque limiter	×
		e	Lift wire (Rear)	
		f	Lift wire (Front)	
(2)	Others	a	Paper remaining quantity sensor PWB	
		b	Paper remaining quantity detector	
		c	Paper feed tray 1, 2 detection sensor	
		d	Dry heater	

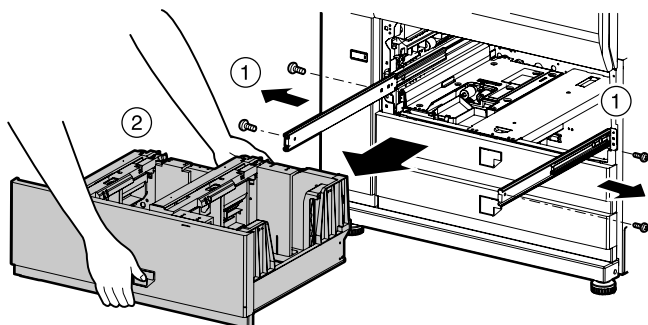


(1) Paper feed unit (Paper feed tray 1, 2)

- 1) Pull up the paper feed tray 1, 2.

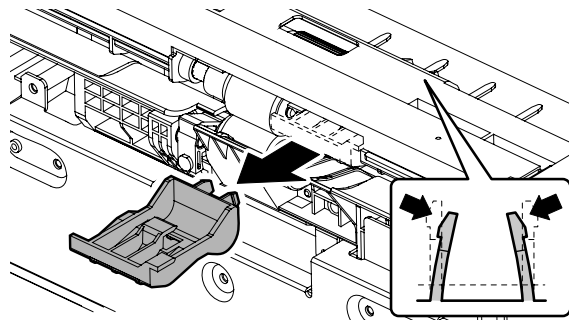


- 2) Remove the fixing screws from the left and right rails.
- 3) Hold the grips of the position indicated in the figure with both hands, and remove it.

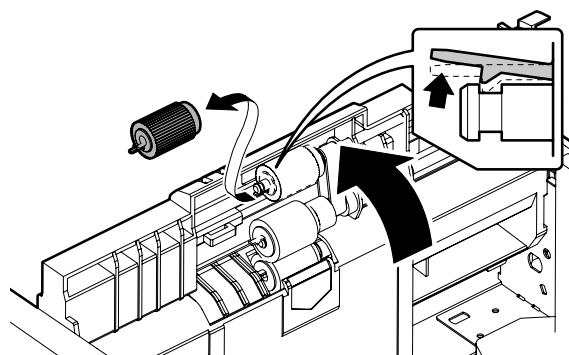


a. Pickup roller

- 1) Pull out the paper feed tray units 1, 2.
(See "(1) Paper feed unit (Paper feed tray 1, 2)")
- 2) Unhook the claws to remove the paper guide.

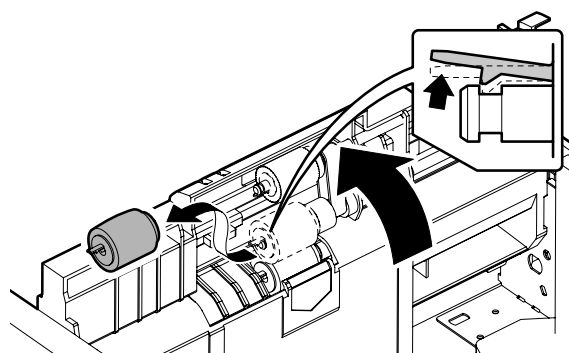


- 3) Unhook the claw to lift up the first paper feed tray feed section, and then remove the pickup roller.



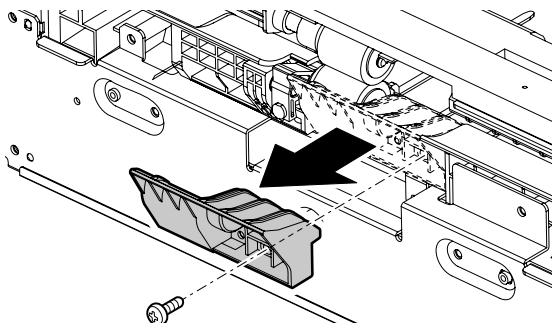
b. Paper feed roller

- 1) Pull out the paper feed tray units 1, 2.
(See "(1) Paper feed unit (Paper feed tray 1, 2)")
- 2) Unhook the claws to remove the paper guide.
(See "a-1. Pickup roller")
- 3) Unhook the claw to lift up the first paper feed tray feed section, and then remove the paper feed roller.

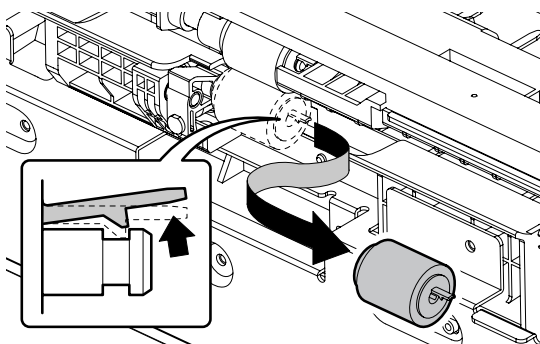


c. Separation roller

- 1) Pull out the paper feed tray units 1, 2.
(See "(1) Paper feed unit (Paper feed tray 1, 2)")
- 2) Unhook the claws to remove the paper guide.
(See "a-1. Pickup roller")
- 3) Remove the lower paper guide.

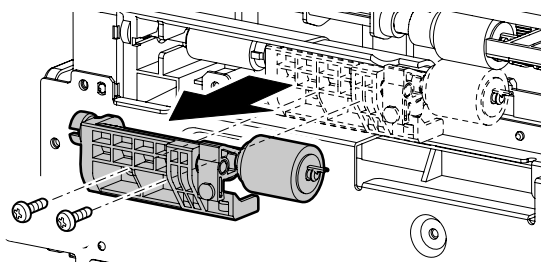


- 4) Unhook the claws to remove the reverse roller.

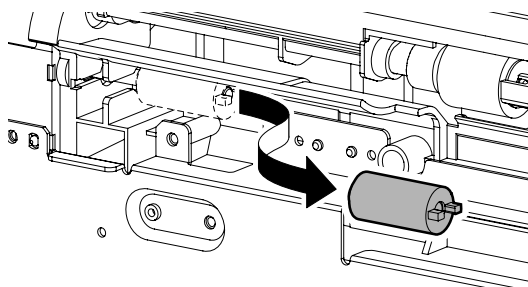


d. Torque limiter

- 1) Pull out the paper feed tray units 1, 2.
(See "a. Paper feed unit (Paper feed tray 1, 2)")
- 2) Unhook the claws to remove the paper guide.
(See "a-3. Separation roller")
- 3) Remove the separation roller unit.

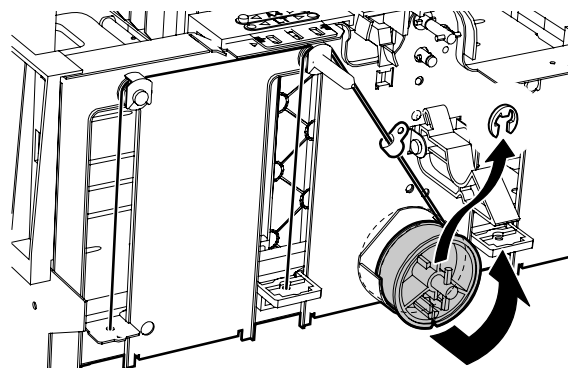


- 4) Remove the torque limiter.

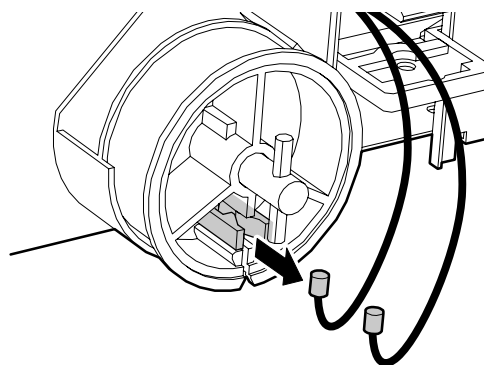


e. Lift wire (Rear)

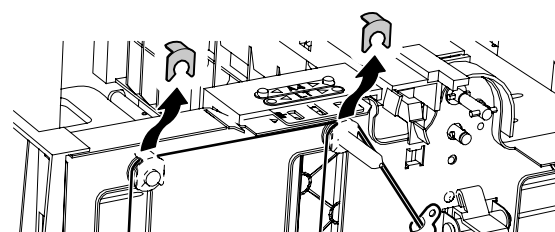
- 1) Remove the paper feed tray units 1, 2.
(See "(1) Paper feed unit (Paper feed tray 1, 2)")
- 2) Remove the E-ring, slide the winding pulley, and loosen the wire.



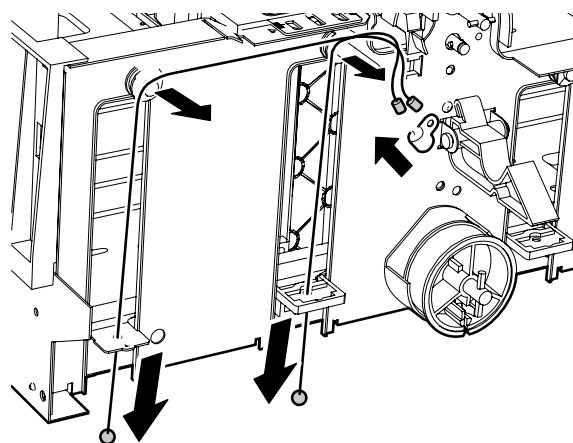
- 3) Disengage the pawl, and remove the wire.



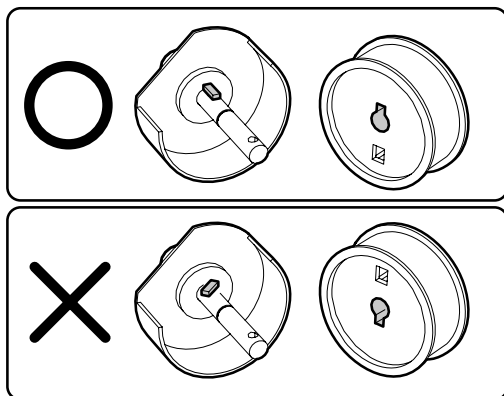
- 4) Remove the resin E-ring.



- 5) Remove the wire.

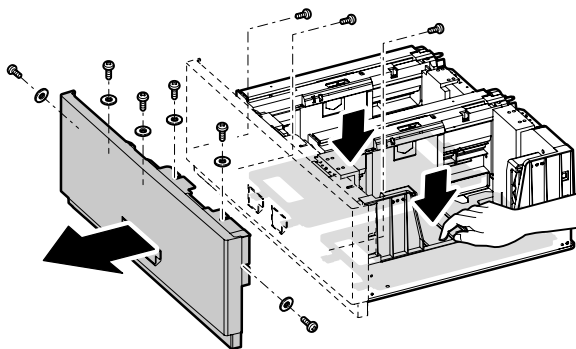


- * Pass the nylon clamp.
- * Attach so that the red wire is on the outside.
- * Turn it clockwise to fit with the T-shape pin position and insert.

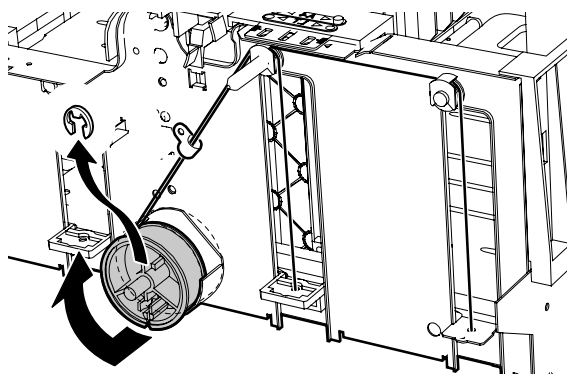


f. Lift wire (Front)

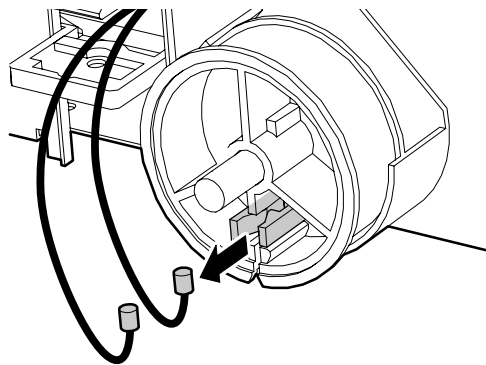
- 1) Remove the paper feed tray units 1, 2.
(See "(1) Paper feed unit (Paper feed tray 1, 2)")
- 2) Push down the tray and remove the screw, and remove the paper feed tray 1, 2 front cabinet.



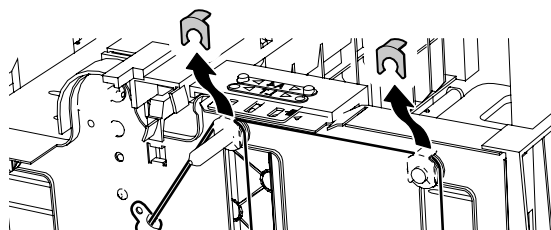
- 3) Remove the E-ring, slide the winding pulley, and loosen the wire.



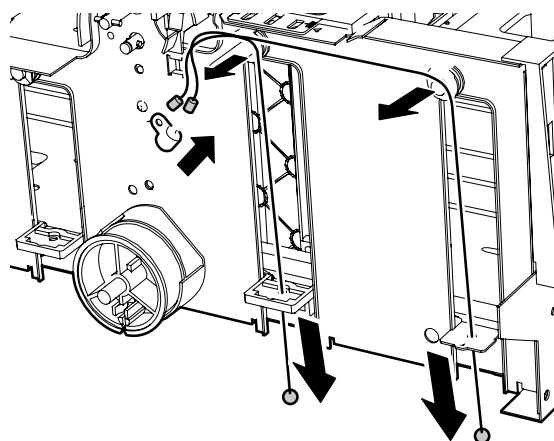
- 4) Disengage the pawl, and remove the wire.



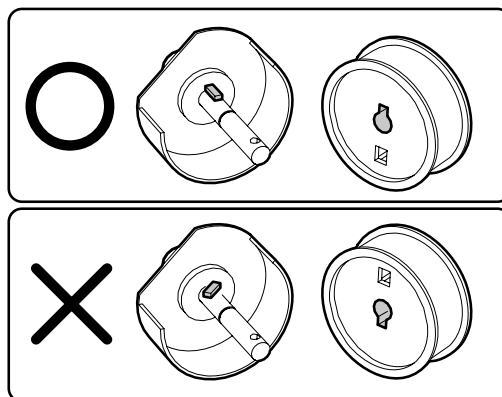
- 5) Remove the resin E-ring.



- 6) Remove the wire.



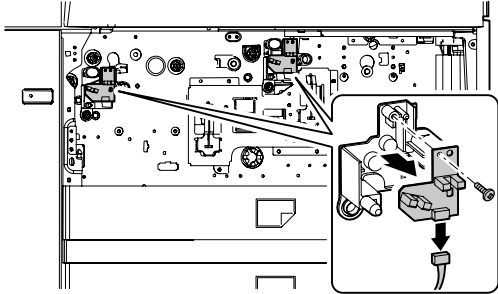
- * Pass the nylon clamp.
- * Attach so that the red wire is on the outside.
- * Turn it counterclockwise and fit with the T-shape pin position and insert.



(2) Others

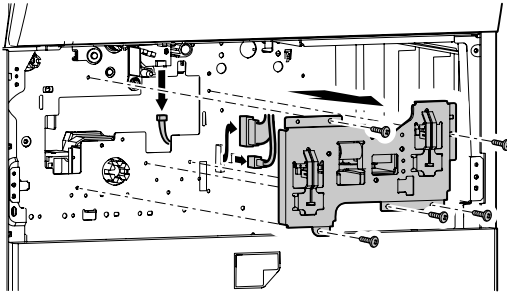
a. Paper remaining quantity sensor PWB

- 1) Remove the paper feed tray units 1, 2.
(See "(1) Paper feed unit (Paper feed tray 1, 2)")
- 2) Disconnect the connector, and remove the paper remaining quantity sensor PWB.

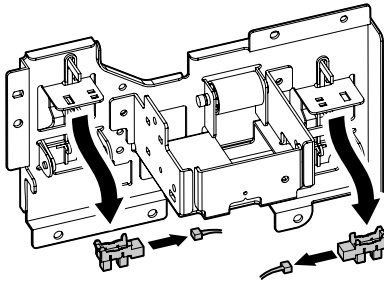


b. Paper remaining quantity detector

- 1) Remove the paper feed tray units 1, 2. (See "(1) Paper feed unit (Paper feed tray 1, 2)")
- 2) Disconnect the connector, and remove the paper feed tray lock arm unit.

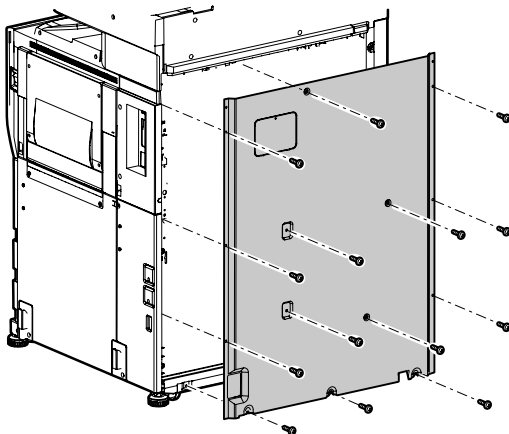


- 3) Disconnect the connector, and remove the paper remaining quantity detector.

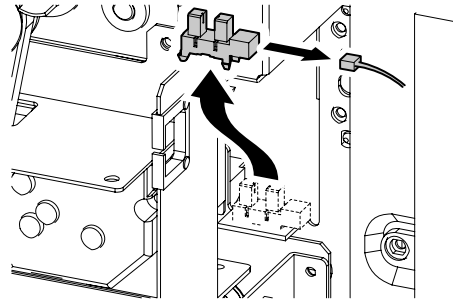


c. Paper feed tray 1, 2 detection sensor

- 1) Remove the rear cabinet.

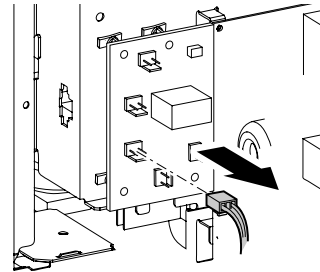


- 2) Disconnect the connector, and remove the Paper feed trays 1, 2 detection sensor.

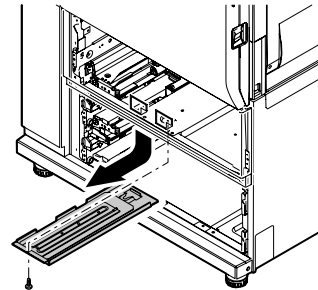


d. Dry heater

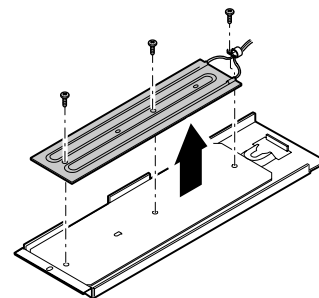
- 1) Remove the rear cabinet.
(See "c. Paper feed trays 1, 2 sensor")
- 2) Disconnect the connector from dehumidifier heater relay PWB.



- 3) Remove the band, and remove the dry heater unit.

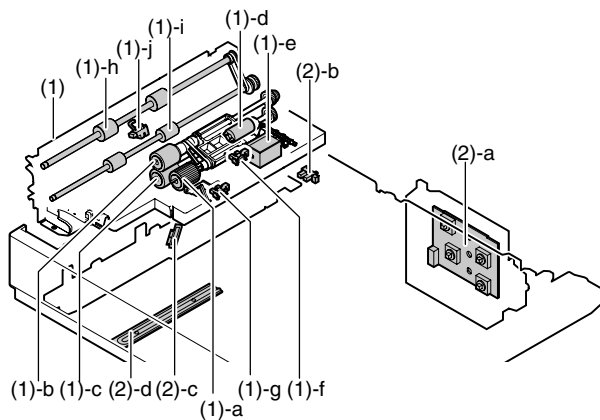


- 4) Remove the dry heater.



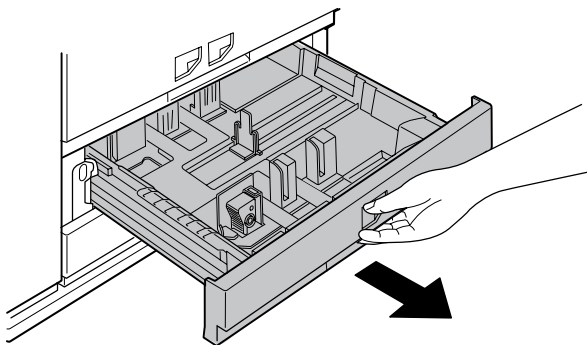
B. Paper feed tray 3, 4 section

No.	Unit	No.	Parts	Maintenance
(1)	Paper feed unit (Paper feed tray 3, 4)	a	Pickup roller	× ○
		b	Paper feed roller	× ○
		c	Separation roller	× ○
		d	Torque limiter	×
		e	Paper pickup solenoid	
		f	Paper feed tray upper limit detector	
		g	Paper feed tray empty detector	
		h	transport roller 8, 10	× ○
		i	Transport roller 5, 7	× ○
		j	Paper pass detector	
(2)	Others	a	Paper size detection PWB	
		b	Paper remaining quantity detector	
		c	Paper feed tray paper width detector	
		d	Dry heater	

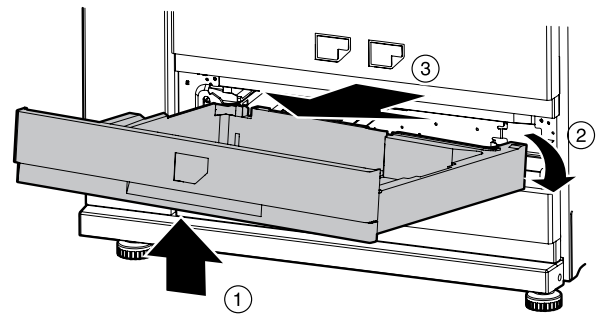


(1) Paper feed unit (Paper feed tray 3, 4)

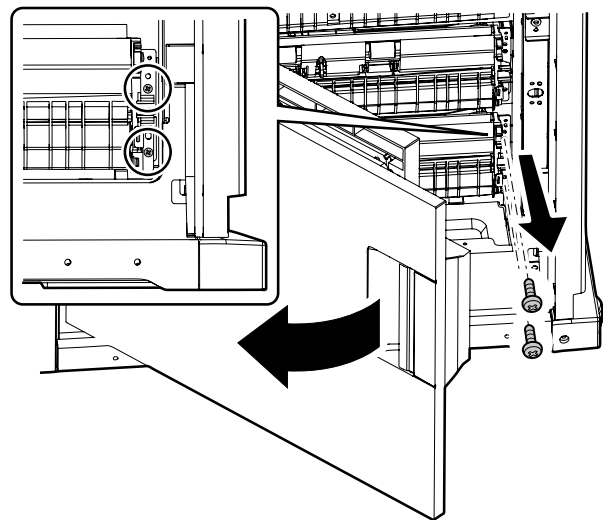
- 1) Pull out gently the paper feed tray it stops.



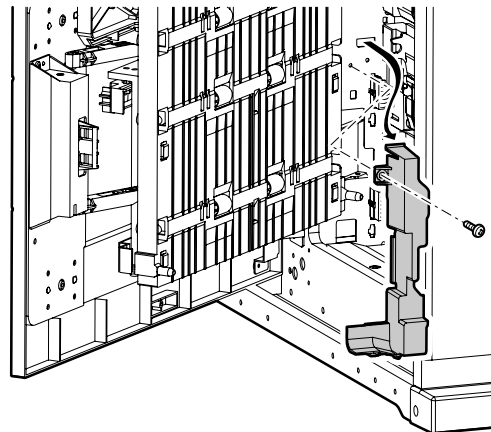
- 2) Lifting up the paper feed tray unit slightly, remove it at an angle from the right side.



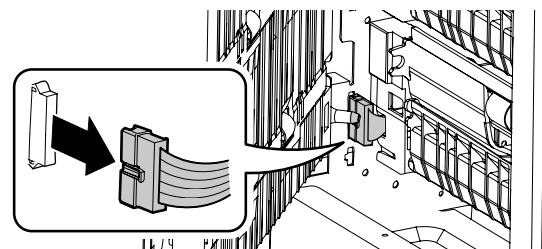
- 3) Open the bottom left cabinet.



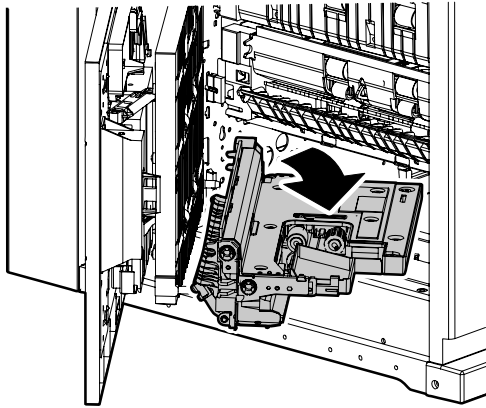
- 4) Remove the connector cover.



- 5) Disconnect the connectors.

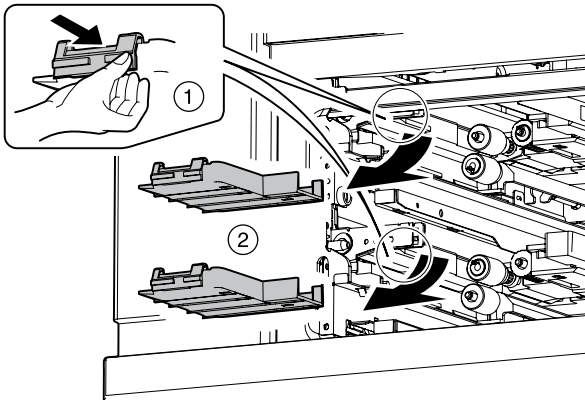


- 6) Remove the paper feed unit (Paper feed tray 3, 4) from the lower shelf.

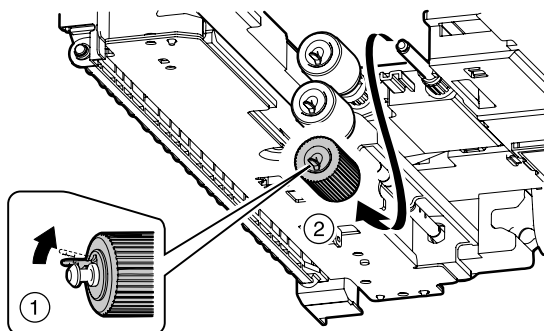


a. Pickup roller

- 1) Remove the paper feed unit (Paper feed tray 3, 4).
(See "(1) Paper feed unit (Paper feed tray 3, 4)")
- 2) Remove the paper guide.

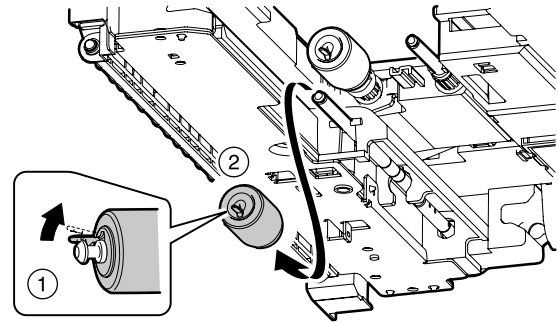


- 3) Unhook the claws to remove the pickup roller.



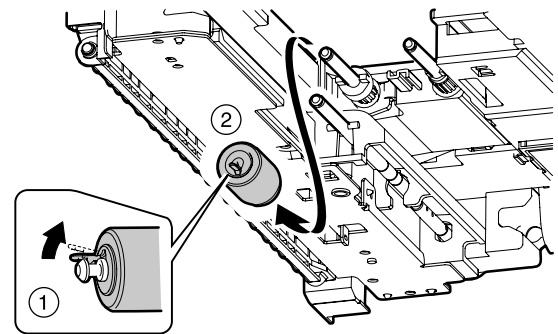
b. Paper feed roller

- 1) Remove the paper feed unit (Paper feed tray 3, 4).
(See "(1) Paper feed unit (Paper feed tray 3, 4)")
- 2) Remove the paper guide. (See "a. Pickup roller")
- 3) Release the pawl, and remove the paper feed roller.



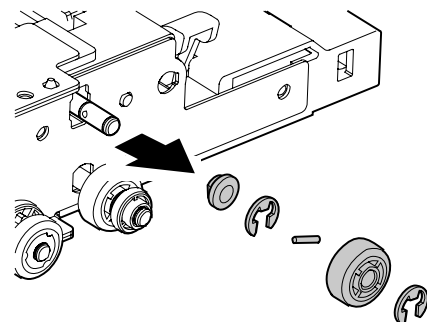
c. Separation roller

- 1) Remove the paper feed unit (Paper feed tray 3, 4).
(See "(1) Paper feed unit (Paper feed tray 3, 4)")
- 2) Remove the paper guide. (See "a. Pickup roller")
- 3) Disengage the pawl, and remove the separation roller.

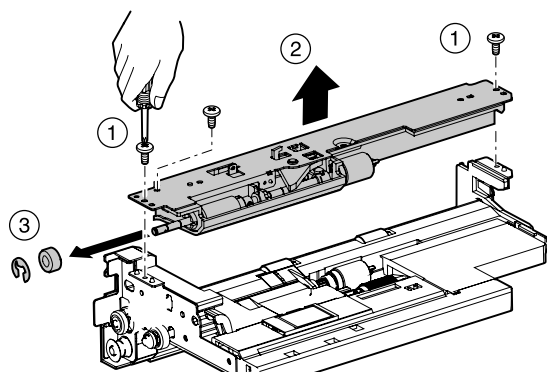


d. Torque limiter

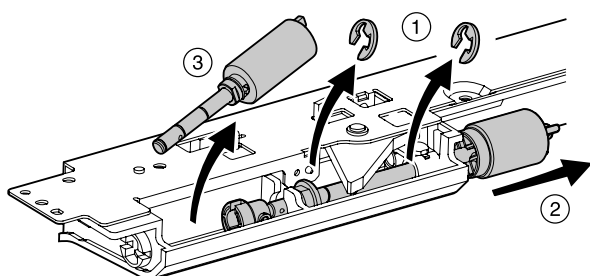
- 1) Remove the paper feed unit (Paper feed tray 3, 4).
(See "(1) Paper feed unit (Paper feed tray 3, 4)")
- 2) Remove the E-ring, and remove the gear and the pin.
- 3) Remove the E-ring and the bearing.



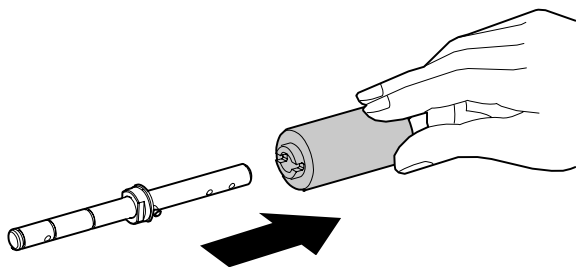
- 4) Remove the separation roller unit.
- 5) Remove the E-ring, and one-way clutch.



- 6) Remove the E-ring, and move the separation roller shaft.
- 7) Remove the shaft unit.

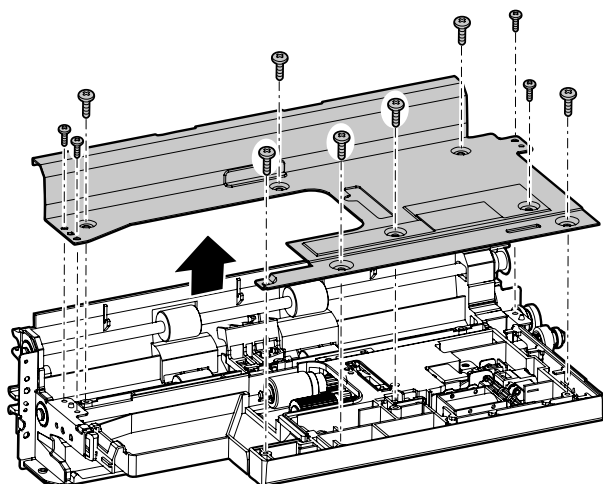


- 8) Remove the torque limiter.

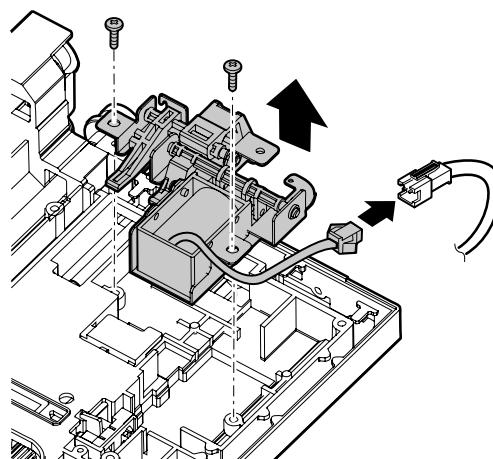


e. Paper pickup solenoid

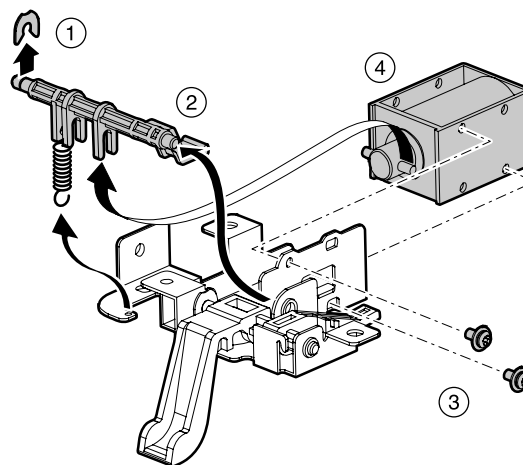
- 1) Remove the paper feed tray 3, 4.
(See "(1)Paper feed unit (Paper feed tray 3, 4)")
- 2) Remove the cover.



- 3) Remove the solenoid unit.



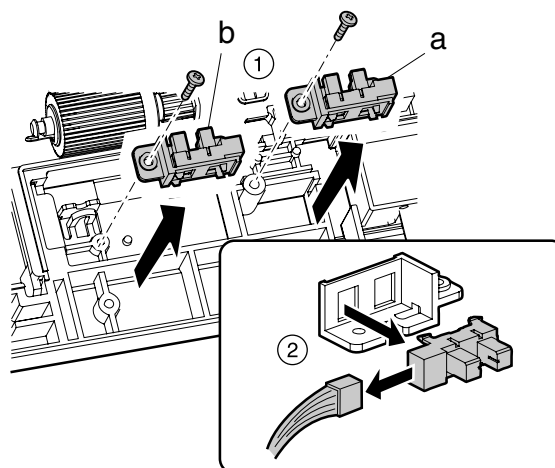
- 4) Remove the paper pickup solenoid.



f. Paper feed tray upper limit detector

g. Paper feed tray empty detector

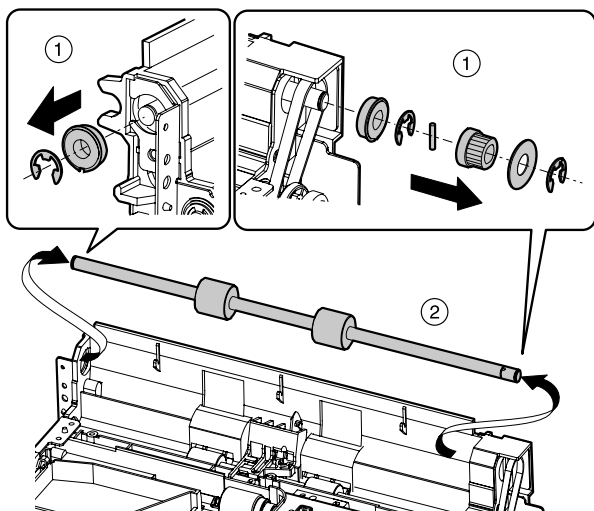
- 1) Remove the paper feed tray 3, 4.
(See "(1)Paper feed unit (Paper feed tray 3, 4)")
- 2) Remove the cover. (See "e. Paper pickup solenoid")
- 3) Remove the paper feed tray upper detector unit (a) and the paper feed tray empty detector unit (b).



- 4) Remove the detector.

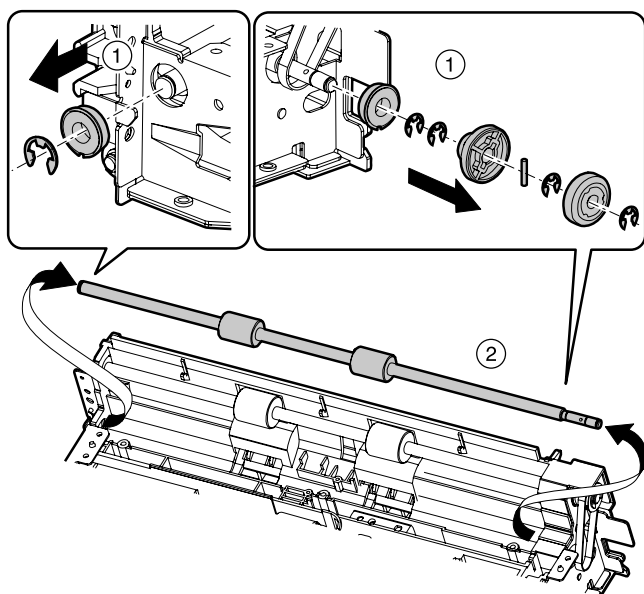
h. transport roller 8, 10

- 1) Remove the paper feed tray 3, 4.
(See "(1)Paper feed unit (Paper feed tray 3, 4)")
- 2) Remove the cover. (See "e. Paper pickup solenoid")
- 3) Remove the E-ring and remove the pulley bearing.
- 4) Remove the transport roller 8, 10.



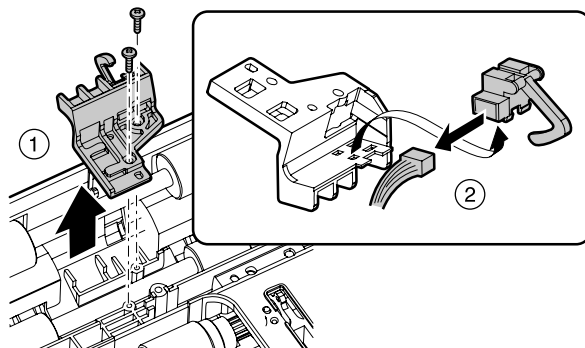
i. Transport roller 5, 7

- 1) Remove the paper feed tray 3, 4.
(See "(1)Paper feed unit (Paper feed tray 3, 4)")
- 2) Remove the cover. (See "e. Paper pickup solenoid")
- 3) Remove the E-ring and remove the pulley bearing.
- 4) Remove the transport roller 5, 7.



j. Paper pass detector

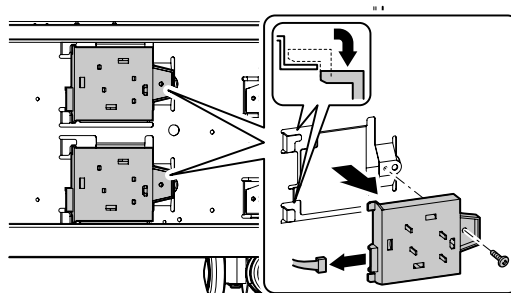
- 1) Remove the paper feed tray 3, 4.
(See "(1)Paper feed unit (Paper feed tray 3, 4)")
- 2) Remove the cover. (See "e. Paper pickup solenoid")
- 3) Remove the paper pass detector unit.
- 4) Remove the paper pass detector.



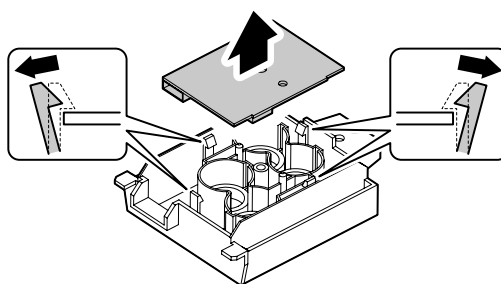
(2) Others

a. Paper size detection PWB

- 1) Remove the paper feed tray.
(See "(1) Paper feed unit (Paper feed tray 3, 4)")
- 2) Disconnect the connector, and remove the paper size detection PWB unit.

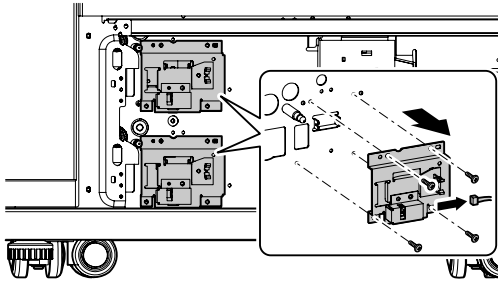


- 3) Release the pawl, and remove the paper size detection PWB.

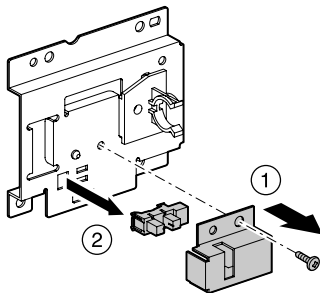


b. Paper remaining quantity detector

- 1) Remove the paper feed tray.
(See "(1) Paper feed unit (Paper feed tray 3, 4)")
- 2) Disconnect the connector, and remove the paper remaining quantity detector unit.

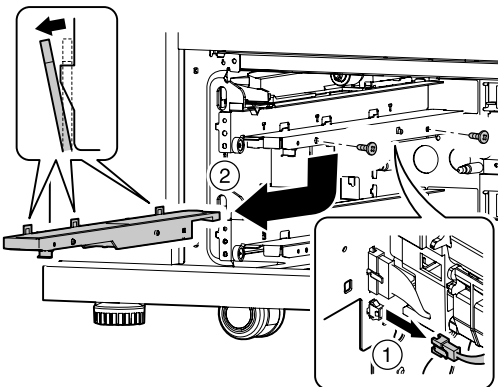


- 3) Remove the paper remaining quantity detector cover. Remove the paper remaining quantity detector.

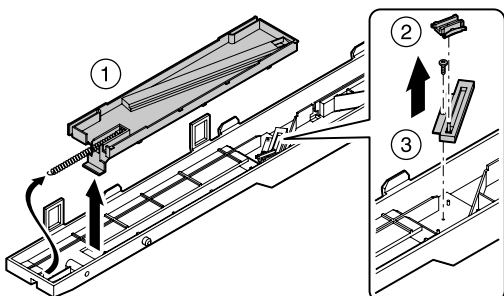


c. Paper feed tray paper width detector

- 1) Remove the paper feed tray 3, 4 unit lower.
(See "(1) Paper feed unit (Paper feed tray 3, 4)")
- 2) Disconnect the connector, and release the pawl, and remove the width detection unit.

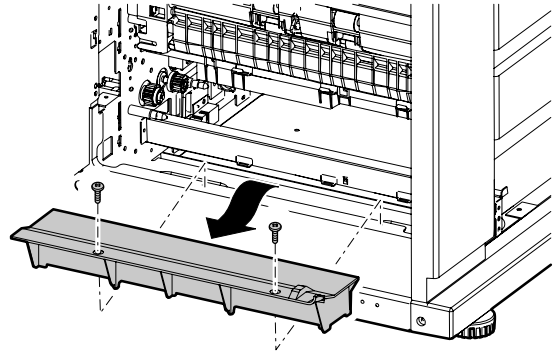


- 3) Remove the spring, and remove the paper width mounting base. Remove the width detection arm and remove the paper feed tray paper width detector.

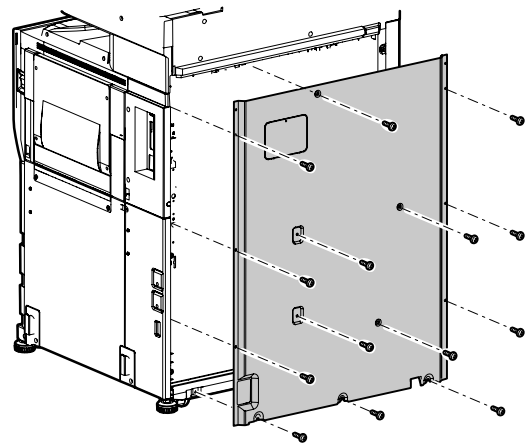


d. Dry heater

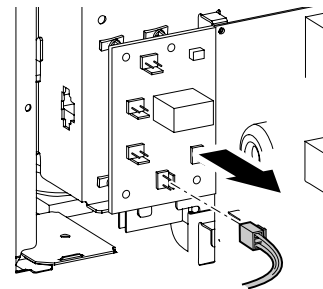
- 1) Remove the paper feed tray 3, 4 unit lower.
(See "(1) Paper feed unit (Paper feed tray 3, 4)")
- 2) Remove the paper feed lower cover.



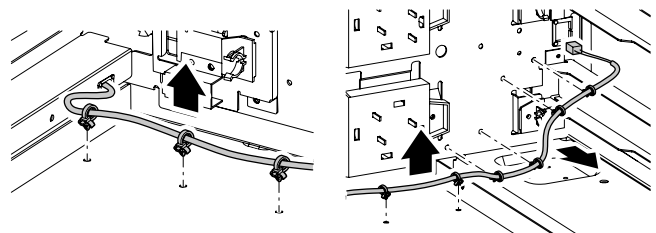
- 3) Remove the rear cabinet.



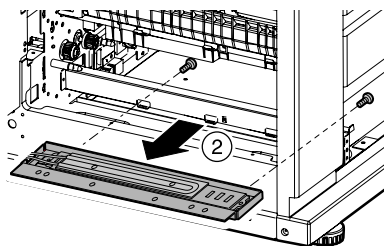
- 4) Disconnect the connector from the dehumidifying heater relay PWB.



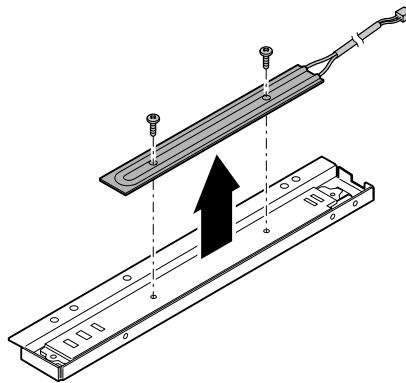
- 5) Remove the snap band.



6) Remove the dry heater unit.



7) Remove the dry heater.



4. Maintenance

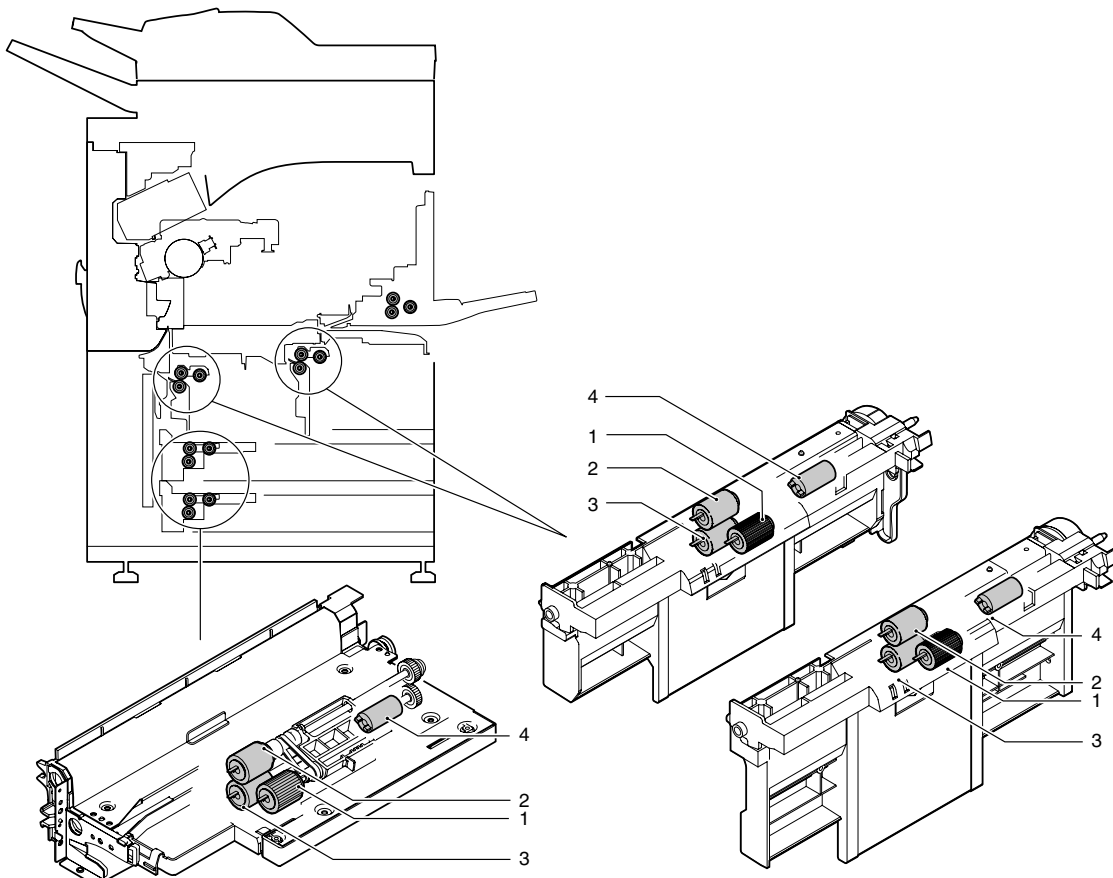
×: Check ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

(Clean, replace, or adjust according to necessity.)

		55ppm (PM: 250K)	When calling	250 K	500 K	750 K	1000 K	1250 K	1500 K	1750 K	2000 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
		62ppm/70ppm (PM: 300K)		300 K	600 K	900 K	1200 K	1500 K	1800 K	2100 K	2400 K	
Unit name	No.	Part name										
Tray paper feed unit	1	Pickup roller	×	○	○	○	○	○	○	○	○	(Note 1)
	2	Paper feed roller	×	○	○	○	○	○	○	○	○	(Note 1)
	3	Separation roller	×	○	○	○	○	○	○	○	○	(Note 1)
	4	Torque limiter	×	×	×	×	×	×	×	×	×	(Note 1)

(Note 1) Replacement reference: For replacement, refer to each paper feed counter value.

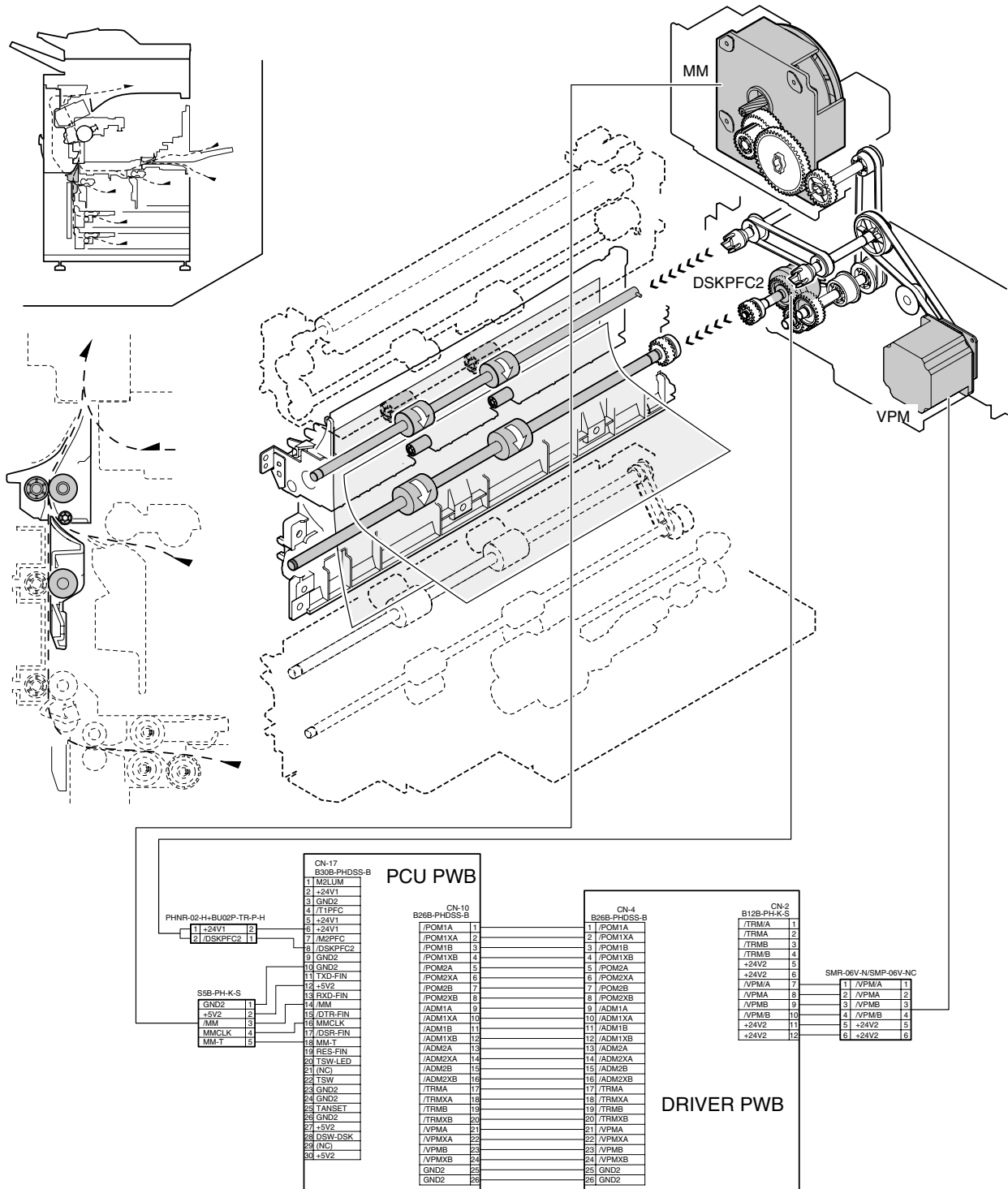
- Paper feed tray 1 and 2: 200K or 1 year
- Paper feed tray 3 and 4: 100K or 1 year
- Torque limiter: 800K



[G] PAPER TRANSPORT SECTION

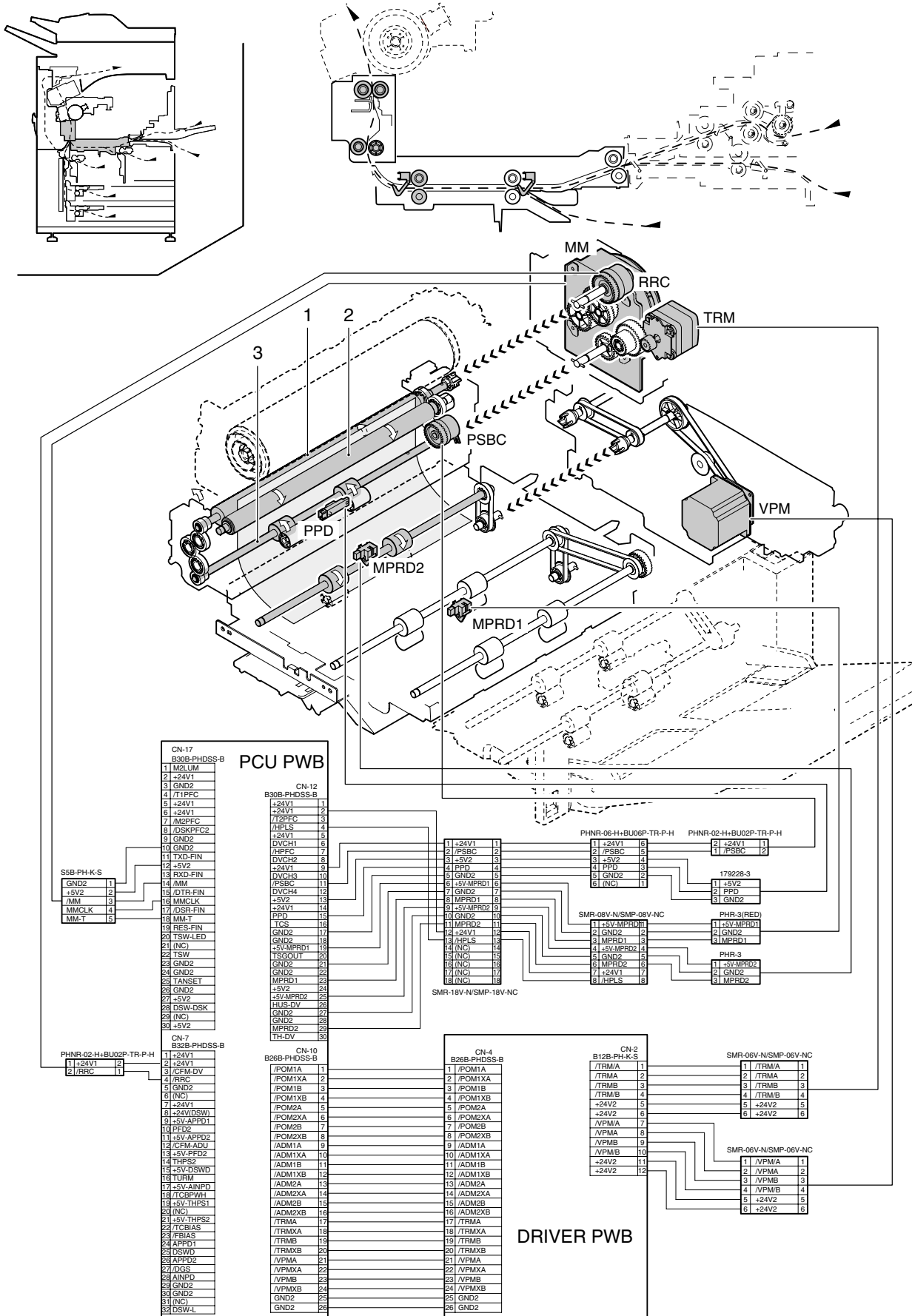
1. Electrical and mechanism relation diagram

A. Vertical paper transport section 1



Code	Signal name	Name	Function/Operation	Type	NOTE
DSKPFC2	DSKPFC2	Paper feed tray 3/4 paper transport clutch 2	Paper transport roller 11 ON/OFF control.	Electromagnetic clutch	
VPM	VPM	Vertical paper transport motor	Drives the paper transport rollers 4 and 13.	Stepping motor	Normal speed mode
MM	MM	Main motor	Drives the paper feed trays 1, 2, 3, and 4, and the manual paper feed section.	DC brush-less motor	Paper pass

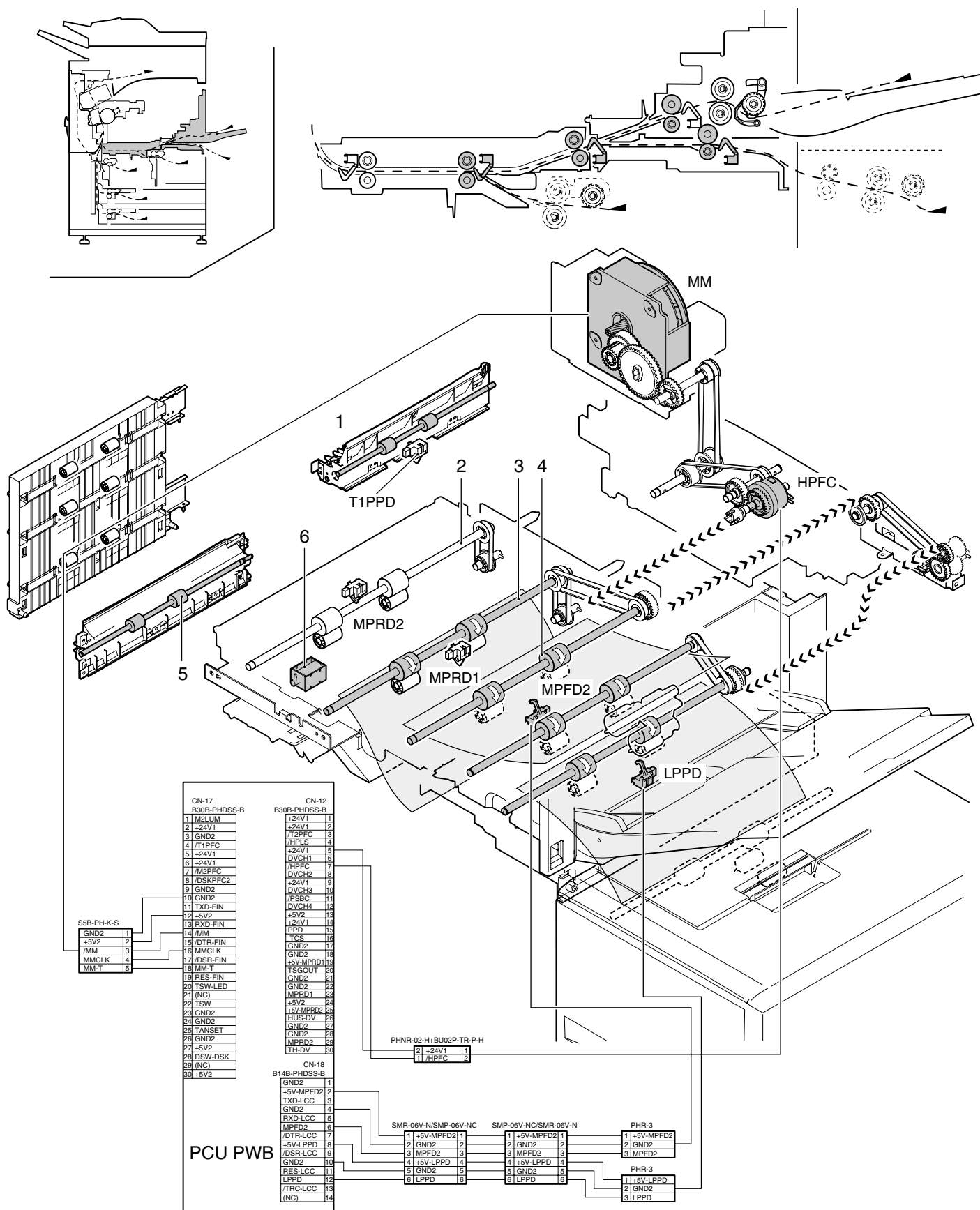
B. Vertical paper transport section 2



Code	Signal name	Name	Function/Operation	Type	NOTE
MPRD1	MPRD1	Paper feed tray 2 paper pass detector 1	Manual feed/paper feed tray 2/LCC paper pass detection	Transmission type	Paper transport system sensor
MPRD2	MPRD2	Paper feed tray 2 paper pass detector 2	Manual feed/paper feed tray 2/LCC paper pass detection	Transmission type	Paper transport system sensor
PPD	PPD	Resist roller front paper pass detector	Paper pass detection in front of resist roller	Reflection type	Paper transport system sensor
RRC	RRC	Resist roller clutch	Resist roller ON/OFF control	Electromagnetic clutch	
PSBC	PSBC	Resist roller brake clutch	Resist roller braking	Electromagnetic clutch	
MM	MM	Main motor	Drives the paper feed trays 1, 2, 3, and 4, and the manual paper feed section.	DC brush-less motor	Paper pass
TRM	TRM	Resist roller front drive motor	Drives the paper transport roller 15.	Stepping motor	Normal speed mode/ Resist roller front paper transport timing control (Warp amount control)
VPM	VPM	Vertical paper transport motor	Drives the paper transport rollers 4 and 13.	Stepping motor	Normal speed mode

No.	Name	Function/Operation
1	Resist roller (Drive)	Transports paper to the transfer section. / Controls the transport timing of paper to adjust the relationship between images and paper.
2	Resist roller (Idle)	Applies a pressure to paper and the resist roller to provide transport power of the transport roller to paper.
3	Transport roller 15	Transports paper to the transport resist roller.

C. Horizontal paper transport section



Code	Signal name	Name	Function/Operation	Type	NOTE
MPFD2	MPFD2	Manual feed paper pass detector 2	Manual tray and LCC unit paper pass detection	Transmission type	Paper transport system sensor
MM	MM	Main motor	Drives the paper feed trays 1, 2, 3, and 4, and the manual paper feed section.	DC brushless motor	Paper pass
HPFC	HPFC	Horizontal paper transport clutch	Manual paper feed, paper feed tray 2 section, LCC paper transport roller ON/OFF control	Electromagnetic clutch	
MPRD1	MPRD1	Paper feed tray 2 paper pass detector 1	Manual feed/paper feed tray 2, LCC paper pass detection	Transmission type	Paper transport system sensor
MPRD2	MPRD2	Paper feed tray 2 paper pass detector 2	Manual feed/paper feed tray 2/LCC paper pass detection	Transmission type	Paper transport system sensor
T1PPD	T1PPD	Paper pass detector (Paper feed tray 1)	Paper pass detection from paper feed tray 1	Transmission type	Paper transport system sensor

No.	Name	Function/Operation
1	Transport roller 15	Transports the paper to resist roller.
2	Transport roller 4	Transports paper from the transport roller 3 to the transport roller 15.
3	Transport roller 3	Transports paper from the paper feed tray 2 and the transport roller 2 to the transport roller 3.
4	Transport roller 2	Transports paper from the manual paper feed and transport roller 2 to the transport roller 3.
5	Transport roller 13	Transports to the transport roller 15.
6	Paper guide lock solenoid	Lock the horizontal transport paper guide.

2. Operational descriptions

A. Outline

The paper transport section serves the function of transferring paper from each paper feed port to the registration roller section.

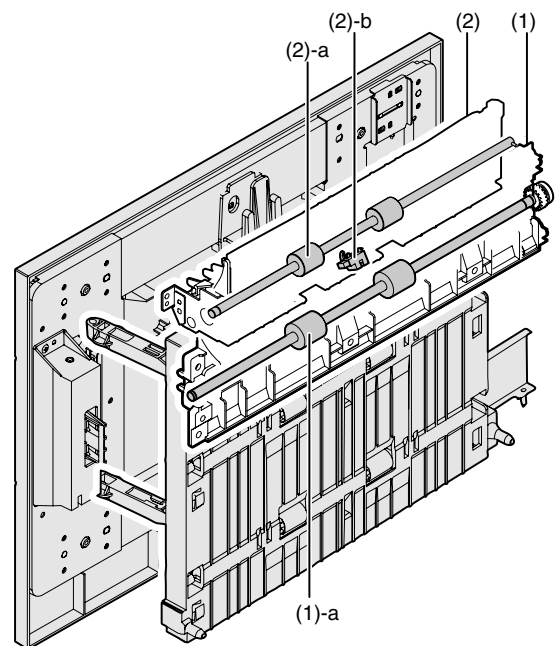
Paper from manual feed, paper feed tray units 1 and 2 (optional), and the right paper feed tray of the paper feed tray units 1 and 2 is transported horizontally, whereas paper from the left paper feed tray of the paper feed tray units 1 and 2, paper feed tray 3 and paper feed tray 4 is transported vertically to the registration roller section.

After the leading edge of the paper is synchronized with the leading edge of the drum image in the registration roller section, the paper that is transfer printed with the image in the transfer section passes through the fusing section and is discharged either face-down or face-up.

3. Disassembly and assembly

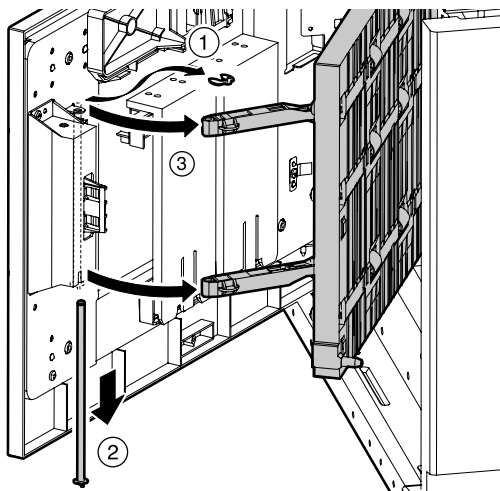
A. Vertical paper transport section 1

No.	Unit	No.	Parts	Maintenance
(1)	Paper feed tray 1 and 2 left PG unit	a	Transport roller 11 (Drive)	× ○
(2)	Vertical transport upper unit	a	Transport roller 13 (Drive)	× ○
		b	Transport sensor	

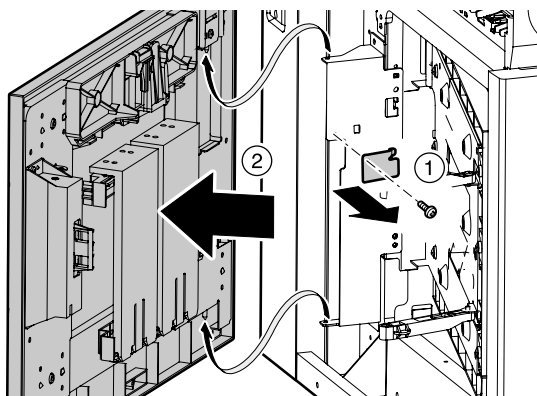


(1) Paper feed tray 1 and 2 left PG unit

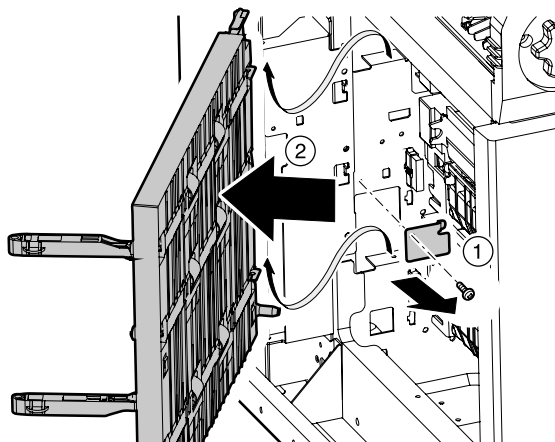
- 1) Open the left lower cabinet.
- 2) Remove the resin E-ring, and remove the pressure fulcrum shaft.



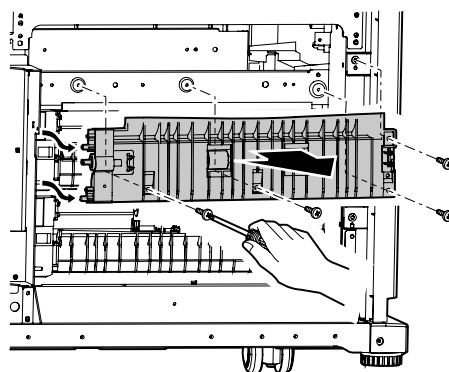
- 3) Remove the left vertical transport PG stopper plate.
- 4) Open the left door, and remove the left lower cabinet unit.



- 5) Remove the left vertical transport PG stopper plate.
- 6) Open the left vertical transport unit, and remove it.

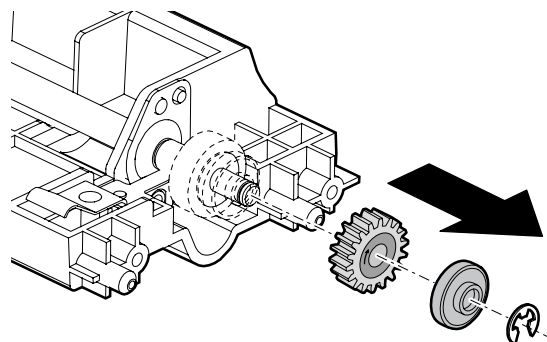


- 7) Remove the paper feed tray 1 and 2 left PG unit.



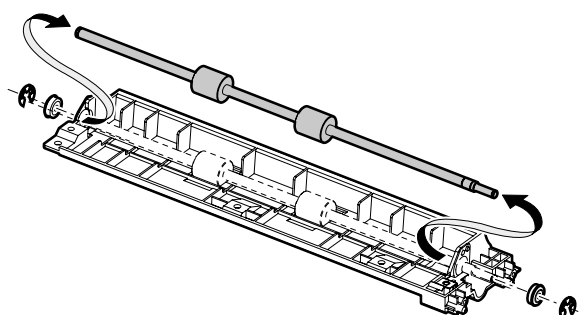
a. Transport roller 11 (Drive)

- 1) Remove the paper feed tray 1 and 2 left PG unit.
(See "(1) Paper feed tray 1 and 2 left PG unit")
- 2) Remove the E-ring, the drive collar, and the one-way gear.



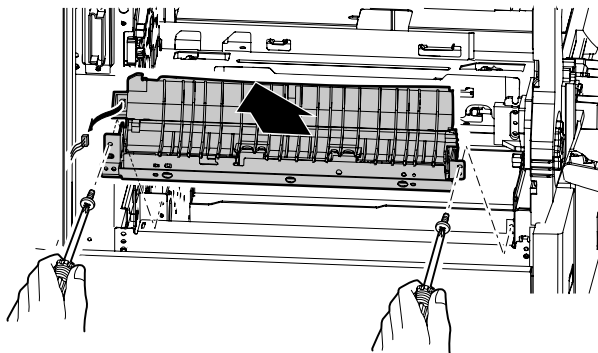
* Be careful of the installing direction.

- 3) Remove the E-ring and the bearing, and remove the transport roller 11 (Drive).

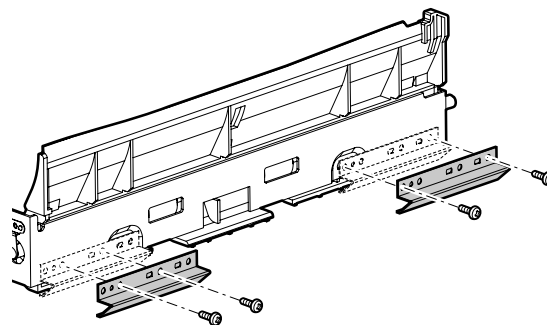


(2) Vertical transport upper unit

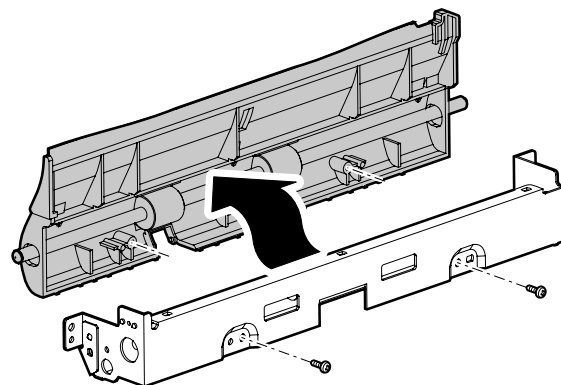
- 1) Remove the resist roller unit. (See "B-(1) Resist roller unit")
- 2) Disconnect the connector, and remove the vertical transport upper unit.



- 4) Remove the upper PG holding plate.

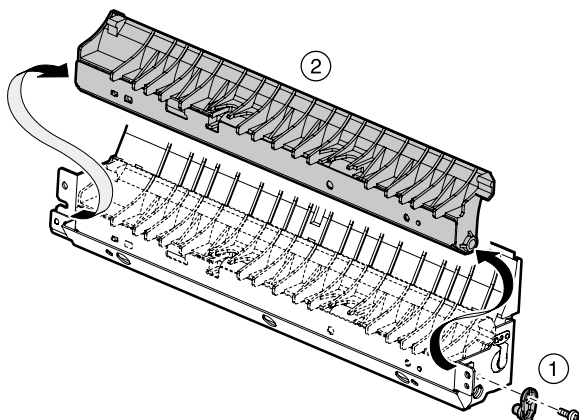


- 5) Remove the vertical transport upper PG.

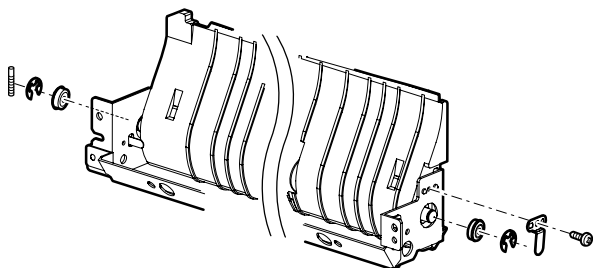


a. Transport roller 13 (Drive)

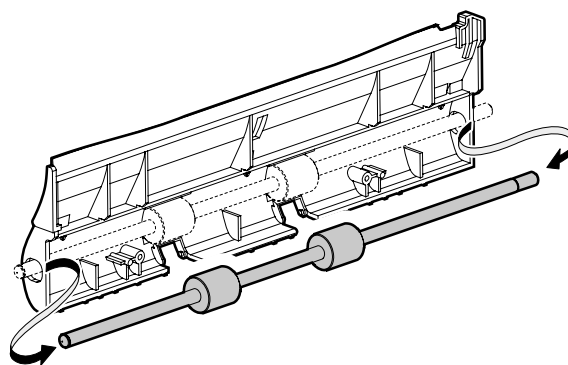
- 1) Remove the vertical transport upper unit. (See "(2) Vertical transport upper unit")
- 2) Remove the upper transport fulcrum plate holder, and remove the vertical transport upper open/close PG.



- 3) Remove the open/close PG earth, and remove the drive connection stopper screw and the bearing.

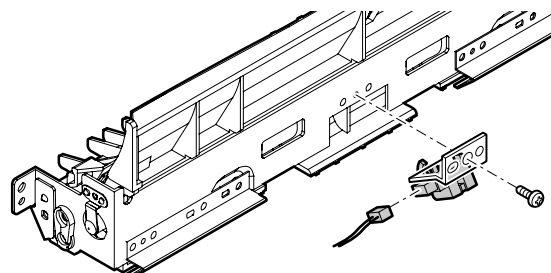


- 6) Remove the transport roller 13 (Drive).



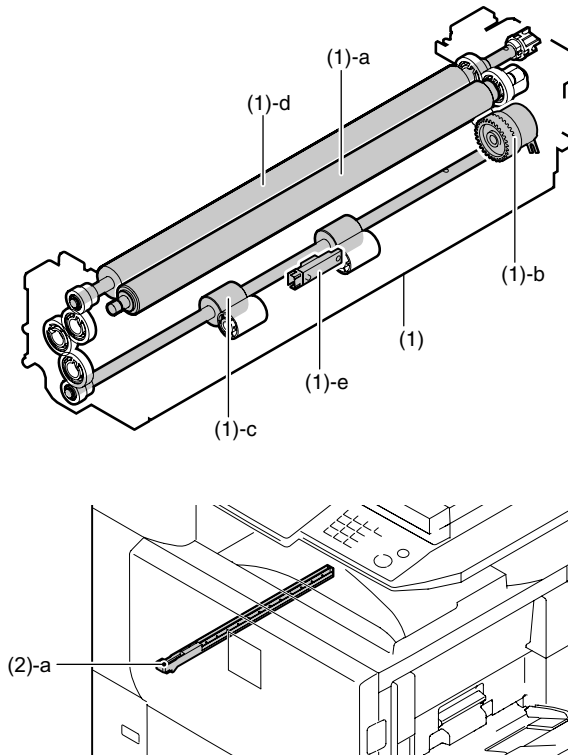
b. Transport sensor

- 1) Remove the vertical transport upper unit. (See "(2) Vertical transport upper unit")
- 2) Check each sensors.



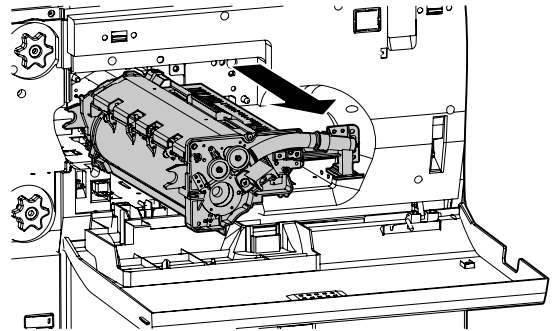
B. Vertical paper transport section 2

No.	Unit	No.	Parts	Maintenance
(1)	Resist roller unit	a	Resist roller (Idle)	× ○
		b	Resist roller brake clutch	
		c	Transport roller 15	× ○
		d	Resist roller (Drive)	× ○
		e	Resist roller front paper pass detector	
(2)	Others	a	Paper dust cleaner	× ▲

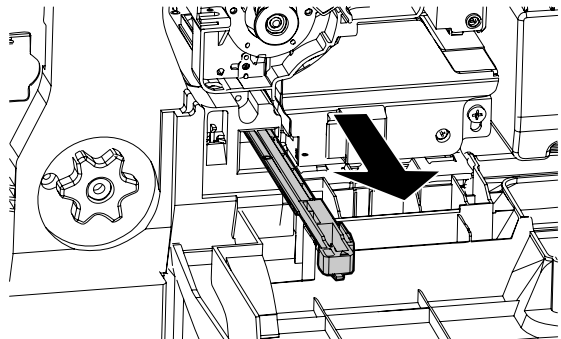


(1) Resist roller unit

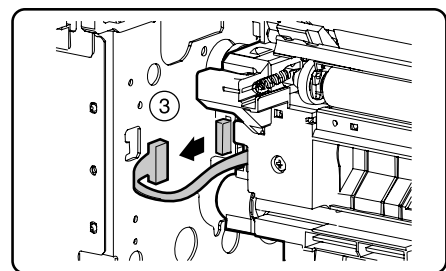
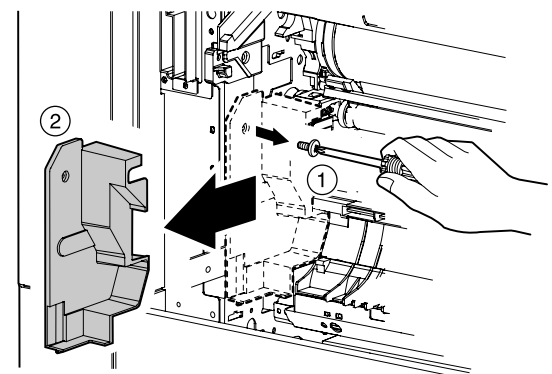
- 1) Open the front door, and open the process cover. Remove the process unit.



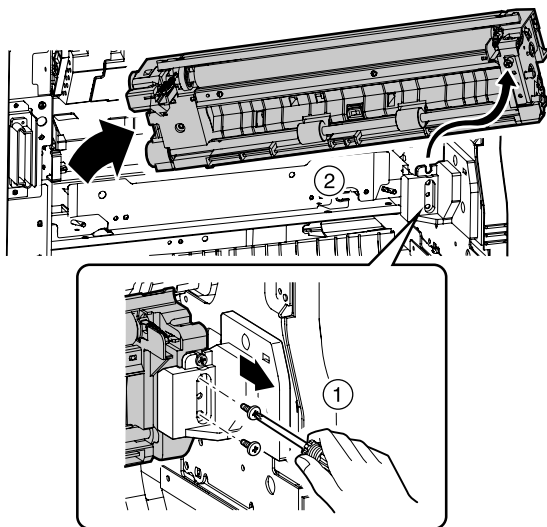
- 2) Remove the paper dust removing unit.



- 3) Remove the rear frame side cover, and disconnect the connector.

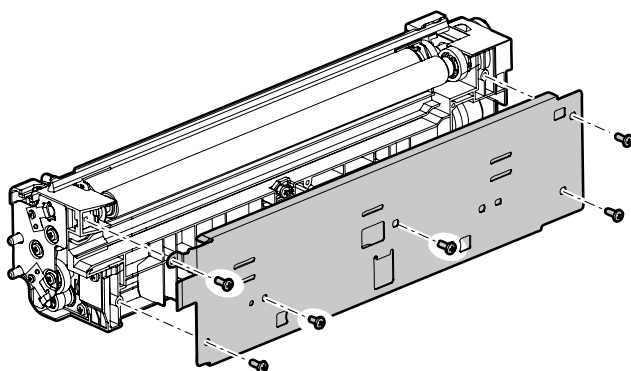


- 4) Remove the resist roller unit.

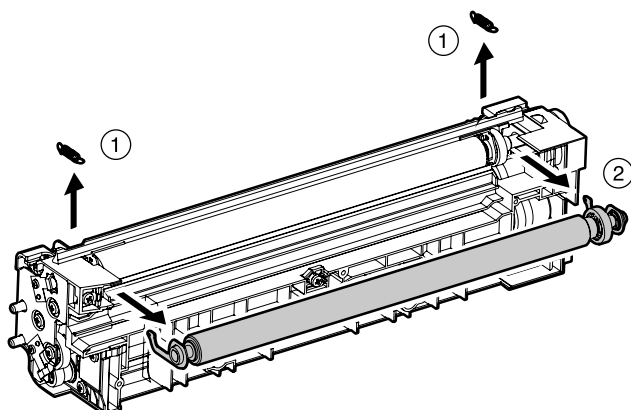


a. Resist roller (Idle)

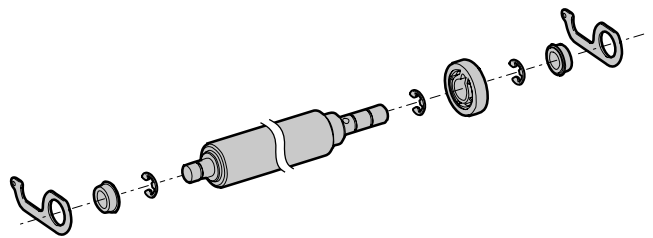
- 1) Remove the resist roller unit. (See "(1) Resist roller unit")
- 2) Remove the cover.



- 3) Remove the follower roller tension spring.
- 4) Remove the resist roller (Idle) unit.

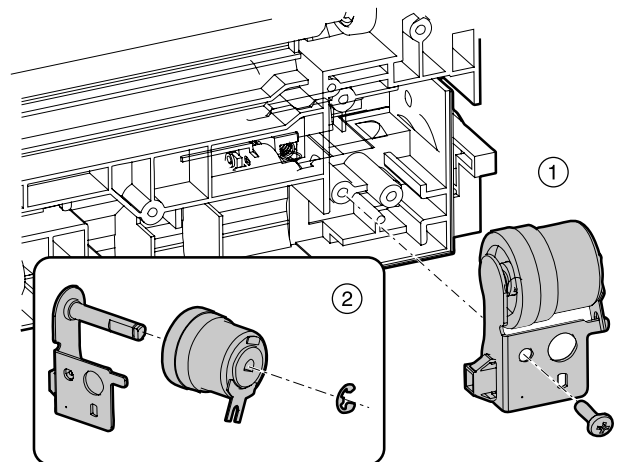


- 5) Remove the bearing, and remove the E-ring, the gear, and the pin.



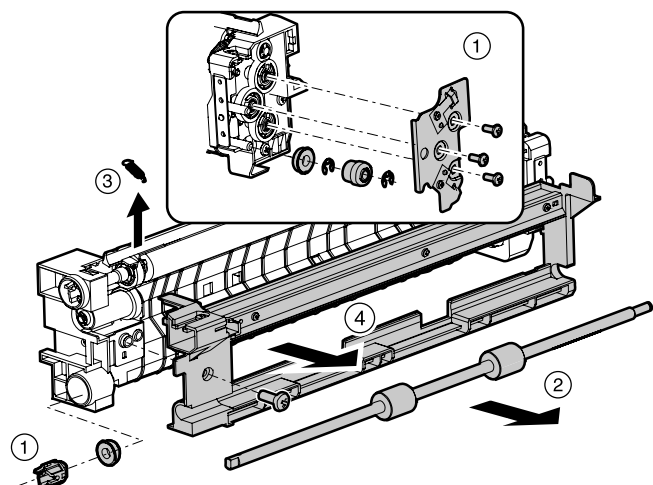
b. Resist roller brake clutch

- 1) Remove the resist roller unit. (See "(1) Resist roller unit")
- 2) Remove the cover. (See "a. Resist roller (Idle)")
- 3) Remove the resist roller brake clutch fixture.
- 4) Remove the E-ring and the resist roller break clutch.



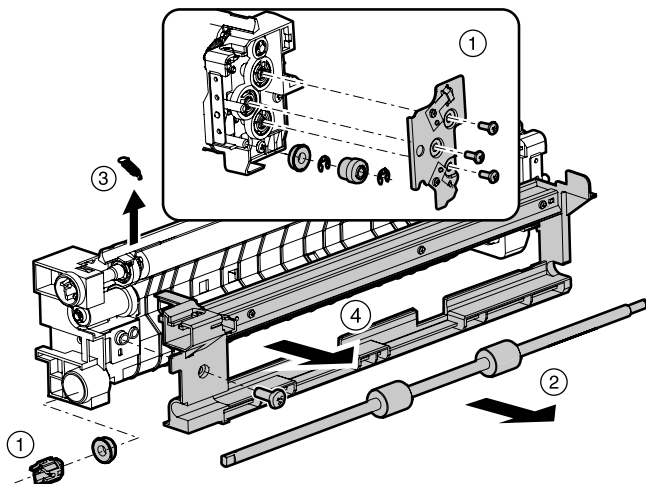
c. Transport roller 15

- 1) Remove the resist roller unit. (See "(1) Resist roller unit")
- 2) Remove the front side cover.
- 3) Remove the E-ring, the gear, and the bearing.
- 4) Remove the coupling bearing on the rear side.
- 5) Remove the transport roller 15.

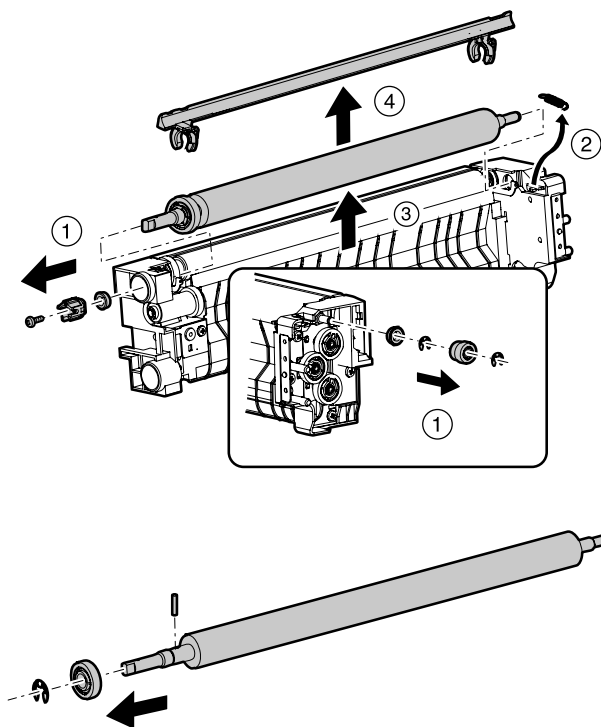


d. Resist roller (Drive)

- 1) Remove the resist roller unit. (See "(1) Resist roller unit")
- 2) Remove the follower roller and the tension spring.
- 3) Remove the cover on the front side.
- 4) Remove the transport roller 15.
- 5) Remove the paper guide.

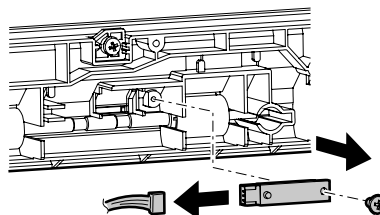


- 6) Remove the E-ring, the gear, and the bearing.
- 7) Remove the coupling on the rear side.
- 8) Remove the resist roller (Drive).



e. Resist roller front paper pass detector

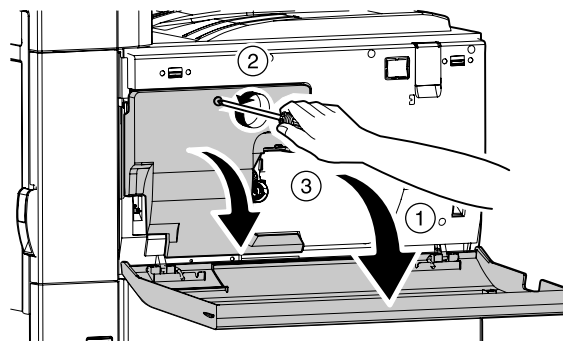
- 1) Remove the resist roller unit. (See "(1) Resist roller unit")
- 2) Remove the cover. (See "a. Resist roller (Idle)")
- 3) Remove the resist roller front paper pass detector.



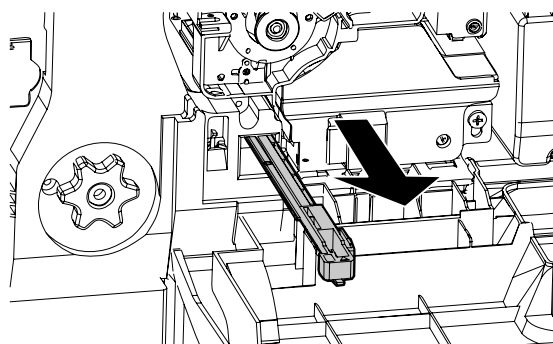
(2) Others

a. Paper dust cleaner

- 1) Open the front cabinet. Open the process DV cover.

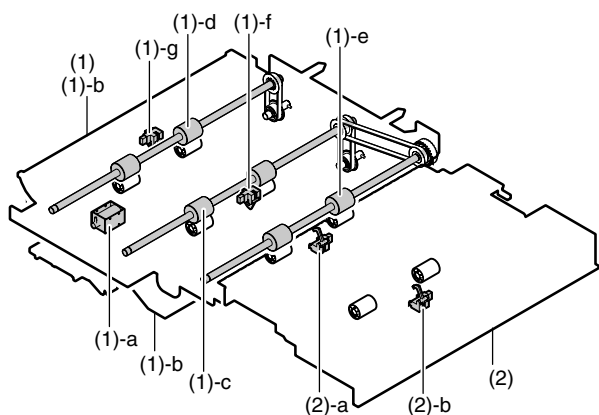


- 2) Remove the paper dust cleaner.



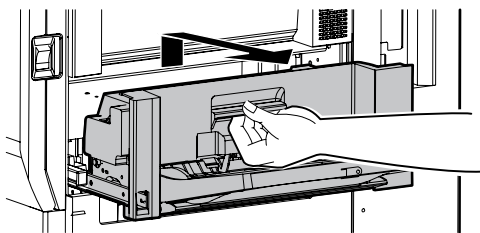
C. Horizontal paper transport section

No.	Unit	No.	Parts	Maintenance
(1)	Relay pass unit	a	Paper guide lock solenoid	
		b	Paper guides	○
		c	Transport roller 3 (drive)	× ○
		d	Transport roller 4 (Drive)	× ○
		e	Transport roller 2 (Drive)	× ○
		f	Paper feed tray 2 paper pass detector 1	
		g	Paper feed tray 2 paper pass detector 2	
(2)	No. 5 paper feed paper pass unit	a	Manual paper pass detector 2	
		b	No. 5 paper feed paper pass detector	



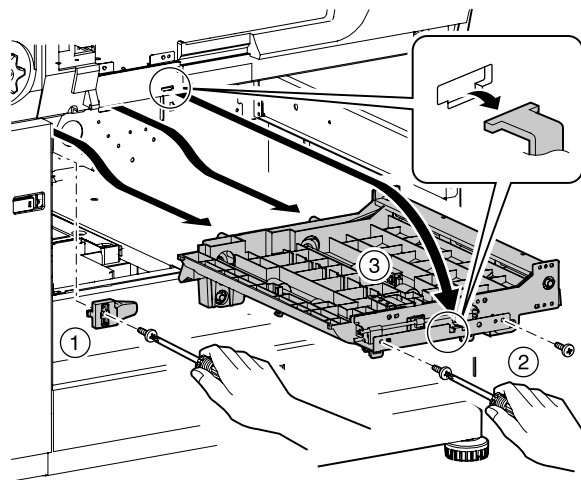
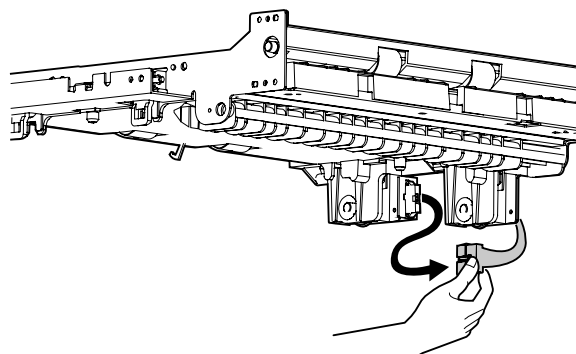
(1) Relay pass unit

- 1) Pull out the multi manual paper feed tray unit.



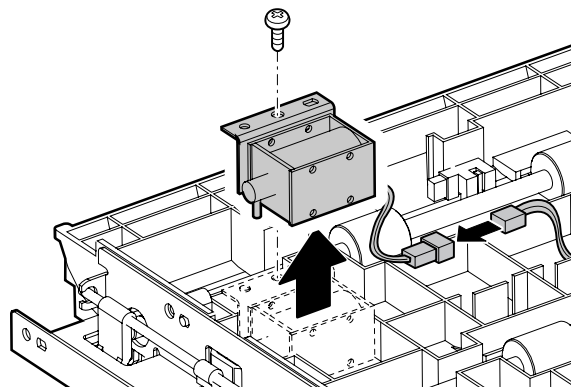
- 2) Remove the paper feed tray units 1 and 2.
(See "A-(1) Paper feed tray units 1 and 2" in the "PAPER TRANSPORT SECTION")
- 3) Remove the toner cartridge, the OPC drum, and the toner hopper, and remove the front door.

- 4) Remove the paper feed reverse guide.
Disconnect the connector, and remove the relay pass unit.

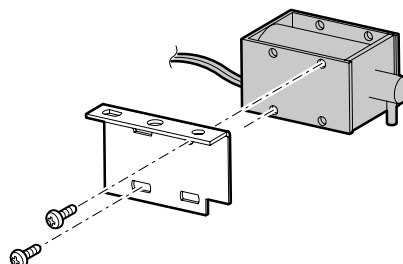


a. Paper guide lock solenoid

- 1) Remove the relay pass unit. (See "(1) Relay pass unit")
- 2) Remove the connector, and remove the paper guide lock solenoid unit.

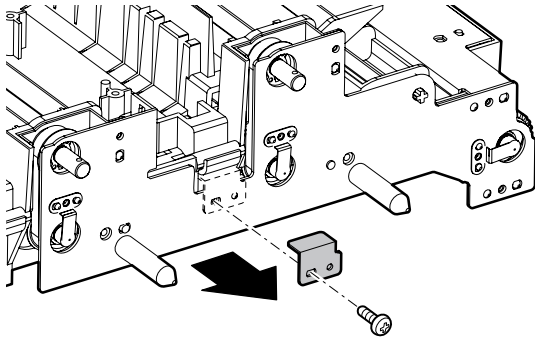


- 3) Remove the paper guide lock solenoid.

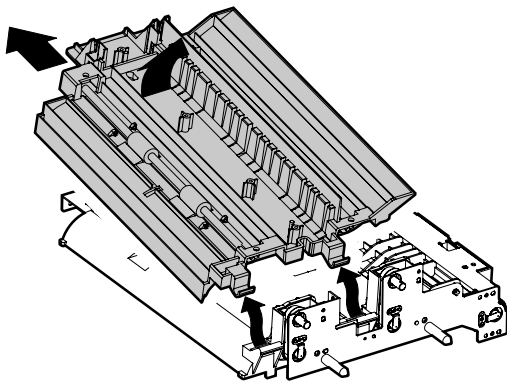


b. Paper guides

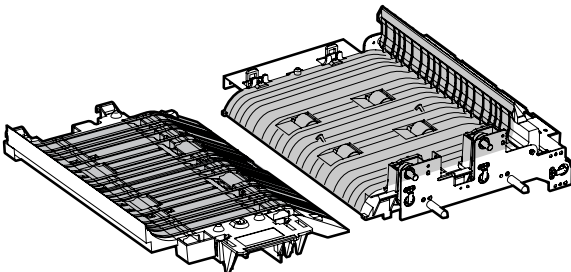
- 1) Remove the relay pass unit. (See "(1) Relay pass unit")
- 2) Remove the metal fixture.



- 3) Remove the lower paper guide unit.



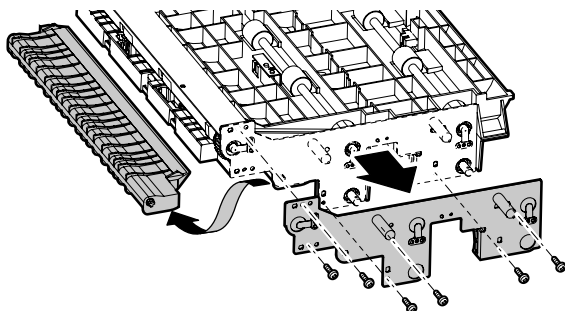
- 4) Clean each paper guides.



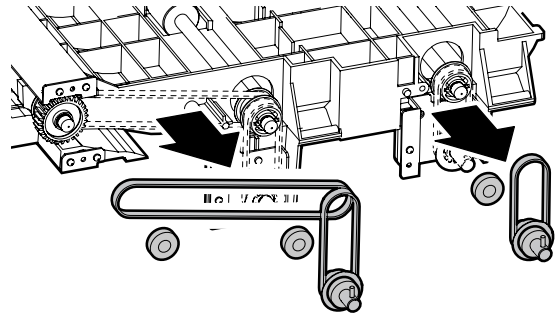
c. Transport roller 3 (drive)

d. Transport roller 4 (Drive)

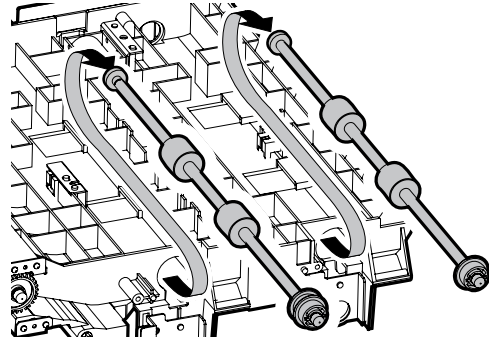
- 1) Remove the relay pass unit. (See "(1) Relay pass unit")
- 2) Remove lower paper guide unit. (See "b. Paper guides")
- 3) Remove the rear positioning plate, and remove the paper feed port PG of the paper feed tray 1 and 2.



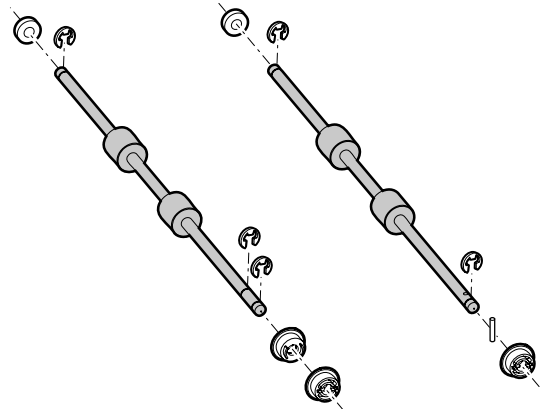
- 4) Remove the bearing, the belt, and the relay pass drive shaft unit.



- 5) Remove the transport roller 3 and 4 (Drive).

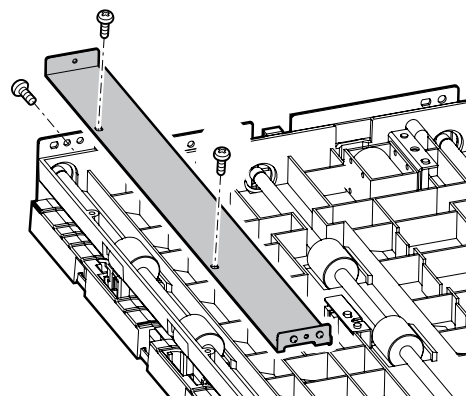


- 6) Remove the E-ring from transport roller 3 and 4 (Drive), and remove the belt pulley.

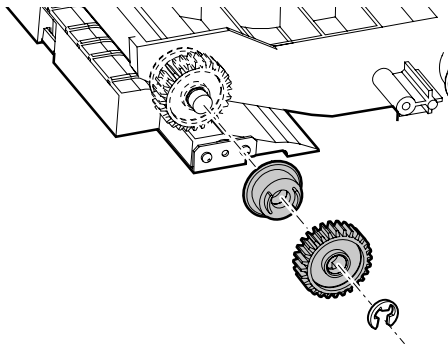


e. Transport roller 2 (Drive)

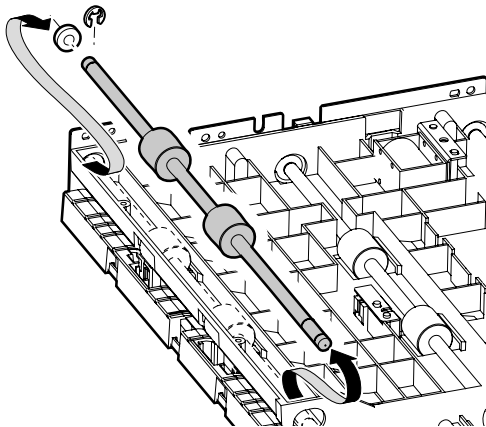
- 1) Remove the relay pass unit. (See "(1) Relay pass unit")
- 2) Remove lower paper guide unit. (See "b. Paper guides")
- 3) Remove the rear positioning plate, and remove the paper feed PG of the paper feed tray 1/2. (See "c. Transport roller 3 (Drive)")
- 4) Remove the paper entry side upper plate.



- 5) Remove the E-ring, and remove the gear and the belt pulley.



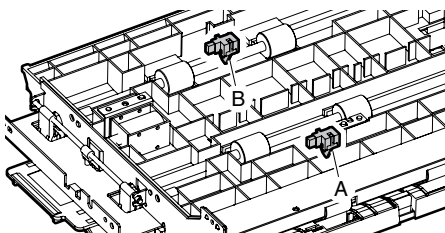
- 6) Remove the transport roller 2 (Drive) unit.
- 7) Remove the E-ring from the transport roller 2 (Drive).



f. Paper feed tray 2 paper pass detector 1

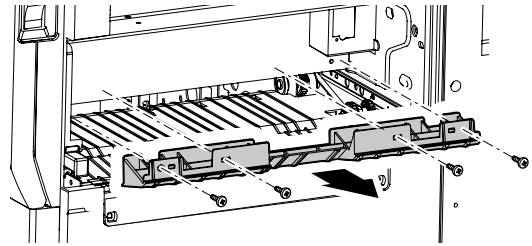
g. Paper feed tray 2 paper pass detector 2

- 1) Remove the relay pass unit. (See "(1) Relay pass unit")
- 2) Check the paper feed tray 2 paper pass detector 1 (A) and the paper feed tray 2 paper pass detector 2 (B).

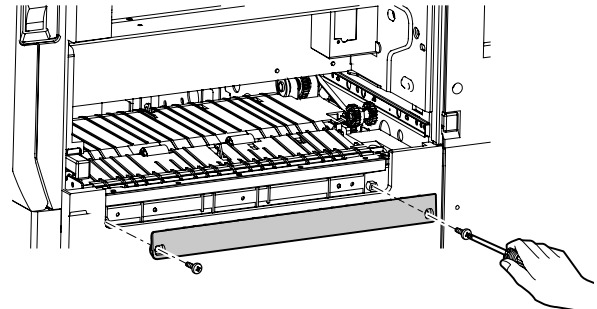


(2) No. 5 paper feed relay unit

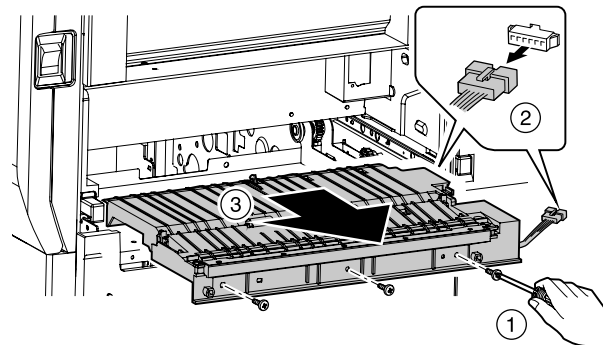
- 1) Remove the multi manual paper feed unit.
(See "A-(1) Multi manual paper feed tray unit" in the "MANUAL PAPER FEED SECTION")
- 2) Remove the manual interface paper guide upper.



- 3) Remove the manual feed relay paper guide upper.



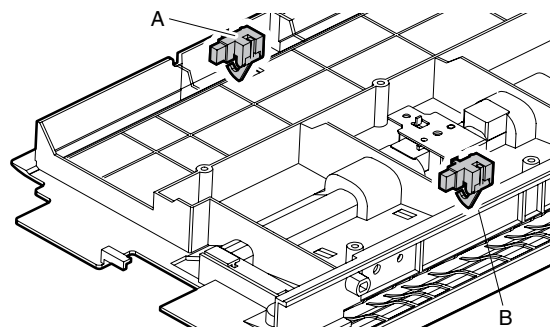
- 4) Lift the No. 5 paper feed relay unit, and remove the connector.
- 5) Remove the No. 5 paper feed relay unit.



a. Manual paper pass detector 2

b. No. 5 paper feed relay detector

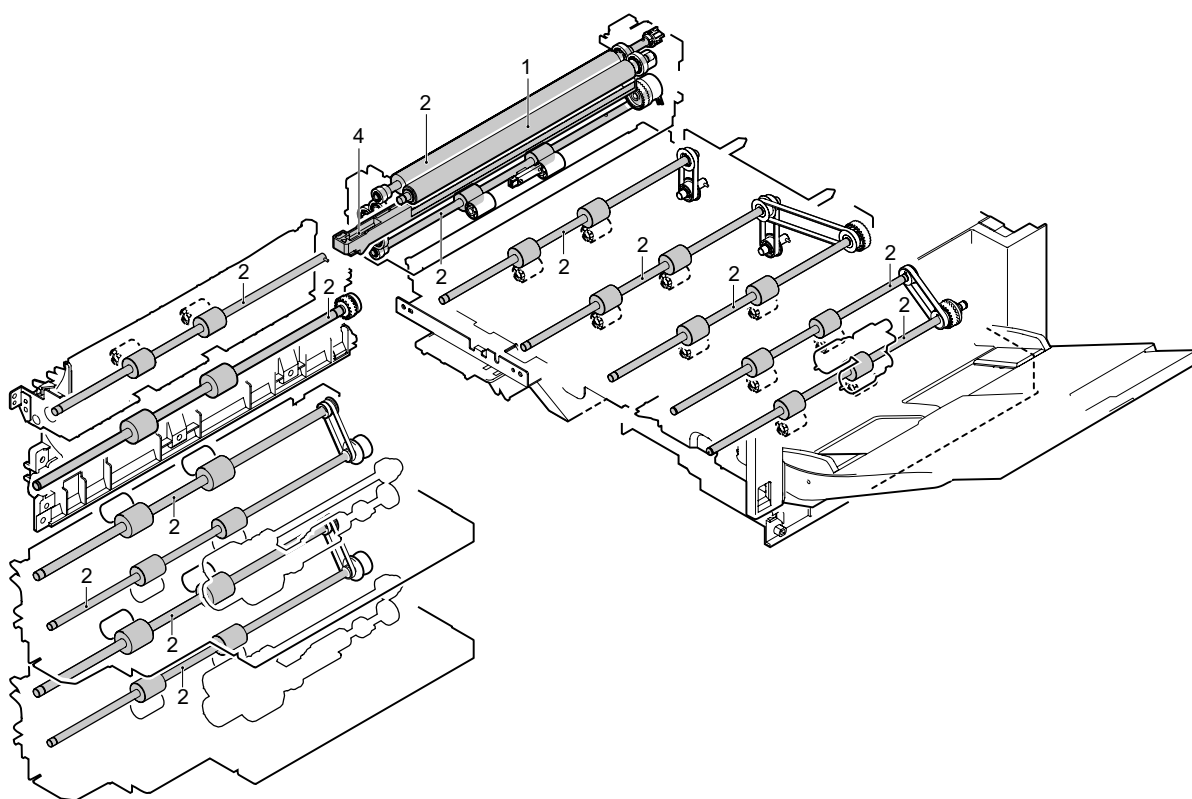
- 1) Remove the multi manual paper feed unit.
(See "A-(1) Multi manual paper feed tray unit" in the "MANUAL PAPER FEED SECTION")
- 2) Remove the No. 5 paper feed relay unit.
- 3) Check the manual paper pass detector 2 (A) and the No. 5 paper feed relay detector (B).



4. Maintenance

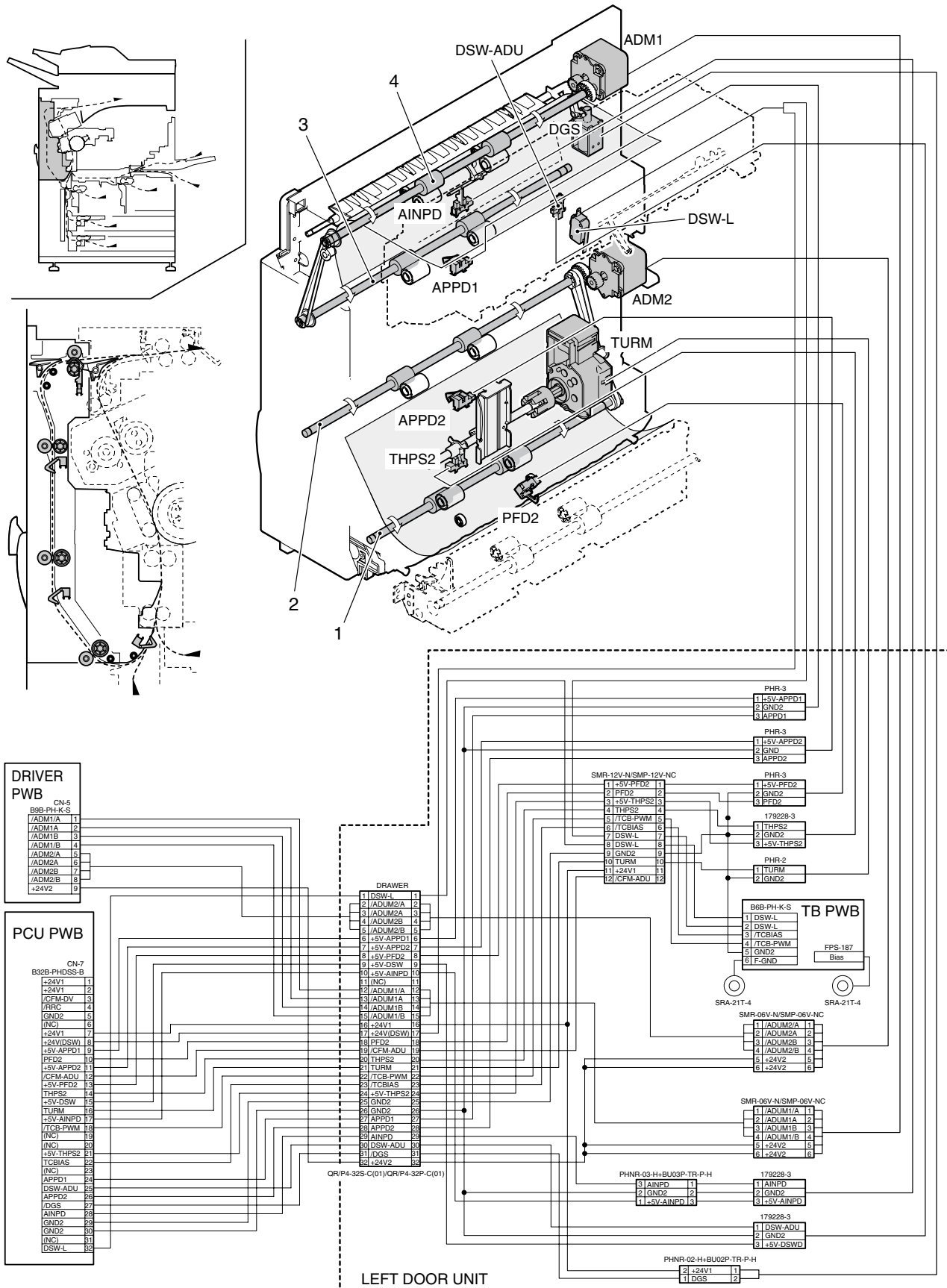
× : Check ○ : Clean ▲ : Replace △ : Adjust ☆ : Lubricate □ : Shift position
(Clean, replace, or adjust as necessary.)

			When calling	250 K	500 K	750 K	1000 K	1250 K	1500 K	1750 K	2000 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
				300 K	600 K	900 K	1200 K	1500 K	1800 K	2100 K	2400 K	
Unit name	No.	Part name										
Transport section	1	PS follower roller	×	○	○	○	○	○	○	○	○	
	2	Transport rollers	×	○	○	○	○	○	○	○	○	
	3	Transport paper guides	○	○	○	○	○	○	○	○	○	
	4	Paper dust clean unit	×	▲	▲	▲	▲	▲	▲	▲	▲	



[H] DUPLEX SECTION

1. Electrical and mechanism relation diagram



Code	Signal name	Name	Function/Operation	Type	NOTE
AINPD	AINPD	Duplex (ADU) paper entry detector	Duplex (ADU) paper entry detection, detection of paper exit to finisher	Transmission type	Paper transport system sensor
APPD1	APPD1	Duplex (ADU) paper pass detector 1	Duplex (ADU) upstream paper pass detection	Transmission type	Paper transport system sensor
APPD2	APPD2	Duplex (ADU) paper pass detector 2	Duplex (ADU) midstream paper pass detection	Transmission type	Paper transport system sensor
DSW-ADU	DSW-ADU	Duplex (ADU) cover open/close detector	Duplex (ADU) cover open/close detection	Transmission type	Door switch
PFD2	PFD2	Paper pass detector 2	Paper pass detection (Left door unit) from duplex (ADU)/Paper feed tray 1, 3, 4	Transmission type	Paper transport system sensor
THPS2	THPS2	Transfer belt contact/separation home position sensor 2	Transfer belt separation home position detection 2	Transmission type	Other sensor, switch
ADM1	ADM1	Duplex (ADU) motor 1	Drives the paper transport roller 2 and the paper transport roller 19	Stepping motor	High speed only
ADM2	ADM2	Duplex (ADU) motor 2	Drives the paper transport roller 20 and 21	Stepping motor	Selection of Normal speed/ High speed
TURM	TURM	Transfer separation motor	Drives and separates the transfer belt	DC brush motor	The transfer belt is pressed on the OPC drum only during printing.
DGS	DGS	Paper exit gate solenoid	Drives the paper exit gate	Electromagnetic solenoid	
DSW-L	DSW-L	Left door open/close detector	Left door open/close detection	Micro switch	Door switch

No.	Name	Function/Operation
1	Transport roller 21 (Drive)	Transports paper from the transport roller 20 to the transport roller 15
2	Transport roller 20 (Drive)	Transports paper from the transport roller 19 to the transport roller 21
3	Transport roller 19 (Drive)	Transports paper from the transport roller 2 to the transport roller 20
4	Paper exit roller 2 (Drive)	Discharges paper. / Transports paper to the duplex (ADU) section

2. Operational descriptions

A. Outline

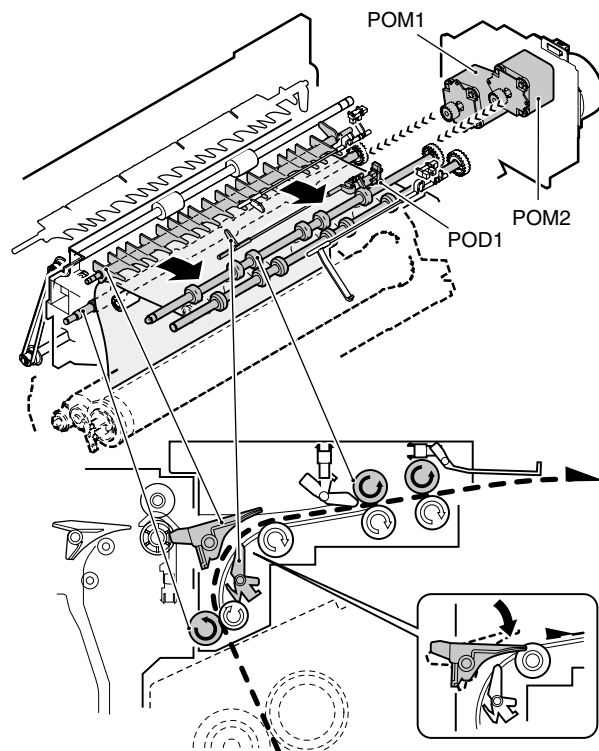
When duplex print is selected, paper one surface of which was printed is switched back to feed to the duplex section to make duplex print.

B. Paper transport operation in duplex print

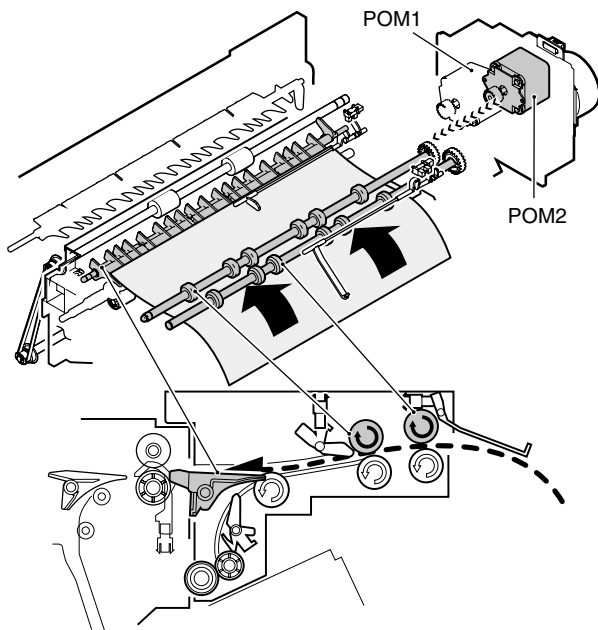
(1) Switchback operation and transport to the reverse section

- 1) The paper transported from the fusing section is sent to the paper exit roller 1 (which is driven by the paper exit motor 2 (POM2)) with the transport roller 16 (which is driven by the paper exit motor 1 (POM1)).

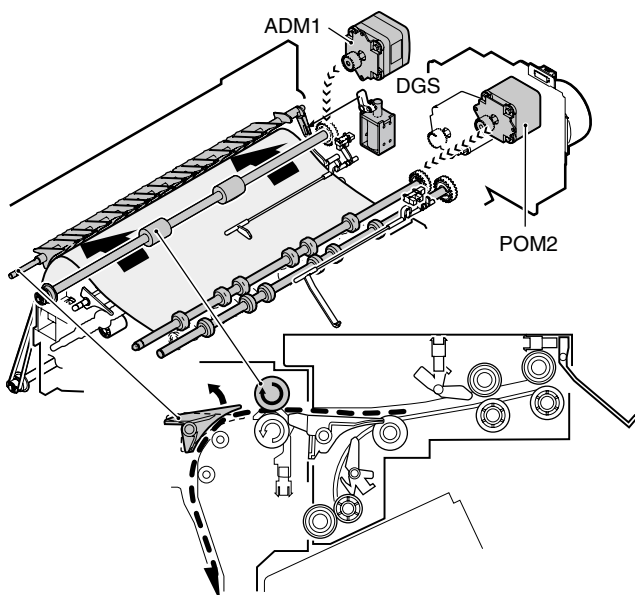
At this time, paper is passed under the paper exit guide. After paper passing, the paper exit gate guide falls down by its own weight.



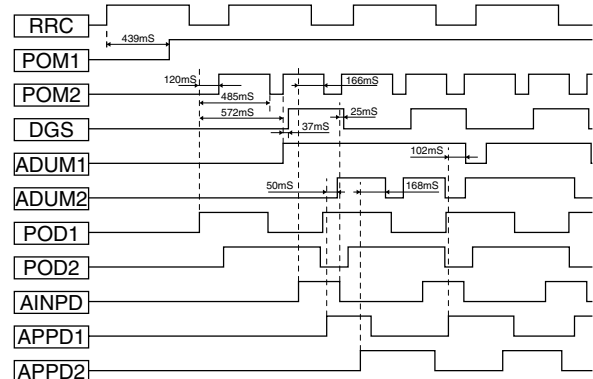
- 2) When the specified time has passed from detection of the paper lead edge by POD1 (paper exit detection from fusing), POM2 rotates in the normal direction, then rotates in the reverse direction in the specified time. (The rotation time differs depending on the paper size.)
- 3) When POM2 rotates reversely, paper is transported to the reverse section.
At that time, paper is passed over the paper exit gate guide which fell down by its own weight.



- 4) When the specified time has passed from reverse rotation of POM2, DGS (paper exit guide) turns on for a certain time and paper is sent to the reverse section.



- 5) POM2 stops after passing the specified time from detection the paper lead edge by AINPD (duplex paper entry detection). Its rotation is changed from reverse direction to normal direction to transport the next paper.



(2) Paper transport speed in duplex print

The transport speed in duplex print is changed to the high speed (800mm/sec) to increase the job speed in some positions of paper. The transport speed is changed to the high speed in the Following positions:

- 1) From when the paper rear edge passes the fusing section to when switchback operation is started.
- 2) From when switchback operation is started to when a certain amount of paper is transported after passing APPD1 (Paper pass detection sensor in upstream of duplex).
- 3) After that, paper is stopped at the duplex paper feed position and fed to the machine again. (The paper feed speed to the machine is 335mm/sec)

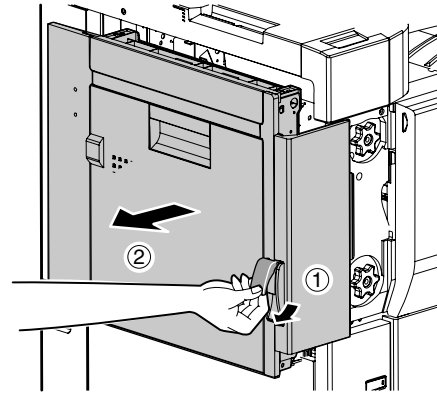
3. Disassembly and assembly

A. Duplex section

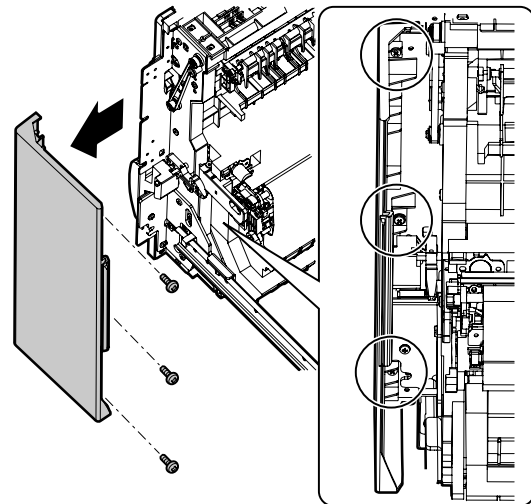
No.	Unit	No.	Parts	Maintenance
(1)	Left door unit	a	ADU opening/closing door	
		b	Paper exit roller 2	× ○
		c	Transport roller 19	× ○
		d	Transport roller 20	× ○
		e	Transport roller 21	× ○
		f	Duplex motor 1	
		g	Duplex motor 2	
		h	Paper exit gate solenoid	
		i	Duplex paper entry detector	
		j	Duplex paper pass detector 1	
		k	Left door transport paper guide R unit	
		l	Duplex paper pass detector 2	
		m	Paper pass detector 2	
		n	Transfer high voltage transformer	
		o	Transfer separation motor	
		p	Transfer belt separation home position sensor	
		q	Switchback gate	
		r	Paper exit gate	
		s	Left door open/close detector	
		t	Duplex cover open/close detector	
		u	Fusing discharge brush	×
		v	Reversing discharge brush	×

(1) Left door unit

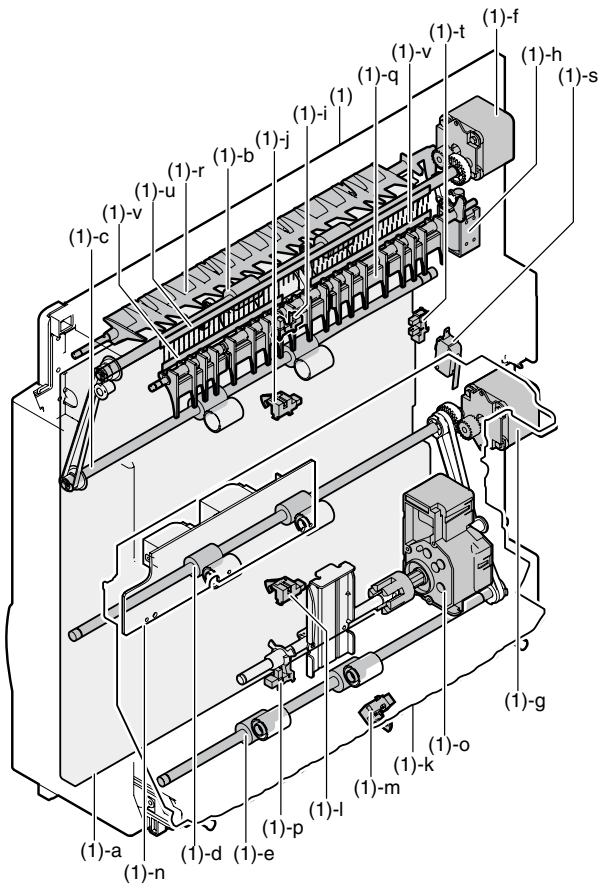
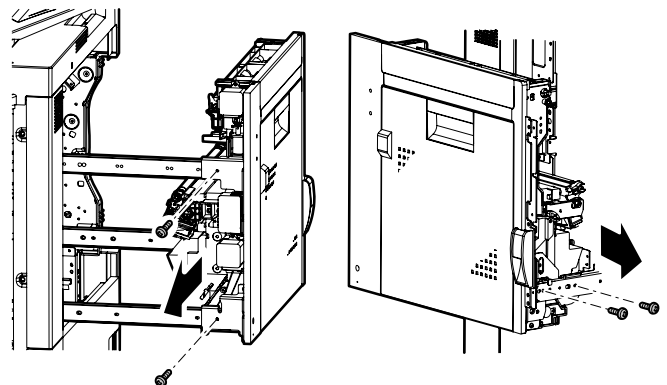
1) Pull out the left door.



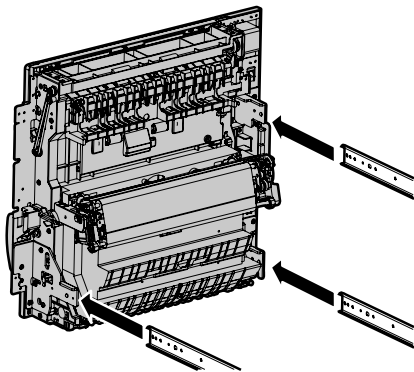
2) Remove the front cabinet.



3) Remove the fixing screw.

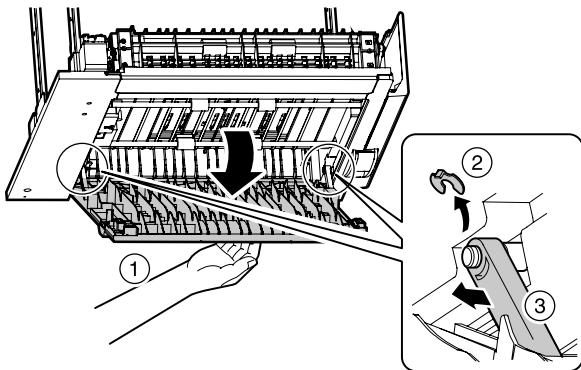


- 4) Remove the left door unit.

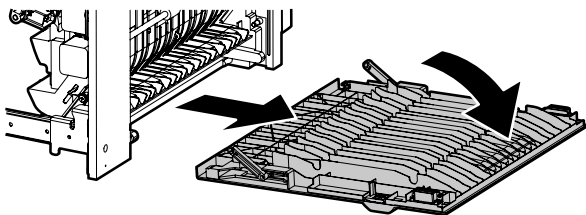


a. ADU opening/closing door

- 1) Pull out the left door.
- 2) Remove the stopper section plastic E-ring.

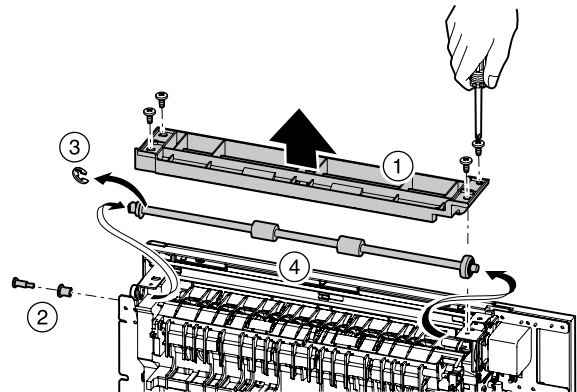


- 3) Remove the stopper from the fulcrum shaft to remove the opening/closing door in the arrowed direction.

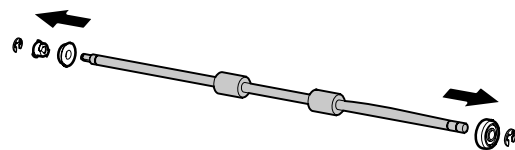


b. Paper exit roller 2

- 1) Pull out the left door.
- 2) Remove the ADU opening/closing door.
- 3) Remove the ADU paper exit upper paper guide.
- 4) Remove the ADU brake collar.
- 5) Remove the E-ring to remove the transport roller 2 assembly.



- 6) Remove the E-ring to remove the bearing, pulley, gear and pin from the paper exit roller.

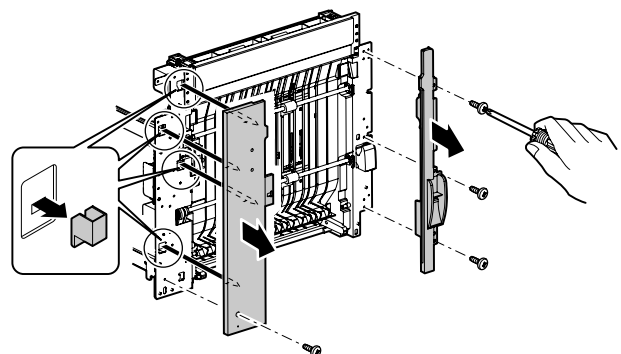


c. Transport roller 19

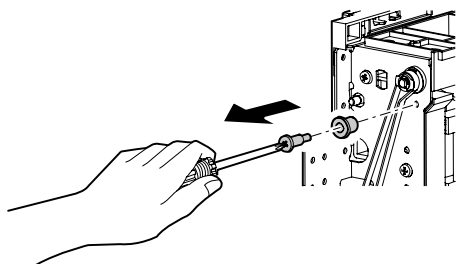
d. Transport roller 20

e. Transport roller 21

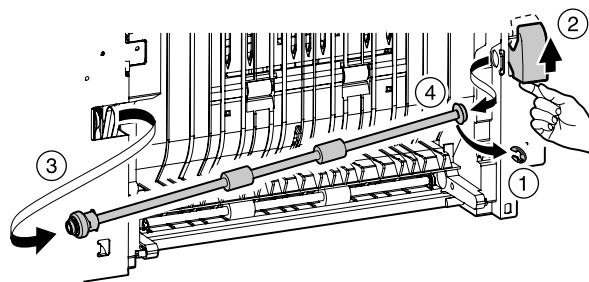
- 1) Pull out the left door.
- 2) Remove the ADU opening/closing door.
- 3) Remove the left door cabinet F.
- 4) Remove the left door cabinet R.



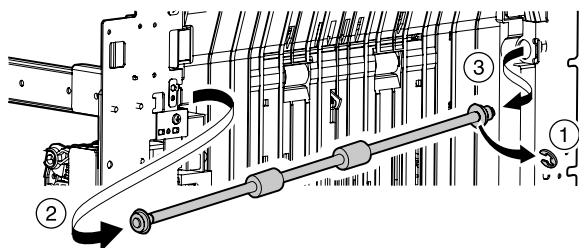
5) Remove the front belt collar.



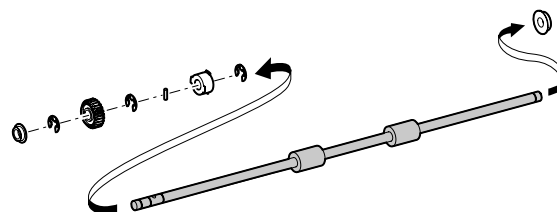
11) Remove the E-ring and lift up the switching lever to remove the transport roller 20 assembly.



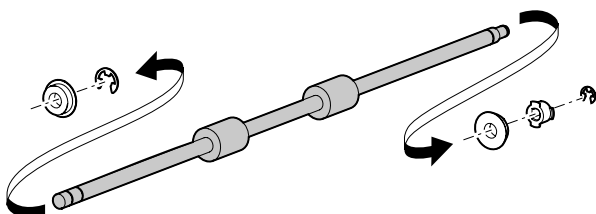
6) Remove the E-ring to remove the transport roller 19 assembly.



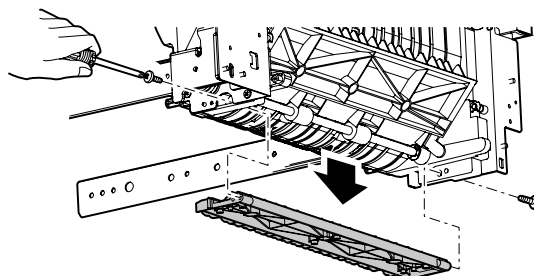
12) Remove the bearing, pulley, gear and pin from the transport roller 20.



7) Remove the bearing, pulley, gear and pin from the transport roller 19.



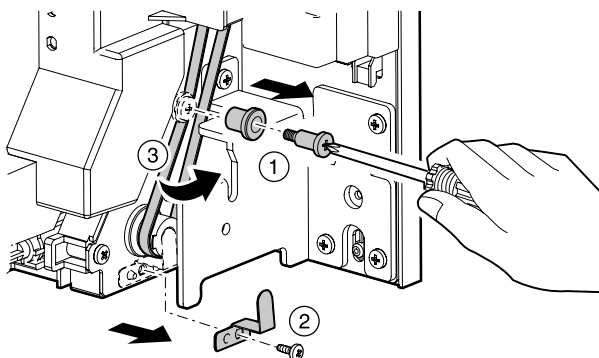
13) Remove the U-turn paper guide.



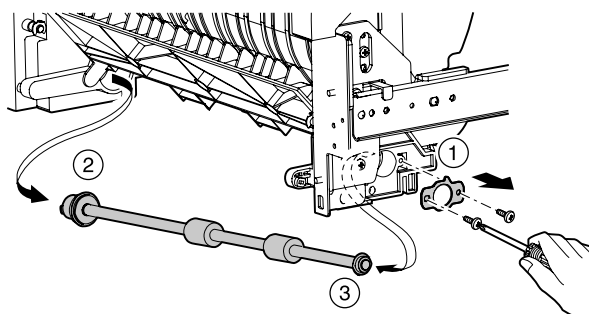
8) Remove the rear belt collar.

9) Remove the ground plate.

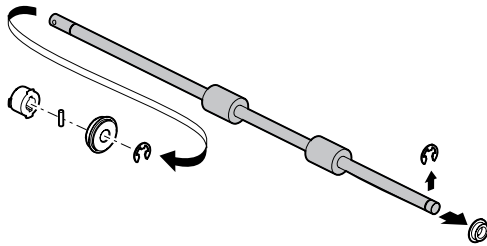
10) Remove the belt.



14) Apply the bearing attachment plate to remove transport roller 21.

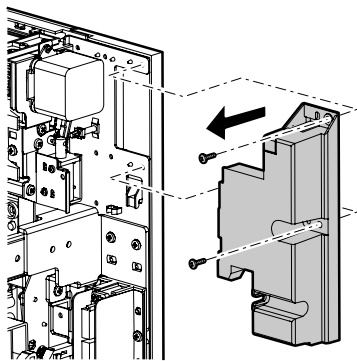


- 15) Remove the bearing, pulley, gear and pin from the transport roller 21.

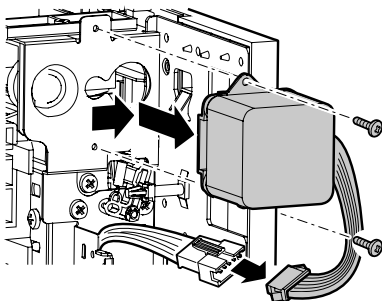


f. Duplex motor 1

- 1) Pull out the left door.
- 2) Remove the cover.

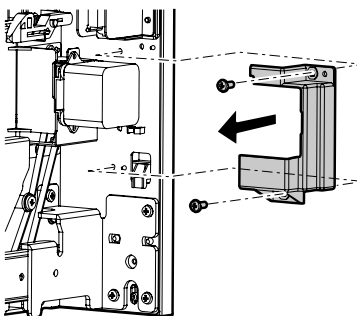


- 3) Remove the duplex motor 1.

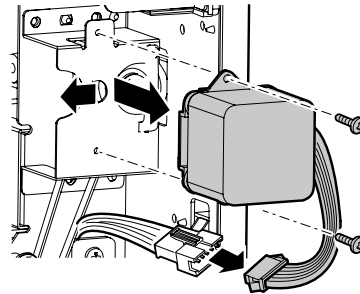


g. Duplex motor 2

- 1) Pull out the left door.
- 2) Remove the cover.

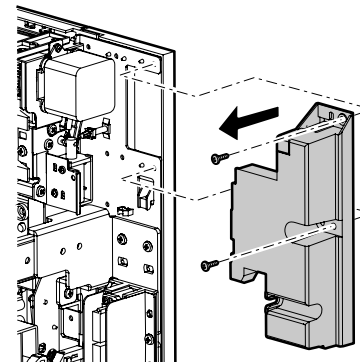


- 3) Remove the duplex motor 2.

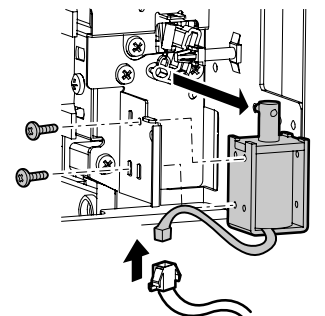


h. Paper exit gate solenoid

- 1) Pull out the left door.
- 2) Remove the cover.

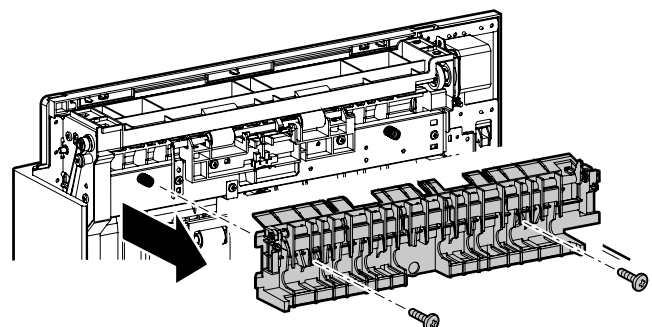


- 3) Remove the paper exit gate solenoid.

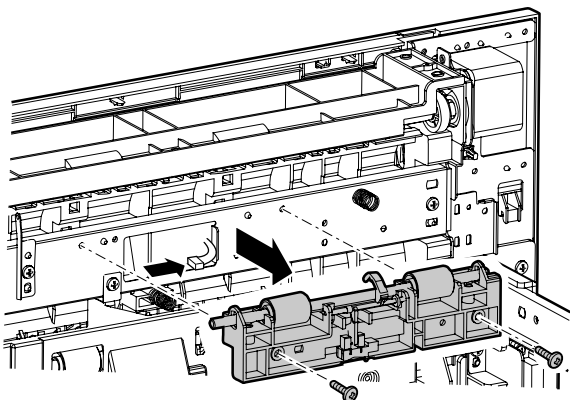


i. Duplex paper entry detector

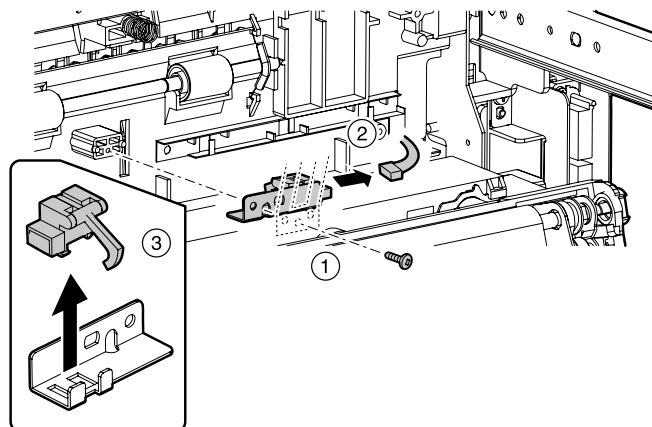
- 1) Pull out the left door.
- 2) Remove the paper guide unit.



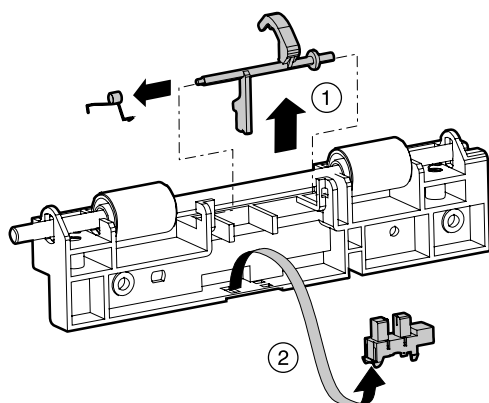
3) Remove the follower roller unit.



3) Remove the duplex paper pass detector 1.

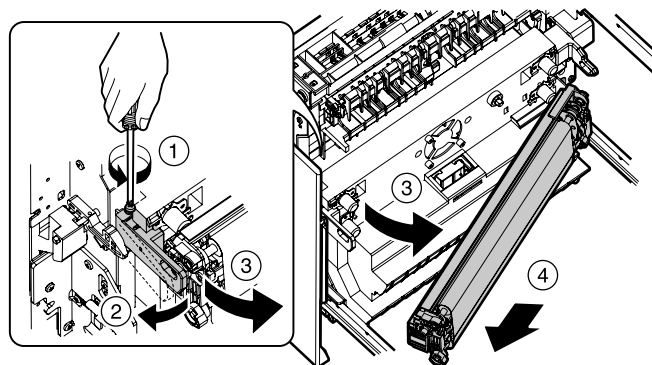


4) Remove the duplex paper entry detector.



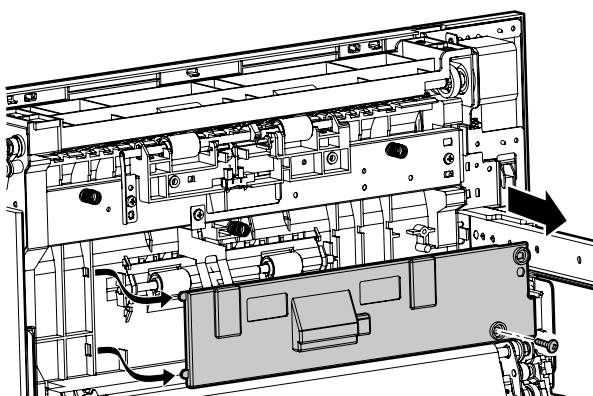
k. Left door transport paper guide R unit.

- 1) Pull out the left door.
- 2) Remove the transfer unit.

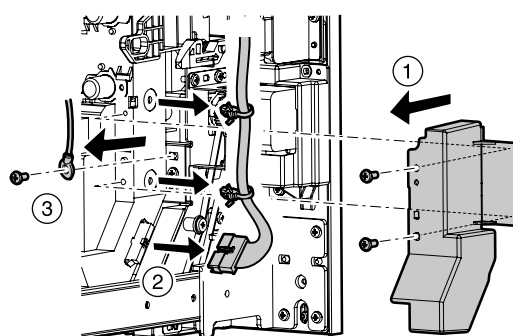


j. Duplex paper pass detector 1

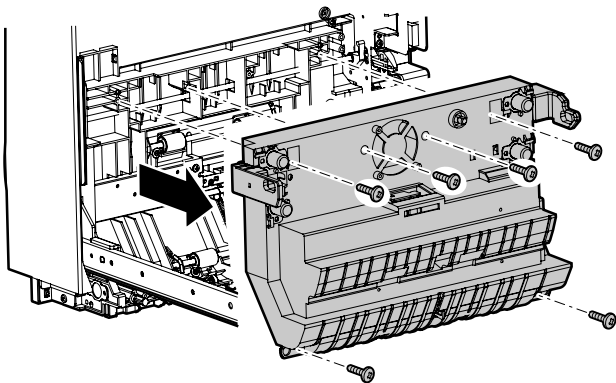
- 1) Pull out the left door.
- 2) Remove the cover.



3) Remove the cover, and remove the connector, the snap band, and the earth terminal.

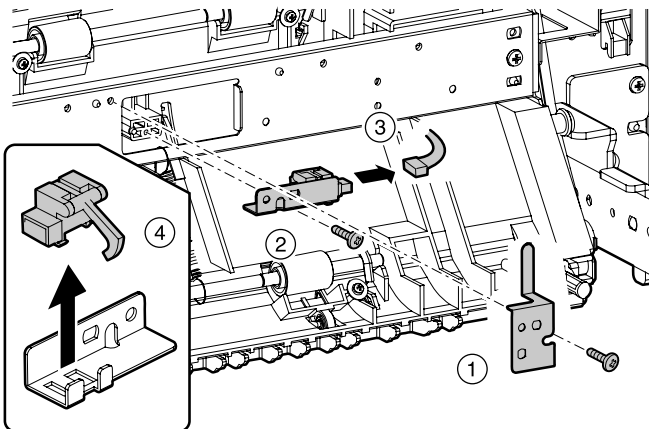


- 4) Remove the left door transport paper guide R unit.



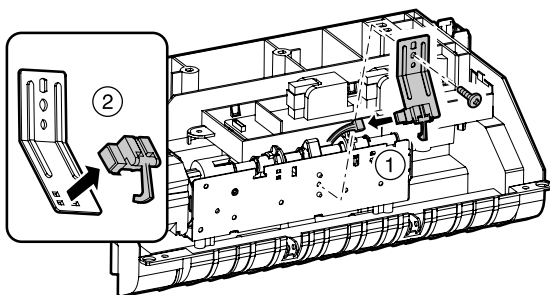
l. Duplex paper pass detector 2

- 1) Pull out the left door.
- 2) Remove the left door transport paper guide R unit.
- 3) Remove the duplex paper pass detector 2.



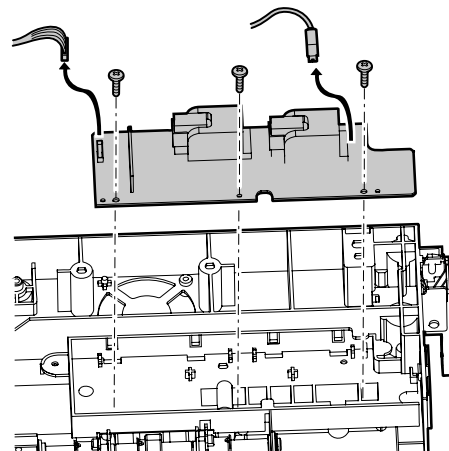
m. Paper pass detector 2

- 1) Pull out the left door.
- 2) Remove the left door transport paper guide R unit.
- 3) Remove the paper pass detector 2.



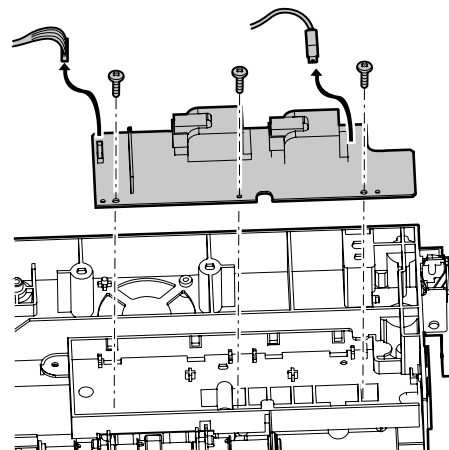
n. Transfer high voltage transformer

- 1) Pull out the left door.
- 2) Remove the left door transport paper guide R unit.
- 3) Remove the transfer high voltage transformer.

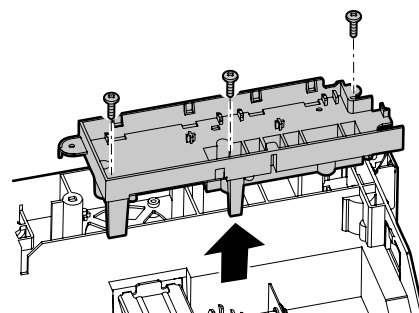


o. Transfer separation motor

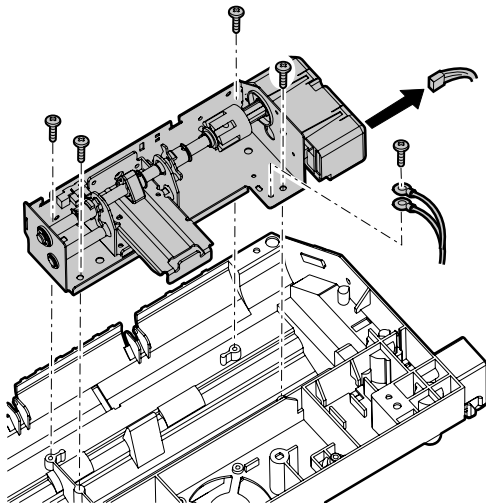
- 1) Pull out the left door.
- 2) Remove the left door transport paper guide R unit.
- 3) Remove the transfer high voltage transformer.



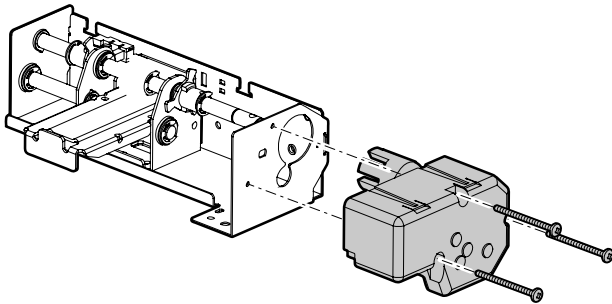
- 4) Remove the PWB holder.



- 5) Remove the transfer separation unit.

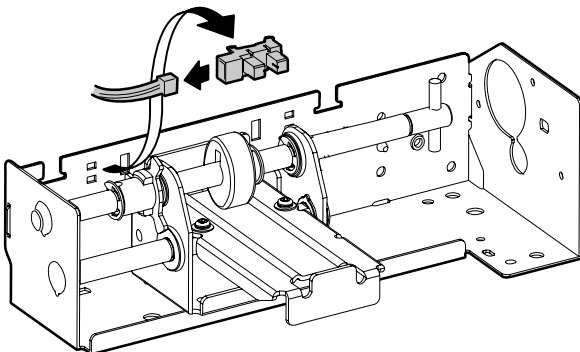


- 6) Remove the transfer separation motor.



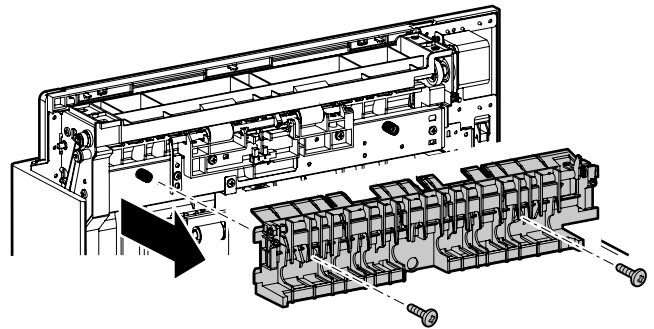
p. Transfer belt separation home position sensor

- 1) Pull out the left door.
- 2) Remove the left door transport paper guide R unit.
- 3) Remove the transfer belt separation home position sensor.

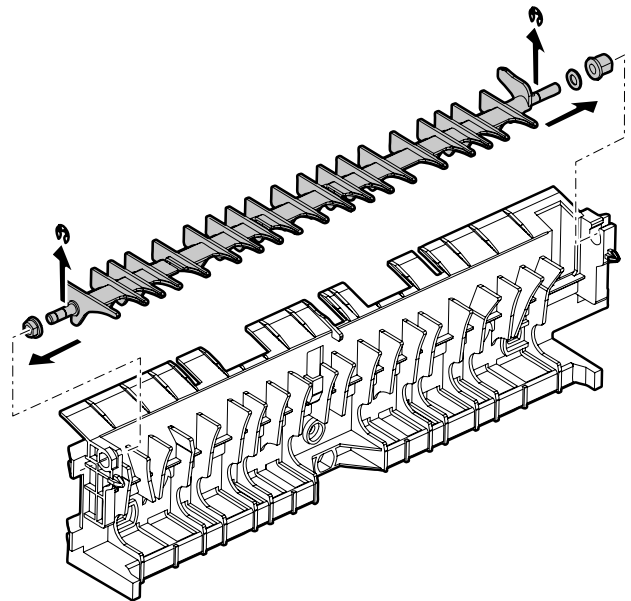


q. Switchback gate

- 1) Pull out the left door.
- 2) Remove the paper guide unit.

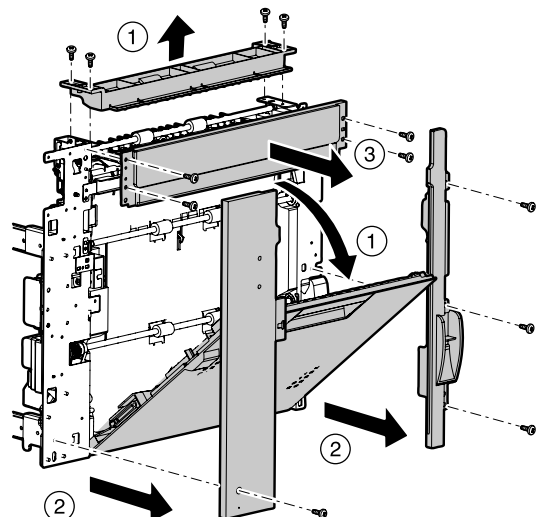


- 3) Remove the paper exit gate.

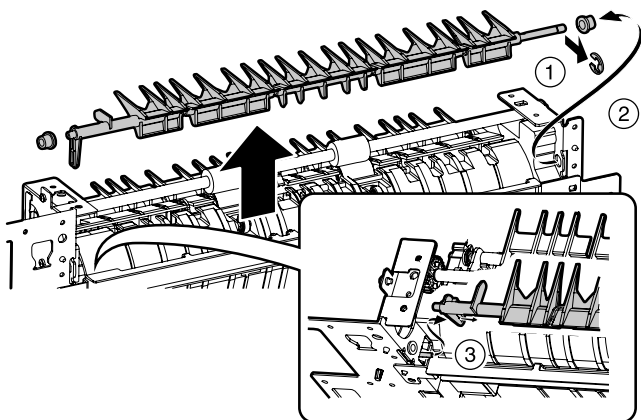


r. Paper exit gate

- 1) Pull out the left door.
- 2) Remove the paper guide unit. Open the door, and remove the cabinets.

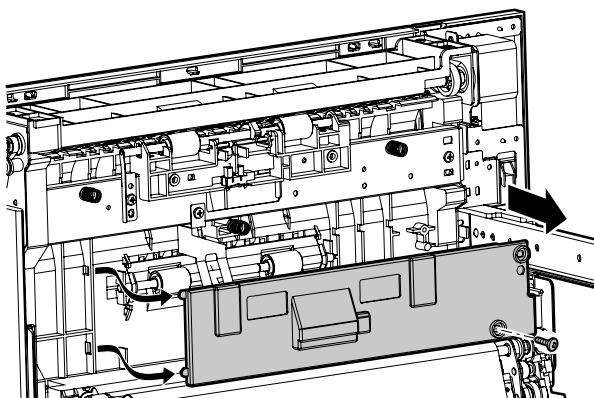


- 3) Remove the switchback gate.

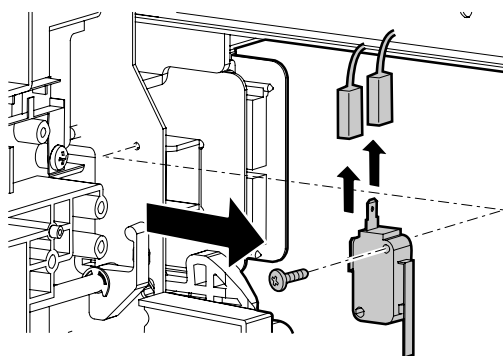


s. Left door open/close detector

- 1) Pull out the left door.
- 2) Remove the cover.

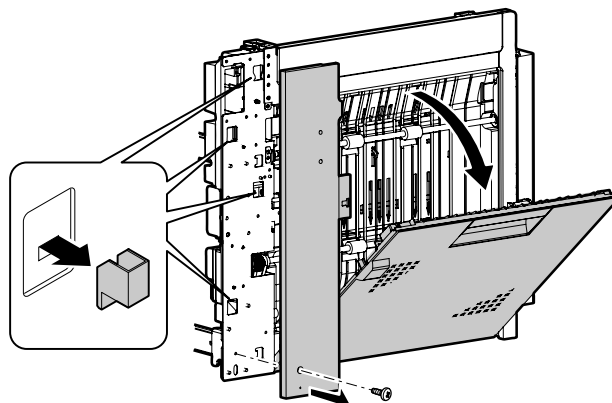


- 3) Remove the left door transport paper guide R unit.
- 4) Remove the left door open/close detector.

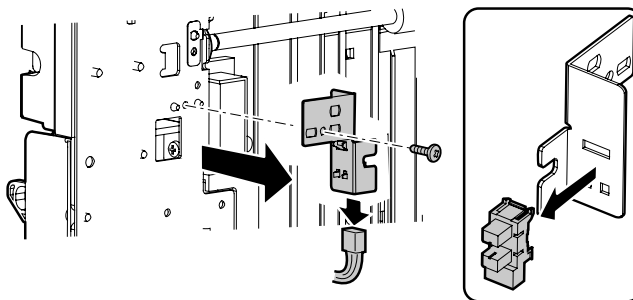


t. Duplex cover open/close detector

- 1) Pull out the left door.
- 2) Open the door, and remove the cover.

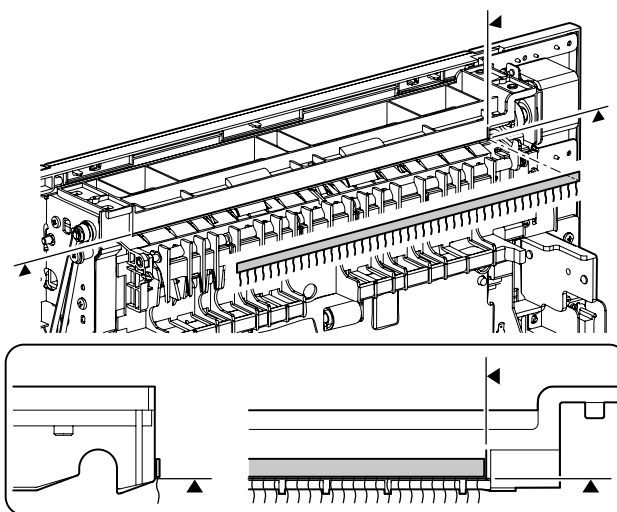


- 3) Remove the duplex cover open/close detector.



u. Fusing discharge brush

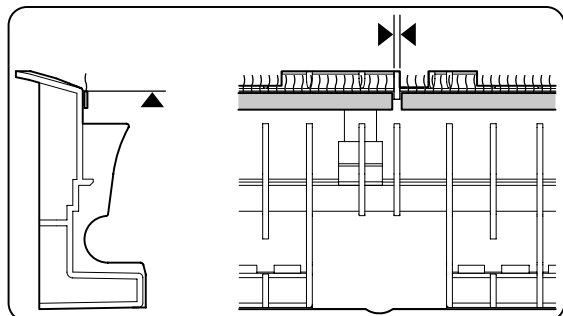
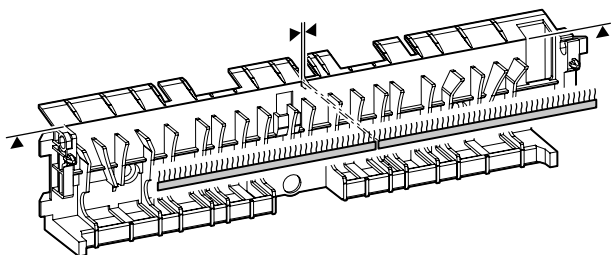
- 1) Pull out the left door.
- 2) Remove the fusing discharge brush.



* Attach the fusing discharge brush so that it is fit with the rear end.

v. Reversing discharge brush

- 1) Pull out the left door.
- 2) Remove the switchback gate.
- 3) Remove the reversing discharge bursh.

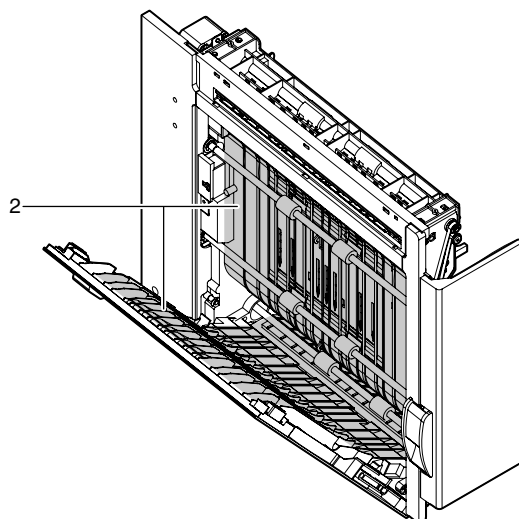
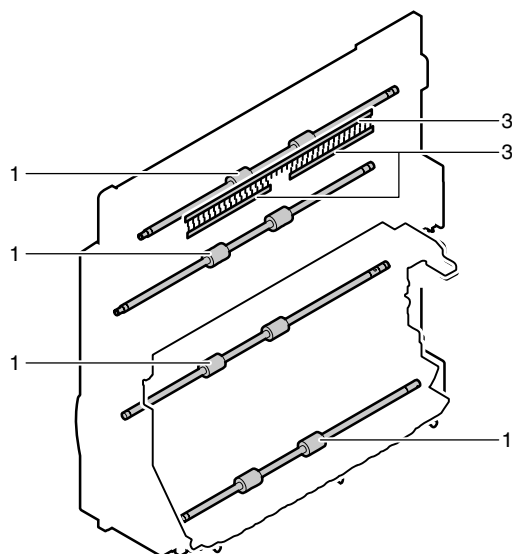


* Attach the reverse discharge brush so that it is fit with the rib inside and the parting line.

4. Maintenance

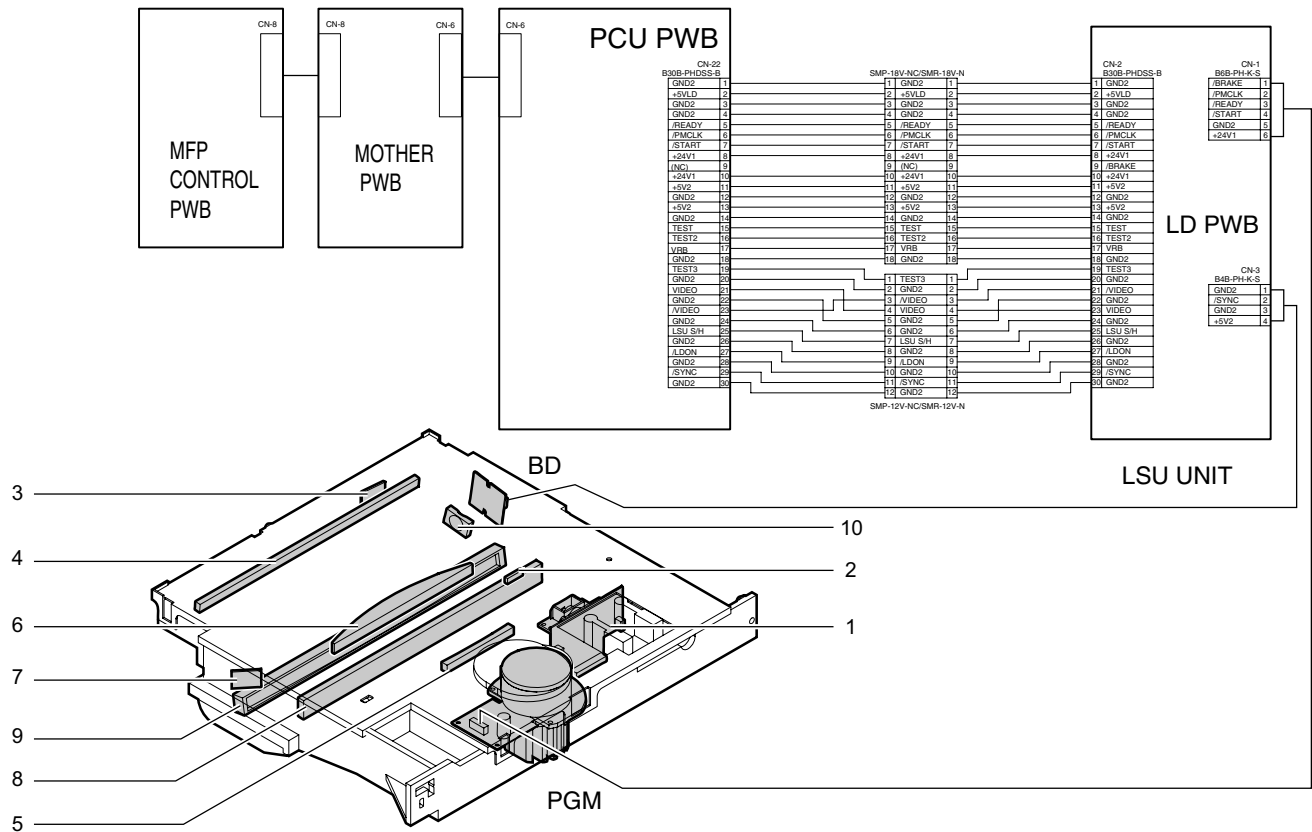
×: Check ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position
(Clean, replace, or adjust according to necessity.)

			When calling	250 K	500 K	750 K	1000 K	1250 K	1500 K	1750 K	2000 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
				300 K	600 K	900 K	1200 K	1500 K	1800 K	2100 K	2400 K	
Unit name	No.	Part name										
Duplex	1	Transport rollers	×	○	○	○	○	○	○	○	○	
	2	Transport paper guides	○	○	○	○	○	○	○	○	○	
	3	Discharge brush	×	×	×	×	×	×	×	×	×	



[i] LSU SECTION

1. Electrical and mechanism relation diagram



Code	Signal name	Name	Type	Function/Operation	NOTE
PGM	PGM	Polygon mirror (motor)		Reflects laser beams at the constant rotation speed	
BD		BD PWB		Detects the laser scan start timing This device is used to detect a laser trouble	

No.	Name	Function/Operation
1	Laser control PWB	Controls laser beam flashing and the output value
2	Cylindrical lens	Converges laser beams to focus
3	Incidence reflection mirror	Assures the optical path for laser beams
4	No. 1 mirror	Assures the optical path for laser beams
5	fθ lens 1	Deflects laser beams so that the laser scan speeds on the both ends of the drum and that at the center of the drum are the same
6	fθ lens 2	
7	BD mirror	Assures the optical path for laser beams to the BD PWB
8	No. 2 mirror	Assures the optical path for laser beams
9	Plane lens	Converges laser beams to focus
10	Collective lens for BD	Converges laser beams on to the BD PWB

No.	Name	Code	Function/Operation
RW	Control signal	+5VLD	5V power for laser diode
RW	Control signal	/READY	Polygon mirror motor READY signal ("L" in the constant speed rotation)
RW	Control signal	/PMCLK	Clock signal for driving the polygon mirror motor
RW	Control signal	/START	Polygon mirror motor drive start signal
RW	Control signal	/VIDEO	VIDEO (Image signal)
RW	Control signal	/SYNC	Sync signal (SYNC) from BD, sync signal for 1 line

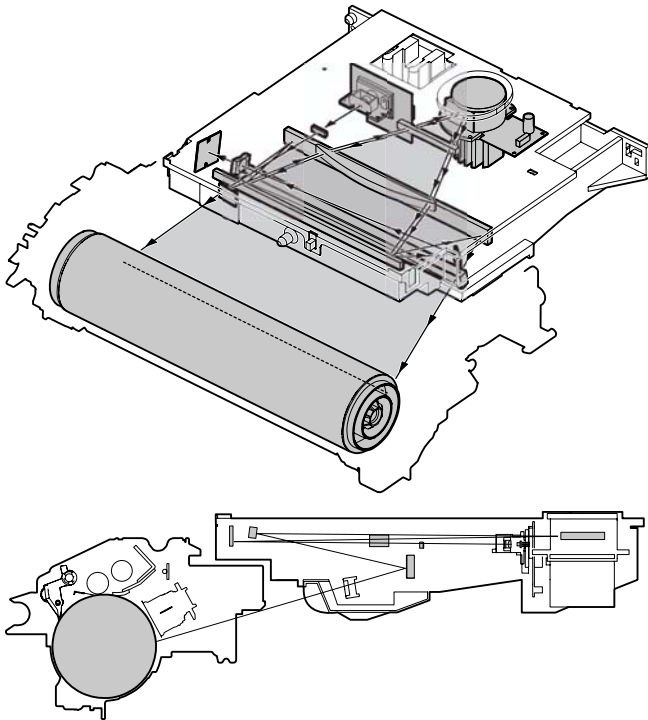
2. Operational descriptions

A. Outline

This section performs the following operations.

Image data sent from the MFP (image process circuit) through the mother board and PCU are converted into laser beams to radiate onto the drum surface.

[Laser optical path]



* This unit must not be disassembled in the market.

B. Polygon mirror motor

Model	Number of mirror surface	Rotating speed	Bearing	Remarks
55/62ppm	14 surfaces	34000 rpm	AIR	Superior in silence
70ppm	14 surfaces	40000 rpm	AIR	

The number of mirror surfaces and the motor RPM are reduced to reduce noises and increase reliability.

C. Outline of LSU specifications

Effective scan width : 297 mm

Resolution : 600 dpi

Beam diameter : Main scan = 60 to 85 μ m

Sub scan = 75 to 110 μ m

Laser power : 55/62ppm: 0.385 \pm 0.04mW

70ppm: 0.480 \pm 0.04mW

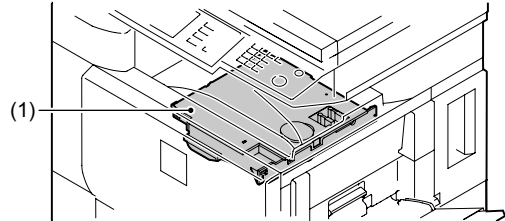
Laser power : 770 to 795 nm

3. Disassembly and assembly

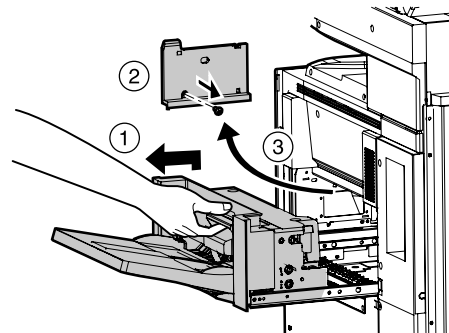
A. Laser scan unit (LSU)

No.	Unit
1	LSU

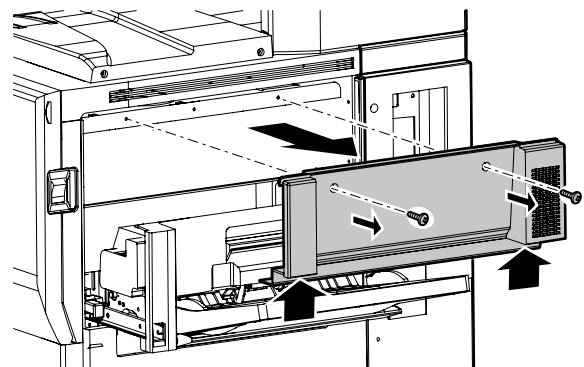
(1) LSU



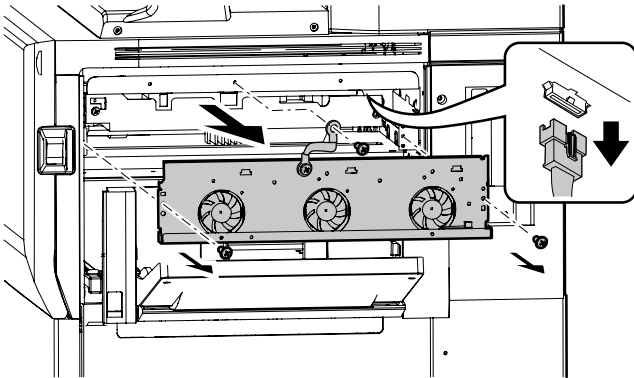
- 1) Pull out the multi paper feed tray, and remove the manual paper feed cover F.



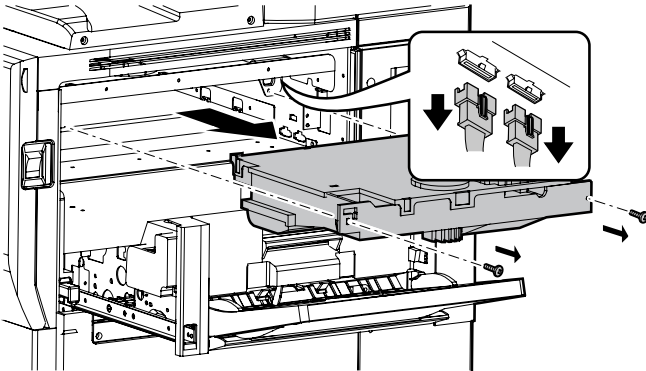
- 2) Pushing the lower part, remove the right cabinet center.



- 3) Disconnect the connector, and remove the process cooling fan unit.



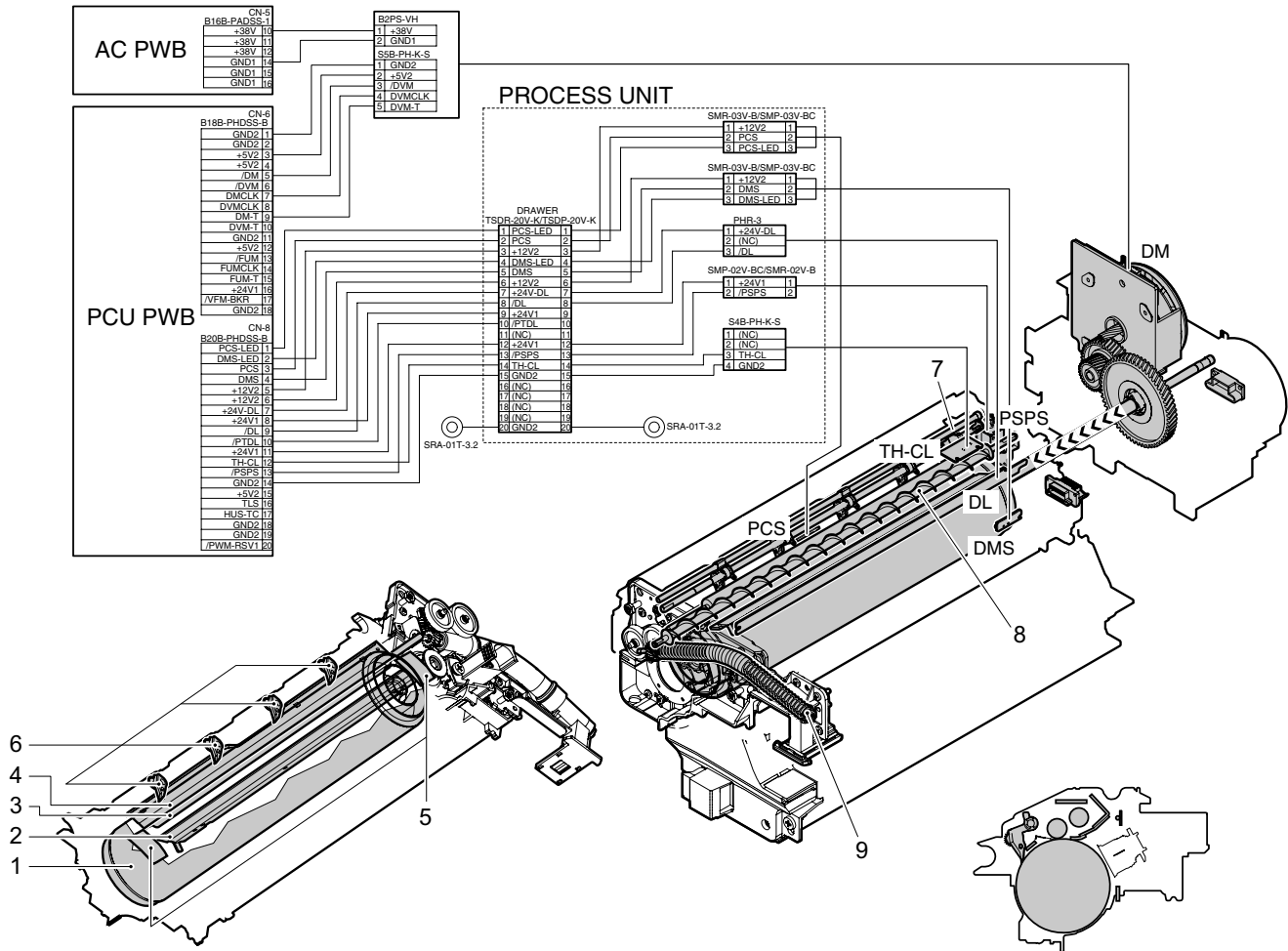
- 4) Disconnect the connectors to remove the LSU unit.



[J] PHOTOCONDUCTOR SECTION

1. Electrical and mechanism relation diagram

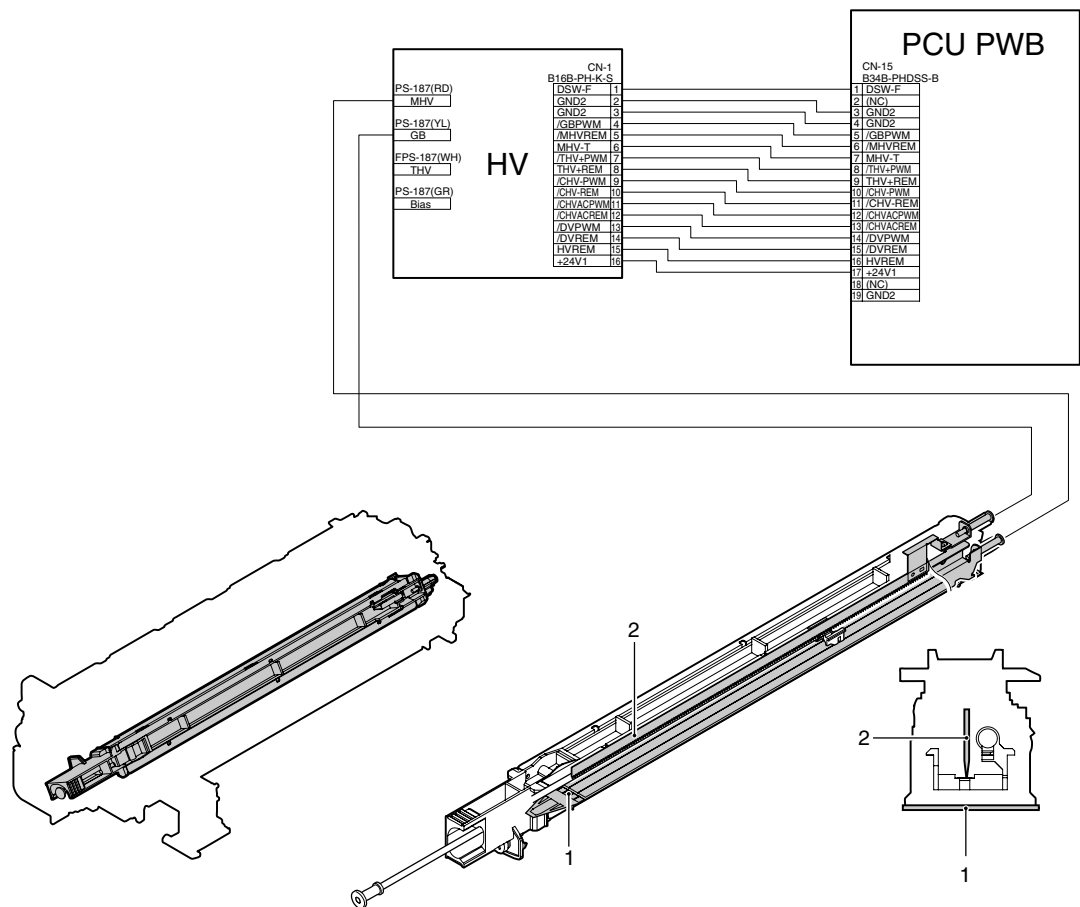
A. OPC drum Section



Code	Signal name	Name	Function/Operation	Type	NOTE
DMS	DMS	OPC drum marking sensor signal	OPC drum mark detection	Reflection type	Analog detector
PCS	PCS	Image density sensor	Detection of density of toner patch on the OPC drum	Reflection type	Analog detector
TH-CL	TH-CL	OPC drum cleaner temperature sensor	OPC drum cleaner peripheral temperature detection	Thermistor	Analog detector
DM	DM	OPC drum motor	Drives the OPC drum and the transfer section	DC brushless motor	
PSPS	PSPS	Drum separation pawl solenoid	Drives the OPC drum separation pawl	Solenoid	
DL	DL	Discharge lamp	Discharges electric charges on the OPC drum	Lamp	

No.	Name	Function/Operation
1	OPC drum	Forms electrostatic latent images by laser beams
2	Cleaning blade	Cleans remaining toner on the OPC drum
3	CL brush roller	Cleans remaining toner on the OPC drum
4	Sub blade (Cleaning seal)	Prevent against toner leakage from the cleaner section
5	Side seal F/R	Prevents against toner dispersion
6	Drum separation pawl	Separates paper from the drum
7	Separation pawl oscillation shaft	Moves in the front and rear frame direction to install the separation pawl
8	Waste toner transport screw	Transports toner from the cleaner unit to the waste toner transport pipe
9	Waste toner transport pipe	Transports toner from the cleaner unit to the waste toner box in the toner cartridge front section

B. Main charger section



No.	Name	Function/Operation
1	Screen grid	Charges the OPC drum evenly / Charges the OPC drum
2	Sawtooth plate	Charges the OPC drum

2. Operational descriptions

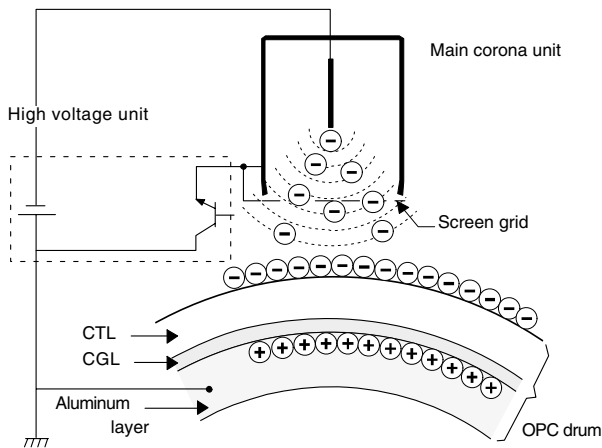
A. Outline

In this section, laser beams are radiated to the OPC drum surface which was negatively charged, making electrostatic latent images.

B. Description

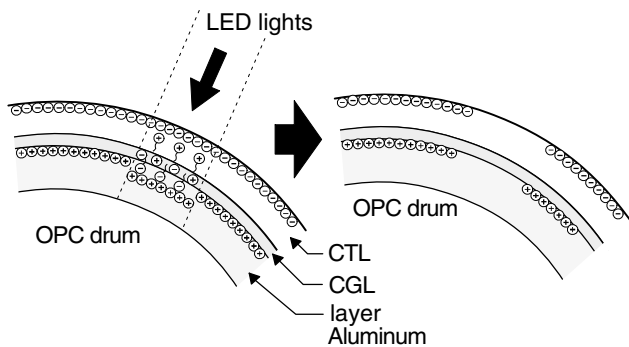
The OPC drum surface is negatively charged by the main charger. The laser beam images are radiated to the OPC drum surface by the laser unit to form latent electrostatic images.

- 1) The OPC drum surface is negatively charged by the main charger.



The main charger grid is provided with the screen grid. The OPC drum is charged at a voltage virtually same as the voltage applied to the screen grid.

- 2) LED lights are radiated to the OPC drum surface by the laser unit to form latent electrostatic images.



When laser lights are radiated to the OPC drum CGL, negative and positive charges are generated.

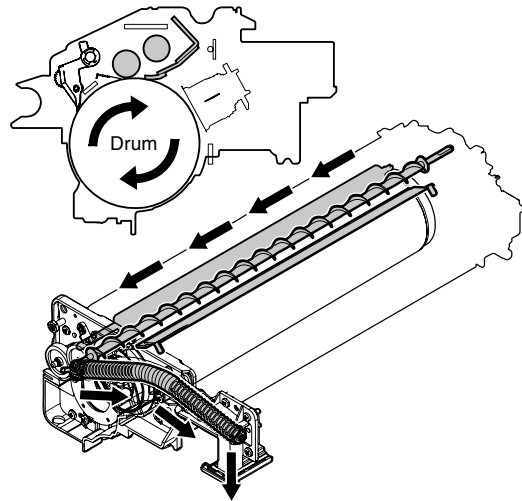
Positive charges generated in CGL are attracted to the negative charges on the OPC drum surface. On the other hand, negative charges are attracted to the positive charges in the OPC drum aluminum layer.

Therefore, positive charges and negative charges are balanced out on the OPC drum and in the aluminum layer, reducing positive and negative charges to decrease the OPC drum surface voltage.

Electric charges remain at a position where LED lights are not radiated.

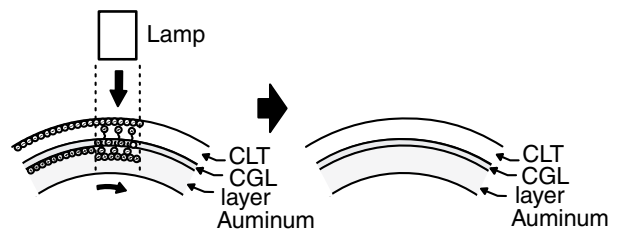
As a result, latent electrostatic images are formed on the OPC drum surface.

- 3) After transfer operation, remaining toner is removed by the cleaning blade.



Toner removed from the OPC drum surface is transported to the waste toner section in the toner cartridge by the waste toner transport screw.

- 4) The whole surface of the OPC drum is discharged.

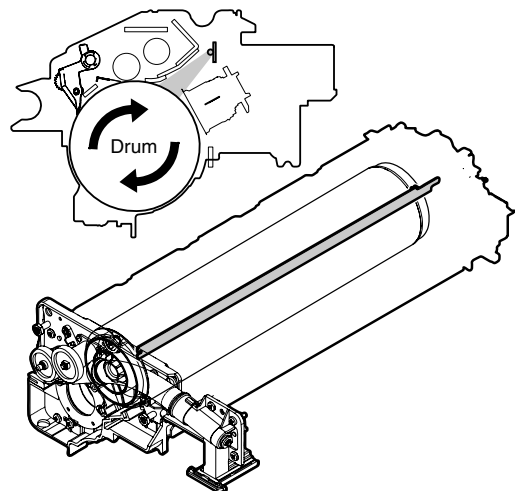


By radiating the discharge lamp light to the discharge lens, light is radiated through the lens to the OPC drum surface.

When the discharge lamp light is radiated to the OPC drum CGL, positive and negative charges are generated.

Positive charges generated in CGL are attracted to the negative charges on the OPC drum surface. On the other hand, negative charges are attracted to the positive charges in the aluminum layer of the OPC drum.

Therefore, positive and negative charges are balanced out on the OPC drum surface and in the aluminum layer, reducing positive and negative charges to decrease the surface voltage of the OPC drum.



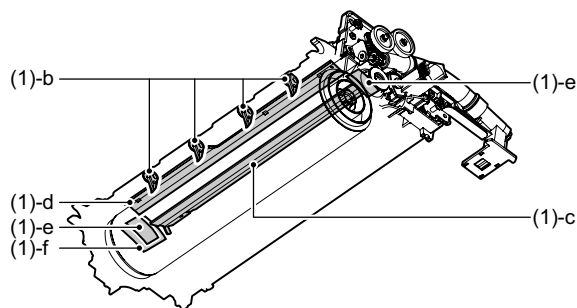
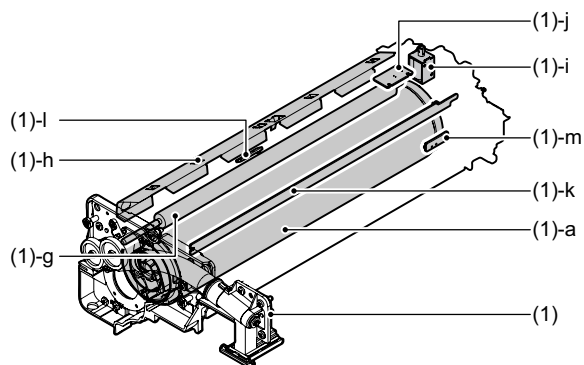
C. Main charger

The OPC drum surface is negatively charged in this section.

3. Disassembly and assembly

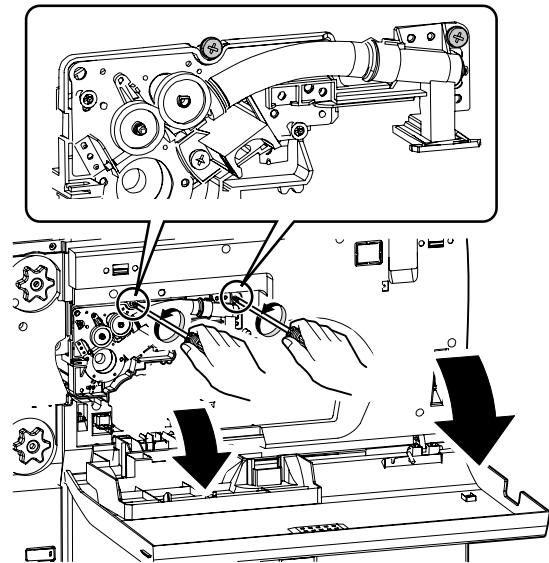
A. OPC drum Section

No.	Unit	No.	Parts	Maintenance
(1)	Process unit	a	OPC drum	× ▲
		b	Separation pawl	× ▲
		c	Cleaning blade	× ▲
		d	Toner reception seal	× ▲
		e	Side seal F/R	× ▲
		f	Side seal R base sheet	
		g	Cleaning brush	▲
		h	Process adsorption plate	
		i	Drum separation pawl solenoid	
		j	OPC drum cleaner temperature sensor	
		k	Discharge lamp	
		l	Image density sensor	
		m	OPC drum marking sensor	

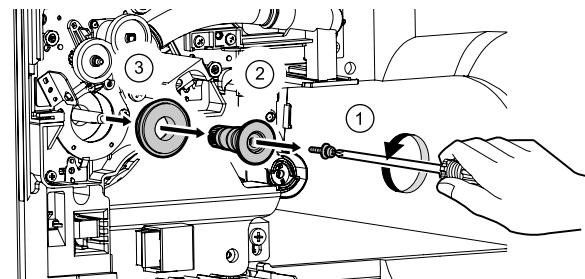


(1) Process unit

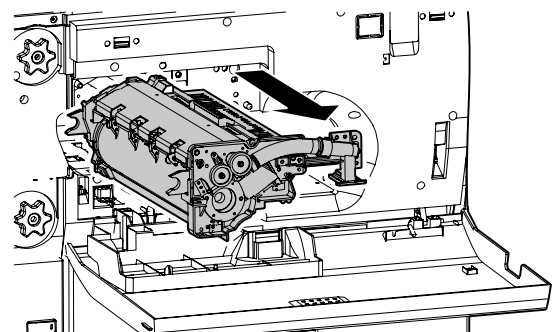
- 1) Open the front door.



- 2) Open the process cover.
- 3) Open the left door.
- 4) Remove the MC charger unit.
- 5) Remove the blue screw.
- 6) Unfix the drum to remove the bearing.

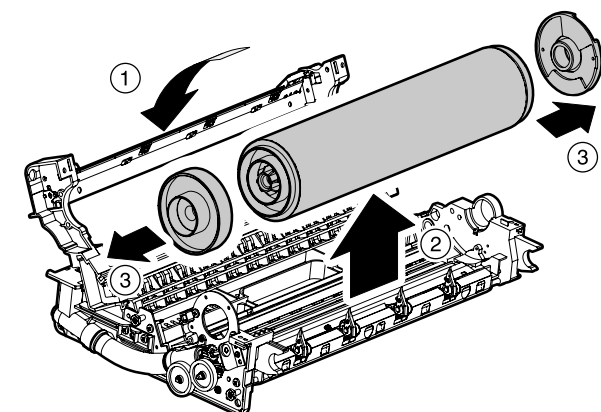
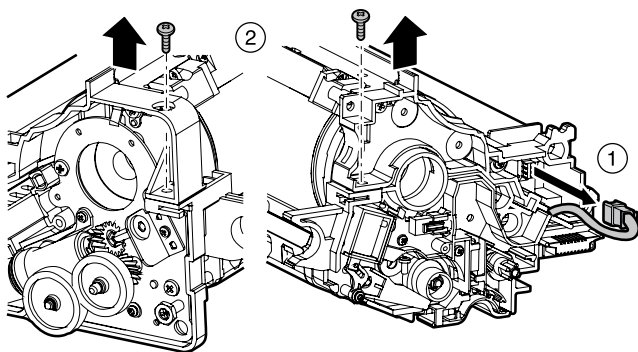


- 7) Pull out the process unit by clasp the bolt head.



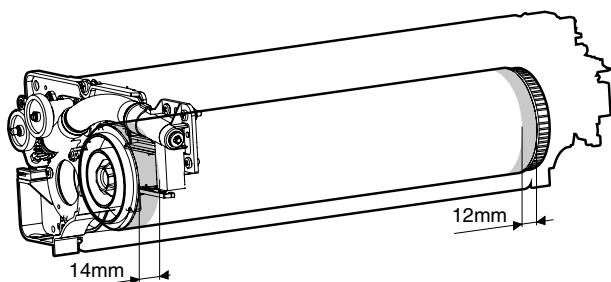
a. OPC drum

- 1) Disconnect the connectors.

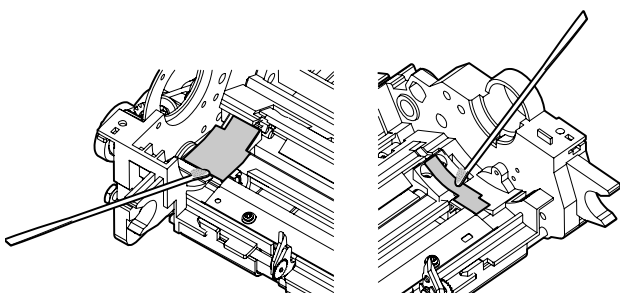


- 2) Remove the blue screw to open the lower frame.
- 3) Gently remove the drum, guide and all.
- 4) Remove the guide.

* The OPC layer of a certain area of the OPC drum may break off due to rotational friction. The OPC layer break-off generated in the area shown below will not affect print images. Therefore, the drum can be used without replacement.

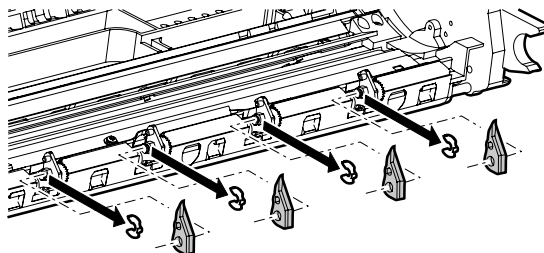


* When replacing the OPC drum, apply friction-reducing powder (UKOG-0309FCZZ) to all over the drum (F and R) in order to reduce friction and membrane decrease of the OPC layer on both sides of the OPC drum. (Use PARTEL (UKOG-0311FCZZ).)



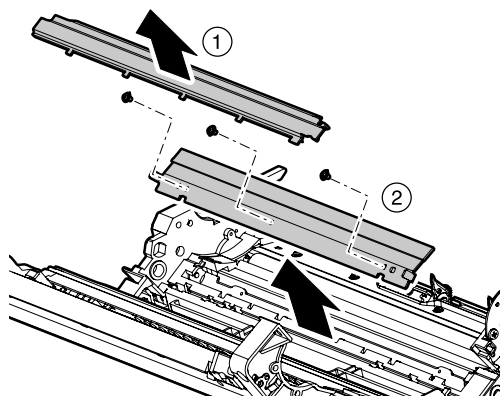
b. Separation pawl

- 1) Remove the OPC drum. (See "a. OPC drum")
- 2) Remove the resin E-ring.
- 3) Remove the separation pawl.



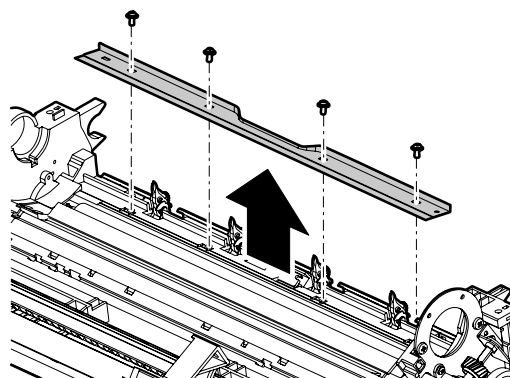
c. Cleaning blade

- 1) Remove the OPC drum. (See "a. OPC drum")
- 2) Remove the cover.
- 3) Remove the cleaning blade.



d. Toner reception seal

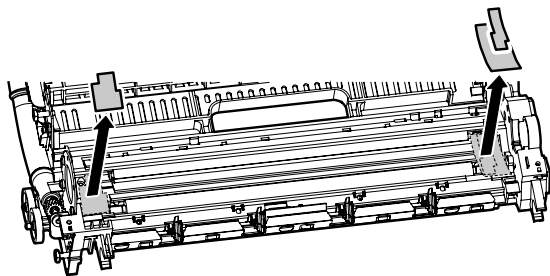
- 1) Remove the OPC drum. (See "a. OPC drum")
- 2) Remove the toner receiving seal.



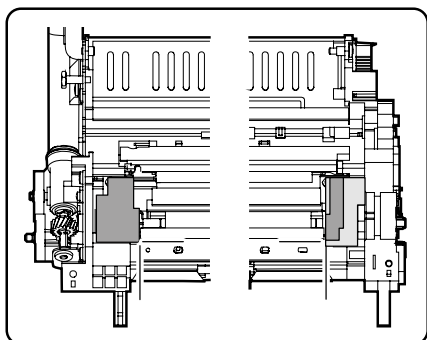
e. Side seal F/R

f. Side seal R base sheet

- 1) Remove the OPC drum. (See "a. OPC drum")
- 2) Remove the side seal R base sheet.

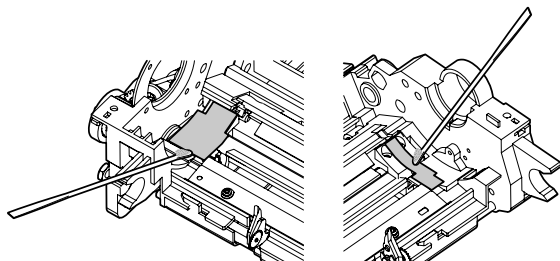


- 3) Attach the side seal R base sheet to the specified position. Attach the side seals F/R to the specified positions.



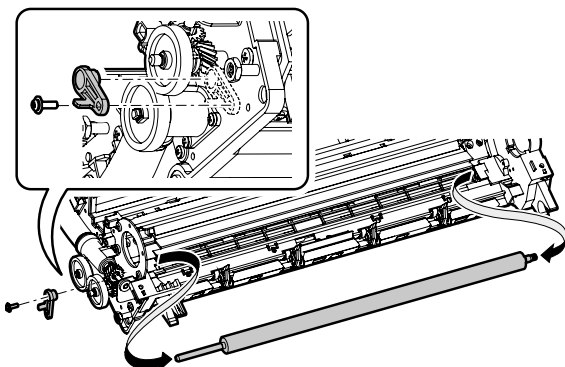
* Clean and remove toner and dust from the attachment section with alcohol.

* When replacing the side seals F/R, apply friction-reducing powder (UKOG-0309FCZZ) to all over the side seals F/R in order to reduce friction and membrane decrease of the OPC layer on both sides of the OPC drum. (Use PARTEL (UKOG-0311FCZZ).)



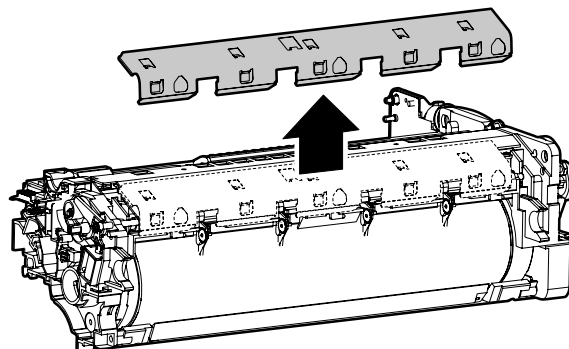
g. Brush roller

- 1) Remove the OPC drum. (See "a. OPC drum")
- 2) Remove the toner receiving seal.
- 3) Remove the blue screw to remove the lever.
- 4) Remove the brush roller.



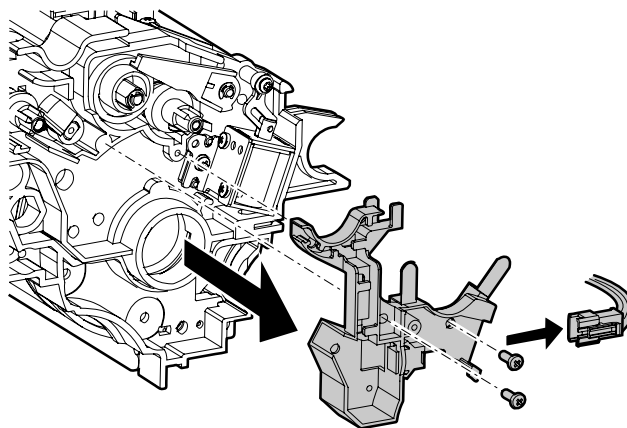
h. Process adsorption plate

- 1) Remove the cover to remove the adsorption plate.

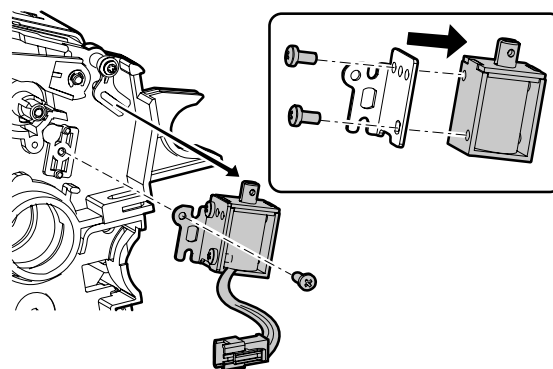


i. Drum separation pawl solenoid

- 1) Disconnect the connector, and remove the harness guide unit.

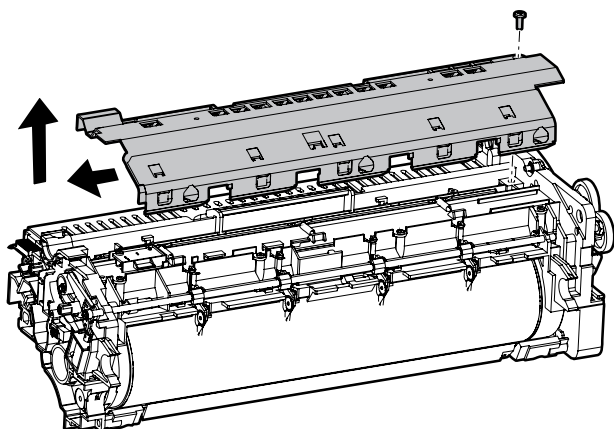


- 2) Remove the drum separation pawl solenoid.

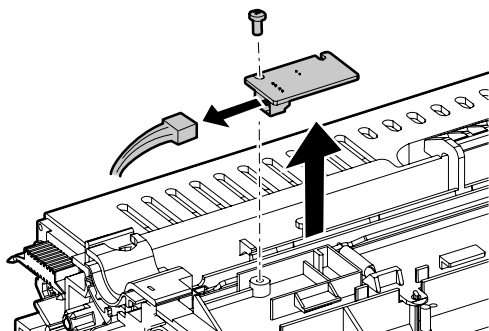


j. OPC drum cleaner temperature sensor

- 1) Remove the upper cover.

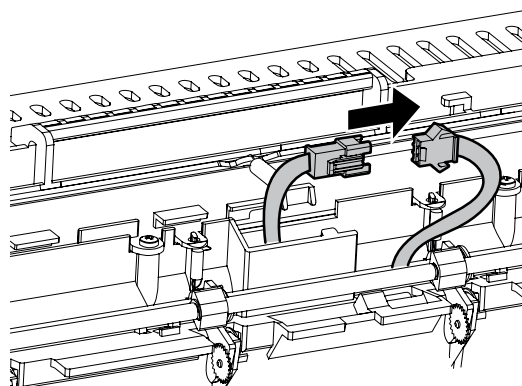


- 2) Remove the OPC drum cleaner temperature sensor.

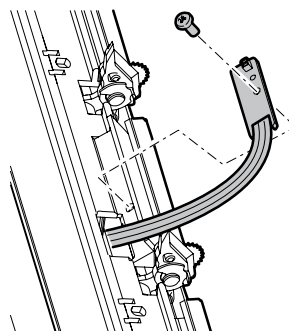


l. Image density sensor

- 1) Remove the upper cover.
(See "j. OPC drum cleaner temperature sensor")
- 2) Remove the connector.

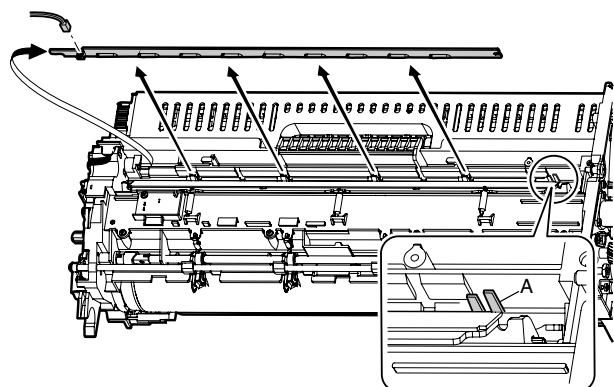


- 3) Remove the OPC drum. (See "a. OPC drum")
- 4) Remove the image density sensor.



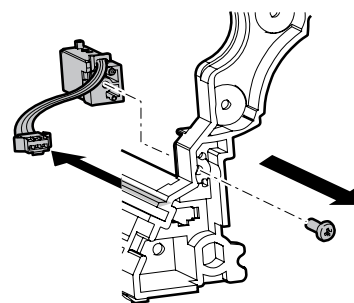
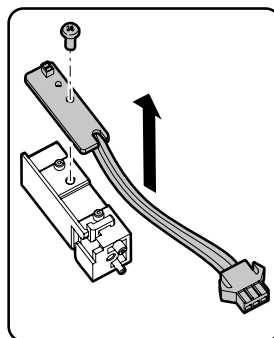
k. Discharge lamp

- 1) Remove the upper cover.
(See "j. OPC drum cleaner temperature sensor")
- 2) Remove the discharge lamp.
* Be careful not to break the pawl when fixing.



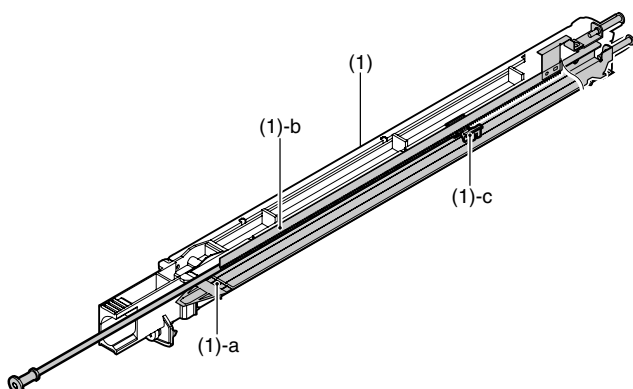
m. OPC drum marking sensor

- 1) Remove the OPC drum. (See "a. OPC drum")
- 2) Remove the OPC drum marking sensor.
* Execute cleaning.



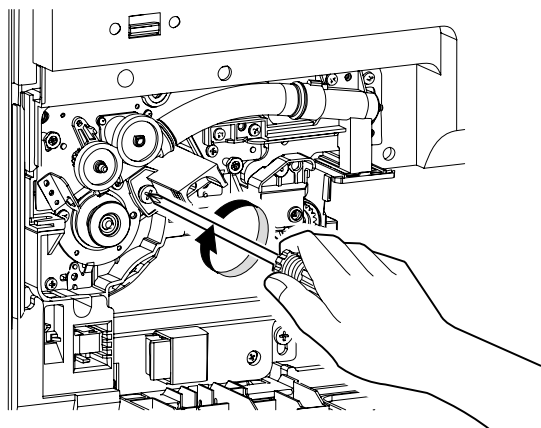
B. Main charger section

No.	Unit	No.	Parts
(1)	Main charger unit	a	Screen grid
		b	Sawtooth plate
		c	MC cleaner

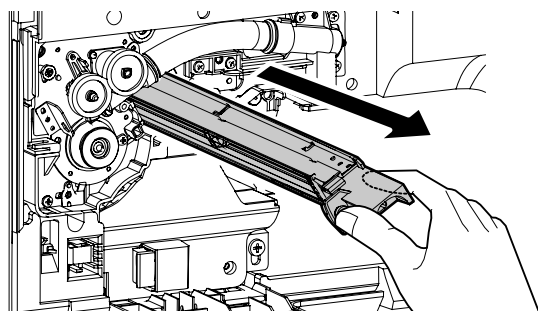


(1) Main charger unit

- 1) Open the front door.
- 2) Loosen the blue screw.

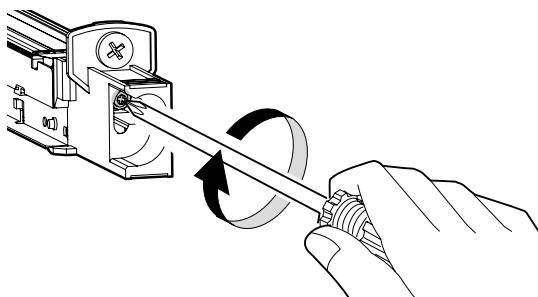


- 3) Remove the main charger unit.

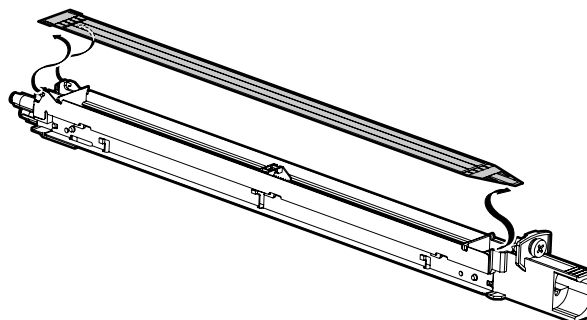


a. Screen grid

- 1) Loosen the screw.

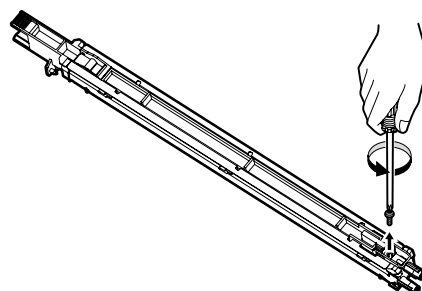


- 2) Remove the screen grid from the claw.

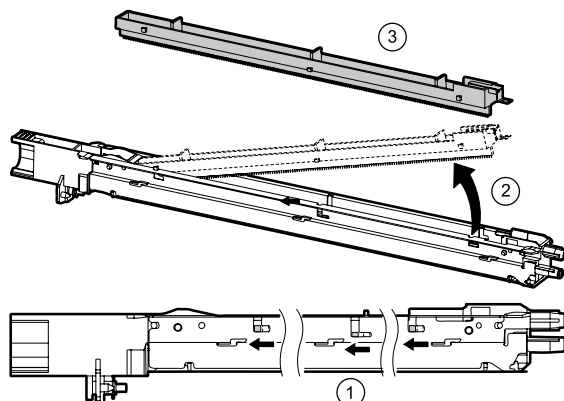


b. Sawtooth plate

- 1) Remove the blue screw.

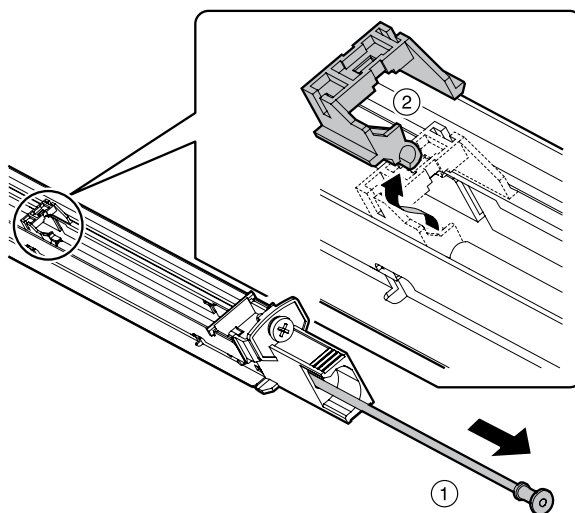


- 2) Lifting one end up, slide off the saw blade holder.



c. MC cleaner

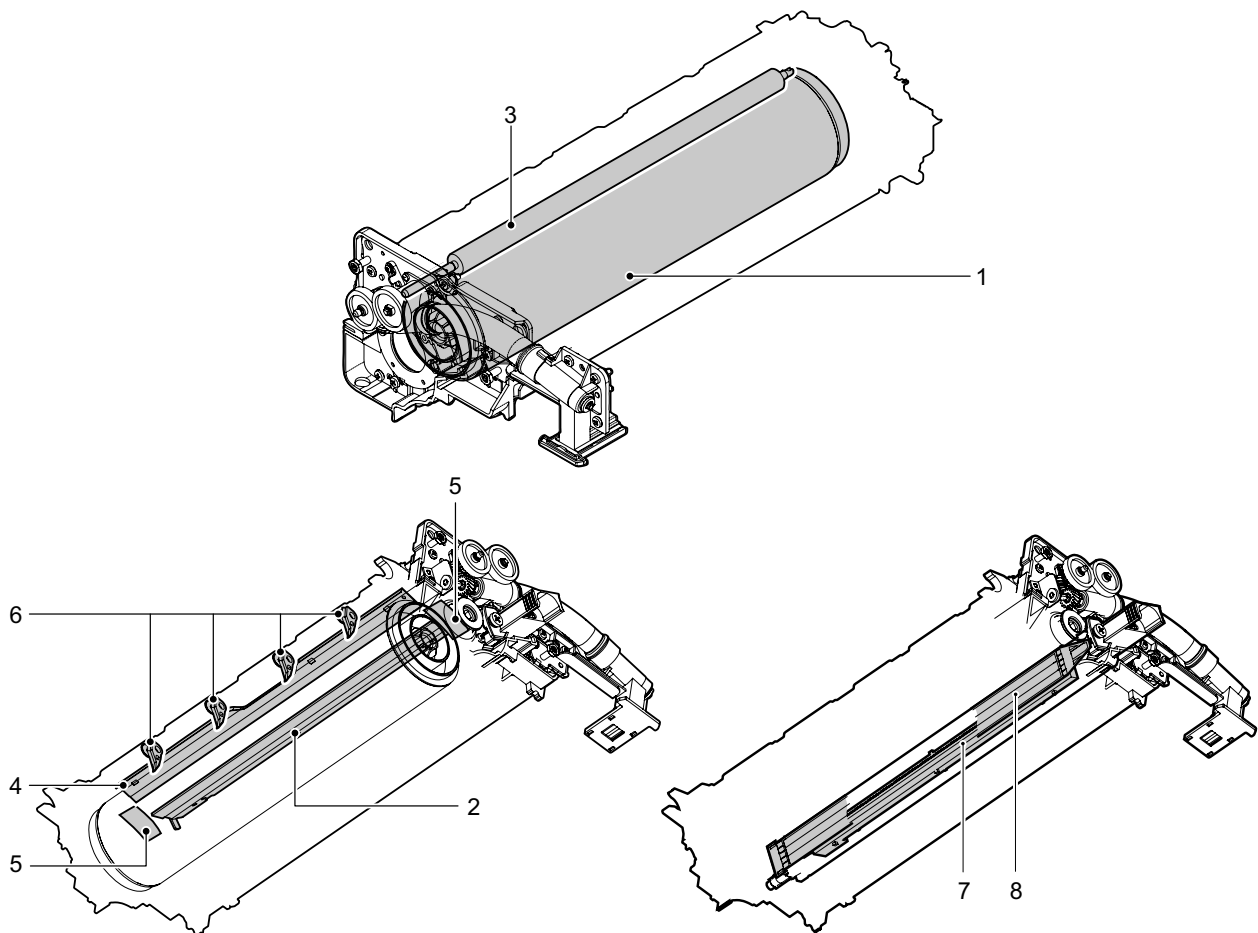
- 1) Remove the screen grid. (See "a. Screen grid")
- 2) Remove the saw teeth plate. (See "b. Saw teeth plate")
- 3) Remove the MC cleaner.



4. Maintenance

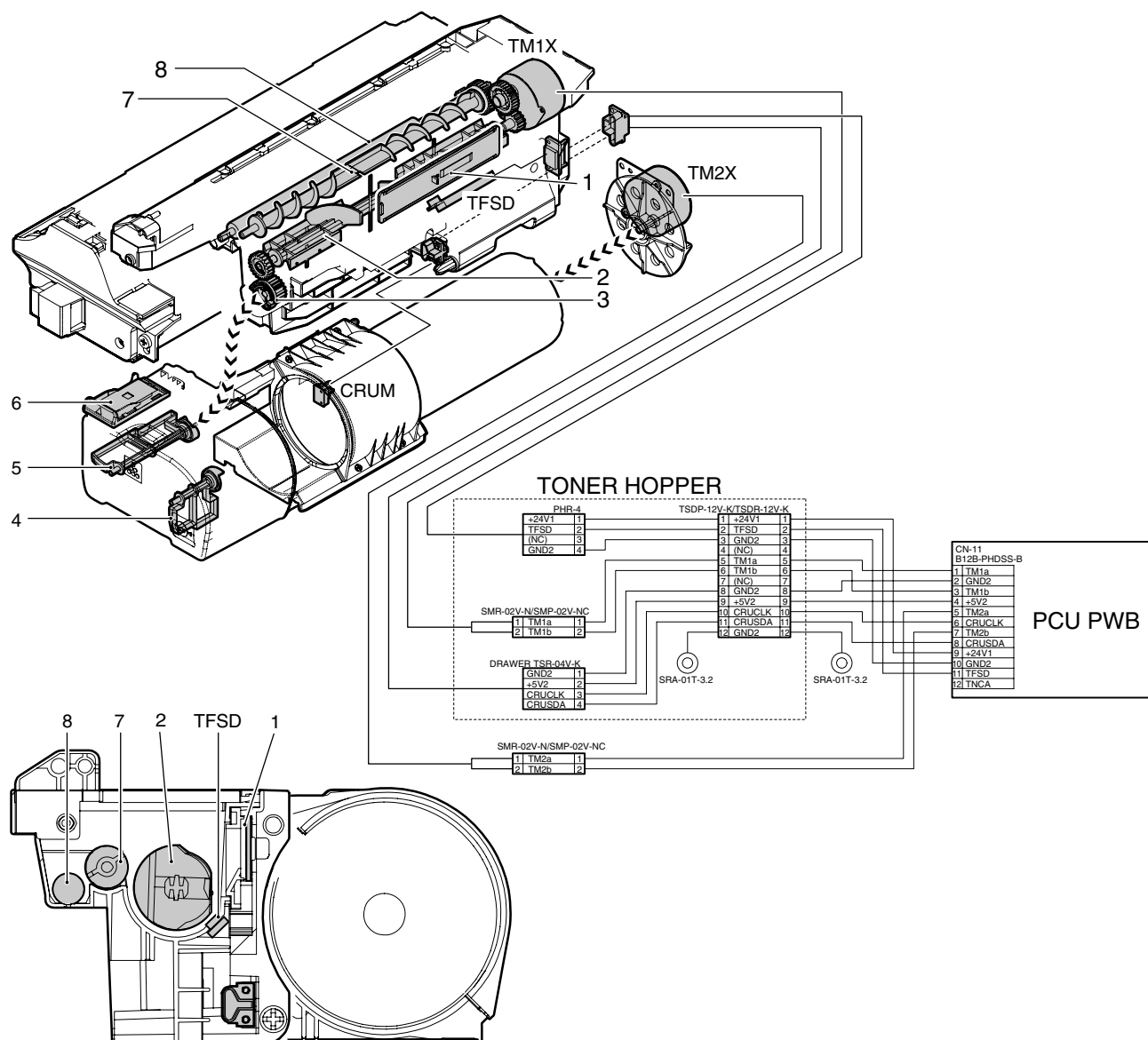
×: Check ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position
(Clean, replace, or adjust according to necessity.)

			When calling	250 K	500 K	750 K	1000 K	1250 K	1500 K	1750 K	2000 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
				300 K	600 K	900 K	1200 K	1500 K	1800 K	2100 K	2400 K	
Unit name	No.	Part name										
Drum peripheral section	1	Drum	×	▲	▲	▲	▲	▲	▲	▲	▲	After installation, the used product for one year is recommendable to exchange. (P/G No.: [43]-5)
	2	Cleaning blade	×	▲	▲	▲	▲	▲	▲	▲	▲	
	3	Cleaning brush roller	×	▲	▲	▲	▲	▲	▲	▲	▲	
	4	Toner reception seal	×	▲	▲	▲	▲	▲	▲	▲	▲	
	5	Side seal		×	▲	×	▲	×	▲	×	▲	
	6	Drum separation pawl	×	○	○	○	○	○	○	○	○	
	7	Sawtooth plate	○	▲	▲	▲	▲	▲	▲	▲	▲	
	8	Screen grid	×	▲	▲	▲	▲	▲	▲	▲	▲	



[K] TONER SUPPLY SECTION

1. Electrical and mechanism relation diagram



Code	Signal name	Name	Function/Operation	Type	NOTE
TM1X	TM1X	Toner motor 1	Transports toner in the toner hopper to the developing unit/Transports waste toner to the waste toner section	Synchronous motor	
TM2X	TM2X	Toner motor 2	Transports toner in the toner bottle to the toner hopper	Synchronous motor	
TFSD	TFSD	Toner sensor	Toner hopper remaining quantity detection	Magnetic sensor	
CRUM		CRUM lap	Stores the toner bottle information		

No.	Name	Function/Operation
1	TH shutter	Serves as a shutter to supply toner from the toner bottle unit to the toner hopper. When a toner bottle unit is installed, the shutter opens.
2	Toner mixing roller	Mixes toner in the toner hopper.
3	Waste toner box drive gear	Drives the waste toner transport parts.
4	Waste toner transport plate	Remains toner evenly in the waste toner box.
5	Waste toner transport plate	Remains toner evenly in the waste toner box.
6	Waste toner shutter	Serves as a shutter to receive waste toner from the process unit.
7	TH shaft	Toner supply roller to the toner unit section.
8	Toner supply roller	Toner supply roller to the developing unit section.

2. Operational descriptions

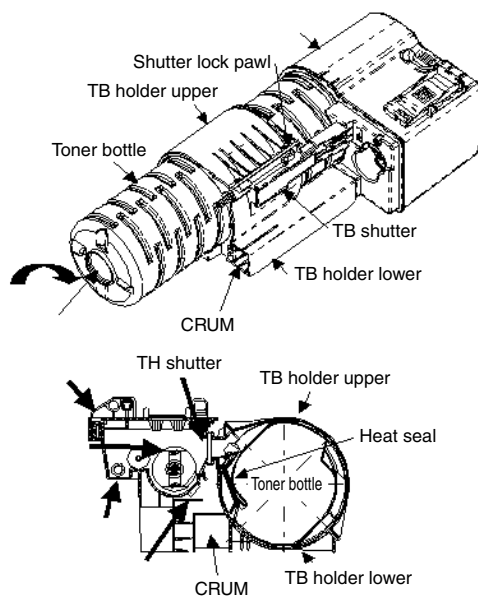
A. Outline

Adoption of the rotating toner bottle enables large capacity with a compact toner bottle size.

When the remaining toner detection sensor in the toner hopper unit detects no toner, the toner bottle turns to supply toner to the toner hopper. Following supply, since the sensor detects full or empty status inside the toner hopper based on a standard quantity of approximately 150 g of toner, even if the toner cartridge becomes empty, copying is not immediately suspended because toner inside the toner hopper is used (approximately 5K/6% print duty documents).

Toner filling amount	Life with 6% print duty k]documents
1,430g / 1,650g	72,000 sheets / 83,000 sheets

B. Composition

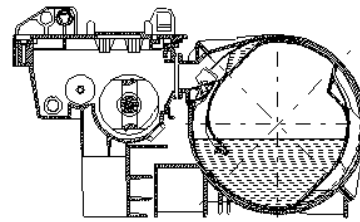


The toner cartridge is composed of the toner bottle with toner filled in it, the TB holder lower which holds the toner bottle and to which the CRUM and the waste toner box assembly are attached, and the TG holder upper.

The TB holder lower is attached to the TB shutter. When inserting it to the machine, the toner hopper rib releases the shutter lock pawl, and opens in linkage with the TH shutter. When removing the toner cartridge from the machine, the TB shutter closes.

* The toner discharge port of the toner bottle is sealed by the heat seal. Do not rotate the toner bottle manually, or the heat seal is dismantled and toner is discharged from the TB shutter port.

C. Operation



The toner remaining quantity sensor in the toner hopper detects the toner remaining quantity by the toner stirring roller rotation. When there is little toner, the toner bottle rotating motor of the machine is rotated.

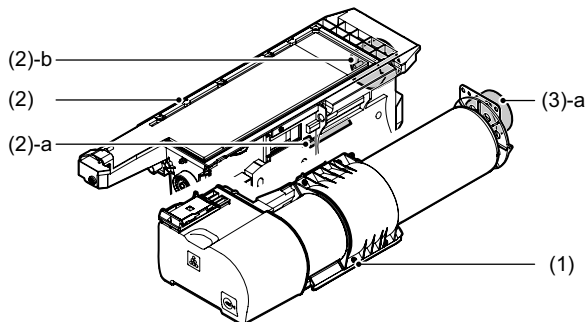
The toner bottle rotates at 4.2rpm. Toner of about 54g is supplied to the toner hopper for every rotation. When toner full is not detected after detecting the state with little toner for a certain period (4min), the toner cartridge is judged as empty, and the display to urge toner cartridge replace is shown on the operation panel.

* When the power is turned on for toner hopper replacement or cleaning, the toner cartridge replacement display is shown though toner is not accumulated enough in the toner hopper. In such a case, turn off/on the power again.

3. Disassembly and assembly

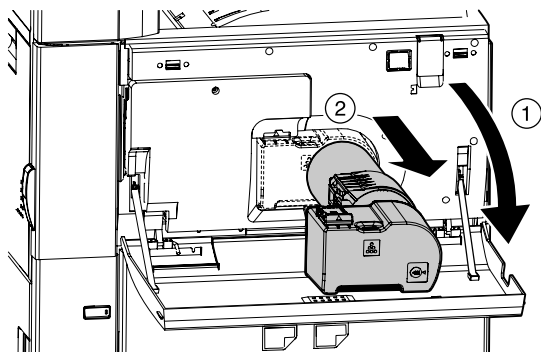
A. Toner hopper and toner bottle section

No.	Unit	No.	Parts
(1)	Toner bottle unit		
(2)	Toner hopper unit	a	Toner sensor
		b	Toner motor 1
(3)	Others	a	Toner motor 2



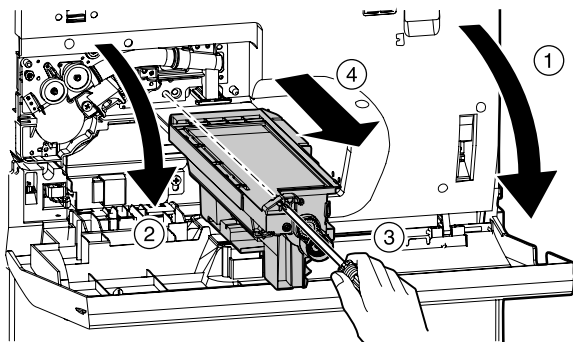
(1) Toner bottle unit

- 1) Open the front door.
- 2) Remove the toner bottle.

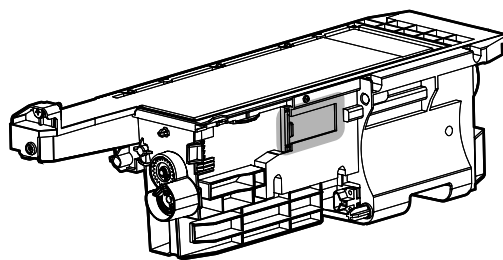


(2) Toner hopper unit

- 1) Remove the toner bottle unit. (See "(1) Toner bottle unit")
- 2) Open the process cover.
- 3) Remove the toner hopper unit.

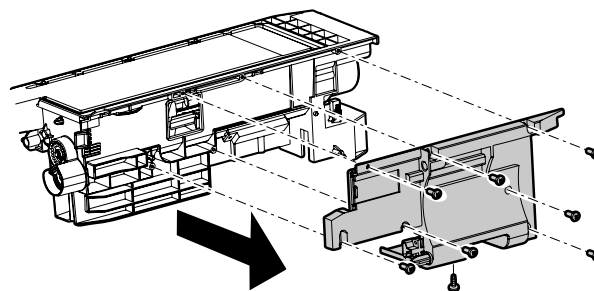


- 4) Clean the shutter area.

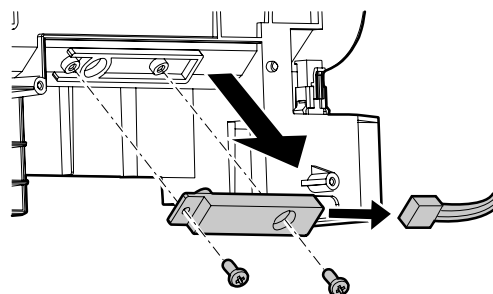


a. Toner sensor

- 1) Remove the toner hopper unit. (See "(2) Toner hopper unit")
- 2) Remove the cover.

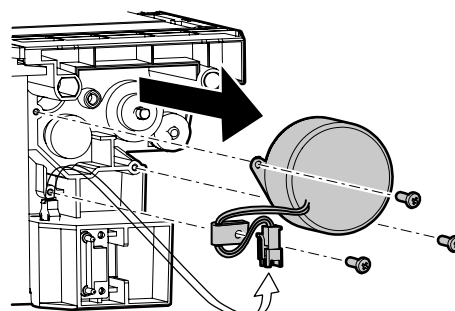


- 3) Remove the toner sensor.



b. Toner motor 1

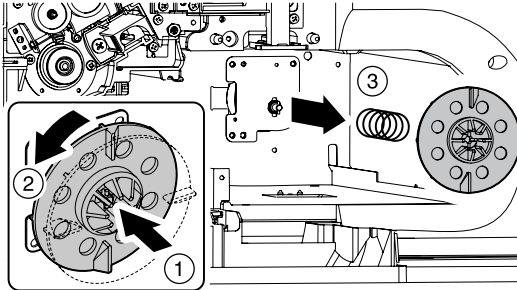
- 1) Remove the toner hopper unit. (See "(2) Toner hopper unit")
- 2) Remove the toner motor 1.



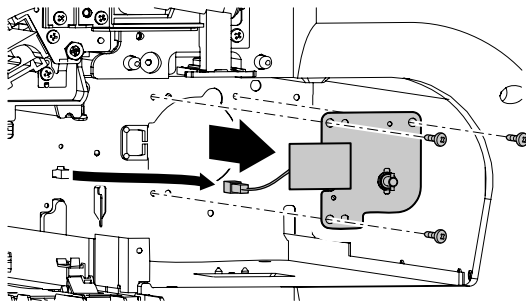
(3) Others

a. Toner motor 2

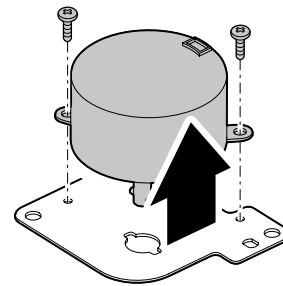
- 1) Remove the toner bottle. (See “(1) Toner bottle unit”)
- 2) Remove the toner hopper unit. (See “(2) Toner hopper unit”)
- 3) While pressing the bottle coupling, turn it 90 degrees to the left and remove it. Remove the spring.



- 4) Disconnect the connector, and remove the toner motor unit.



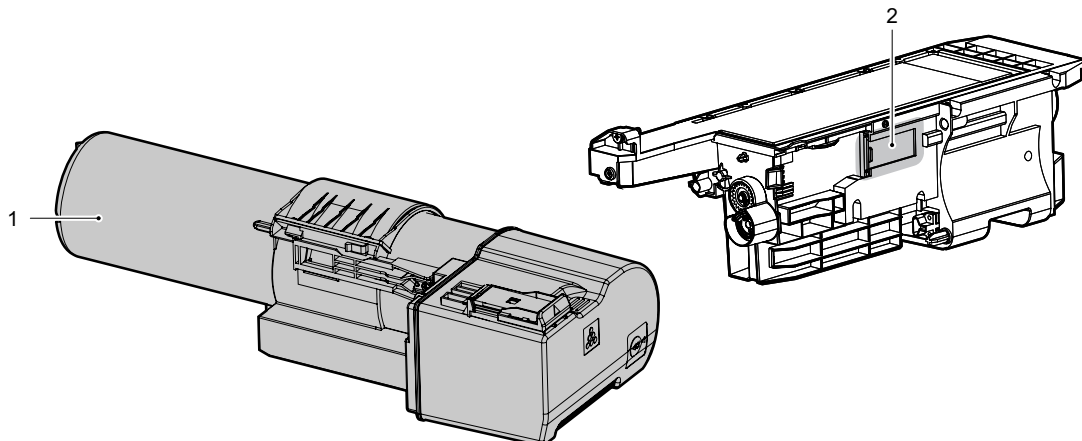
- 5) Remove the toner motor 2.



4. Maintenance

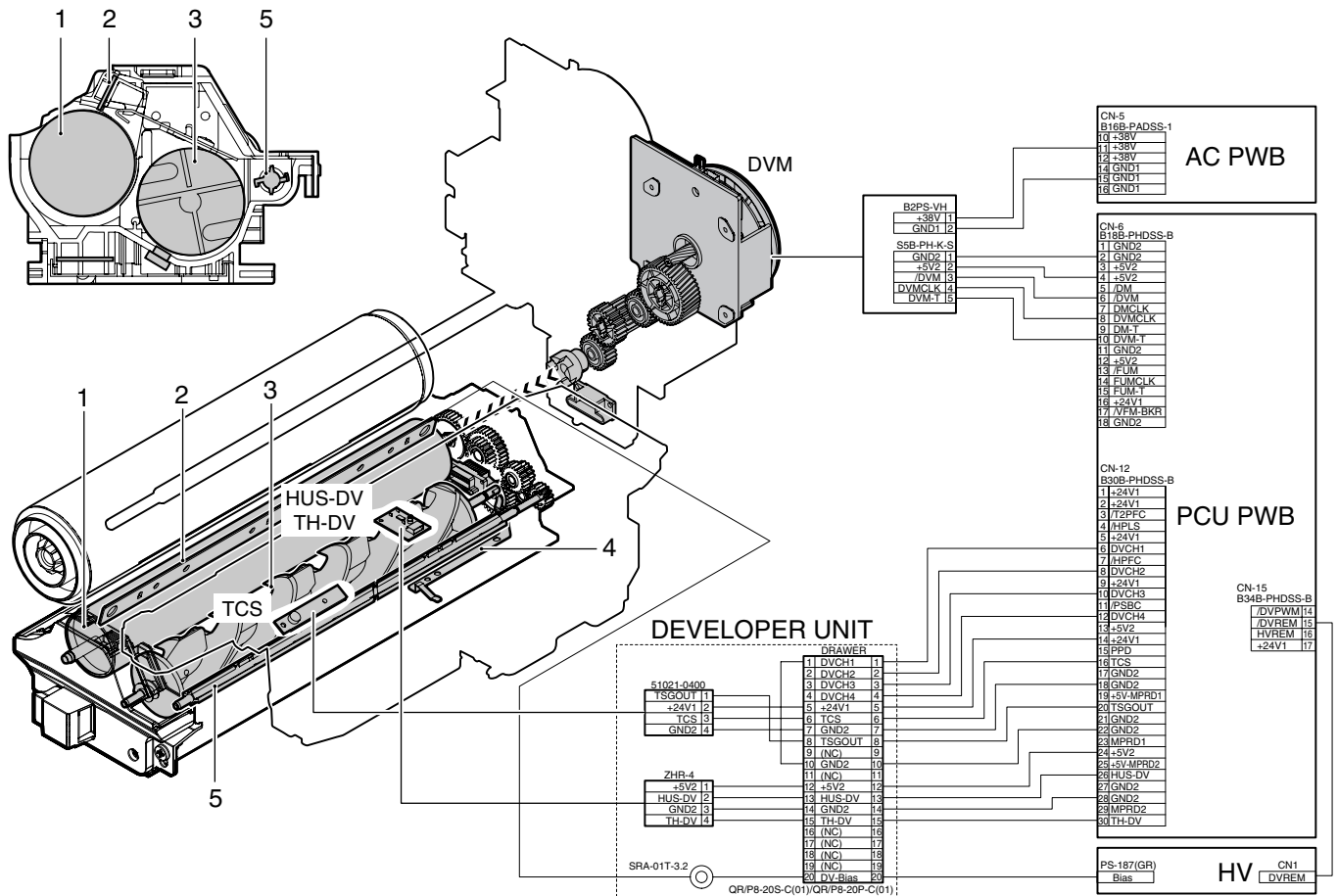
X: Check O: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position
(Clean, replace, or adjust according to necessity.)

		55ppm (PM: 250K)	When calling	250 K	500 K	750 K	1000 K	1250 K	1500 K	1750 K	2000 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
				300 K	600 K	900 K	1200 K	1500 K	1800 K	2100 K	2400 K	
Unit name	No.	Part name										
Developing section	1	Toner bottle										Assembly when installing/ Replacement by user when empty
	2	Toner hopper	O	O	O	O	O	O	O	O	O	Clean the shutter area.



[L] DEVELOPING SECTION

1. Electrical and mechanism relation diagram



Code	Signal name	Name	Function/Operation	Type	NOTE
HUS-DV	HUS-DV	Developing humidity sensor	Developing section peripheral humidity detection	Humidity sensor	Analog detector
TCS	TCS	Toner density sensor	Toner density detection	Magnetic sensor	Analog detector
TH-DV	TH-DV	Developing humidity sensor	Developing section humidity detection	Thermistor	Analog detector
DVM	DVM	Developing motor	Drives the developing section.	DC brush-less motor	
Bias	Bias	Developing bias	Developing bias		

No.	Name	Function/Operation
1	Developing roller	Forms magnetic brush with developer and put toner on the OPC drum.
2	DV doctor	Keeps the height of the magnetic brush on the developing roller at a fixed level.
3	Mixing roller	Mixes developer (carrier and toner) and charges toner negatively.
4	DV earth plate	Earth plate for DV unit
5	AG roller	Mixes toner supplied from the toner hopper, and supplies toner to the DV box evenly.

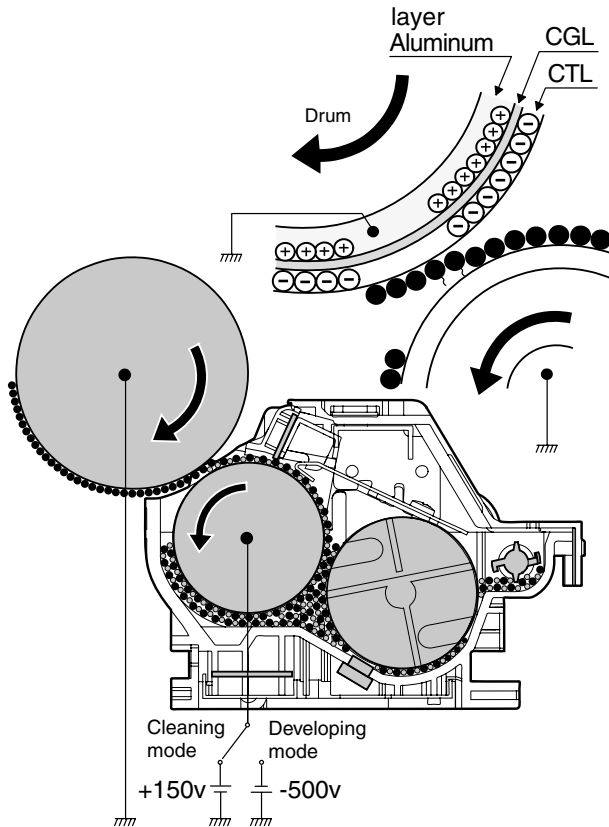
2. Operational descriptions

A. Outline

In this section, toner is attached to electrostatic latent images formed by laser beams on the OPC drum, making visible images.

B. Description

Electrostatic latent images formed on the OPC drum by the LED (writing) unit (LED image light) are converted into visible images by toner.



Toner in the developing unit is stirred by the mixing roller.

When toner is stirred, it is negatively charged by mechanical friction.

The developing bias voltage (negative) is applied to the developing roller.

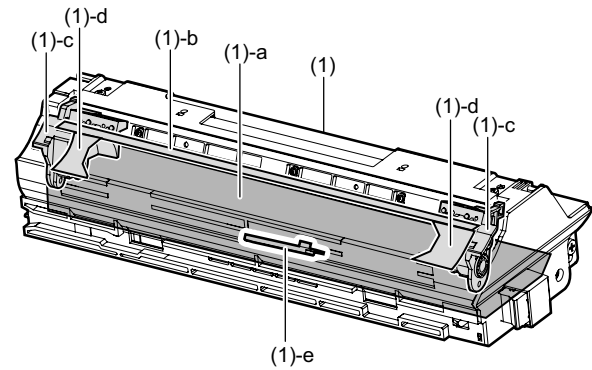
Negatively charged toner is attracted and attached to the area on the OPC drum where negative voltage is reduced by exposure.

On the other hand, the negative voltage at an area where exposure is not made is higher than the developing bias voltage, and toner is not attached.

3. Disassembly and assembly

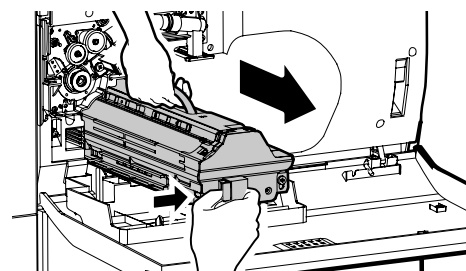
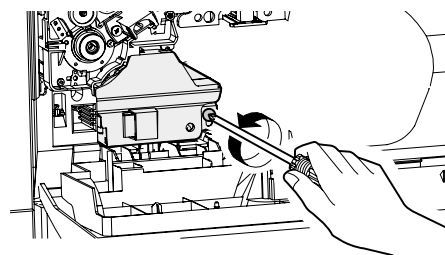
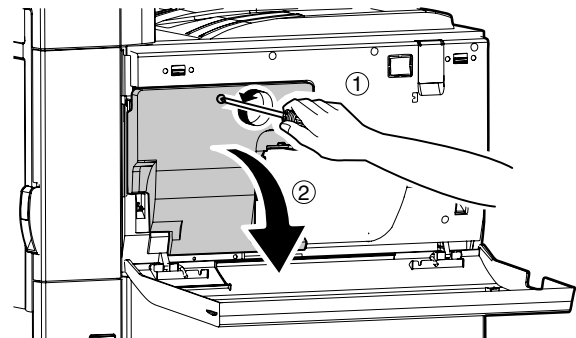
A. Developer tank section

No.	Unit	No.	Parts	Maintenance
(1)	Developing unit	a	Developer	▲
		b	DV seal	▲
		c	MG holder F and R	○
		d	Side seal F and R	▲
		e	Toner density sensor	



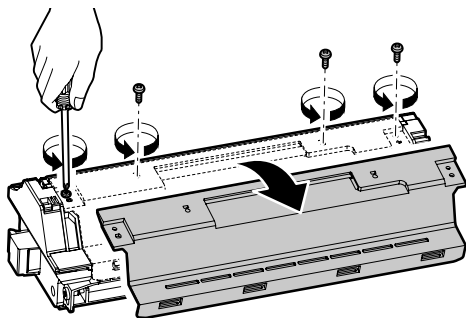
(1) Developing unit

- 1) Take out the developing tank.

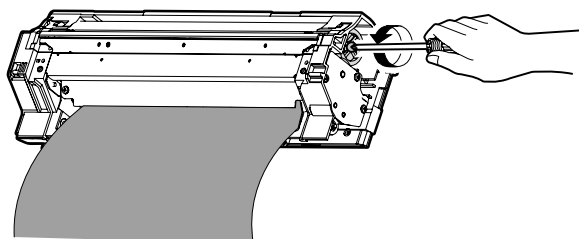


a. Developer

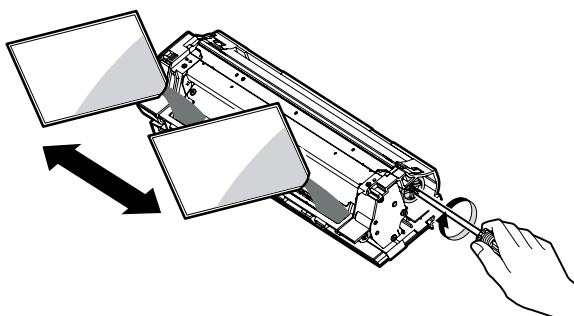
- 1) Take out the developing tank. (See "(1) Developing unit")
- 2) Remove the DV cover.



- 3) Turning the MG roller, take out the old developer.

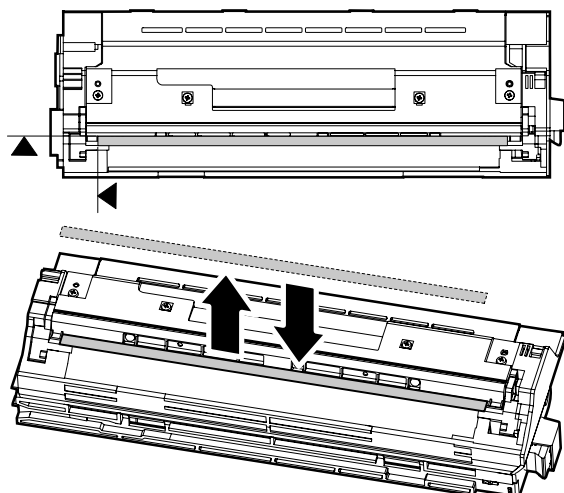


- 4) Insert the new developer.



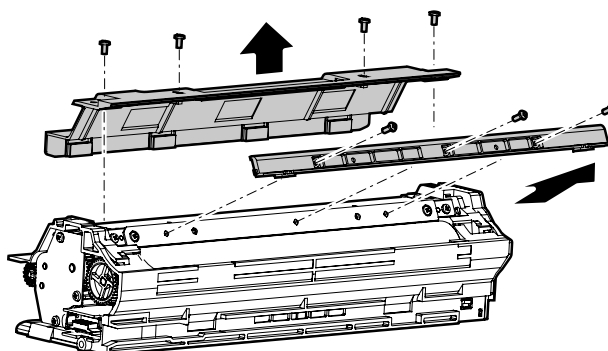
b. DV seal

- 1) Take out the developing tank. (See "(1) Developing unit")
- 2) Take out the old DV seal.
- 3) Wipe the sealing face with alcohol.
- 4) Affix the new DV seal at the reference position.

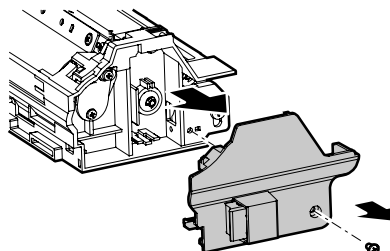


c. MG holder F and R

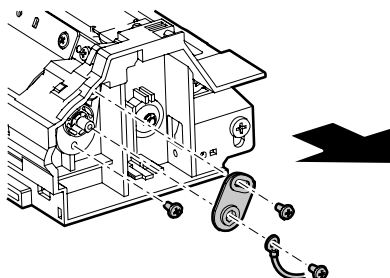
- 1) Take out the developing tank. (See "(1) Developing unit")
- 2) Remove the DV cover. (See "a. Developer")
- 3) Remove the doctor cover.



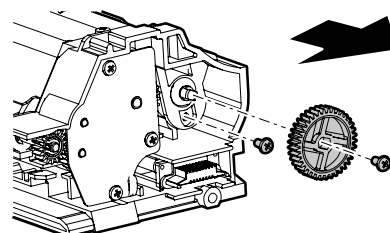
- 4) Remove the DV cover front.



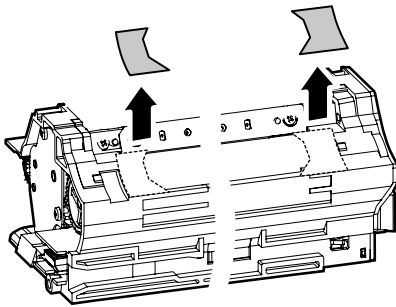
- 5) Remove the bias line and main pole position adjusting plate and screws.



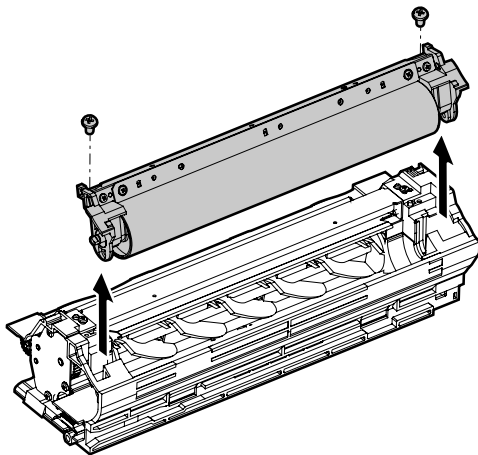
- 6) Remove the MG gear and screws.



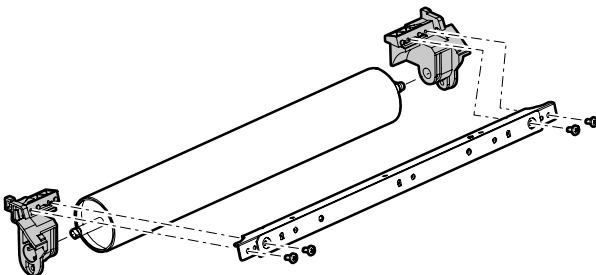
- 7) Remove the side seals F and R.



- 8) Remove the MG roller unit.

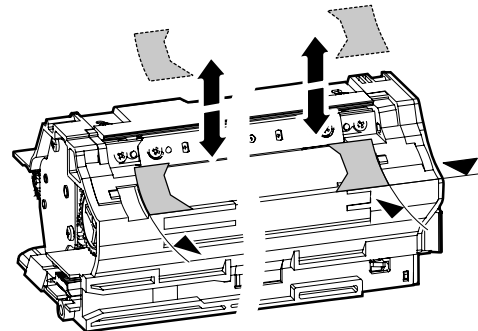
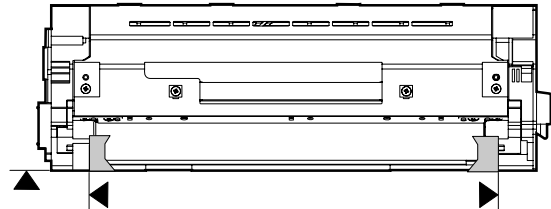


- 9) Remove the doctor attaching plate.
10) Remove the MG holders F and R.



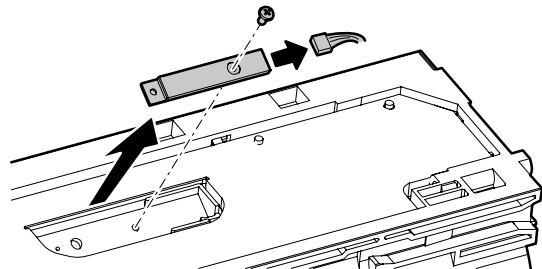
d. Side seal F and R

- 1) Take out the developing tank. (See “(1) Developing unit”)
- 2) Remove the doctor cover.
- 3) Peel off the right and left side seals.
- 4) Clean the peeled area.
- 5) Peel off the new right and left seals from the mounting paper and affix in the designated positions.



e. Toner density sensor

- 1) Take out the developing tank. (See “(1) Developing unit”)
- 2) Remove the DV cover. (See “a. Developer”)
- 3) Remove the toner concentration sensor.

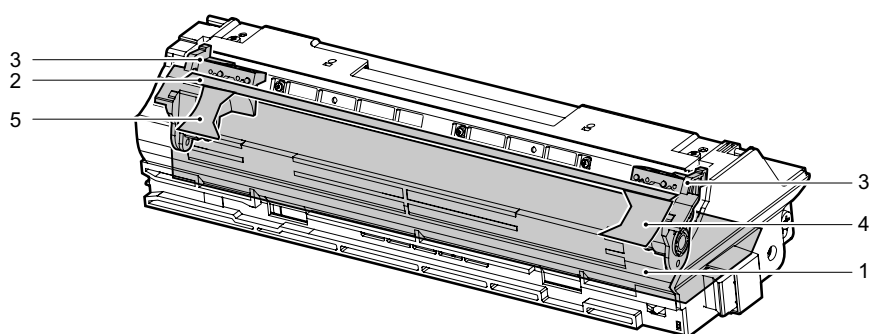


4. Maintenance

X: Check O: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

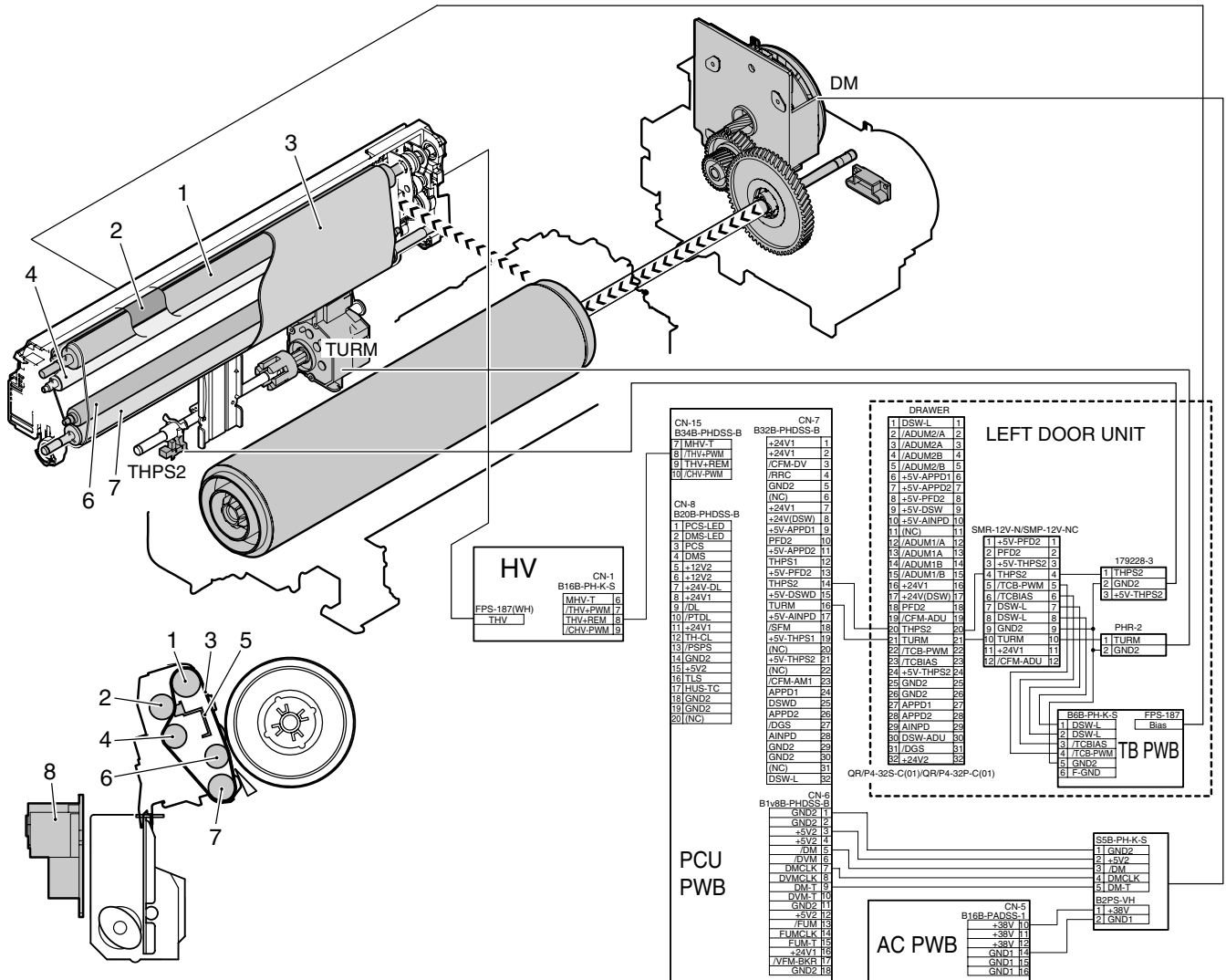
(Clean, replace, or adjust according to necessity.)

			When calling	250 K	500 K	750 K	1000 K	1250 K	1500 K	1750 K	2000 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
				300 K	600 K	900 K	1200 K	1500 K	1800 K	2100 K	2400 K	
Unit name	No.	Part name										
Developing section	1	Developer		▲	▲	▲	▲	▲	▲	▲	▲	Supply when installing
	2	DV seal		▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [37]-5)
	3	MG holder F/R	O	O	O	O	O	O	O	O	O	
	4	DV side seal F		▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [36]-14)
	5	DV side seal R		▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [36]-13)



[M] TRANSFER SECTION

1. Electrical and mechanism relation diagram



Code	Signal name	Name	Function/Operation	Type	NOTE
DM	DM	OPC drum motor	Drives the OPC drum and the transfer section.	DC brushless motor	
TURM	TURM	Transfer separation motor	Drives and separates the transfer belt.	DC brush motor	The transfer belt is pressed on the OPC drum only during printing.
THPS2	THPS2	Transfer belt contact/separation home position sensor 2	Transfer belt separation home position detection 2	Transmission type	Other sensor, switch
THV	THV	Transfer high voltage	High voltage for transfer		
HUS-TC	HUS-TC	Process humidity sensor	Process section peripheral humidity detection	Humidity sensor	Analog detector (Not used)

No.	Name	Function/Operation
1	Transfer drive roller (Drive)	Drives the transfer belt.
2	Transfer cleaning roller	Cleans the transfer belt.
3	Transfer belt	Transfers toner images from the OPC drum to paper.
4	Transfer tension roller	Applies a proper tension to the transfer belt.
5	Transfer belt discharge brush	Connects the transfer belt to the chassis ground.
6	Transfer roller	Applies a transfer voltage to the transfer belt.
7	Transfer auxiliary roller (Idle)	Helps to stretch the transfer belt.
8	Transfer (TCCL) bias high voltage PWB	Generates a bias voltage for the transfer cleaning roller in cleaning or in the print mode.

2. Operational descriptions

A. Outline

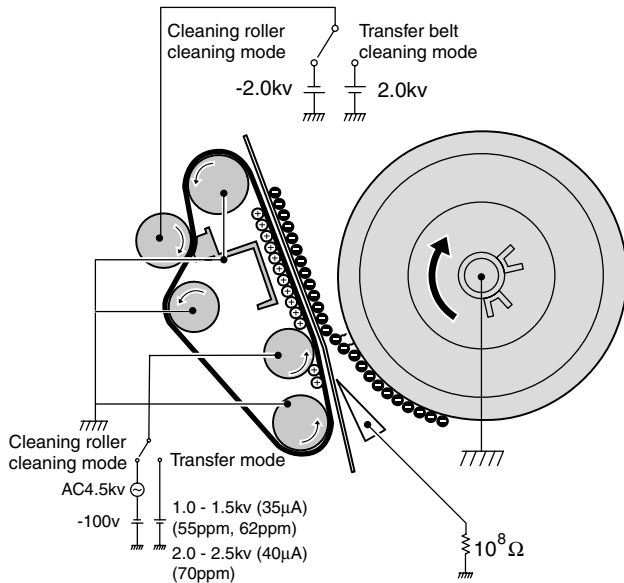
In this section, toner images on the OPC drum are transferred to paper.

B. Description

1) Toner image transfer

Toner images formed on the drum by the developing roller are transferred to paper by the transfer belt.

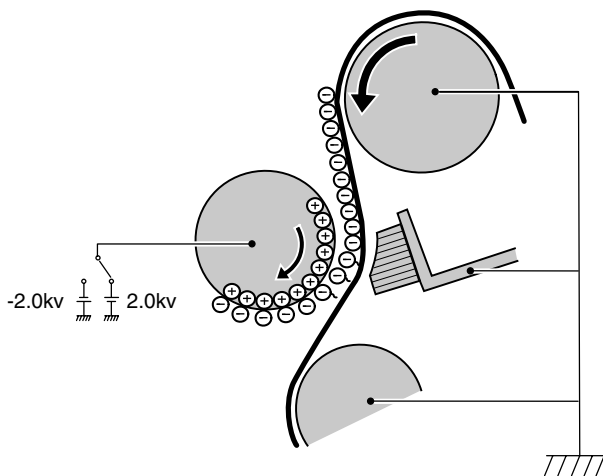
Toner on the drum is negatively charged by stirring in the developing unit. By applying a positive voltage to the transfer roller, the transfer belt and paper on the transfer belt are positively charged to transfer negatively charged toner images to paper.



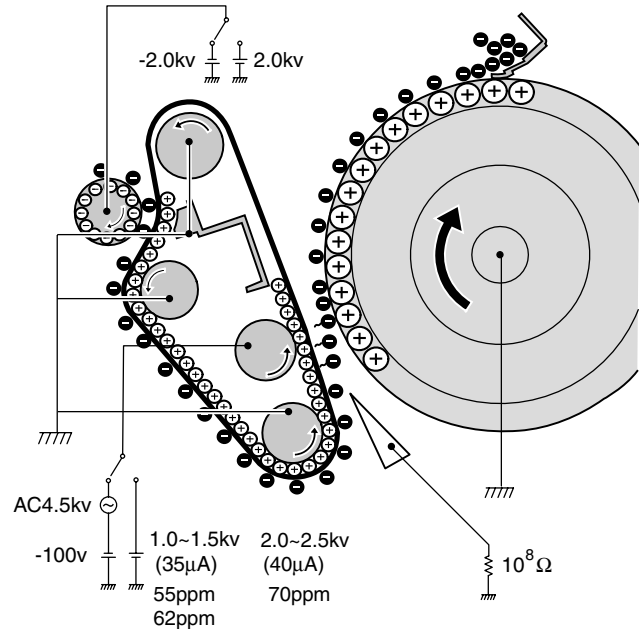
2) Transfer belt cleaning

During the job, a positive voltage is applied to the transfer cleaning roller so that negatively charged toner on the transfer belt is attracted to the cleaning roller.

(The brush on the back of the transfer belt is provided for increasing the cleaning effect.)



After completion of the job, the applied voltage to the transfer cleaning roller is switched to negative, and toner is returned from the transfer cleaning roller to the transfer belt, and toner on the transfer belt is attracted to the drum and cleaned by the cleaning blade.



Cleaning timing:

After completion of the job, When warming-up, After canceling a jam, After execution of process control

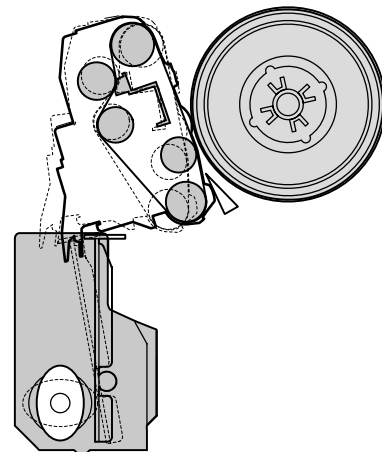
3) Transfer belt separation/contact

Transfer belt is separated by the transfer separation motor.

The transfer belt is in contact with the drum except for the following cases.

The case that the transfer belt is separated from the drum except:

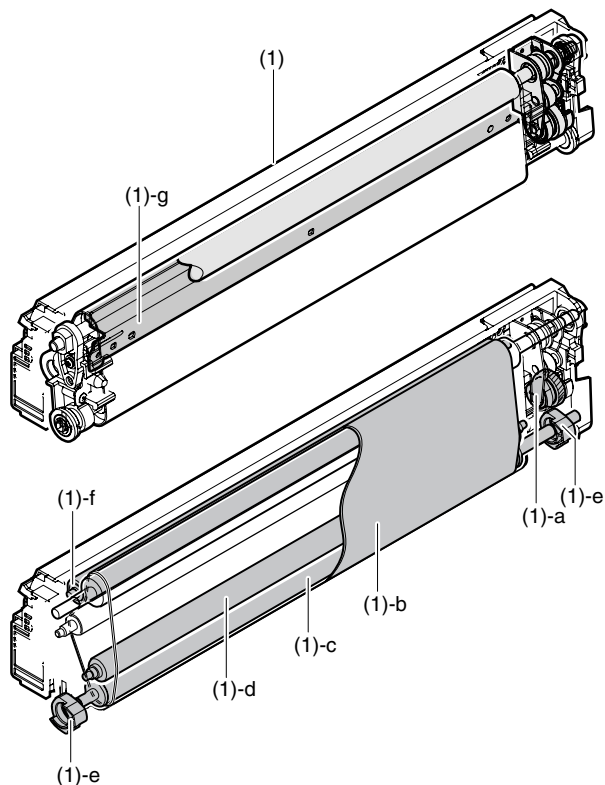
- * When executing process control (to prevent against breakage of toner patch on the drum)
- * When a jam occurs (Protection of the drum, left door open/close)
- * When shipping (Protection of the drum. Separate with the simulation 6-1 (7).)



3. Disassembly and assembly

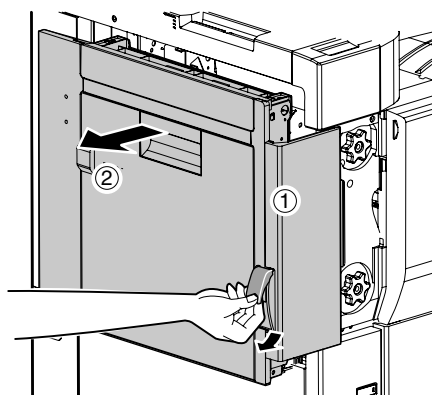
A. Transfer section

No.	Unit	No.	Parts	Maintenance
(1)	Transfer unit	a	Transfer drive gear	× ▲
		b	Transfer belt	○ ▲
		c	Transfer auxiliary roller	
		d	Transfer roller	▲
		e	Transfer roller collar	× ▲
		f	Transfer cleaning roller	
		g	Transfer cleaning brush	

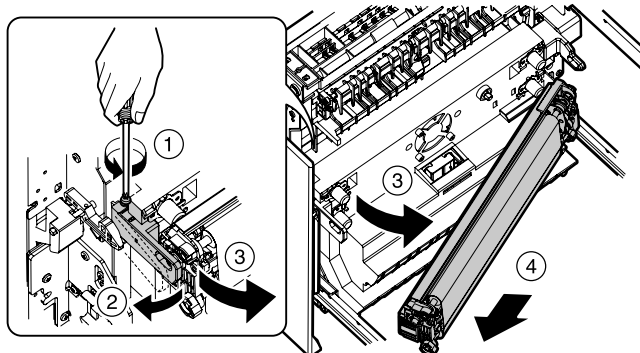


(1) Transfer unit

- 1) Open the left door unit.

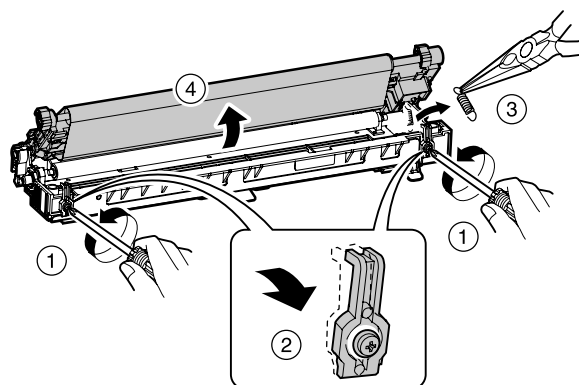


- 2) Loosen the blue screw and open the holder to remove the transfer unit.

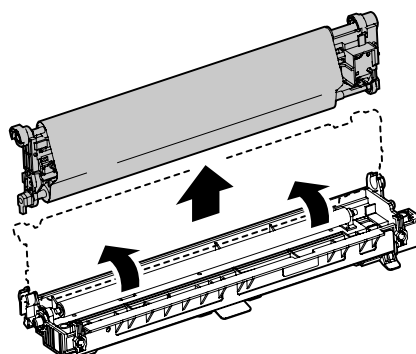


a. Transfer drive gear

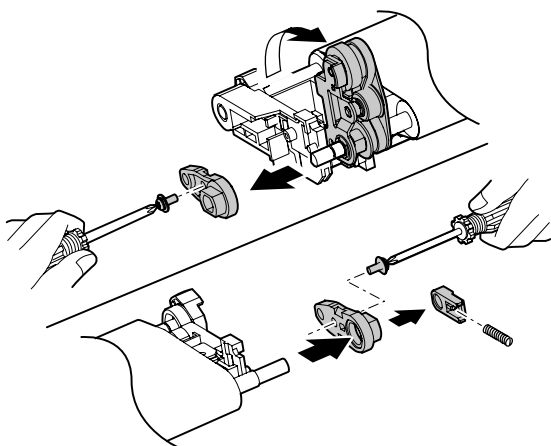
- 1) Remove the transfer unit. (See "(1) Transfer unit")
- 2) Loosen the blue screw and unhook the hook lever in order to open the transfer belt unit in the arrowed direction.
- 3) Remove the spring.



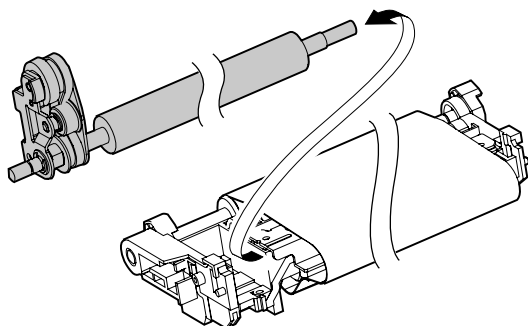
- 4) Remove the transfer belt unit in the arrowed direction.



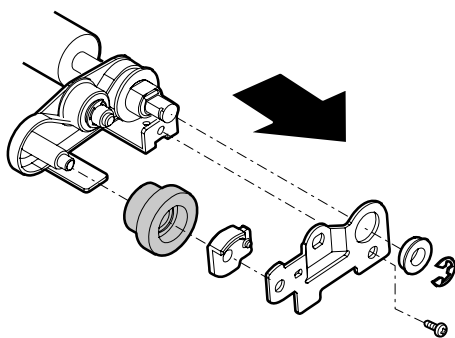
- 5) Remove the ground members.
- 6) Remove the blue screw to remove the roller fixing members.



- 7) Pull out the upper transfer roller unit from the transfer belt.

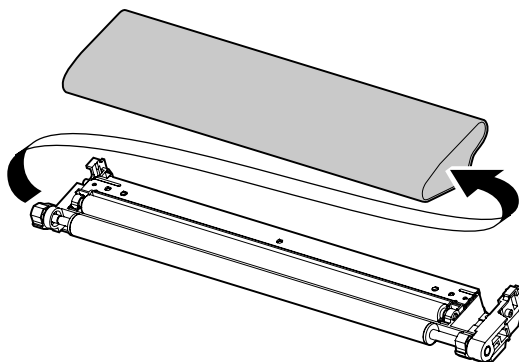


- 8) Remove the E-ring and screw to remove the transfer drive gear.



b. Transfer belt

- 1) Remove the transfer unit. (See "(1) Transfer unit")
- 2) Remove the transfer belt unit. (See "a. Transfer drive gear")
- 3) Pull out the transfer belt.

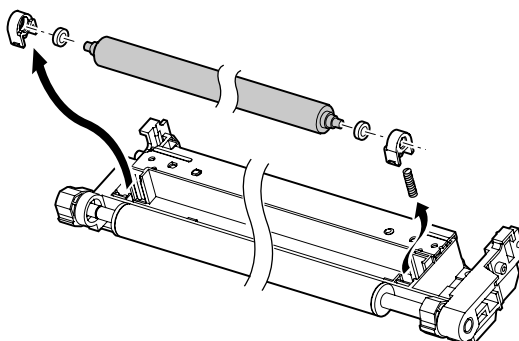


c. Transfer auxiliary roller

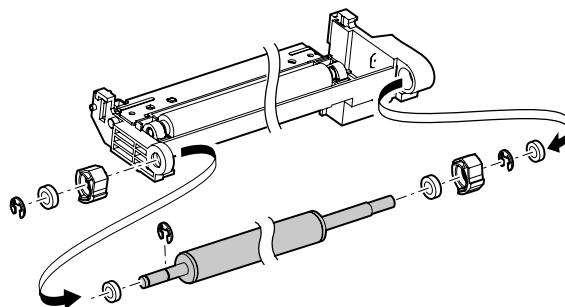
d. Transfer roller

e. Transfer roller collar

- 1) Remove the transfer unit. (See "(1) Transfer unit")
- 2) Remove the upper transfer roller unit. (See "a. Transfer drive gear")
- 3) Remove the transfer belt. (See "b. Transfer belt")
- 4) Remove the transfer tension roller bearing to remove the transfer roller.

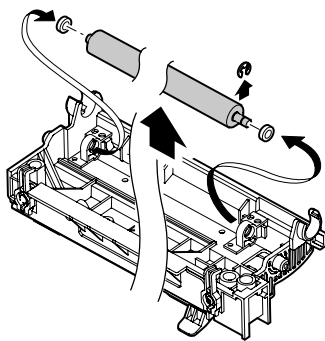


- 5) Remove the E-ring to remove the transfer roller transfer roller collar.



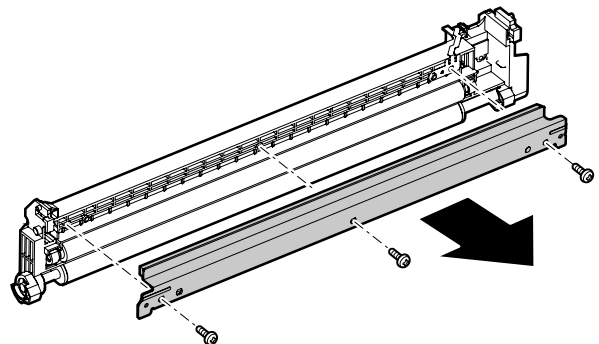
f. Transfer cleaning roller

- 1) Remove the transfer unit. (See "(1) Transfer unit")
- 2) Remove the transfer belt unit. (See "a. Transfer drive gear")
- 3) Remove the E-ring to remove the transfer cleaning roller.



g. Transfer cleaning brush

- 1) Remove the transfer unit. (See "(1) Transfer unit")
- 2) Remove the upper transfer roller unit.
(See "a. Transfer drive gear")
- 3) Remove the transfer belt. (See "b. Transfer belt")
- 4) Remove the cleaning brush.

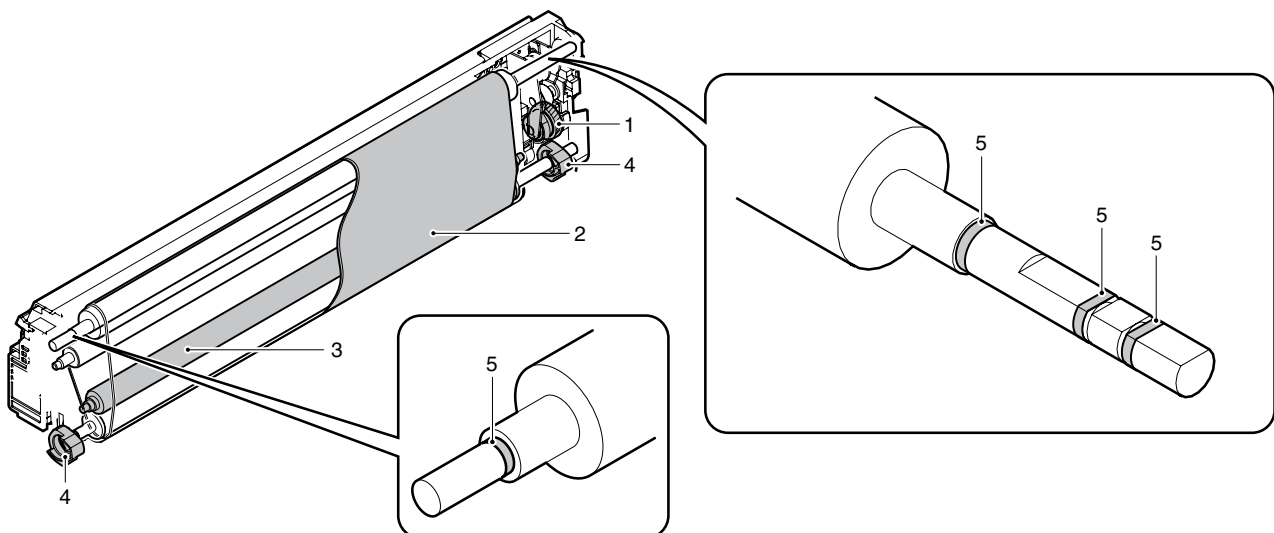


4. Maintenance

×: Check ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position
(Clean, replace, or adjust according to necessity.)

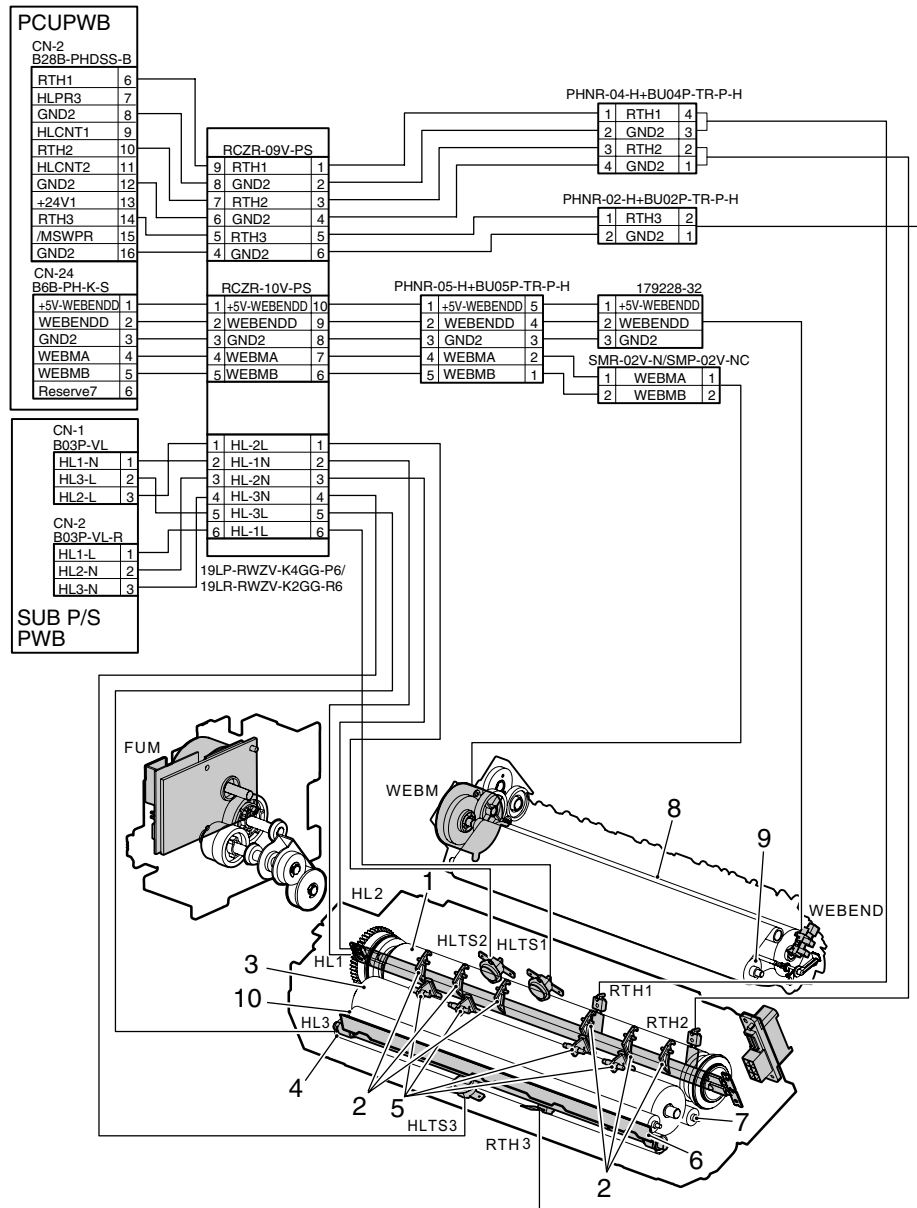
			When calling	250 K	500 K	750 K	1000 K	1250 K	1500 K	1750 K	2000 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
				300 K	600 K	900 K	1200 K	1500 K	1800 K	2100 K	2400 K	
Transfer section	No.	Part name										
	1	Transfer drum gear	×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [45]-25)
	2	Transfer belt	○	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [45]-50)
	3	Transfer roller		▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [45]-47)
	4	Transfer roller collar		×	▲	×	▲	×	▲	×	▲	(P/G No.: [45]-48)
	5	Shaft (Conductive grease)	×	×	×	×	×	×	×	×	×	UKOG-0012QSZZ
	6	Paper guide	○	○	○	○	○	○	○	○	○	

* When cleaning the transfer belt, never use alcohol, solvent, and water.



[N] FUSING SECTION

1. Electrical and mechanism relation diagram



Code	Signal name	Name	Type	Function/Operation	Active condition	NOTE
RTH1	RTH1	Fusing temperature sensor (1)	Thermistor	Detects the surface temperature of the heat roller. (Center section)	Analog input	
RTH2	RTH2	Fusing temperature sensor (2)	Thermistor	Detects the surface temperature of the heat roller. (Edge section)	Analog input	
HLTS1	HLTS1	Thermostat (1)		Shuts conduction to the heater lamp when the temperature rises abnormally. [For the heat roller]		
HLTS2	HLTS2	Thermostat (2)		Shuts conduction to the heater lamp when the temperature rises abnormally. [For the heat roller]		
HL1	HL1	Heater lamp (1)		Heats the heat roller.		
HL2	HL2	Heater lamp (2)		Heats the heat roller.		
RTH3	RTH3	Fusing temperature sensor (3)	Thermistor	Detects the surface temperature of the sub heat roller.		
HLTS3	HLTS3	Thermostat (3)		Shuts conduction to the heater lamp when the temperature rises abnormally. [For the sub heat roller]	Analog input	
HL3	HL3	Heater lamp (3)		Heats the sub heat roller.		
FUM	FUM	Fusing motor		Drives the fusing unit.		
WEBEND	WEBEND	Web end sensor	Transmission type	Detects the web paper end (Replacement).	End detection	
WEBM	WEBM	Web motor		Drives the web roller.		

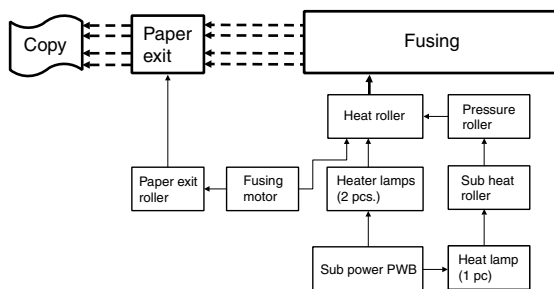
No.	Name	Function/Operation	Active condition	NOTE
1	Heat roller	Heats and presses toner on paper and fuses it on paper.		
2	Separation pawl	Mechanically separates paper which was not separated naturally from the heat roller.		
3	Pressure roller	Heats and presses toner on paper and fuses it on paper.		
4	Sub heat roller	Heats the pressure roller.		
5	Separation pawl	Mechanically separates paper which was not separated naturally from the pressure roller.		
6	Cleaning sheet	Clean the sub heat roller surface.		
7	CL roller	Clean the pressure roller.		
8	Web roller	Clean the heat roller.		
9	Pressure roller	Applies a pressure to web paper to connect the heat roller.		
10	Lower CL roller DG2	Clean the pressure roller.		

2. Operational descriptions

A. General

This section performs the following functions and operations.

- 1) Toner attached to paper in the transfer section are heated and pressed by the fusing roller onto paper to fuse.
- 2) The sub heat roller is used to improve fusing capacity and separation capacity after fusing.



B. Fusing unit drive

To drive the fusing unit, the drive power is transmitted from the drive motor (FUM) through the connection gear to the upper heat roller gear.

The drive motor (stepping motor) is driven according to the control signal sent from the PCU.



C. Heater lamp drive

The surface temperature of the heat roller detected by the thermostat is sent to the PCU.

When the temperature is lower than the specified level, the heater lamp lighting signal is sent from the PCU to the heater lamp drive circuit in the sub power PWB.

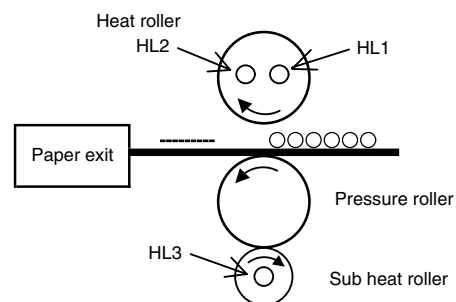
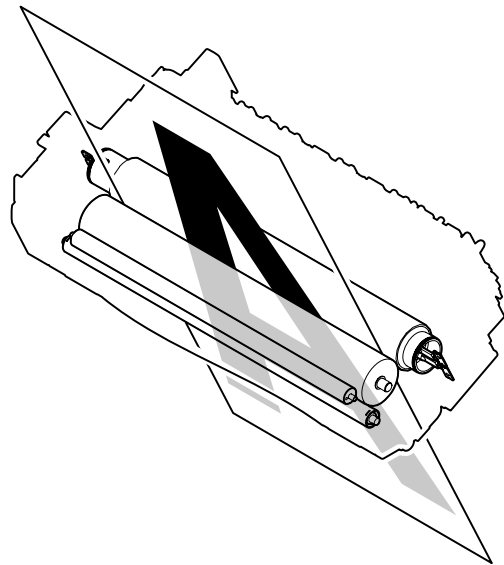
The power triac in the heater lamp drive circuit is turned on, and the AC power is supplied to the heater lamp, lighting the lamp and heating the heat roller.

To prepare for an abnormally high temperature of the heat roller, the thermostat is provided for safety.

When the thermostat is opened, power supply (AC line) to the heater lamp is cut off.

D. Fusing operation

Toner on paper is heated and pressed to be fused by the heat roller.



Two heater lamps are provided for the heat roller and one heater lamp is provided for the sub heat roller for the pressure roller to sub heat paper from above and below.

This is because toner on paper must be heated from above and below to be fused on paper.

Pressure roller are of silicon rubber because of the following reasons and purpose. This is the following reason, objective.

- 1) Paper is separated upward. (Since the heat roller is of higher hardness, the pressure roller is deformed to separate paper upward.)
- 2) The nip quantity is increased to increase heat capacity for paper.
- 3) By pressing paper with the flexible roller, toner is fused without deformation. (The flatness, however, is not so high.)

E. Fusing temperature control

The temperature sensor is provided at the center of the heat roller and the sub heat roller.

The roller temperature is detected by the installed temperature sensor, and the heater lamp is controlled so that the temperature is maintained at the specified level.

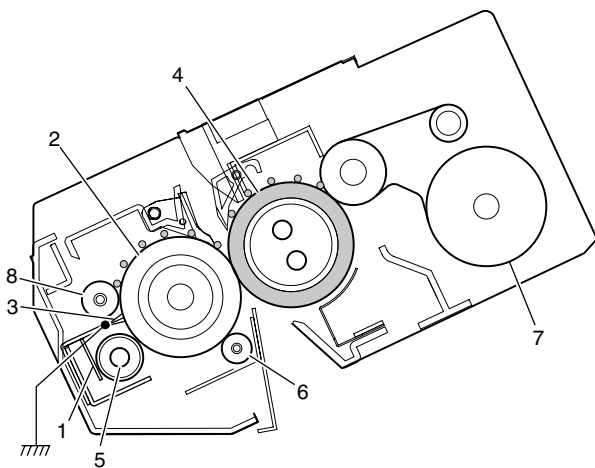
In addition, the fusing temperature is switched according to the kind of paper.

Mode	Paper	Fusing roller	Sub heat roller
Ready condition Print mode	Standard paper	185°C	185°C
	Thick paper	220°C	180°C
	Tab paper	220°C	180°C
	Postcard	200°C	200°C
Pre-heat	—	140°C	140°C

F. Cleaning operation

The fusing roller removes toner and dusts from the heat roller and the pressure roller surfaces by the following three methods.

- Sub-heat roller: Clean the sub heat roller with the cleaning sheet.
- Pressure roller: Mechanical cleaning by the CL roller.
- Heat roller: Mechanical cleaning by the web roller.

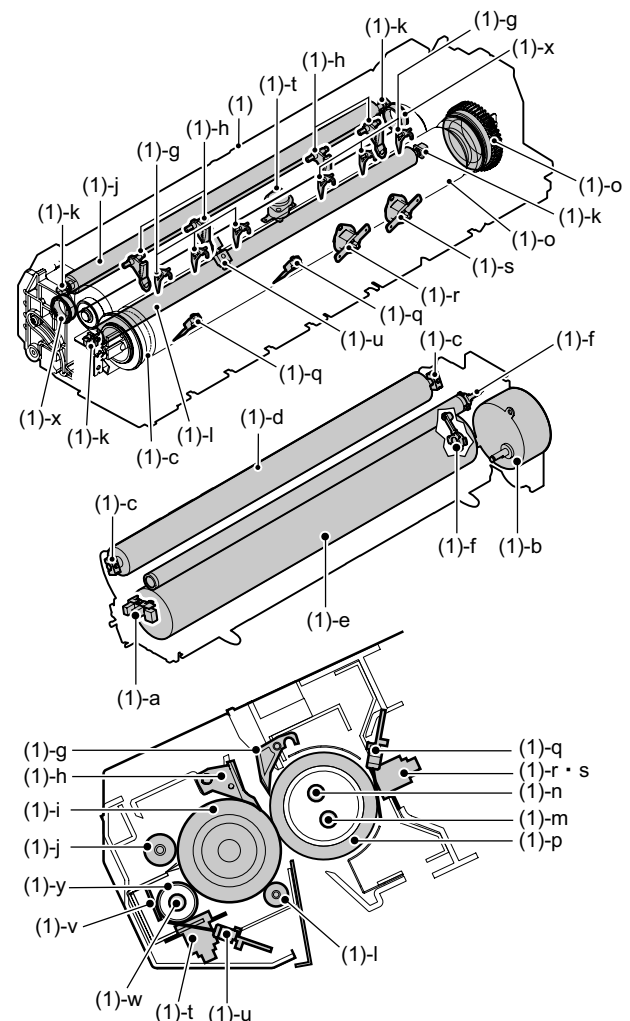


No.	Name
1	Cleaning sheet
2	Pressure roller
3	Discharge brush
4	Heat roller
5	Sub heat roller
6	CL roller
7	Web roller
8	Lower CL roller DG2

3. Disassembly and assembly

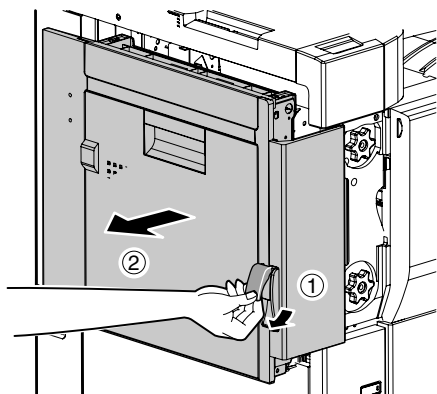
A. Fuser section

No.	Unit	Parts	Maintenance
(1)	Fusing unit	a Web end sensor	×
		b Web motor	
		c Pressure bearing	▲
		d Pressure roller	× ▲
		e Web roller	× ▲
		f Web bearing	▲
		g Heat roller separation pawl	× ▲
		h Pressure roller separation pawl	× ▲
		i Pressure roller	× ▲
		j CL roller	× ▲
		k CL roller bearing	▲
		l Lower CL roller DG2	× ▲
		m Heater lamp main	
		n Heater lamp sub	
		o Heat roller gear	×
		p Heat roller	× ▲
		q Thermistor (upper)	×
		r Thermostat (upper main)	
		s Thermostat (upper sub)	
		t Thermostat (lower)	
		u Thermistor (lower)	×
		v Cleaning sheet table	× ▲
		w Sub heater lamp	
		x Sub heat roller bearing	▲
		y Sub heat roller	× ▲

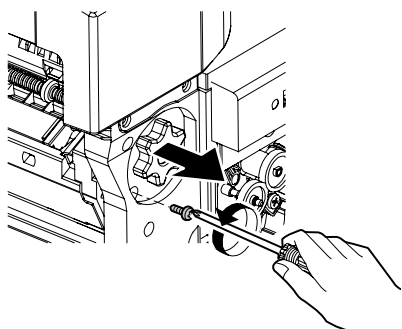


(1) Fusing unit

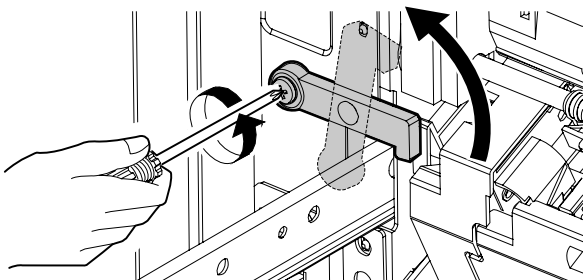
- 1) Open the left door unit.



- 2) Remove the blue fixing screw on the front side.



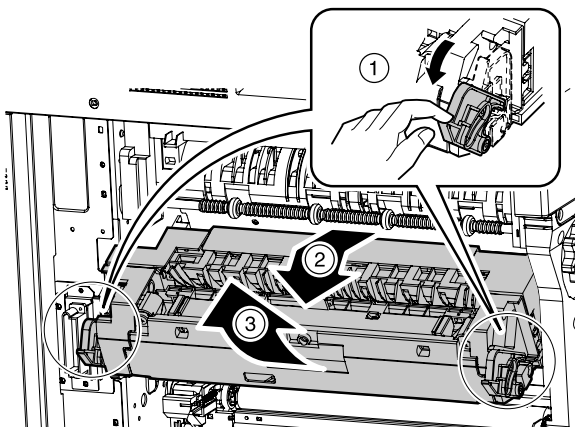
- 3) Release the fixing members on the rear frame side.



- 4) Release the right and left lock levers of the fusing unit to remove the fusing unit.

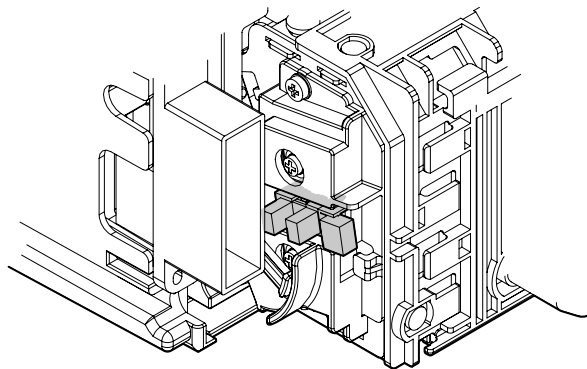
* Caution for handling at a high temperature (Hold the both sides of the unit.)

* When removing the unit, be careful not to tilt it, and remove slowly. (This is because the unit includes paper dust scraped by the scraper.)



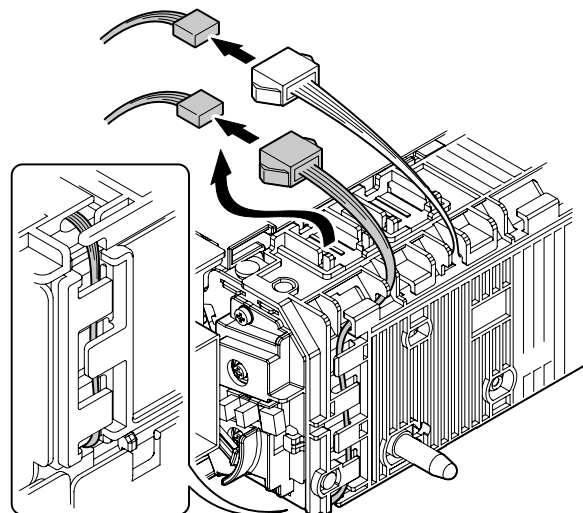
a. Web end sensor

- 1) Remove the fusing unit. (See "(1) Fusing unit")
- 2) Check the web end sensor.

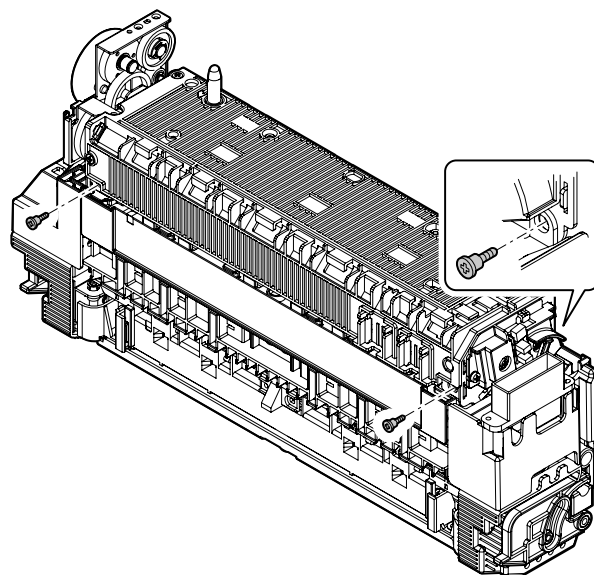


b. Web motor

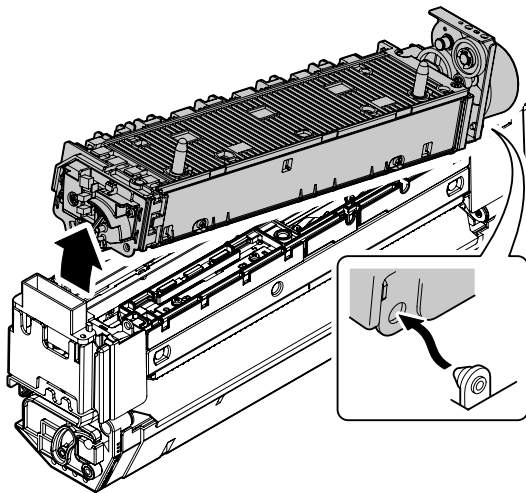
- 1) Remove the fusing unit. (See "(1) Fusing unit")
- 2) Disconnect the connector, and remove only the 4 pin connector harness.



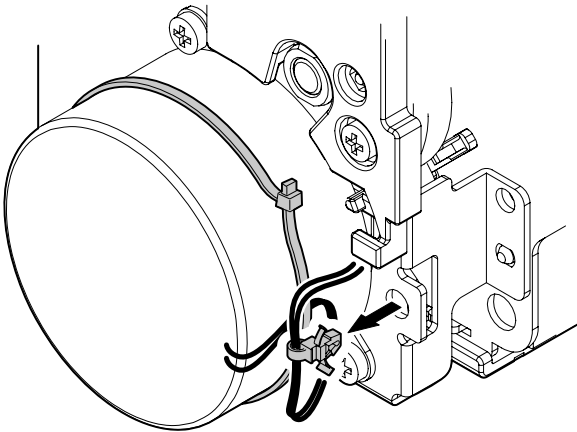
- 3) Remove the 3 screws.



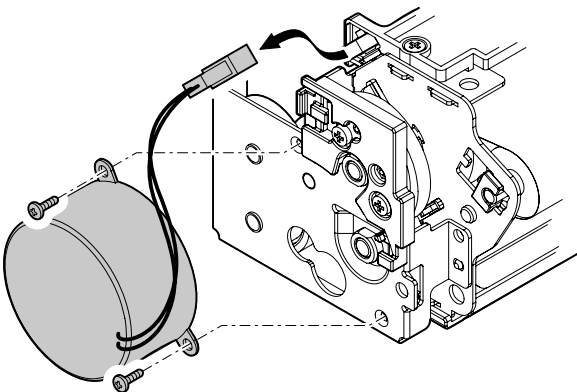
- 4) Remove the web unit.



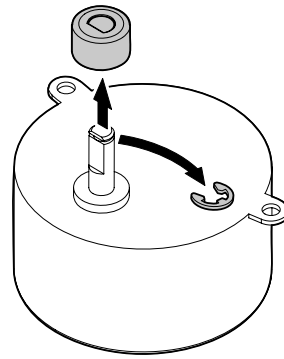
- 5) Remove the heat-resistant band banding web motor harness and cut it.
Cut the banding band and remove it from the web motor.



- 6) Remove the 2 screws and remove the web motor.



- 7) Remove the E-ring, and remove the gear from the web motor.



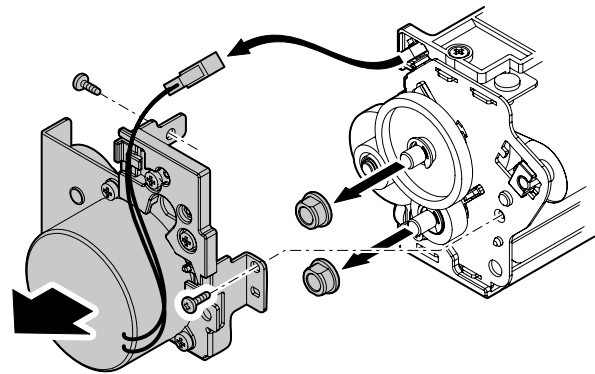
c. Pressure bearing

d. Pressure roller

e. Web roller

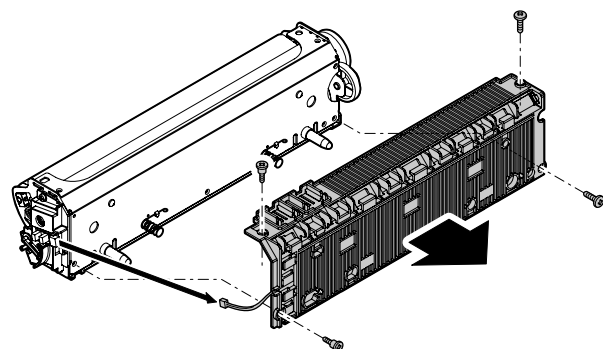
f. Web bearing

- 1) Remove the fusing unit. (See "(1) Fusing unit")
- 2) Remove the web unit. (See "b. Web motor")
- 3) Disconnect the connector. Remove the screws, and remove the web drive unit. Remove the bearings.

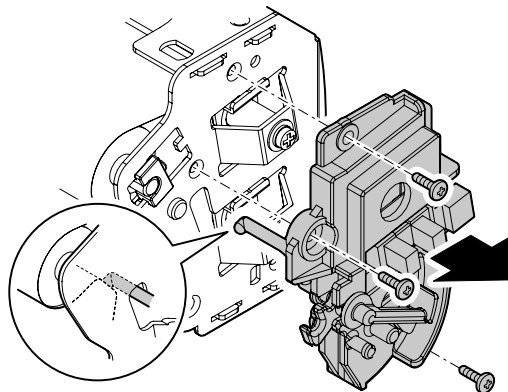


- 4) Disconnect the connector. Remove the screws, and remove the cover.

Note: The shoulder screws go on the front side and the standard screw go on the rear side.

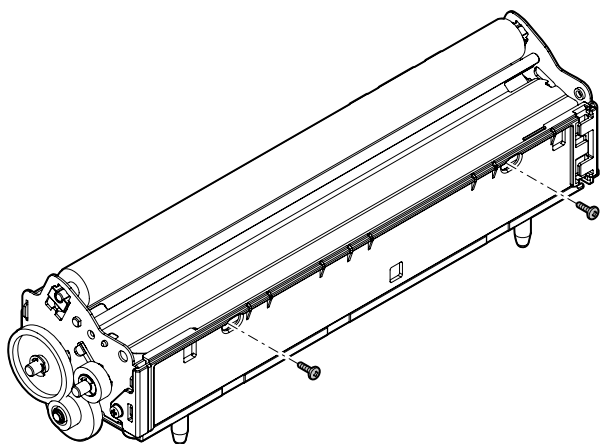


5) Remove 3 screws, and remove the web end sensor unit.



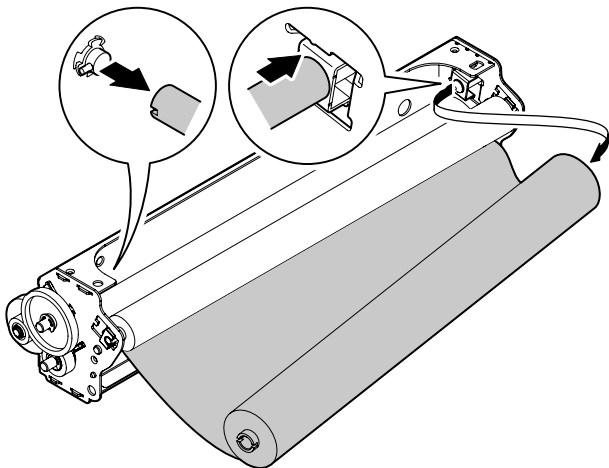
* When installing, put the boss of actuator in the inside of a websheet.

6) Remove 2 screws of backup plate.

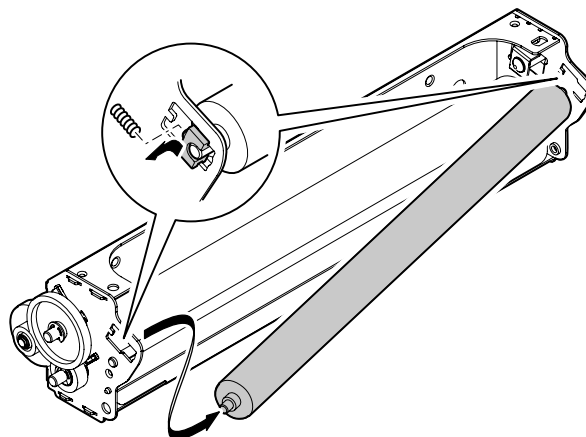


7) Remove the web roller (wind-up side).

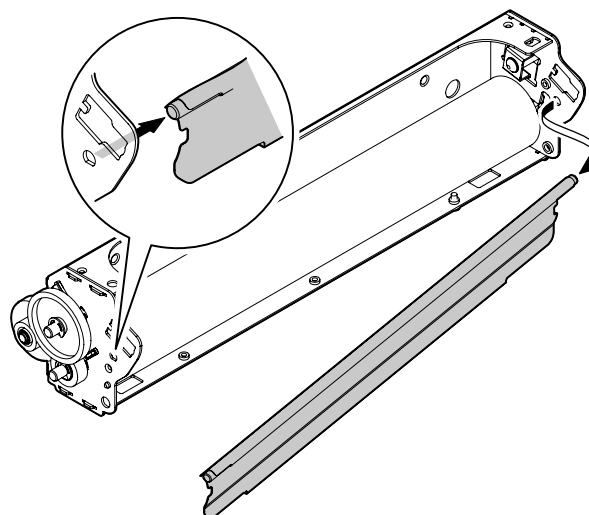
* When installing, rotate the web roller until the blue line (approx. 30cm) is hidden after installing the web roller. (rotate the gear)



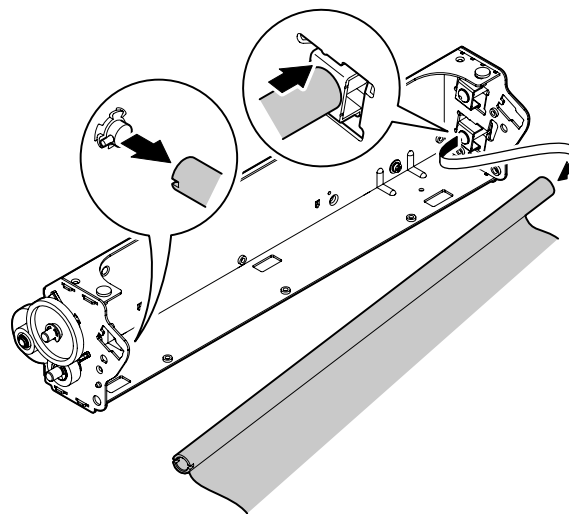
8) Remove the spring, and remove the pressure bearing. Remove the pressure roller.



9) Remove the web tension bearing and the backup plate.

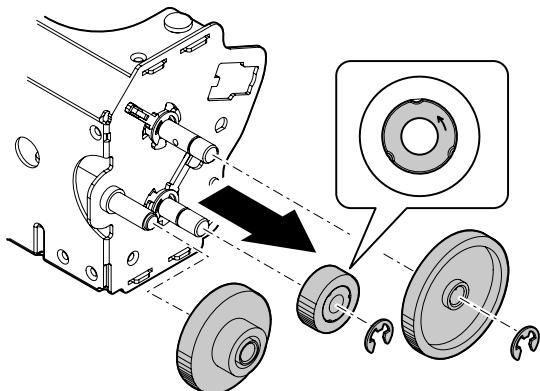


10) Remove the web roller.



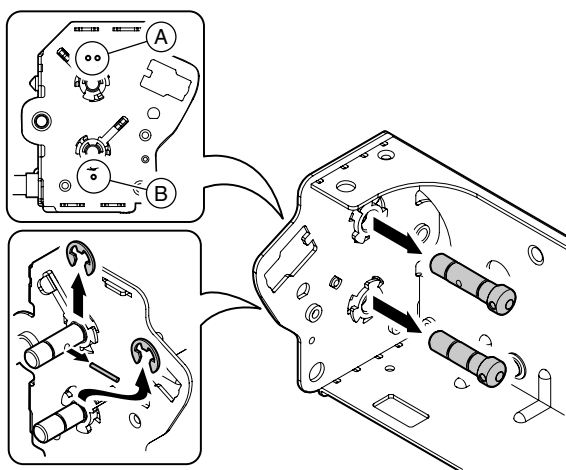
11) Remove the E-rings and the gears.

- * When installing the one way gear, direct the metal surface side to outside.

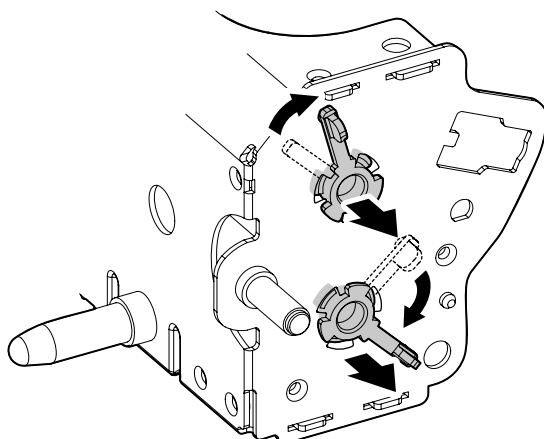


12) Remove the pins and E-rings, and remove the winding shaft and the transport shaft.

- * When installing, install the winding shaft (two pin holes) in an attachment hole (A) of the "OO" mark side, and install transport shaft (one pin hole) in an attachment hole (B) of the "O" mark side.

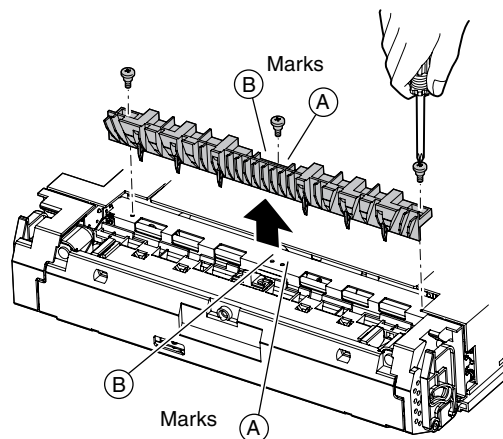


13) Remove the web bearings.



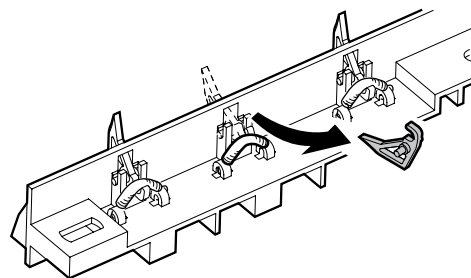
g. Heat roller separation pawl

- 1) Remove the fusing unit. (See "(1) Fusing unit")
- 2) Remove the heat roller separation pawl unit.



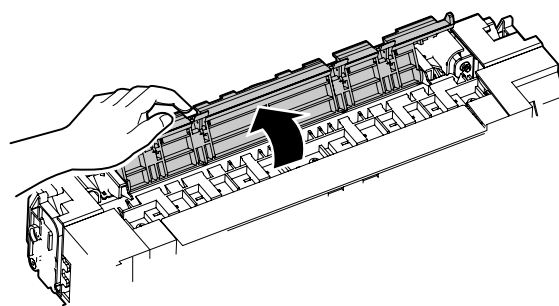
- * When installing the unit, install to the standard position (A). (If the picture quality may be degraded damaged by the roller damage, change the installing position to (B).)

3) Remove the heat roller separation pawl unit.

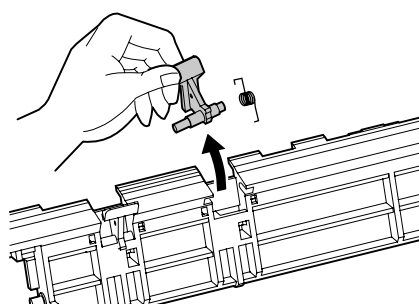


h. Pressure roller separation pawl

- 1) Remove the fusing unit. (See "(1) Fusing unit")
- 2) Open the pressure roller separation pawl unit.



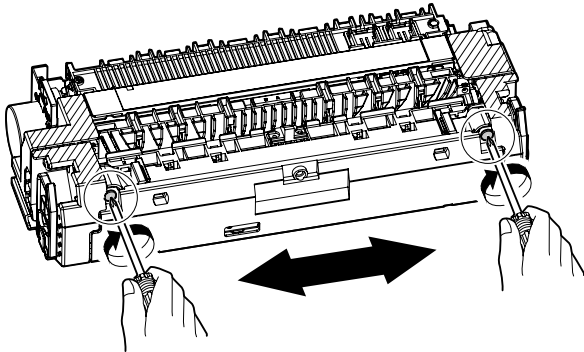
3) Remove the pressure roller separation pawl.



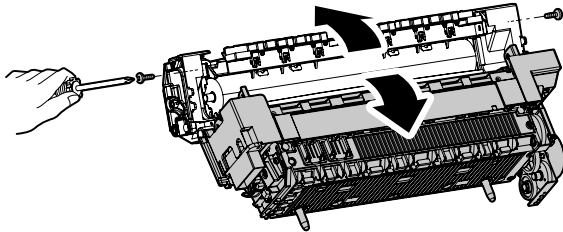
- i. Pressure roller
- j. CL roller
- k. CL roller bearing

l. Lower CL roller DG2

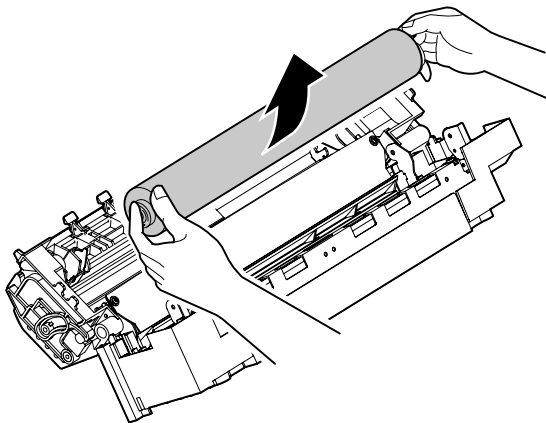
- 1) Remove the fusing unit. (See "(1) Fusing unit")
- 2) Alternately tighten the screws to release pressure.
 - * When releasing the pressure, do not apply any force to the shaded area. (Otherwise, the paper guide on the paper entry side may be deformed.)



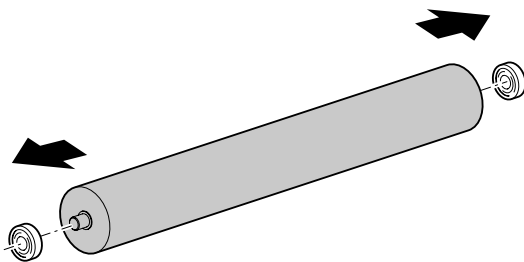
- 3) Remove the screws and open the fusing unit.



- 4) Remove the pressure roller unit.



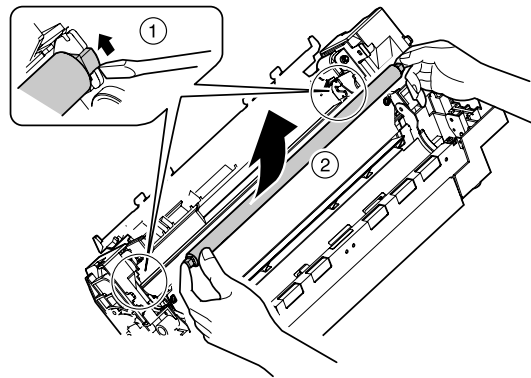
- 5) Remove the bearings from the pressure roller.



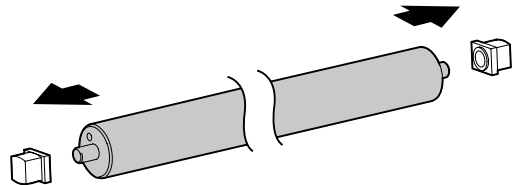
[Caution when attaching]

When installing the pressure roller to the fusing unit, be careful not to damage the cleaning plate.
If the cleaning plate would be deformed, copy dirt would be resulted.

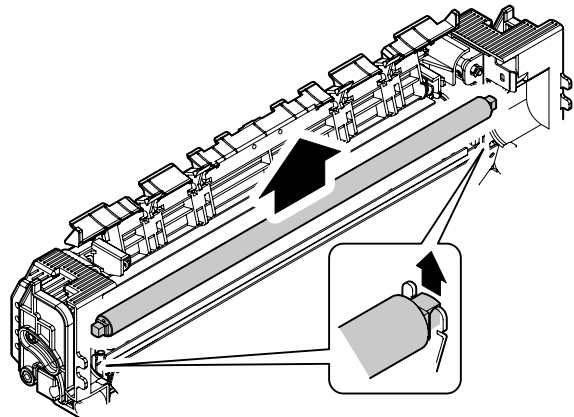
- 6) Remove the CL roller unit.



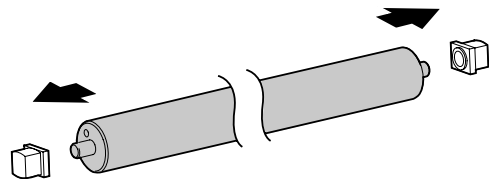
- 7) Remove the CL roller bearings to CL roller.



- 8) Remove the lower CL roller DG2 unit.



- 9) Remove the CL roller bearings to lower CL roller DG2.



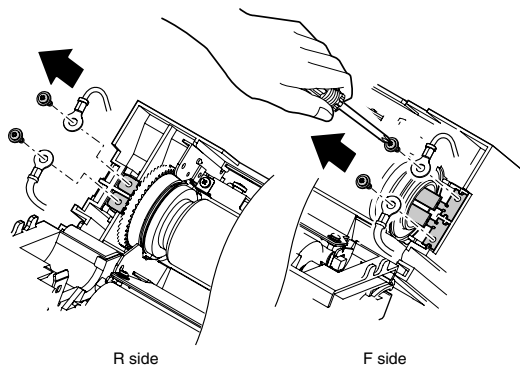
m. Heater lamp main

n. Heater lamp sub

o. Heat roller gear

p. Heat roller

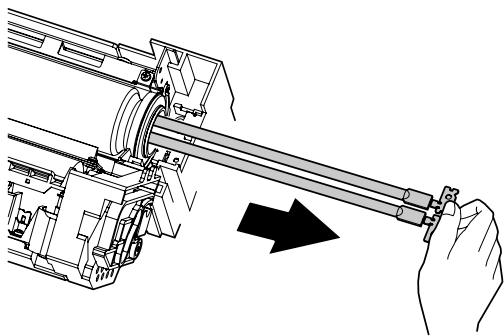
- 1) Remove the fusing unit. (See "(1) Fusing unit")
- 2) Alternately tighten the screws to release pressure. (See "i. Pressure roller")
- 3) Remove the fusing unit. (See "i. Pressure roller")
- 4) Remove the lamp fixing screws.



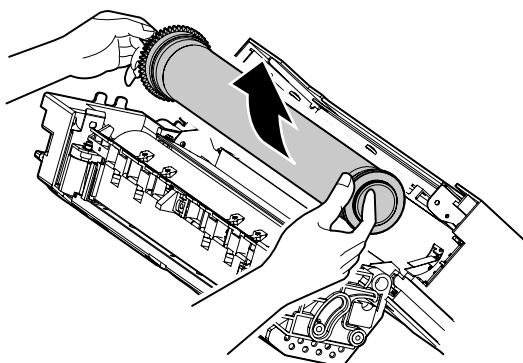
* When assembling, tighten the screws in the front side (drawer CN side) and then in the rear side (gear side) in this sequence.

* Check that the screw is securely tightened again. (If the screw is loose, the contact becomes defective to cause an overheating.)

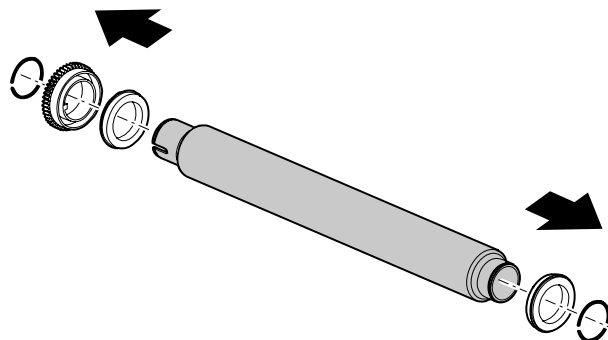
- 5) Remove the heater lamp main and sub.



- 6) Remove the heat roller unit.

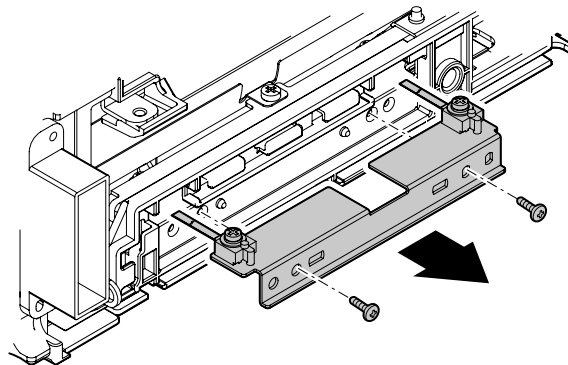


- 7) Remove the ring, and remove the heat rollers, gear and bearings.

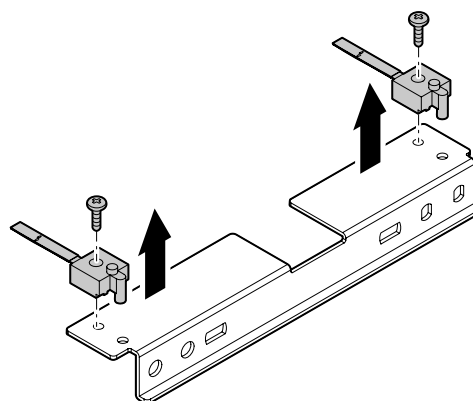


q. Thermistor (upper)

- 1) Remove the fusing unit. (See "(1) Fusing unit")
- 2) Remove the web unit. (See "b. Web motor")
- 3) Remove the screws, and remove the mounting plate.



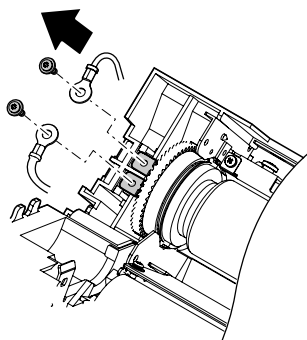
- 4) Remove 1 screw per Thermistor.



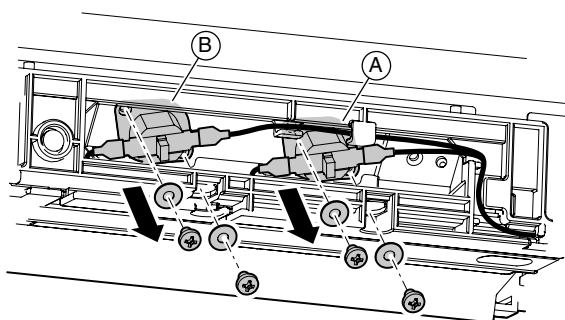
r. Thermostat (upper main)

s. Thermostat (upper sub)

- 1) Remove the fusing unit. (See "(1) Fusing unit")
- 2) Remove the web unit. (See "b. Web motor")
- 3) Remove the lamp fixing screws on R side.



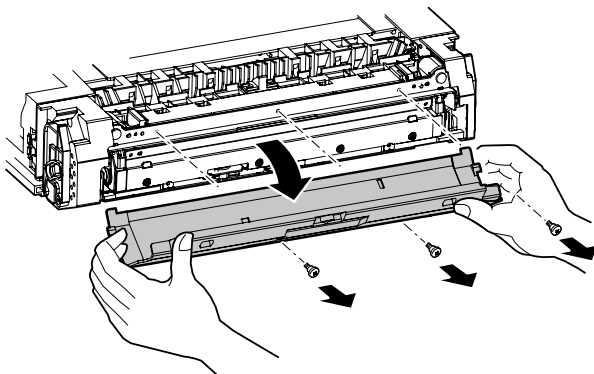
- 4) Disconnect the connector on drawer side.
- 5) Remove the screws and the washers, and remove the upper main thermostat (A) and the upper sub thermostat (B).



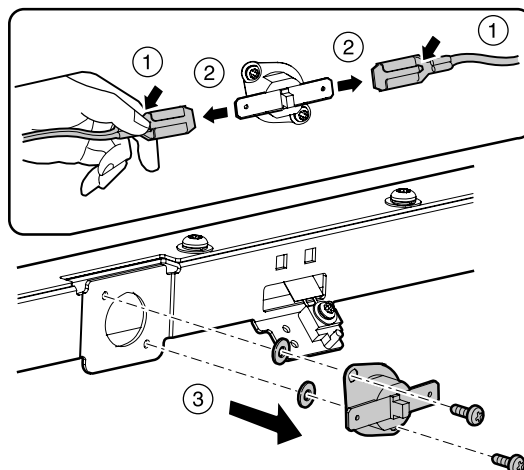
t. Thermostat (lower)

u. Thermistor (lower)

- 1) Remove the fusing unit. (See "(1) Fusing unit")
- 2) Lay the unit on its side to prevent paper dust from dispersing, and remove the lower cover.



- 3) Remove the thermistor (lower).



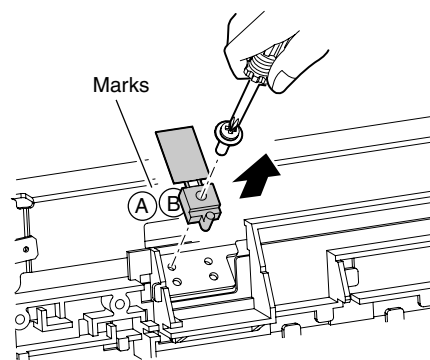
[Cleaning]

When there is paper dust or foreign material on the heat sensitive surface of the thermostat, clean and remove dust or foreign material.

[Caution when attaching]

Be careful not to mistake the install position of the washer.

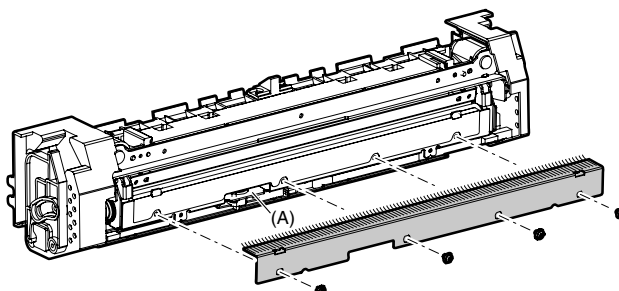
- 4) Disconnect the connector. Remove the screws, and the thermistor (lower).



* If the picture quality may be degraded damaged by the roller damage, change the installing position to (B).

v. Cleaning sheet table

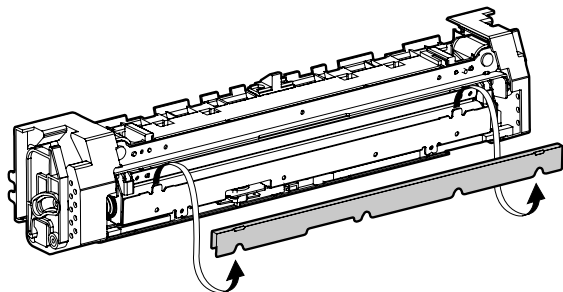
- 1) Remove the fusing unit. (See "(1) Fusing unit")
- 2) Remove the lower cover. (See "t. Thermostat (lower)")
- 3) Remove the holder plate.



* When there are paper dusts or foreign materials at the port area (A), clean and remove.

4) Remove the cleaning sheet table.

- * If the roller is cooled down, toner may be hardened to prevent removing.
- * Since cleaning is performed by applying a pressure by the spring, be careful not to deform it.
- * If copy dirt is heavy, replace the cleaning sheet table with a new one.

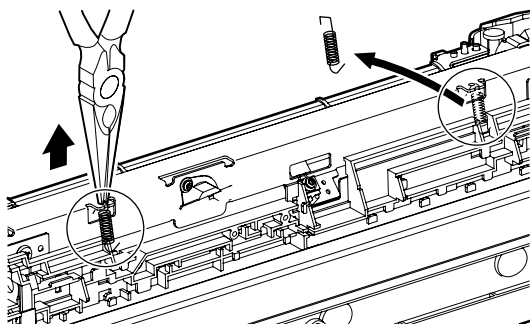


w. Sub heater lamp

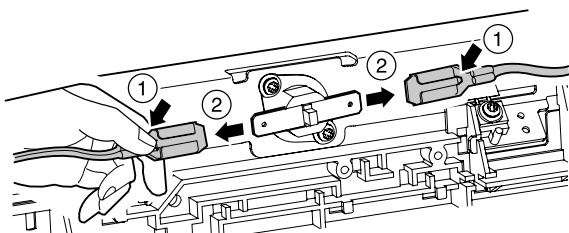
x. Sub heat roller bearing

y. Sub heat roller

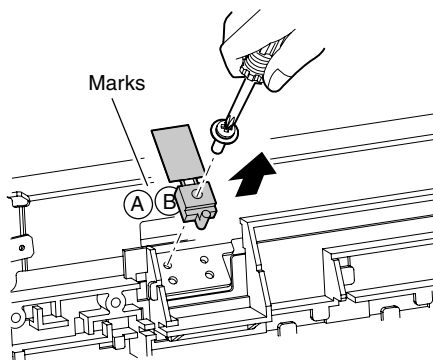
- 1) Remove the fusing unit. (See "(1) Fusing unit")
- 2) Remove the lower cover. (See "t. Thermostat (lower)")
- 3) Remove the springs.



4) Remove the thermostat terminals.

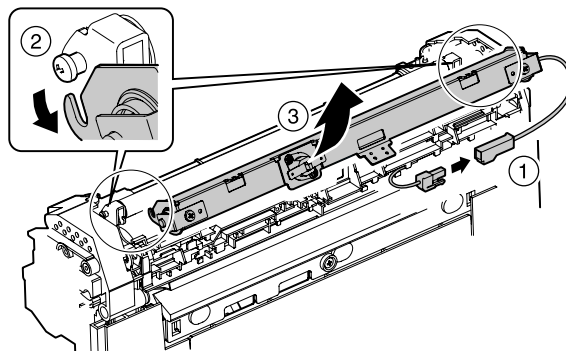


5) Remove the thermistor.



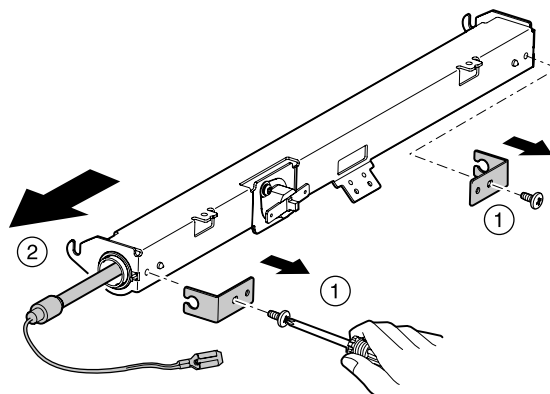
- * If the picture quality may be degraded damaged by the roller damage, change the installing position to (B).

6) Remove the sub heat roller unit.

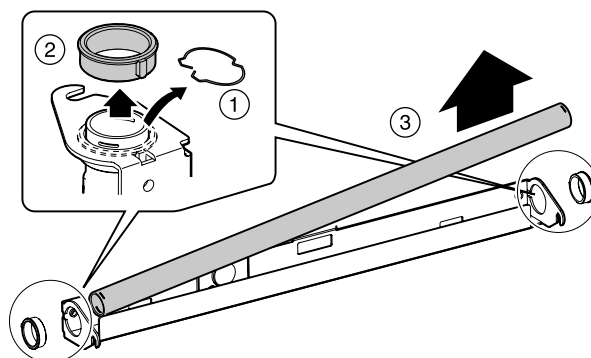


7) Remove the lamp fixtures.

8) Remove the sub heater lamp.



9) Remove the ring, and remove the thermostat (lower) and the sub heat roller.



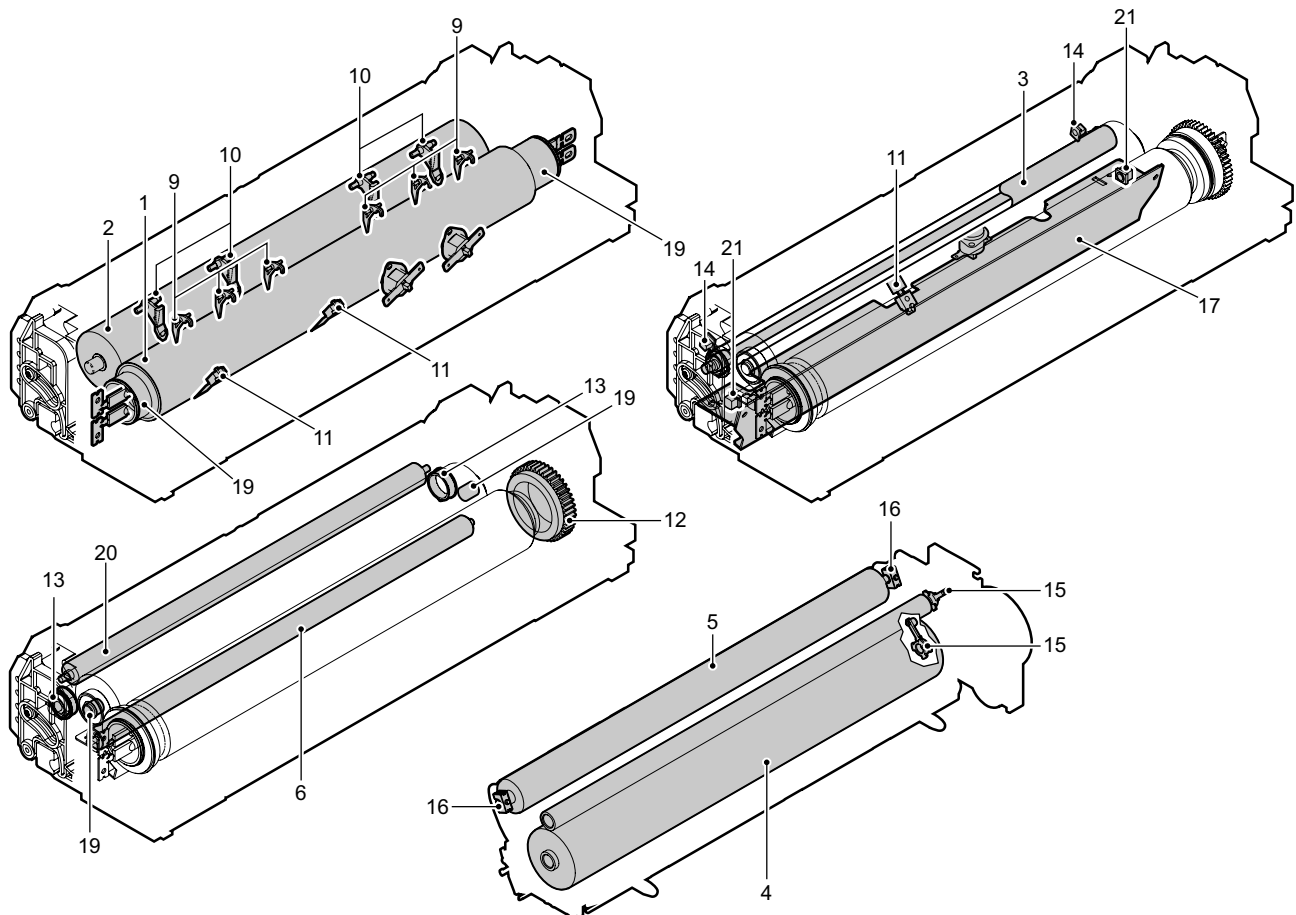
4. Maintenance

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

Unit name	No.	Part name	When calling	250 K	500 K	750 K	1000 K	1250 K	1500 K	1750 K	2000 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
				300 K	600 K	900 K	1200 K	1500 K	1800 K	2100 K	2400 K	
Fusing unit	1	Heat roller	×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [48]-3)
	2	Pressure roller	×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [46]-24)
	3	Sub heat roller	×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [46]-14)
	4	Web roller	×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [49]-42)
	5	Pressure roller	×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [49]-44)
	6	CL roller	×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [47]-46)
	7	CL auxiliary roller bearing	×	▲	▲	▲	▲	▲	▲	▲	▲	
	8	Cleaning sheet table	×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [46]-23)
	9	Heat roller separation pawl	×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [48]-9)
	10	Pressure roller separation pawl	×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [47]-26)
	11	Thermistor (upper/lower)	×	×	×	×	×	×	×	×	×	Paper dust removal is required.
	12	Heat roller gear (Grease)		×	×	×	×	×	×	×	×	UKOG-0235FCZZ
	13	Sub heat roller bearing		▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [46]-7)
	14	CL roller bearing		▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [47]-45)
	15	Web bearing		▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [49]-4)
	16	Pressure bearing		▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [49]-8)
	17	Paper guides	○	○	○	○	○	○	○	○	○	
	18	Gears		☆	☆	☆	☆	☆	☆	☆	☆	
	19	Shaft (Grease)		☆	☆	☆	☆	☆	☆	☆	☆	UKOG-0235FCZZ
	20	Lower CL roller DG2	×	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [47]-47)
	21	CL roller bearing		▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [47]-45)

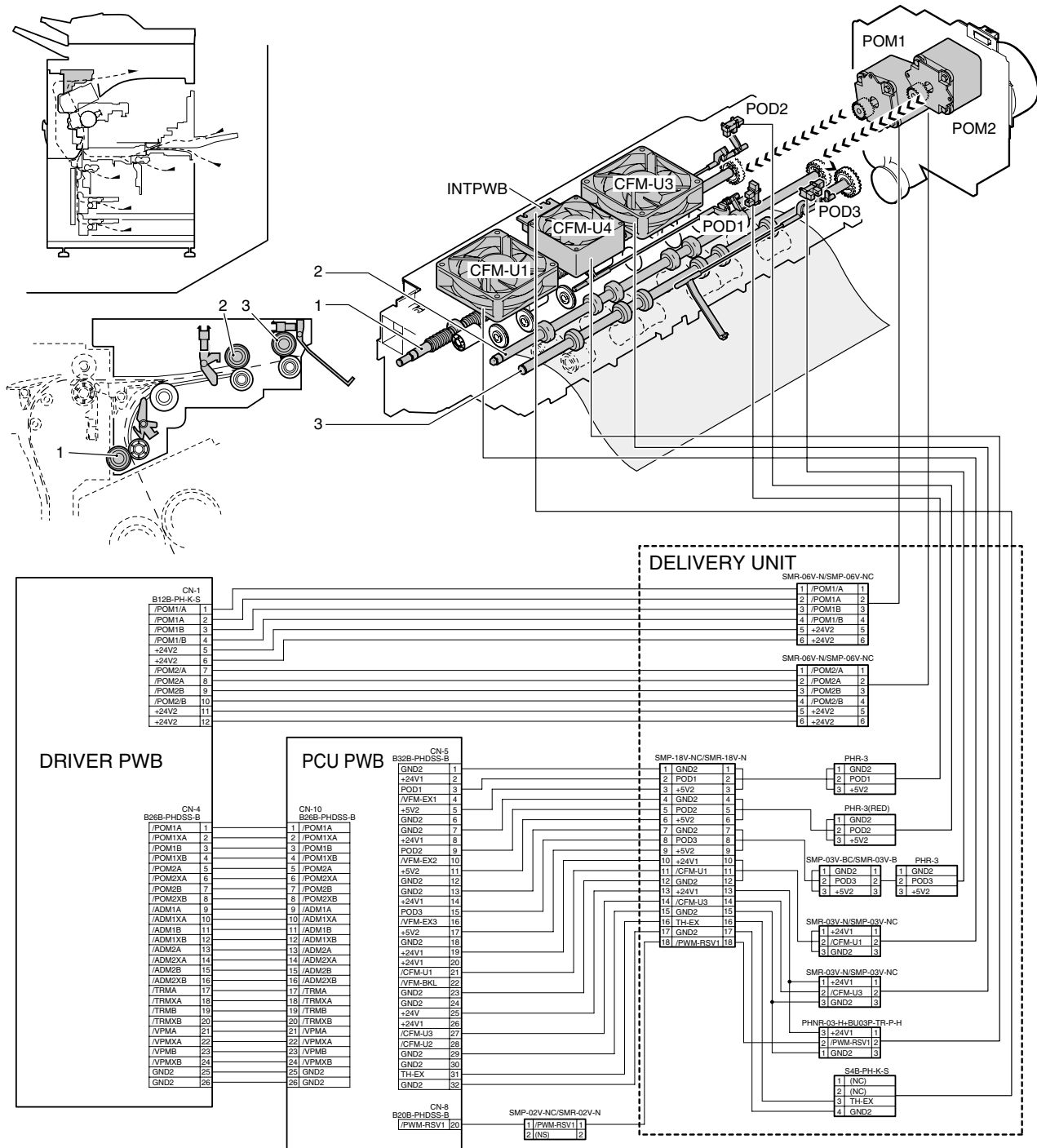
* When maintenance, replace the fusing web roller.

When used without replacement, the picture quality may be damaged because web roller end. [every 300K every 250K]



[O] PAPER EXIT SECTION

1. Electrical and mechanism relation diagram



Code	Signal name	Name	Function/Operation	Type	NOTE
POD1	POD1	Paper exit detector 1	Paper exit detection from fusing	Transmission type	Paper transport system sensor
POD2	POD2	Paper exit detector 2	Paper pass detection from paper exit	Transmission type	Paper transport system sensor
POD3	POD3	Paper exit detector 3	Paper exit detection to upper section	Transmission type	Paper transport system sensor
POM1	POM1	Paper exit motor 1	Drives the paper transport roller 16.	Stepping motor	Selection of Normal speed/ High speed

Code	Signal name	Name	Function/Operation	Type	NOTE
POM2	POM2	Paper exit motor 2	Drives the paper exit roller 1.	Stepping motor	Selection of Normal speed/ High speed
CFM-U1	CFM-U1	Fusing cooling fan motor 1 (Paper exit, duplex (ADU) section) (Front surface)	Exhaust heat from the fusing section.	DC brush-less motor	PWM control
CFM-U3	CFM-U3	Fusing cooling fan motor 3 (Paper exit, duplex (ADU) section) (Front surface)	Exhaust heat from the fusing section.	DC brush-less motor	PWM control
CFM-U4	PWM-RSV1	Fusing cooling fan motor 4 (Paper exit, duplex (ADU) section) (Paper exit section rear side)	Cools paper which is discharged to the inner tray.	DC brush-less motor	PWM control
INTPWB		Paper exit temperature sensor	Paper exit section temperature detection		

No.	Name	Function/Operation
1	Transport roller 16	Transports paper from the fusing roller to the paper exit roller 1.
2	Paper exit roller 1	Discharges paper to the paper exit tray. / Switches back paper.
3	Paper exit roller 3	Discharges paper.

2. Operational descriptions

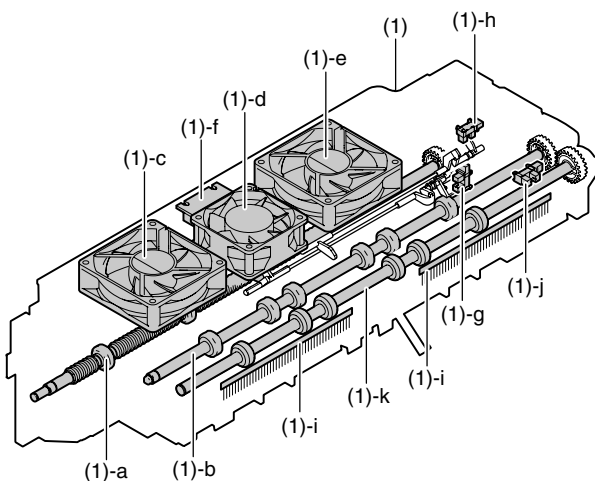
A. Outline

The paper exit and turning section discharges paper which is transported from the fusing section, and detects paper full. It also turns paper to transport it to the duplex or the finisher.

3. Disassembly and assembly

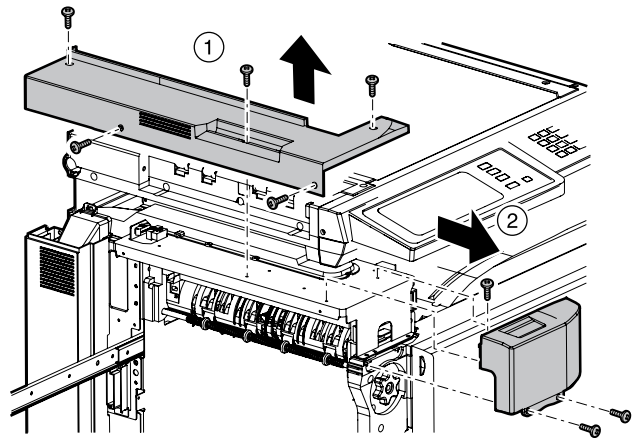
A. Paper exit section

No.	Unit	No.	Parts	Maintenance
(1)	Paper exit unit	a	Transport roller 16	○ ×
		b	Paper exit roller 1	○ ×
		c	Fusing cooling fan motor 1	
		d	Fusing cooling fan motor 3	
		e	Fusing cooling fan motor 4	
		f	Paper exit temperature sensor	
		g	Paper exit detector 1	
		h	Paper exit detector 2	
		i	Discharge brush	×
		j	Paper exit detector 3	
		k	Paper exit roller 3	○ ×

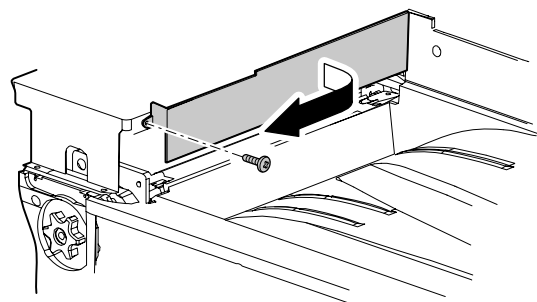


(1) Paper exit unit

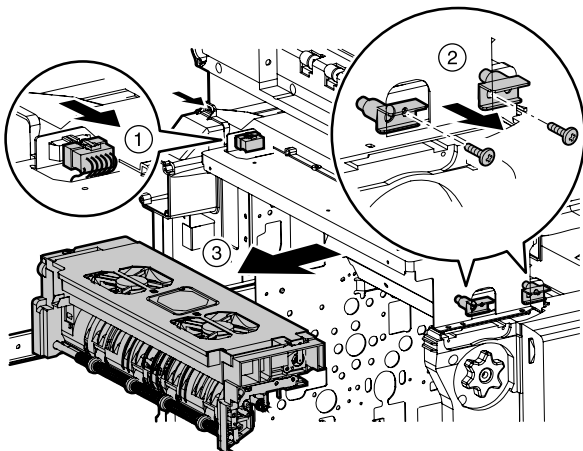
- 1) Open the left door.
- 2) Remove the DSPF paper exit tray.
- 3) Remove the top left cabinet.
- 4) Remove the front left cabinet.



- 5) Remove the paper exit port cabinet.

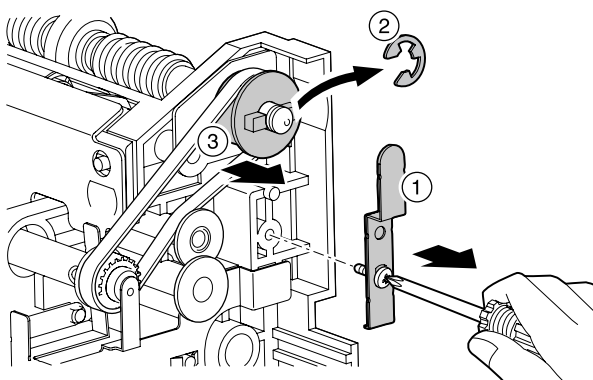


- 6) Disconnect the connectors.
- 7) Remove the front fixing bracket.
- 8) Remove the paper exit unit in the arrowed direction.

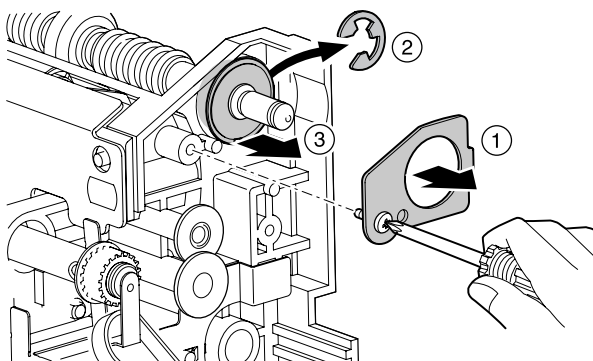


a. Transport roller 16

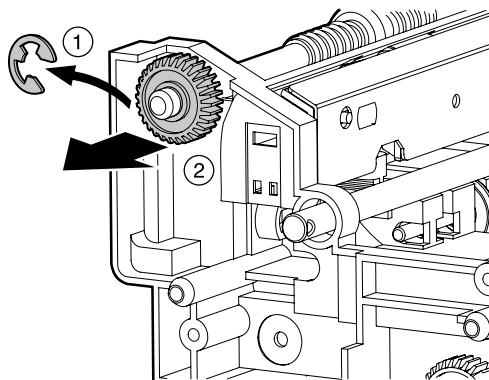
- 1) Remove the paper exit unit. (See "(1) Paper exit unit")
- 2) Remove the ground plate. Remove the E-ring to remove the pulley.



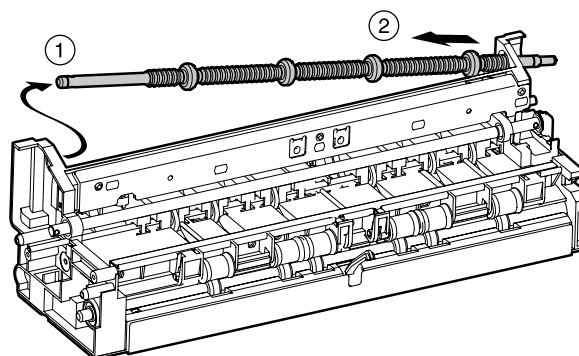
- 3) Remove the stopper. Remove the E-ring to remove the bearing.



- 4) Remove the E-ring to remove the gear.

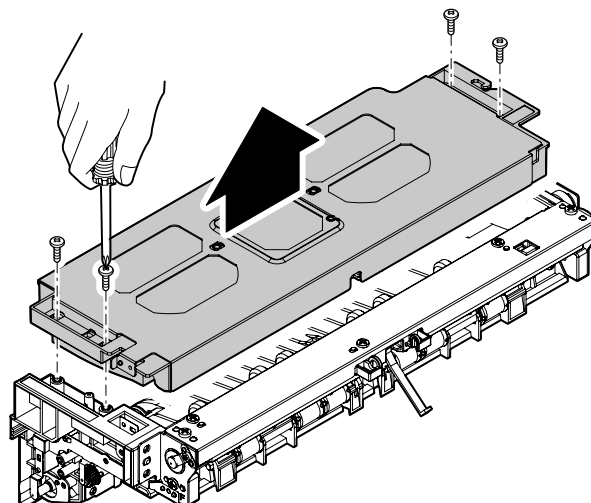


- 5) Remove the transport roller 16.

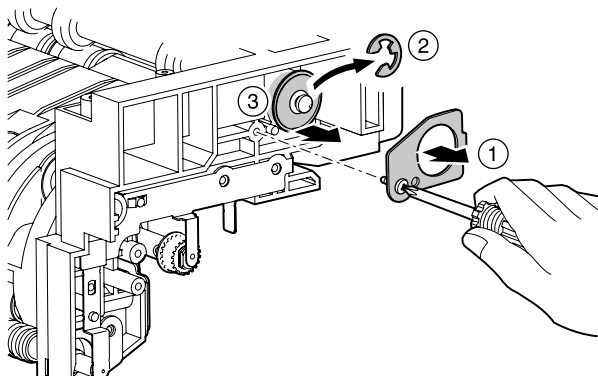


b. Paper exit roller 1

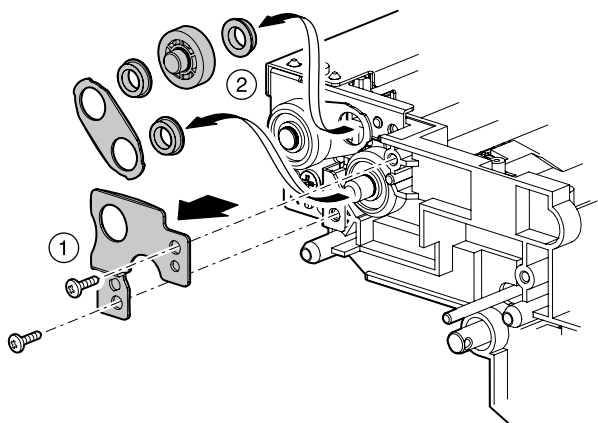
- 1) Remove the paper exit unit. (See "(1) Paper exit unit")
- 2) Remove the upper unit.



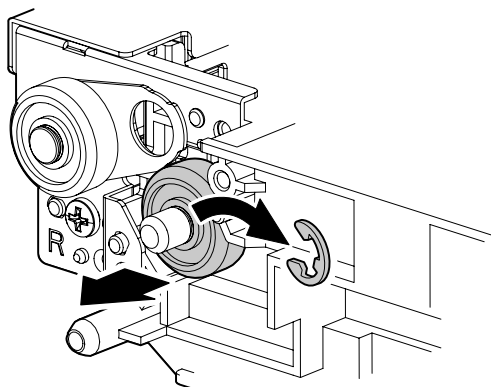
- 3) Remove the stopper. Remove the E-ring to remove the bearing.



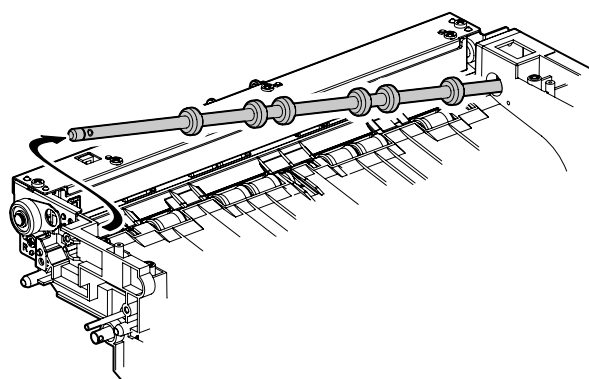
- 4) Remove the supporting plate. Remove the connection plate, and remove the gears.



- 5) Remove the E-ring to remove the gear.



- 6) Remove the paper exit roller 1.

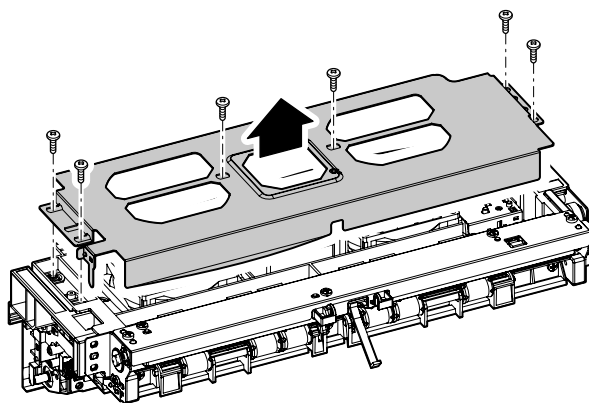


c. Fusing cooling fan motor 1

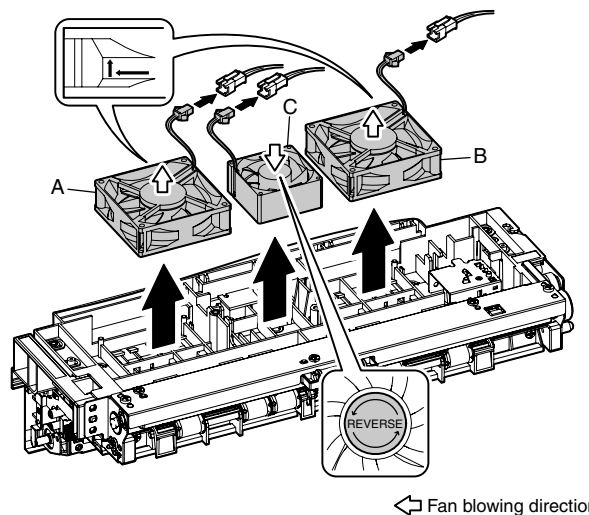
d. Fusing cooling fan motor 3

e. Fusing cooling fan motor 4

- 1) Remove the paper exit unit. (See “(1) Paper exit unit”)
- 2) Remove the upper cover.



- 3) Remove the fusing cooling fan motor 1 (A), 3 (B), and 4 (C).

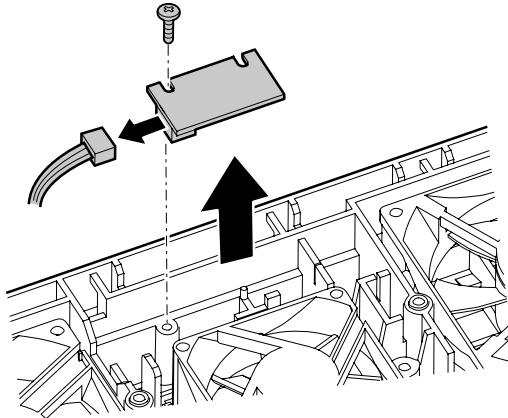


[Caution when attaching]

- When assembling, be careful of the direction of the fan.
(Fit the fan with the mark rotating direction)

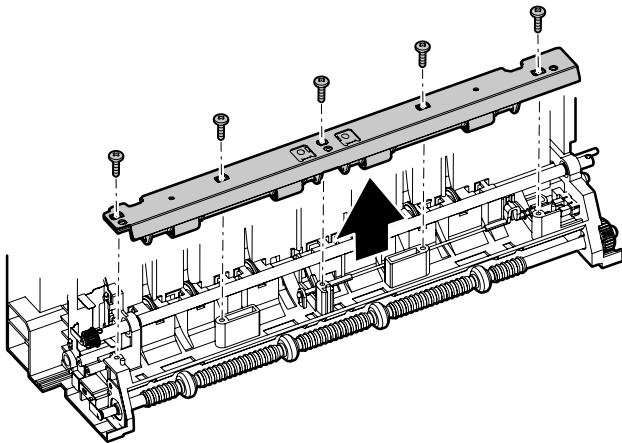
f. Paper exit temperature sensor

- 1) Remove the upper cover. (See "c. Fusing cooling fan motor 1")
- 2) Remove the paper exit temperature sensor.

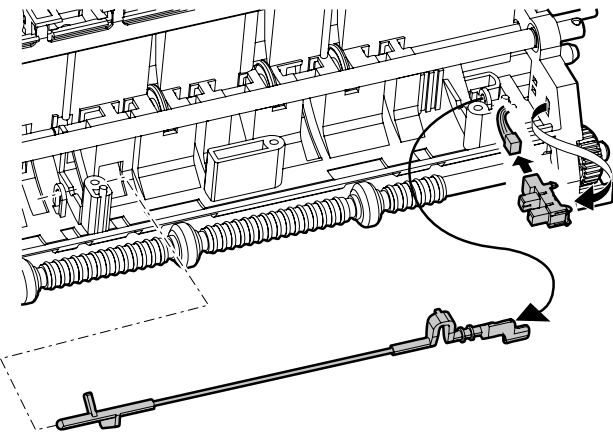


g. Paper exit detector 1

- 1) Remove the paper exit unit. (See "(1) Paper exit unit")
- 2) Remove the follower roller unit.

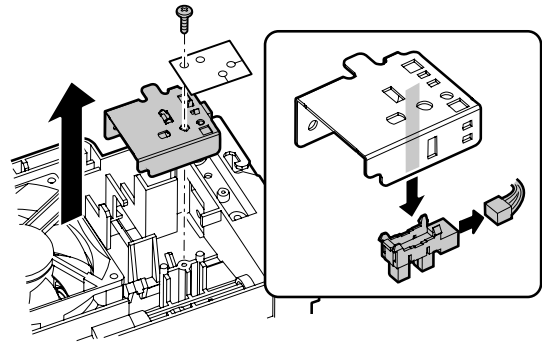


- 3) Remove the paper exit detection 1 detector.



h. Paper exit detector 2

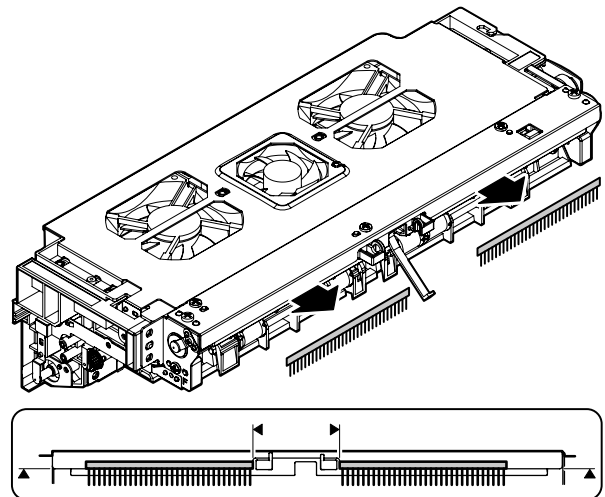
- 1) Remove the paper exit unit. (See "(1) Paper exit unit")
- 2) Remove the upper cover. (See "c. Fusing cooling fan motor 1")
- 3) Remove the paper exit detection 2 detector.



i. Discharge brush

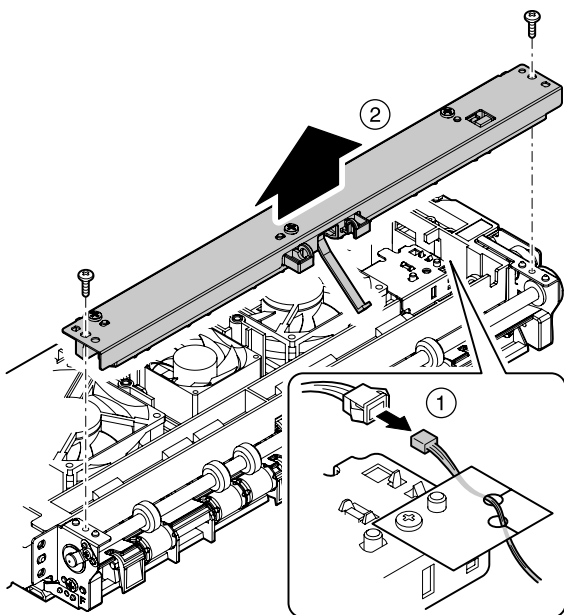
- 1) Remove the paper exit unit. (See "(1) Paper exit unit")
- 2) Remove the discharge brush.

* When attaching, attach it to the reference.

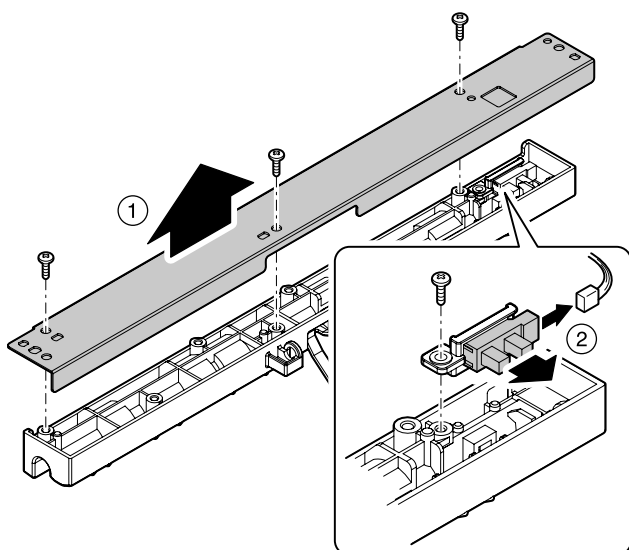


j. Paper exit detector 3

- 1) Remove the paper exit unit. (See "(1) Paper exit unit")
- 2) Remove the upper cover. (See "c. Fusing cooling fan motor 1")
- 3) Disconnect the connector, and remove the harness protect sheet. Remove the paper guide.

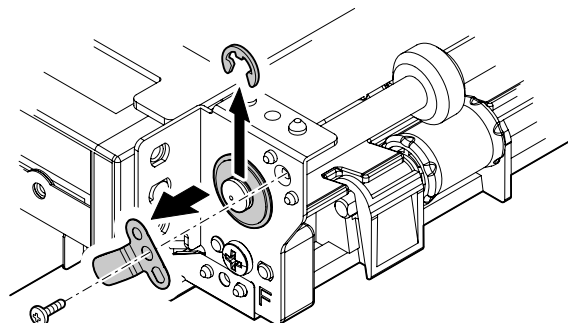


- 4) Remove the cover, and the remove the paper exit detector 3.

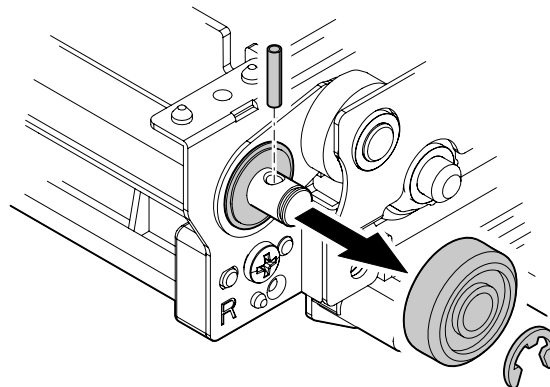


k. Paper exit roller 2

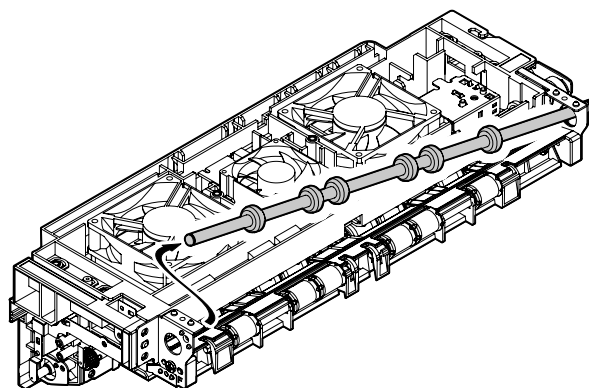
- 1) Remove the paper exit unit. (See "(1) Paper exit unit")
- 2) Remove the upper cover. (See "c. Fusing cooling fan motor 1")
- 3) Remove the paper guide. (See "j. Paper exit detector 3")
- 4) Remove the ground plate. Remove the E-ring to remove the bearing.



- 5) Remove the E-ring, and the gear. Remove the spring pin and the bearing.



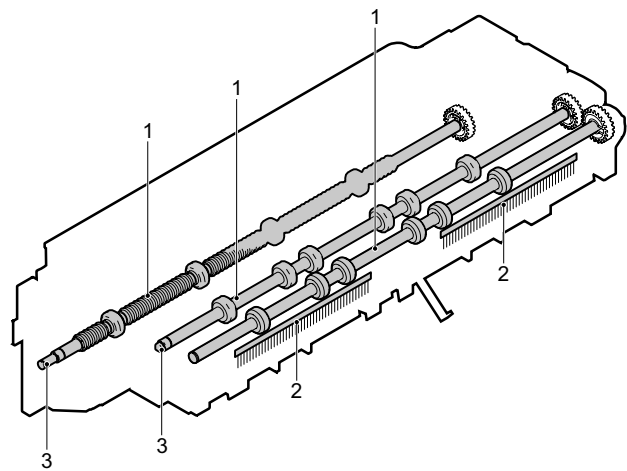
- 6) Remove the paper exit roller 3.



4. Maintenance

×: Check ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position
(Clean, replace, or adjust according to necessity.)

			When calling	250 K	500 K	750 K	1000 K	1250 K	1500 K	1750 K	2000 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
				300 K	600 K	900 K	1200 K	1500 K	1800 K	2100 K	2400 K	
Unit name	No.	Part name										
Paper exit reverse section	1	Transport rollers	×	○	○	○	○	○	○	○	○	
	2	Discharge brush	×	×	×	×	×	×	×	×	×	
	3	Shaft (Conductive grease)	×	×	×	×	×	×	×	×	×	UKOG-0012QSZZ

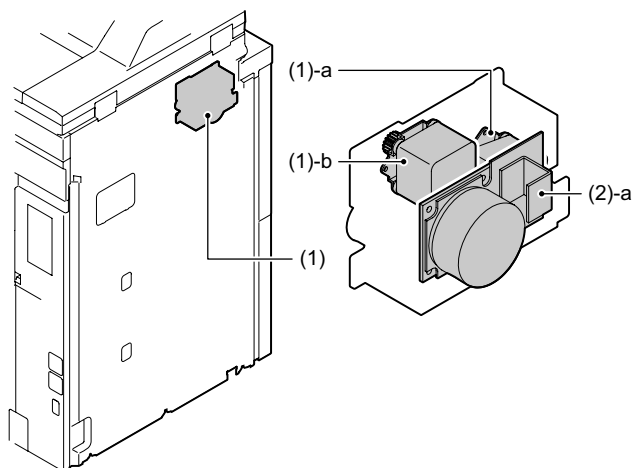


[P] DRIVE SECTION

1. Disassembly and assembly

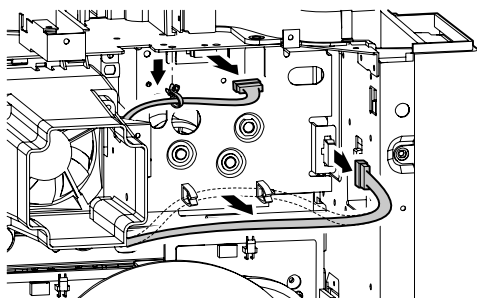
A. Fusing drive section

No.	Unit	No.	Parts
(1)	Fusing drive unit	a	Paper exit motor 1
		b	Paper exit motor 2
(2)	Others	a	Fusing motor

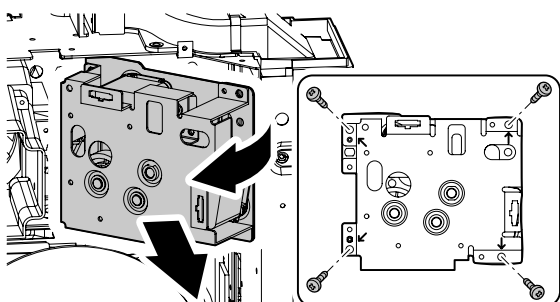


(1) Fusing drive unit

- 1) Remove the fusing unit.
(See "(1) Fusing unit" in the "FUSING SECTION")
- 2) Remove the fusing motor. (See "(2)-a. Fusing motor")
- 3) Disconnect the connector and remove the harness clamp.



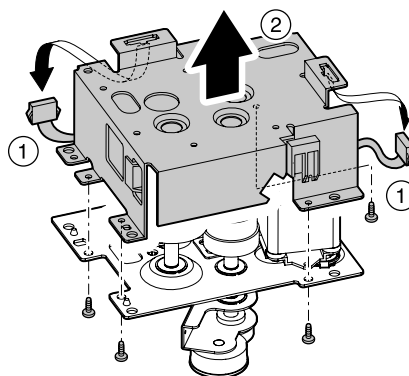
- 4) Remove the fusing drive unit.
* Remove the screw which was indicated with the arrow mark.



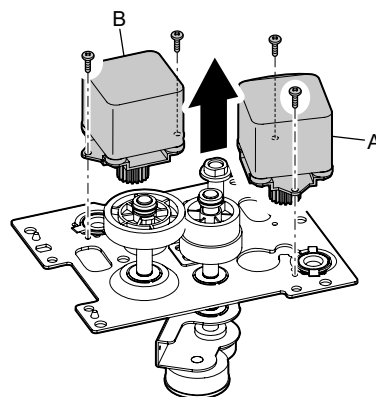
a. Paper exit motor 1

b. Paper exit motor 2

- 1) Remove the fusing unit.
(See "(1) Fusing unit" in the "FUSING SECTION")
- 2) Remove the fusing drive unit. (See "b-1. Fusing motor")
- 3) Disconnect the connector, and remove the fusing drive frame.



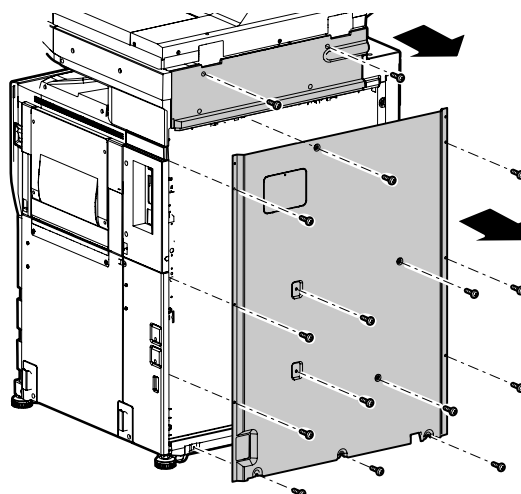
- 4) Remove the paper exit motor 1 (A) and the paper exit motor 2 (B).



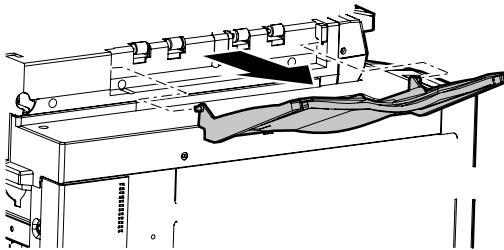
(2) Others

a. Fusing motor

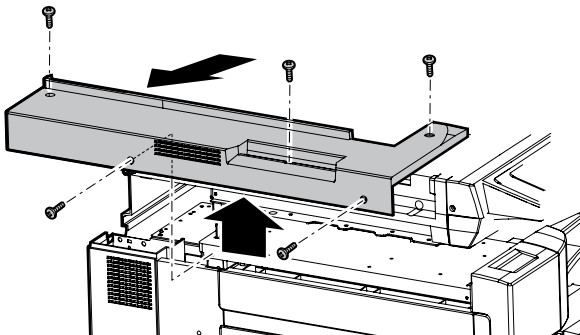
- 1) Remove the rear cabinet and the rear cabinet upper.



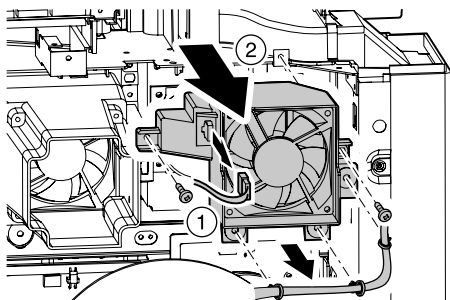
- 2) Remove the tray.



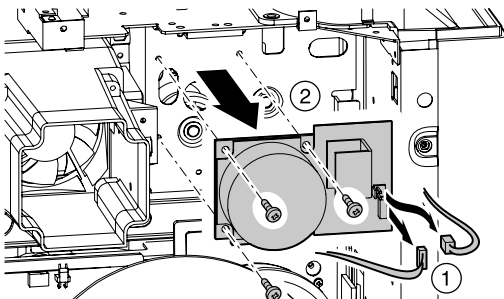
- 3) Remove the left cover cabinet.



- 4) Disconnect the connector and remove the harness clamp, and remove the paper exit tray duct R unit.

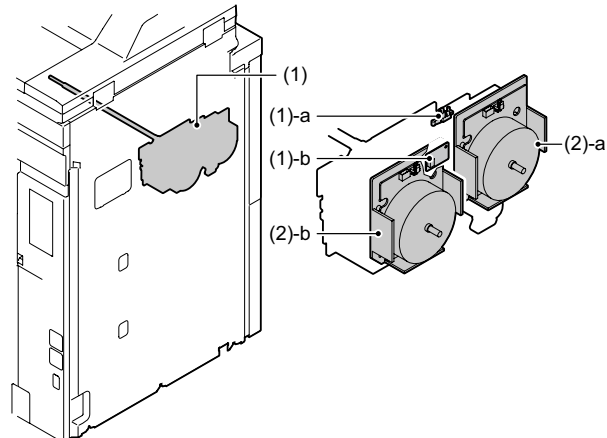


- 5) Disconnect the connector and remove the fusing motor.



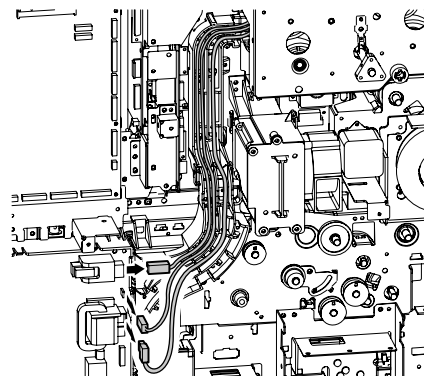
B. Drum drive section

No.	Unit	No.	Parts
(1)	Drum drive unit	a	Waste toner pipe lock detector
		b	Process humidity sensor
(2)	Others	a	OPC drum motor
		b	Developing system



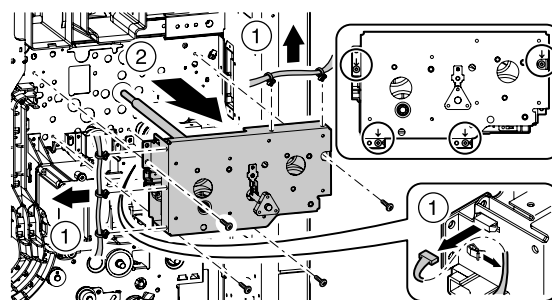
(1) Drum drive unit

- 1) Remove the developing unit and the process unit.
(See "(1) Developing unit" in the "DEVELOPING SECTION", "A-(1) Process unit" in the "PHOTOCONDUCTOR SECTION")
- 2) Remove the OPC drum motor and the developing motor.
(See "(2)-a. OPC drum motor", "(2)-b. Developing system")
- 3) Disconnect the connector, and remove the harness from the harness holder.



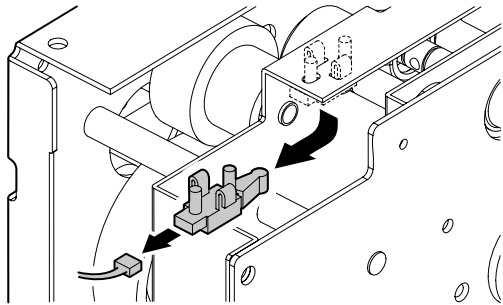
- 4) Disconnect the connector and remove the harness clamp, and remove the drum drive unit.

* Remove the screw which was indicated with the arrow mark.



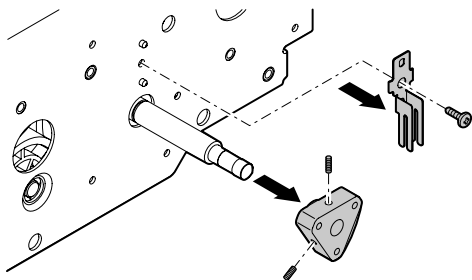
a. Waste toner pipe lock detector

- 1) Remove the developing unit and the process unit.
(See "(1) Developing unit" in the "DEVELOPING SECTION",
"A-(1) Process unit" in the "PHOTOCONDUCTOR SECTION")
- 2) Remove the OPC drum motor and the developing motor.
(See "(2)-a. OPC drum motor", "(a)-b. Developing motor")
- 3) Remove the drum drive unit. (See "(1) Drum drive unit")
- 4) Disconnect the connector, and remove the waste toner pipe lock detector.

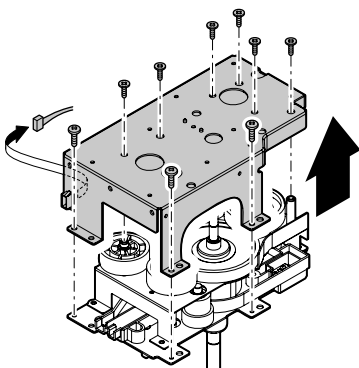


b. Process humidity sensor

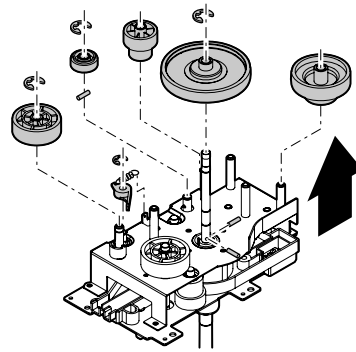
- 1) Remove the developing unit.
(See "(1) Developing unit" in the "DEVELOPING SECTION")
- 2) Remove the process unit. (See "a. Process unit" in the "PHOTOCONDUCTOR SECTION")
- 3) Remove the OPC drum motor and the developing motor.
(See "(2)-a. OPC drum motor", "(a)-b. Developing motor")
- 4) Remove the drum drive unit. (See "(1) Drum drive unit")
- 5) Remove the drum earth plate. Remove the set screw and the flywheel joint. Remove the E-ring.



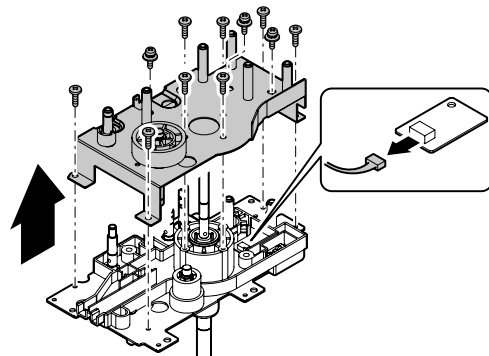
- 6) Disconnect the connector, and remove the drum drive frame.



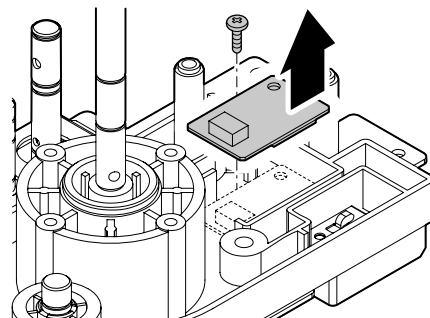
- 7) Remove the parts.



- 8) Disconnect the connector, and remove the sensor plate.



- 9) Remove the process humidity sensor.

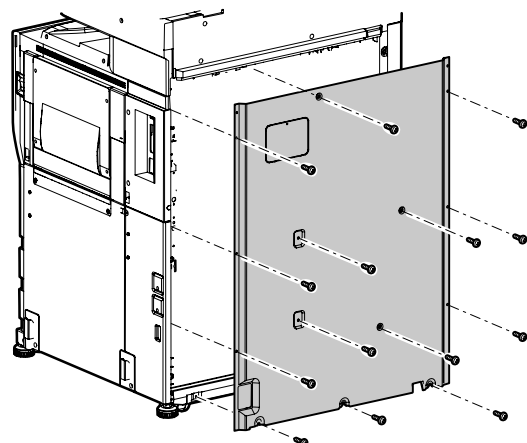


(2) Others

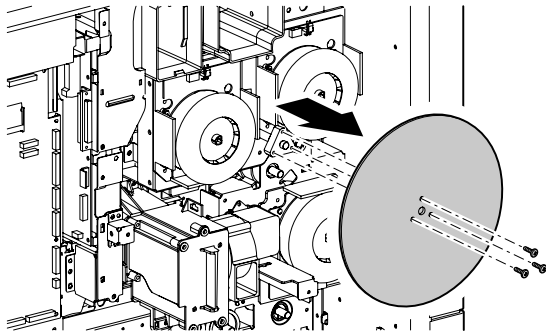
a. OPC drum motor

b. Developing system

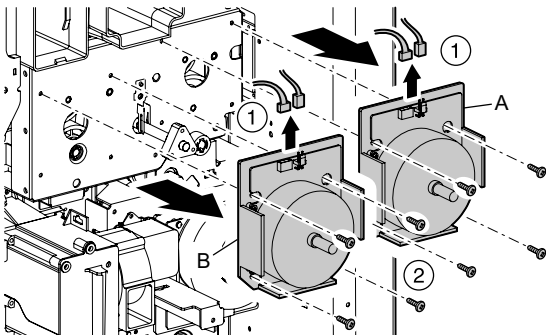
- 1) Remove the rear cabinet.



- 2) Remove the flywheel.

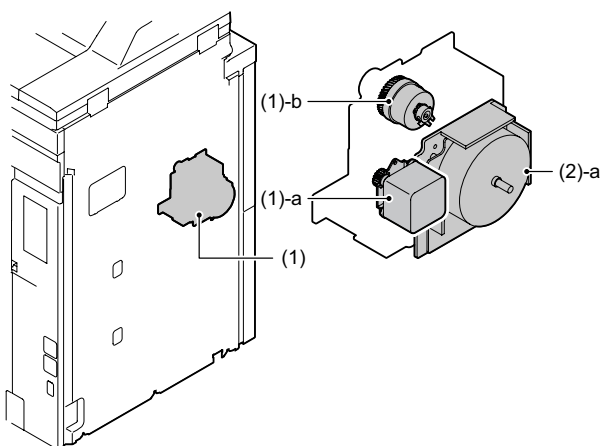


- 3) Disconnect the connector, and remove the OPC drum motor (A) and the developing motor (B).



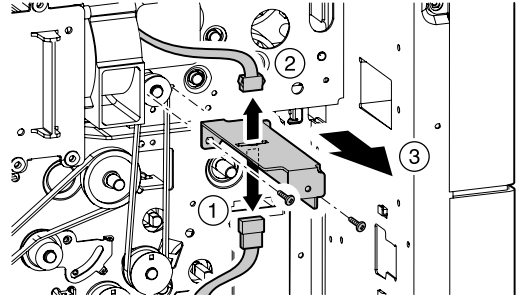
C. Paper feed/paper transport drive section

No.	Unit	No.	Parts
(1)	Main drive unit	a	Resist roller front drive motor
		b	Resist roller clutch
(2)	Others	a	Main motor



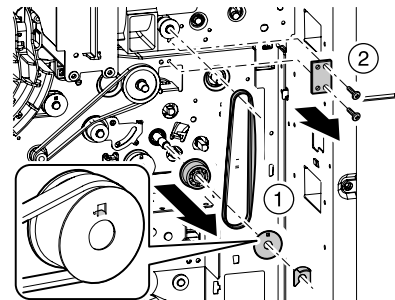
(1) Main drive unit

- 1) Remove the resist roller unit. (See "B-(1) Resist roller unit" in the "PAPER TRANSPORT SECTION")
- 2) Remove the flywheel. (See "B-(2)-a. OPC drum motor")
- 3) Remove the main motor. (See "(2)-a. Main motor")
- 4) Disconnect the connector, and remove the eternal outfit mounting plate.



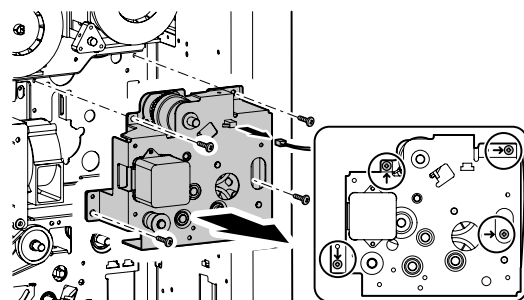
- 5) Remove the plastic E-ring, the belt holding sheet, the belt, and the pulley. Remove the joint plate.

* When installing, be careful of the direction of the belt holding sheet.



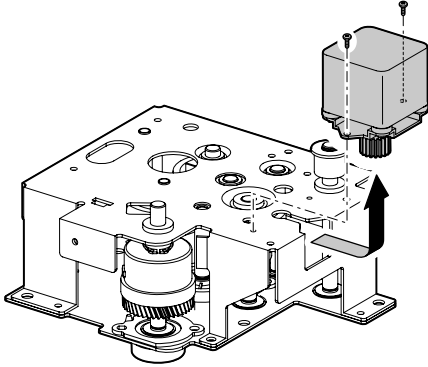
- 6) Disconnect the connector, and remove the main drive unit.

* Remove the screw which was indicated with the arrow mark.



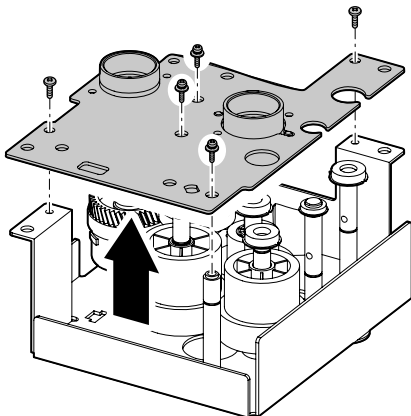
a. Resist roller front drive motor

- 1) Remove the resist roller unit. (See "B-(1) Resist roller unit" in the "PAPER TRANSPORT SECTION")
- 2) Remove the flywheel. (See "B-(2)-a. OPC drum motor")
- 3) Remove the main motor. (See "(2)-a. Main motor")
- 4) Remove the main drive unit. (See "(1) Main drive unit")
- 5) Remove the resist roller front drive motor.

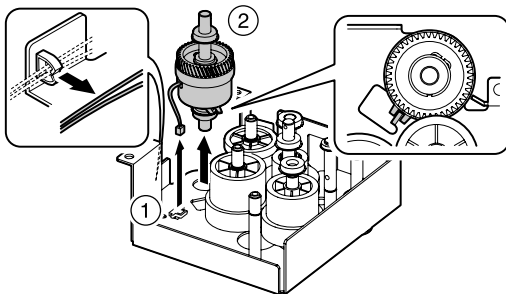


b. Resist roller clutch

- 1) Remove the resist roller unit. (See "B-(1) Resist roller unit" in the "PAPER TRANSPORT SECTION")
- 2) Remove the flywheel. (See "B-(2)-a. OPC drum motor")
- 3) Remove the main motor. (See "(2)-a. Main motor")
- 4) Remove the main drive unit. (See "(1) Main drive unit")
- 5) Disconnect the connector, and remove the main drive frame.

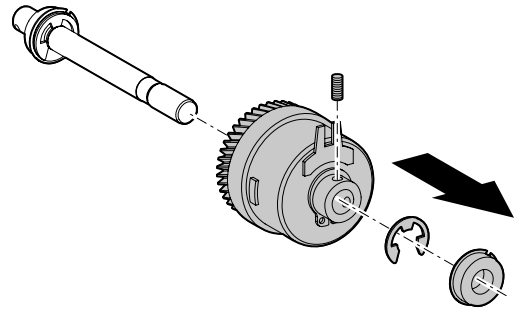


- 6) Disconnect the connector, and remove the resist roller clutch unit.



* When installing, be sure to ensure that the projection of the plate is engaged in the clutch rotation stopper.

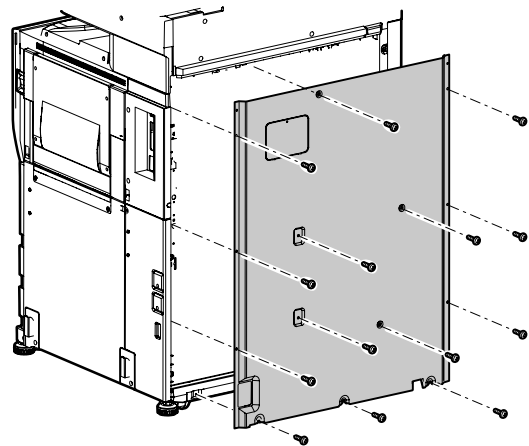
- 7) Remove the bearing, the E-ring, and the set screw, and remove the resist roller clutch.



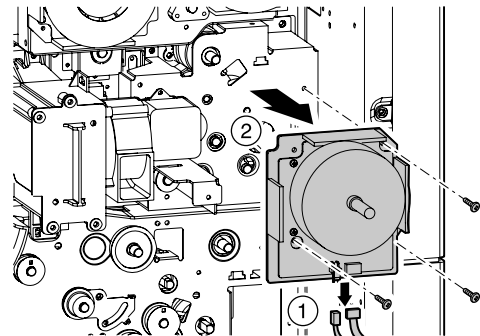
(2) Others

a. Main motor

- 1) Remove the rear cabinet.

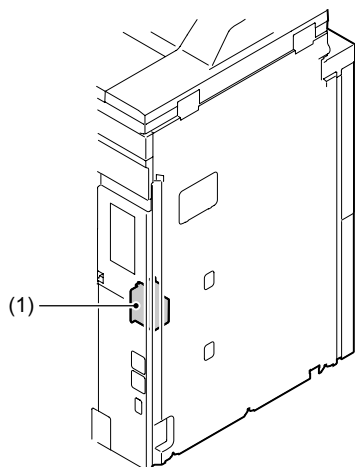


- 2) Disconnect the connector, and remove the main motor.



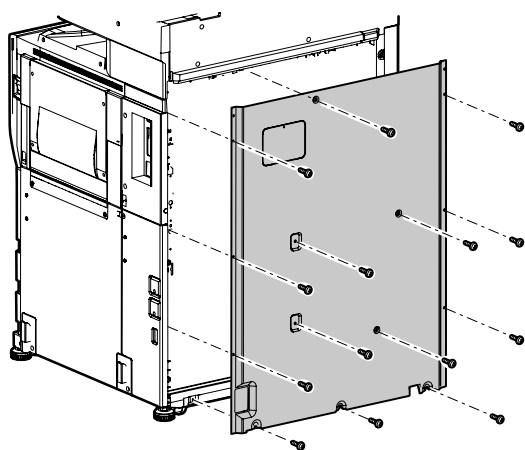
D. Manual paper feed drive section

No.	Unit
(1)	Manual paper feed drive unit

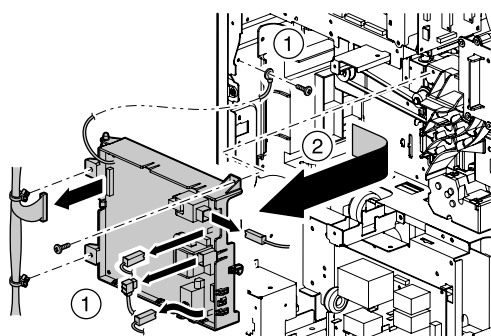


(1) Manual paper feed drive unit

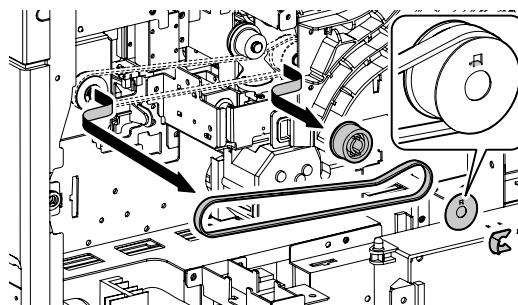
- 1) Remove the rear cabinet.



- 2) Disconnect the connector, the harness clamp, and the earth wire. Remove the high voltage PWB unit.

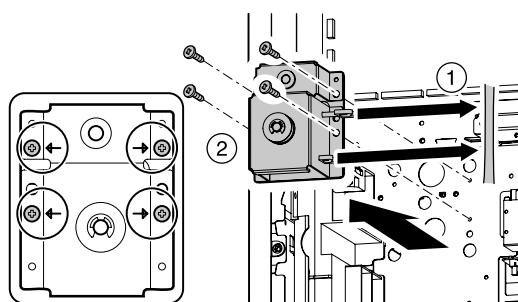


- 3) Remove the plastic E-ring, the belt holding sheet, the belt, and the pulley.



* When installing, be careful of the direction of the belt holding sheet.

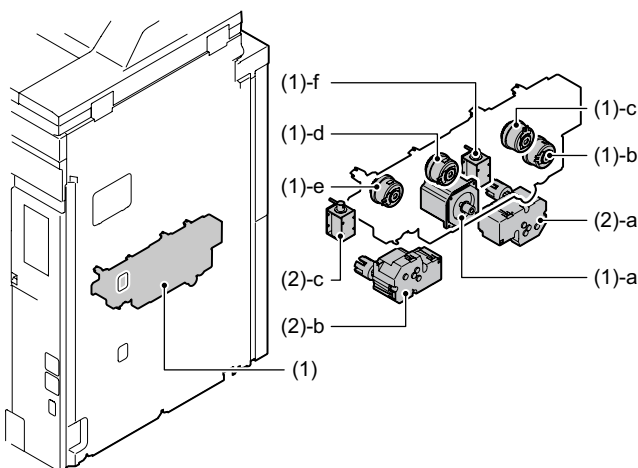
- 4) Remove the harness from the clamp, and remove the manual paper feed unit.



* Remove the screw which was indicated with the arrow mark.

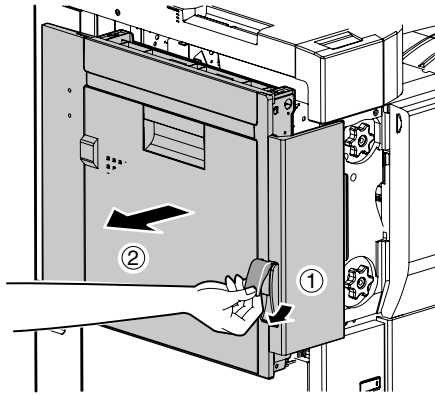
E. 1/2 paper feed drive section

No.	Unit	No.	Parts
(1)	1/2 paper feed drive unit	a	Vertical paper transport motor
		b	Paper feed tray 3/4 paper transport clutch 2
		c	Paper feed clutch (Paper feed tray 1)
		d	Horizontal paper transport clutch
		e	Paper feed clutch (Paper feed tray 2)
		f	Paper pickup solenoid (Paper feed tray 1)
(2)	Others	a	Remove the paper tray lift-up motor (paper feed tray 1)
		b	Paper tray lift-up motor (Paper feed tray 2)
		c	Paper pickup solenoid (Paper feed tray 2)

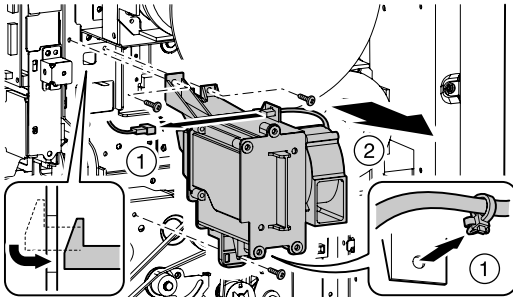


(1) 1/2 paper feed drive unit

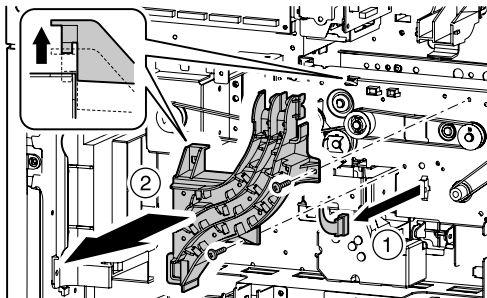
- 1) Remove the main motor. (See "C-(2)-a. Main motor")
- 2) Remove the high voltage PWB unit.
(See "D-(1) Manual paper feed drive unit")
- 3) Pull out the left door.



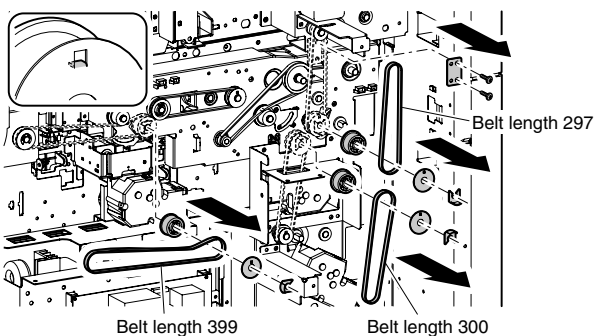
- 4) Disconnect the connector and remove the harness clamp. Remove the DV fan unit.



- 5) Disconnect the connector and remove the harness holder.

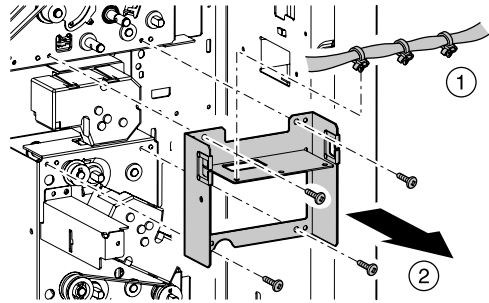


- 6) Remove the plastic E-ring, the belt holding sheet, the belt, and the pulley. Remove the joint plate.



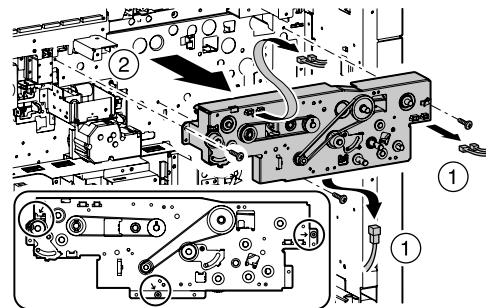
* When installing, be careful of the belt length and the belt holding sheet direction.

- 7) Remove the harness, and remove the drive joint plate.



* When installing, temporarily fix the 1/2 paper feed drive unit to the main unit, and install the drive joint plate. Then tighten the screw of the drive unit securely.

- 8) Disconnect the connector and remove the harness clamp. Remove the 1/2 paper feed drive unit.

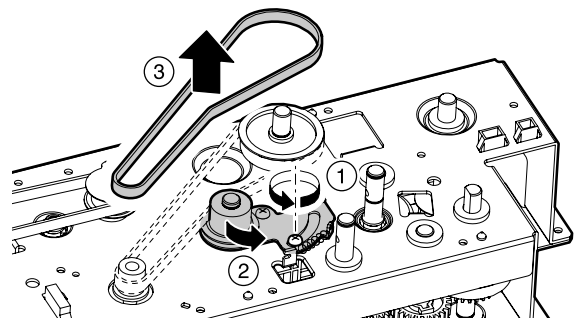


* If the left door is completely pulled out, the unit may drop off. Be careful to avoid it.

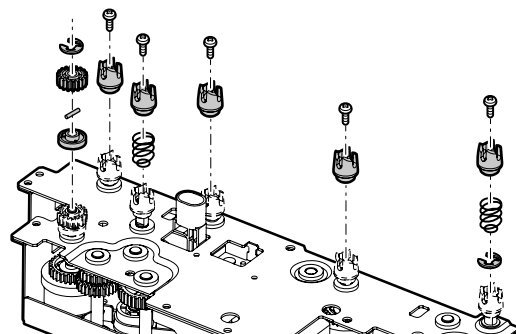
* Remove the screw which was indicated with the arrow mark.

a. Vertical paper transport motor

- 1) Remove the 1/2 paper feed drive unit.
(See "(1) 1/2 paper feed drive unit")
- 2) Loosen the screw to release the tension, and remove the belt.

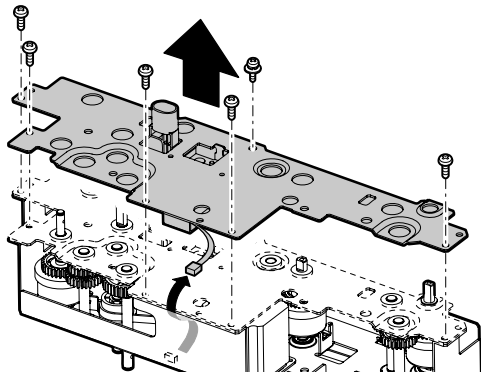


- 3) Remove the parts.

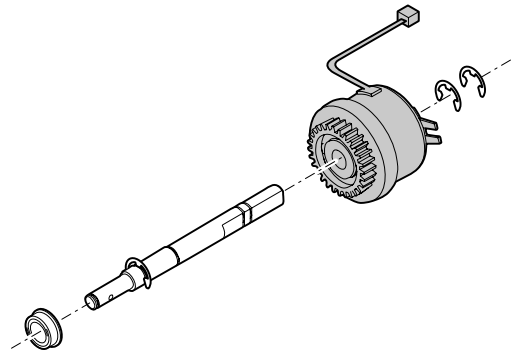


* Attach the spring to the longer shaft.

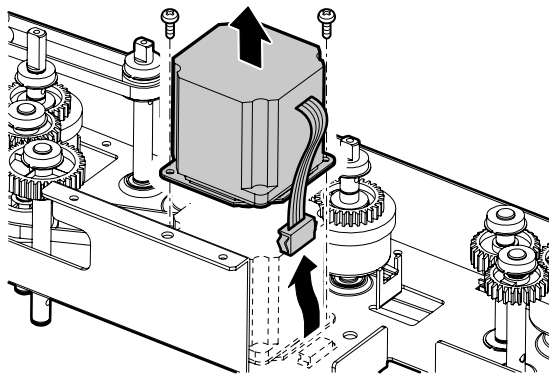
- 4) Remove the 1/2 paper feed drive frame lower. Remove the harness clamp.



- 4) Remove the E-ring, and remove the paper feed tray 3/4 paper transport clutch 2.

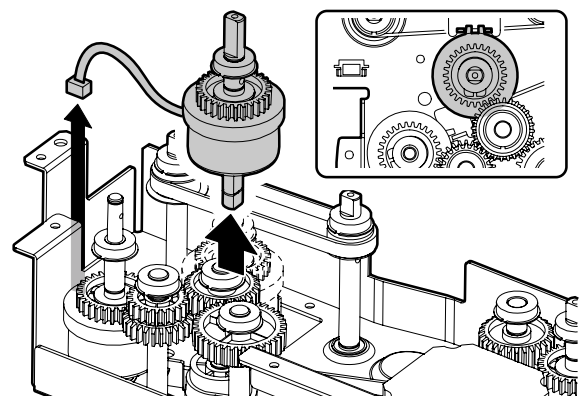


- 5) Disconnect the connector, and remove the vertical paper transport motor.



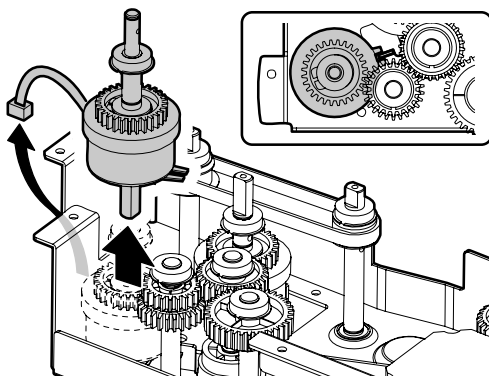
c. Paper feed clutch (Paper feed tray 1)

- 1) Remove the 1/2 paper feed drive unit.
(See "(1) 1/2 paper feed drive unit")
- 2) Remove the 1/2 paper feed drive frame lower.
(See "a. Vertical paper transport motor")
- 3) Disconnect the connector and remove the harness clamp, and remove the paper feed clutch (paper feed tray 1) unit.

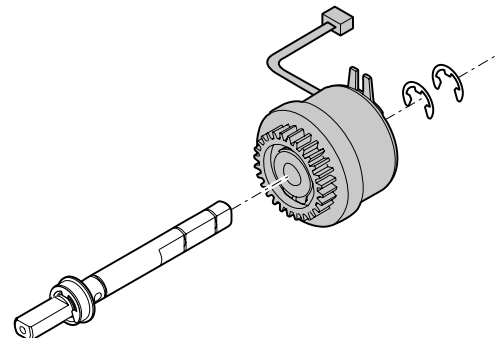


b. Paper feed tray 3/4 paper transport clutch 2

- 1) Remove the 1/2 paper feed drive unit.
(See "(1) 1/2 paper feed drive unit")
- 2) Remove the 1/2 paper feed drive frame lower.
(See "a. Vertical paper transport motor")
- 3) Disconnect the connector and remove the harness clamp, and remove the paper feed tray 3/4 paper transport clutch 2.

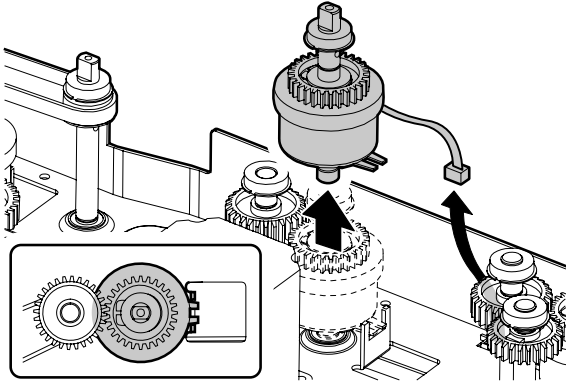


- 4) Remove the E-ring, and remove the paper feed clutch (paper feed tray 1).

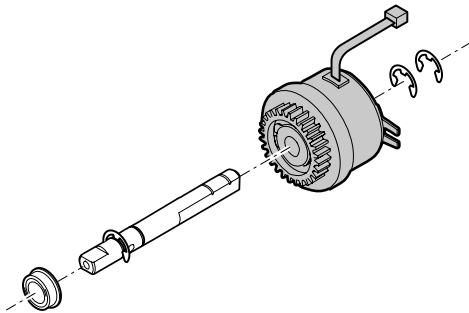


d. Horizontal paper transport clutch

- 1) Remove the 1/2 paper feed drive unit.
(See "(1) 1/2 paper feed drive unit")
- 2) Remove the 1/2 paper feed drive frame lower.
(See "a. Vertical paper transport motor")
- 3) Disconnect the connector and remove the harness clamp, and remove the horizontal paper transport clutch.

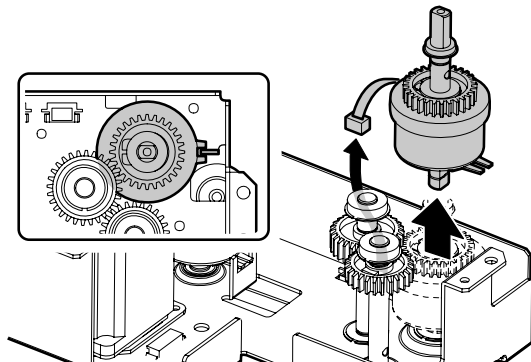


- 4) Remove the E-ring, and remove the horizontal paper transport clutch.

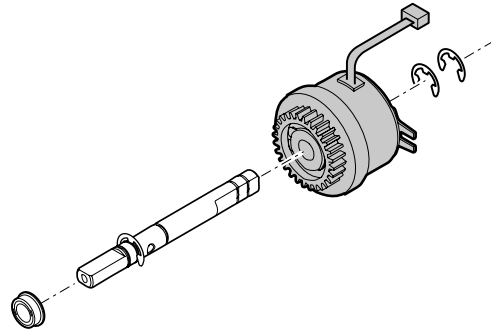


e. Paper feed clutch (Paper feed tray 2)

- 1) Remove the 1/2 paper feed drive unit.
(See "(1) 1/2 paper feed drive unit")
- 2) Remove the 1/2 paper feed drive frame lower.
(See "a. Vertical paper transport motor")
- 3) Disconnect the connector and remove the harness clamp, and remove the paper feed clutch (paper feed tray 2).

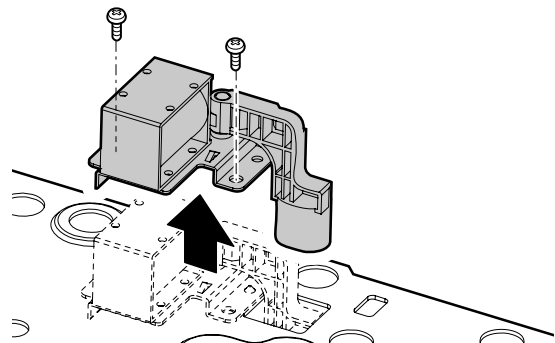


- 4) Remove the E-ring, and remove the paper feed clutch (paper feed tray 2).

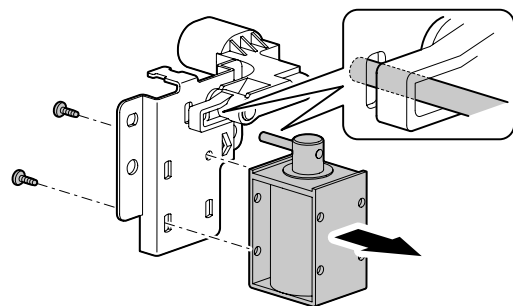


f. Paper pickup solenoid (Paper feed tray 2)

- 1) Remove the 1/2 paper feed drive unit.
(See "(1) 1/2 paper feed drive unit")
- 2) Remove the 1/2 paper feed drive frame lower.
(See "a. Vertical paper transport motor")
- 3) Remove the paper pickup solenoid unit.



- 4) Remove the paper pickup solenoid.

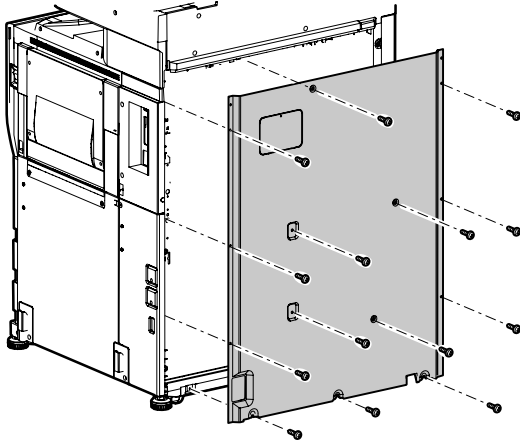


* When installing, check that the solenoid plunger is inserted in the arm.

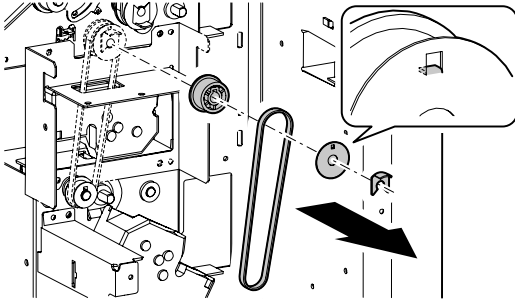
(2) Others

a. Remove the paper tray lift-up motor (paper feed tray 1)

- 1) Remove the rear cabinet.

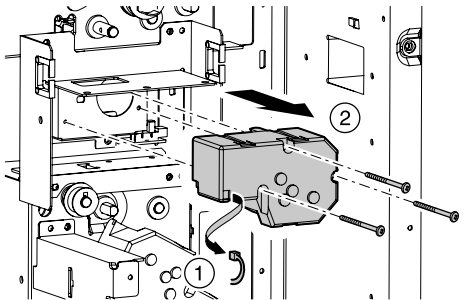


- 2) Remove the plastic E-ring, the belt holding sheet, the belt, and the pulley.

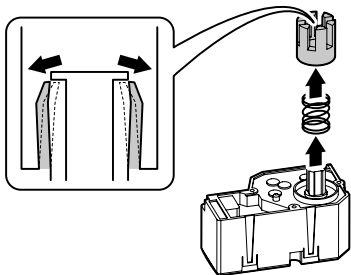


* When installing, be careful of the direction of the belt holding sheet.

- 3) Disconnect the connector, and remove the lift-up motor unit.

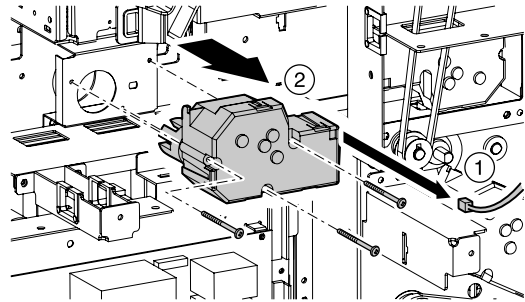


- 4) Release the pawl, and remove the lift-up coupling. Remove the liftup spring from the paper tray lift-up motor.

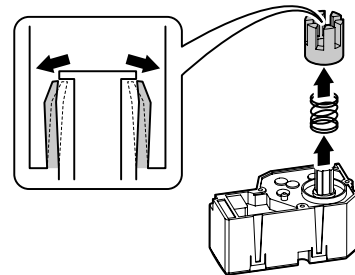


b. Paper tray lift-up motor (Paper feed tray 2)

- 1) Remove the high voltage PWB unit.
(See "D-(1) Manual paper feed drive unit")
- 2) Disconnect the connector, and remove the lift-up motor unit.

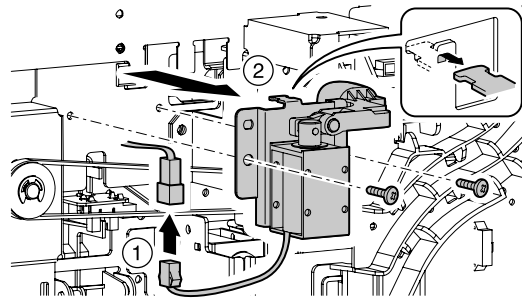


- 3) Release the pawl, and remove the lift-up coupling. Remove the liftup spring from the lift-up motor.

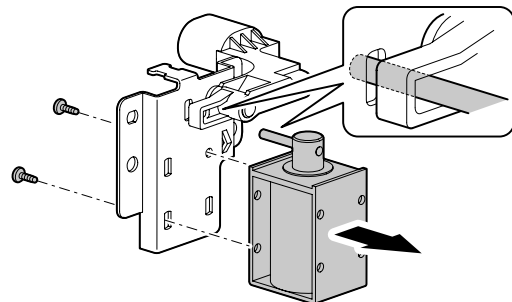


c. Paper pickup solenoid (Paper feed tray 2)

- 1) Remove the high voltage PWB unit.
(See "D-(1) Manual paper feed drive unit")
- 2) Disconnect the connector, and remove the paper pickup solenoid unit.



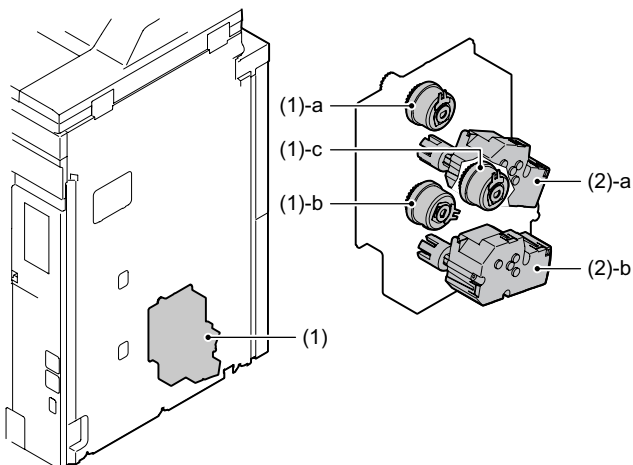
- 3) Remove the paper pickup solenoid.



* When installing, check that the solenoid plunger is inserted in the arm.

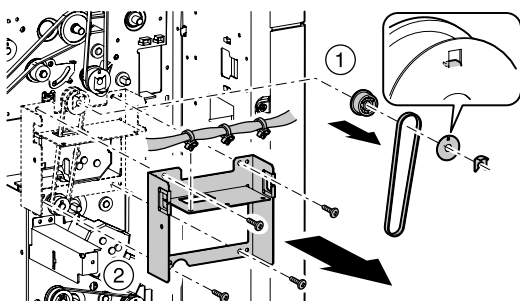
F. 3/4 paper feed drive section

No.	Unit	No.	Parts
(1)	3/4 paper feed drive unit	a	Paper feed clutch (Paper feed tray 3)
		b	Paper feed clutch (Paper feed tray 4)
		c	Paper feed tray 3/4 paper transport clutch 1
(2)	Others	a	Paper tray lift-up motor (Paper feed tray 3)
		b	Paper tray lift-up motor (Paper feed tray 4)



(1) 3/4 paper feed drive unit

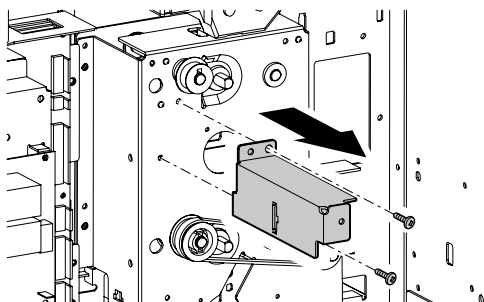
- 1) Remove the paper tray lift-up motor.
(See "(2)-a. Paper tray lift-up motor (Paper feed tray 3)")
- 2) Remove the parts and remove the drive joint plate.



* When installing, be careful of the direction of the belt holding sheet.

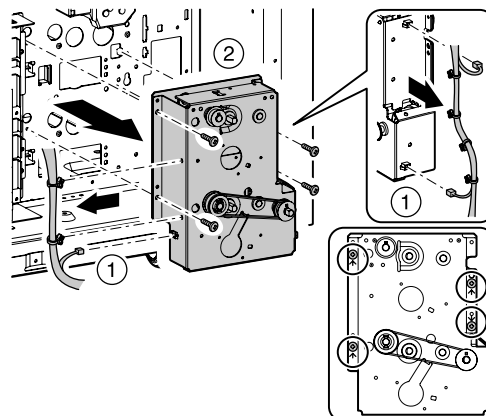
* When installing, temporarily fix the 1/2 paper feed drive unit to the main unit, and install the drive joint plate. Then tighten the screw of the drive unit securely.

- 3) Remove the external outfit mounting plate.



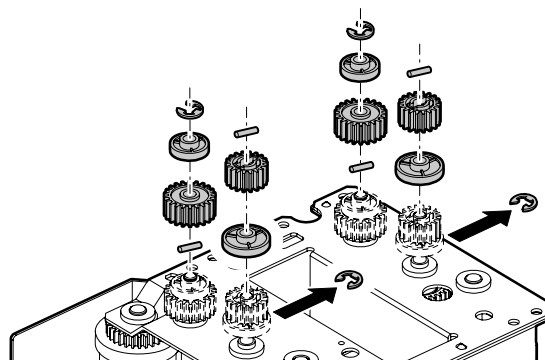
- 4) Disconnect the connector and remove the harness clamp. Remove the 3/4 paper feed drive unit.

* Remove the screw which was indicated with the arrow mark.

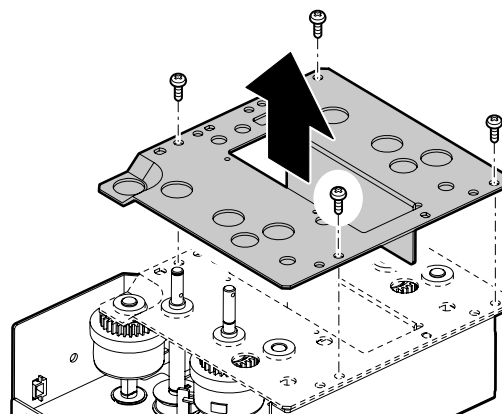


a. Paper feed clutch (Paper feed tray 3)

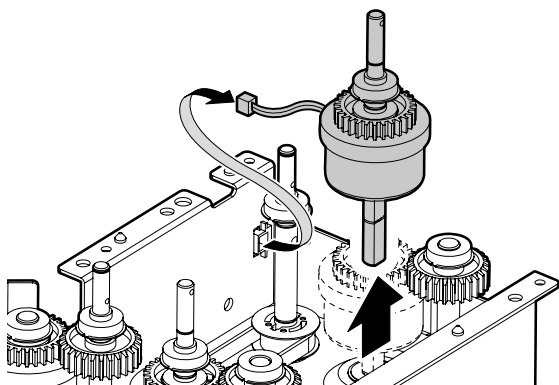
- 1) Remove the 3/4 paper feed drive unit.
(See "(1) 3/4 paper feed drive unit")
- 2) Remove the E-ring and remove the parts.



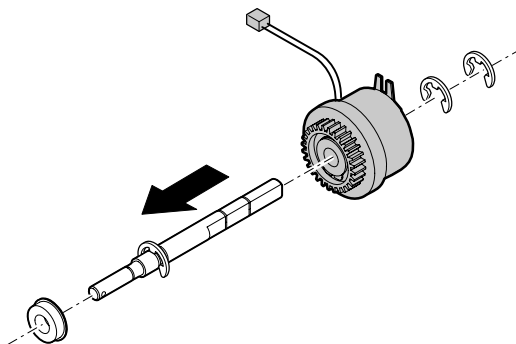
- 3) Remove the 3/4 drive frame lower.



- 4) Disconnect the connector, and remove the paper feed clutch unit.

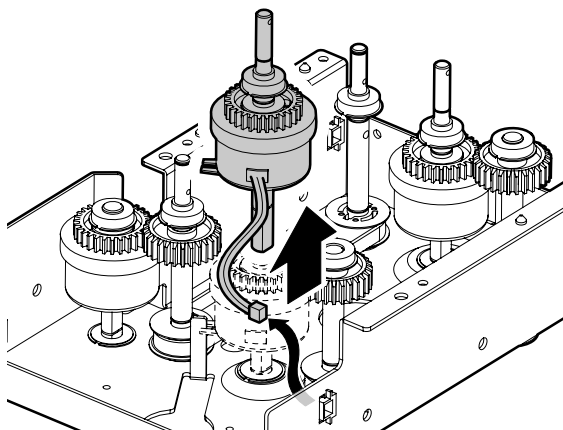


- 5) Remove the E-ring, and remove the paper feed clutch.

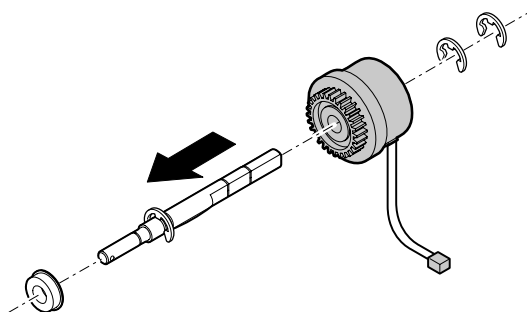


b. Paper feed clutch (Paper feed tray 4)

- 1) Remove the 3/4 paper feed drive unit.
(See "(1) 3/4 paper feed drive unit")
- 2) Remove the 3/4 drive frame lower.
(See "a. Paper feed clutch (Paper feed tray 3)")
- 3) Disconnect the connector, and remove the paper feed clutch unit.

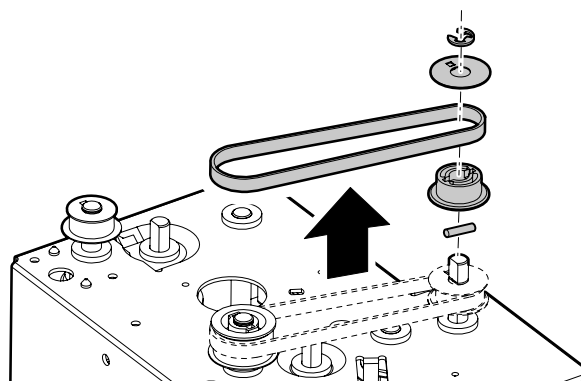


- 4) Remove the E-ring, and remove the paper feed clutch.

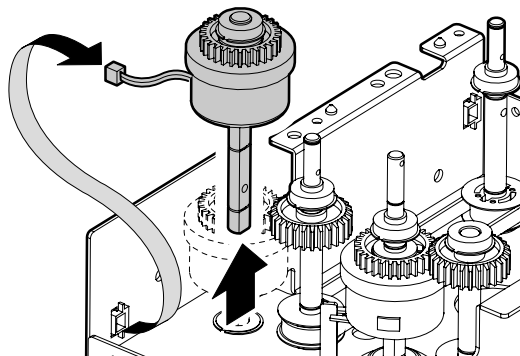


c. Paper feed tray 3/4 paper transport clutch 1

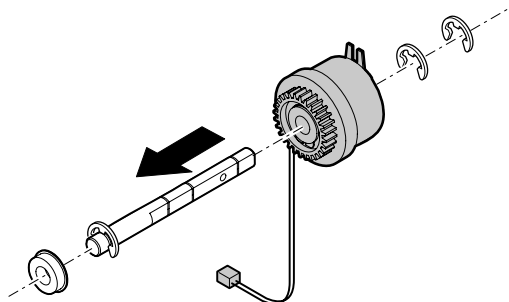
- 1) Remove the 3/4 paper feed drive unit.
(See "(1) 3/4 paper feed drive unit")
- 2) Remove the parts, and remove the belt.



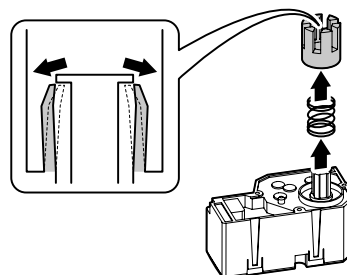
- 3) Remove the 3/4 drive frame lower.
(See "a. Paper feed clutch (Paper feed tray 3)")
- 4) Disconnect the connector, and remove the paper feed tray 3/4 paper transport clutch 1 unit.



- 5) Remove the E-ring, and remove the paper feed tray 3/4 and the paper transport clutch 1.



- 3) Release the pawl, and remove the lift-up coupling. Remove the lift-up spring from the lift-up motor.

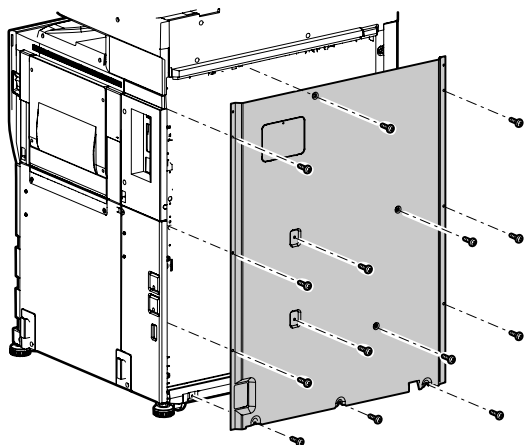


(2) Others

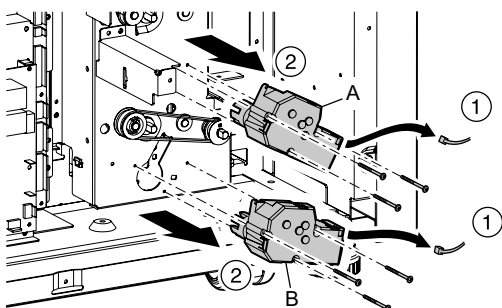
a. Paper tray lift-up motor (Paper feed tray 3)

b. Paper tray lift-up motor (Paper feed tray 4)

- 1) Remove the rear cabinet.



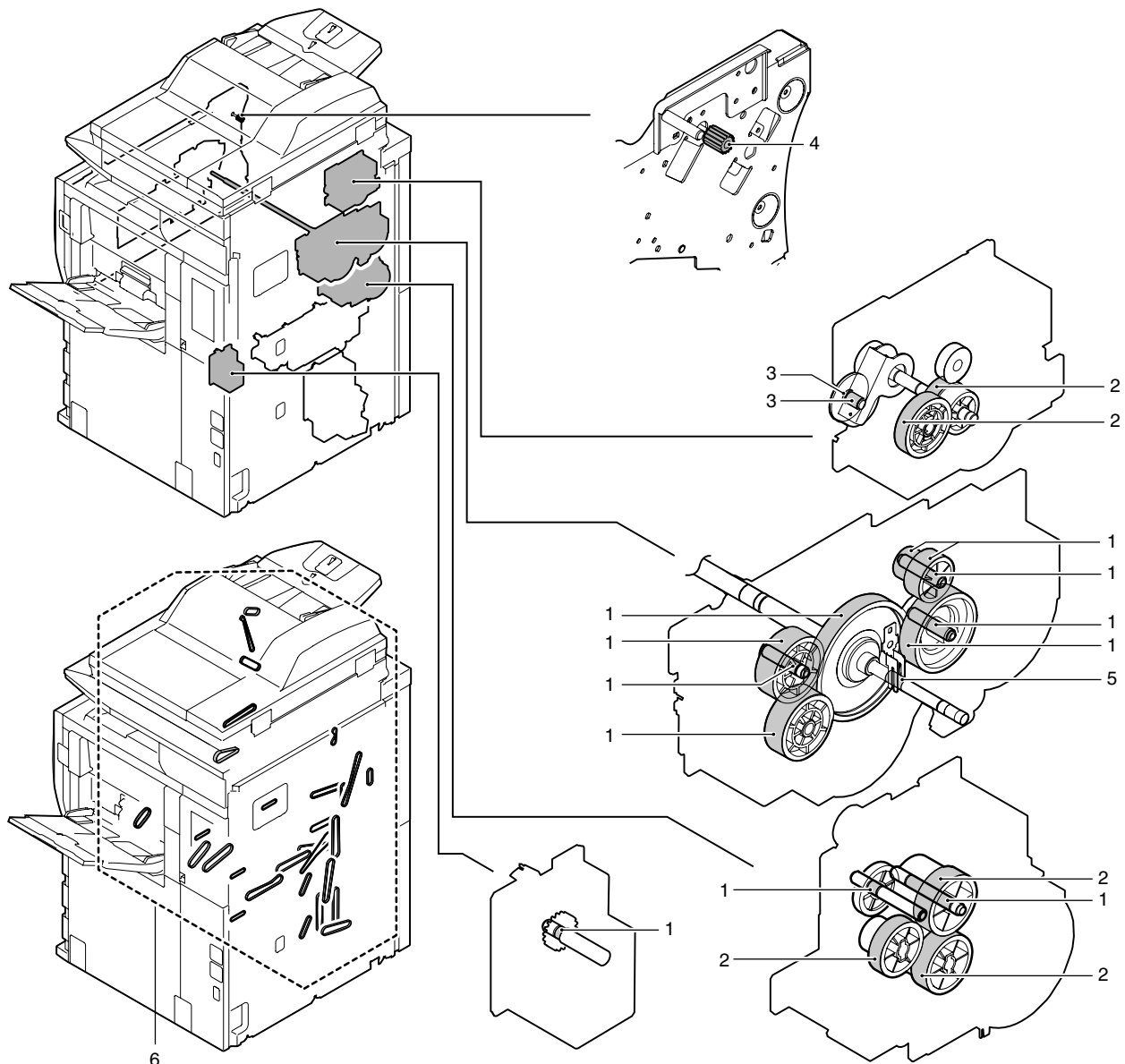
- 2) Disconnect the connector, and remove the paper tray lift-up motor (paper feed tray 3) (A) and the paper tray lift-up motor (Paper feed tray 4) (B).



2. Maintenance

X: Check O: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position
 (Clean, replace, or adjust according to necessity.)

			When calling	250 K	500 K	750 K	1000 K	1250 K	1500 K	1750 K	2000 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
				300 K	600 K	900 K	1200 K	1500 K	1800 K	2100 K	2400 K	
		55ppm (PM: 250K)										
		62ppm/70ppm (PM: 300K)										
Unit name	No.	Part name										
Drive section	1	Gears (grease)	X	☆	☆	☆	☆	☆	☆	☆	☆	UKOG-0307FCZZ
	2	Gears (grease)	X	☆	☆	☆	☆	☆	☆	☆	☆	UKOG-0299FCZZ
	3	Gears (grease)	X	☆	☆	☆	☆	☆	☆	☆	☆	UKOG-0062FCZZ
	4	Gears (grease)	X	☆	☆	☆	☆	☆	☆	☆	☆	UKOG-0235FCZZ
	5	Gear (Conductive grease)	X	☆	☆	☆	☆	☆	☆	☆	☆	UKOG-0012QSZZ
	6	Belts		X	X	X	X	X	X	X	X	

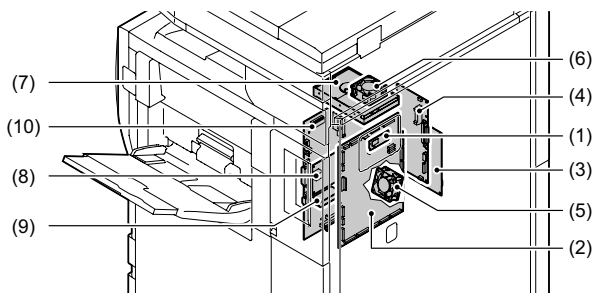


[Q] PWB SECTION

1. Disassembly and assembly

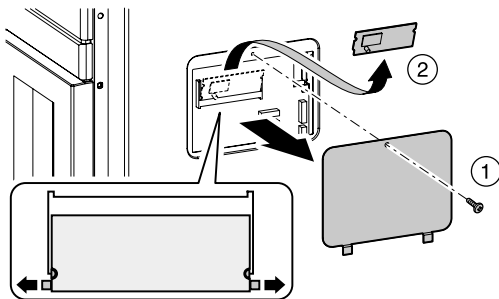
A. Control PWB section

No.	Parts
(1)	PCU FLASH PWB
(2)	PCU PWB
(3)	Driver PWB
(4)	Mother PWB
(5)	Controller cooling fan motor
(6)	HDD cooling fan motor
(7)	HDD
(8)	Soft NIC PWB
(9)	MFP FLASH ROM PWB
(10)	MFP controller PWB



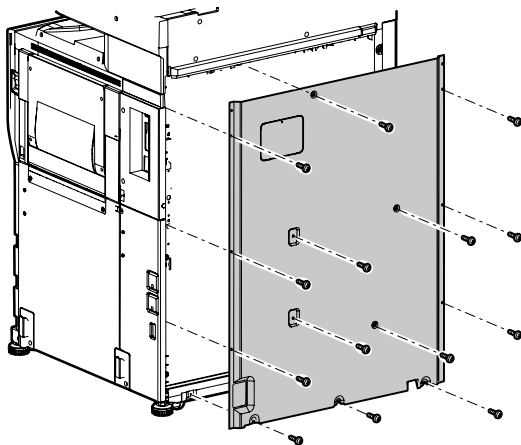
(1) PCU FLASH PWB

- 1) Remove the ROM cover. Release the lock and remove the PCU Flash PWB.

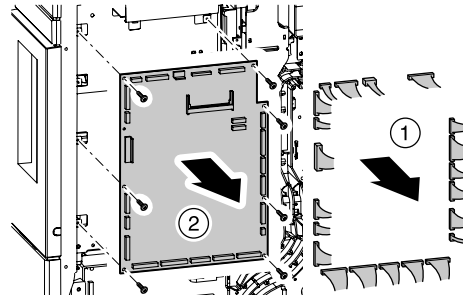


(2) PCU PWB

- 1) Remove the rear cabinet.

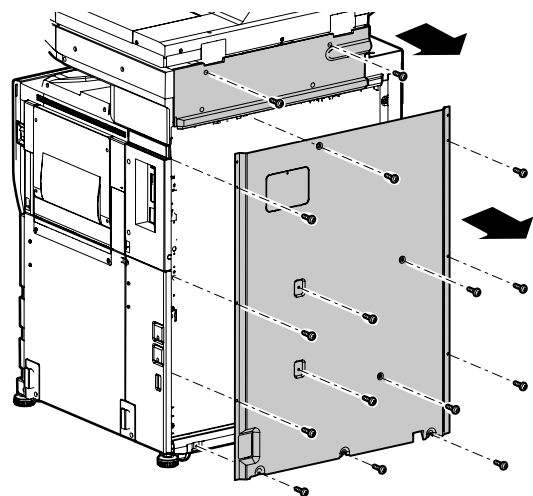


- 2) Disconnect the connector, and remove the PCU PWB.

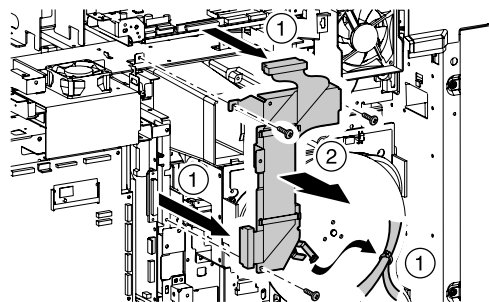


(3) Driver PWB

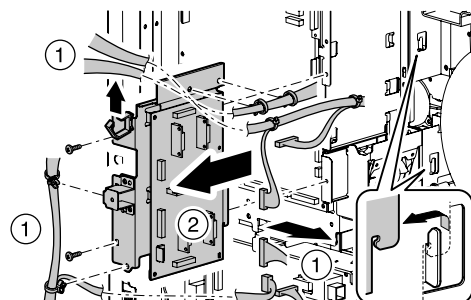
- 1) Remove the rear cabinet and the rear cabinet upper.



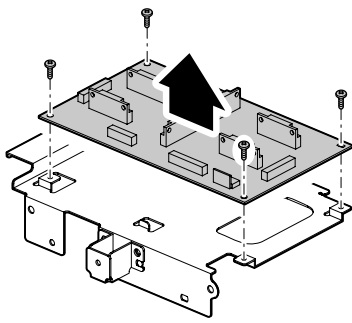
- 2) Disconnect the connector, and remove the harness clamp and the SCAN harness cover.



- 3) Remove the connector and the harness clamp. Remove the driver PWB unit.

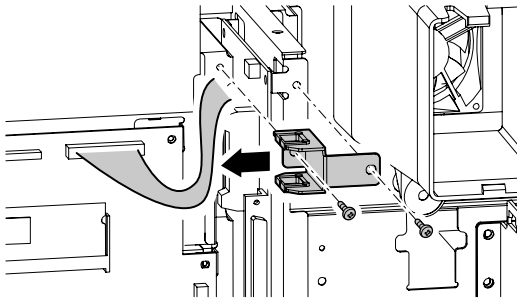


- 4) Remove the driver PWB.

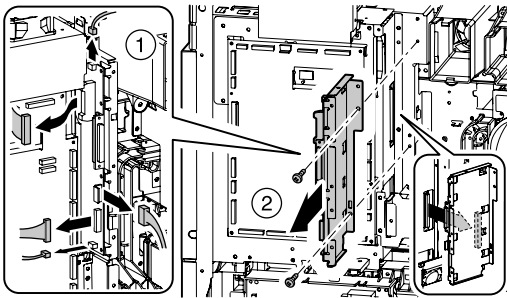


(4) Mother PWB

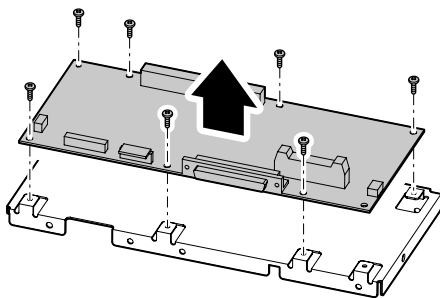
- 1) Remove the driver PWB unit. (See "(3) Driver PWB")
- 2) Remove the harness, and remove the mother PWB stay.



- 3) Disconnect the connector and remove the mother PWB unit.

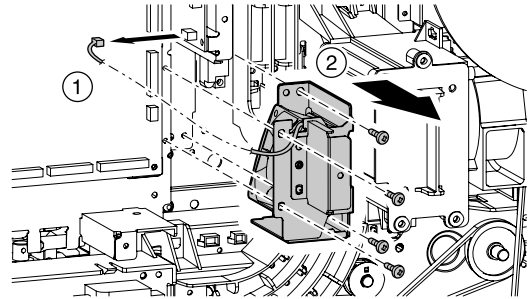


- 4) Remove the mother PWB.

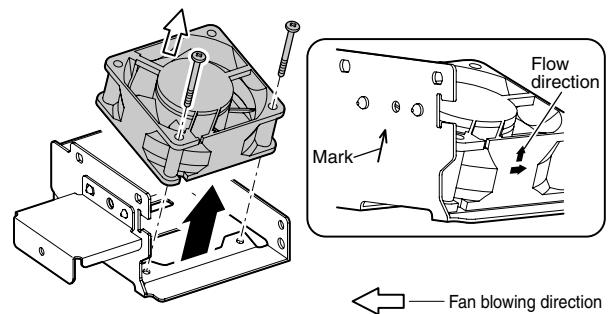


(5) Controller cooling fan motor

- 1) Remove the driver PWB unit. (See "(3) Driver PWB")
- 2) Disconnect the connector and remove the harness clamp. Remove the controller cooling fan motor unit.



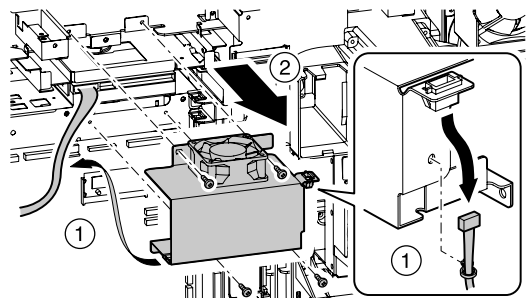
- 3) Remove the controller cooling fan motor.



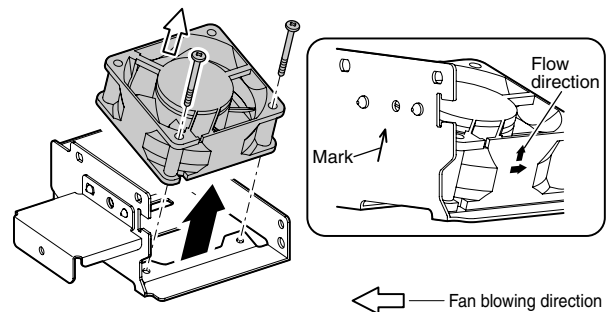
* When assembling, fit the mark with the fan flow direction.

(6) HDD cooling fan motor

- 1) Remove the rear cabinet and the rear cabinet upper. (See "(3) Driver PWB")
- 2) Disconnect the connector, and remove the harness clamp.



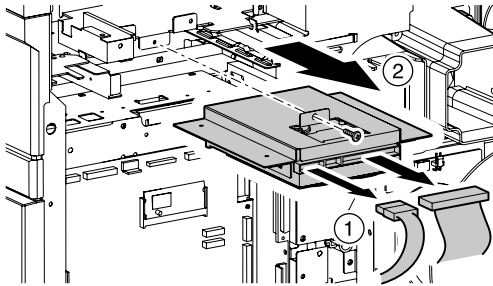
- 3) Disconnect the connector, and remove the HDD cooling fan motor.



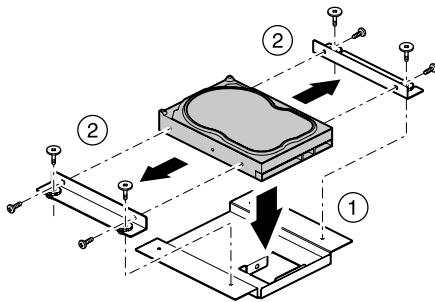
* When assembling, fit the mark with the fan rotating direction.

(7) HDD

- 1) Remove the cooling fan motor unit.
(See "(5) Controller cooling fan motor")
- 2) Disconnect the connector, and remove the HDD unit.

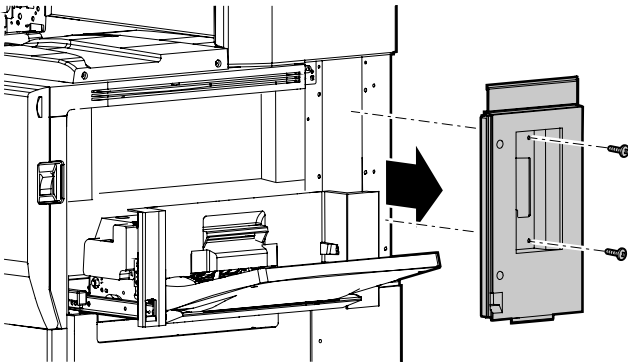


- 3) Remove the HDD slide plate, and remove the HDD mounting plate from the HDD.

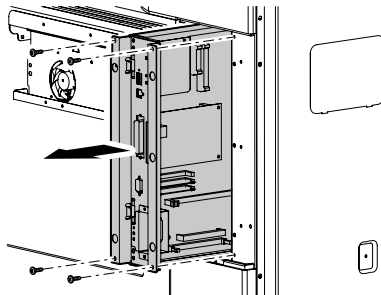


(8) Soft NIC PWB

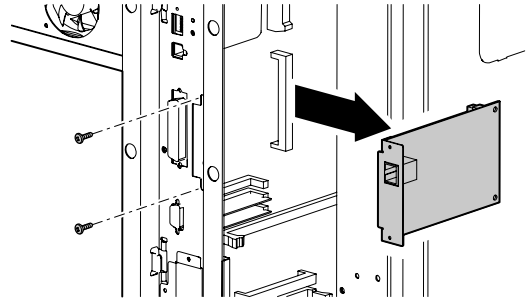
- 1) Remove the right cabinet upper.



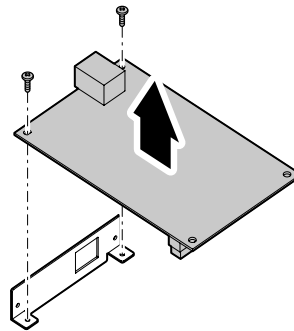
- 2) Pull out the NIC control unit.



- 3) Remove the soft NIC PWB unit.

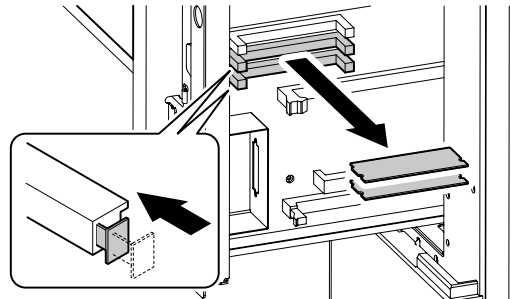


- 4) Remove the soft NIC PWB angle from the soft NIC PWB.



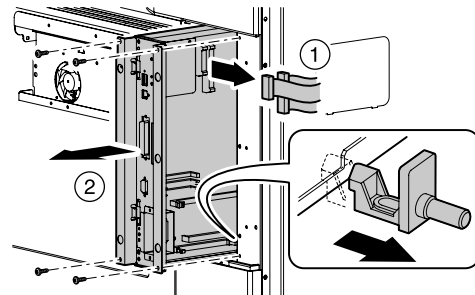
(9) MFP FLASH ROM PWB

- 1) Pull out the NIC control unit. (See "(8) Soft NIC PWB")
- 2) Release the lock, and remove the MFP Flash PWB.

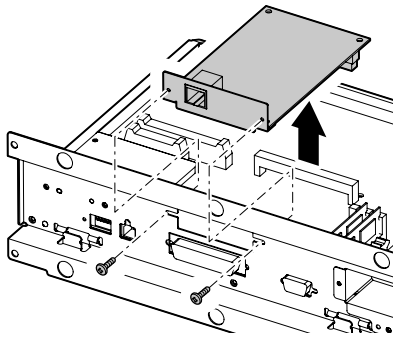


(10) MFP controller PWB

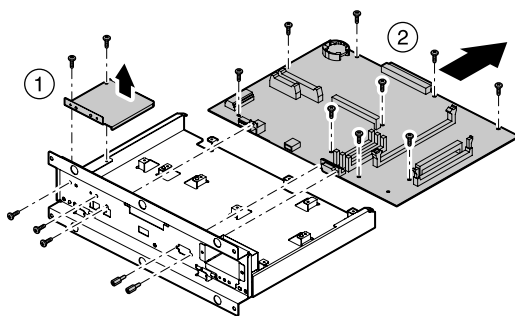
- 1) Remove the manual feed cover F, the right cabinet middle, and the right cabinet upper. (See "(8) Soft NIC PWB")
- 2) Pull out the NIC control unit, and remove the flat cable. Release the lock, and remove the NIC control unit.



- 3) Remove the soft NIC PWB unit.

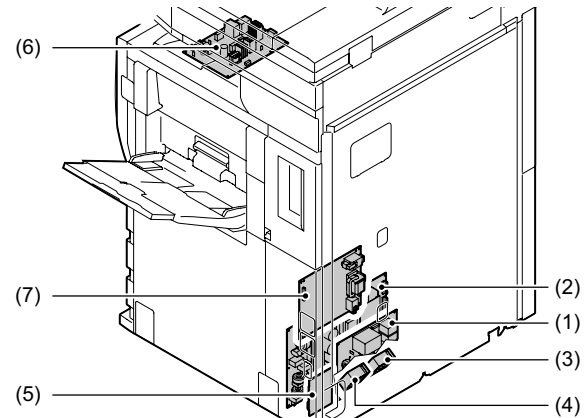


- 4) Remove the PWB protection plate. Remove the MFP controller PWB.



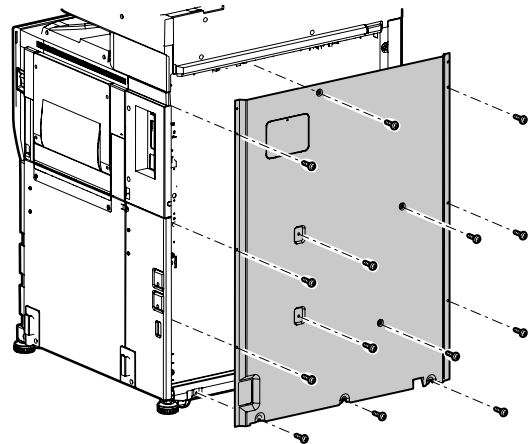
B. Power section

No.	Parts
(1)	AC power PWB
(2)	DC main power PWB
(3)	Power cooling fan motor 1
(4)	Power cooling fan motor 2
(5)	Dehumidifier heater relay PWB
(6)	DC sub power PWB
(7)	High voltage PWB (MC/DV/TC)

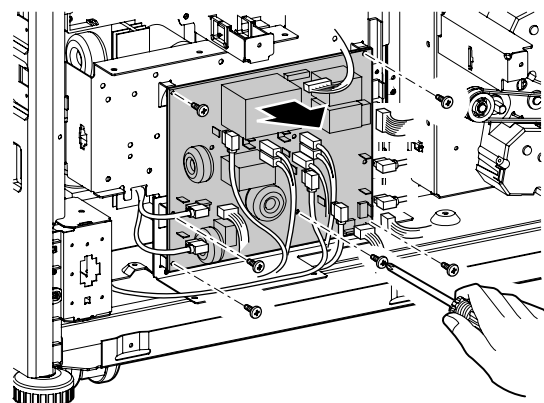


(1) AC power PWB

- 1) Remove the rear cabinet.



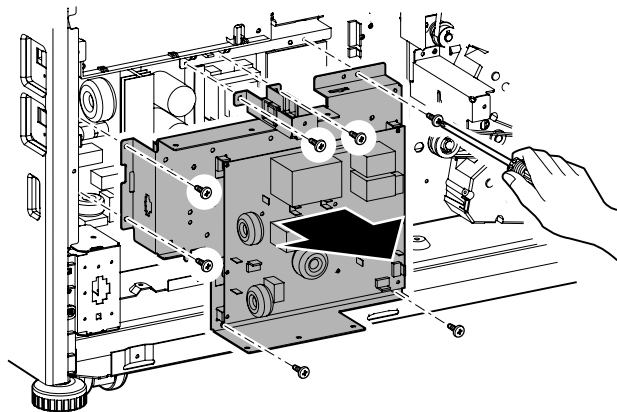
- 2) Disconnect the connector, and remove the AC power PWB.



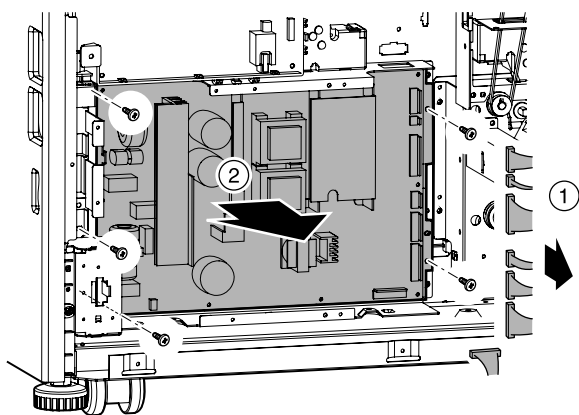
(2) DC main power PWB

(Method 1)

- 1) Remove the rear cabinet. (See “(1) AC power PWB”)
- 2) Disconnect the connector and remove the harness clamp. Remove the AC power PWB unit.

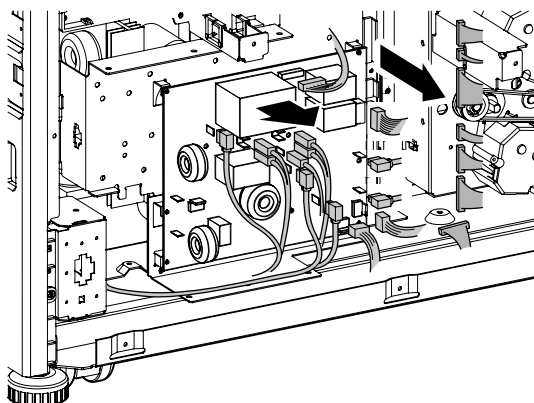


- 3) Disconnect the connector and remove the DC main power PWB.

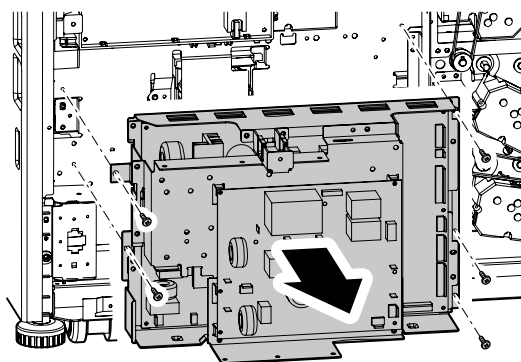


(Method 2)

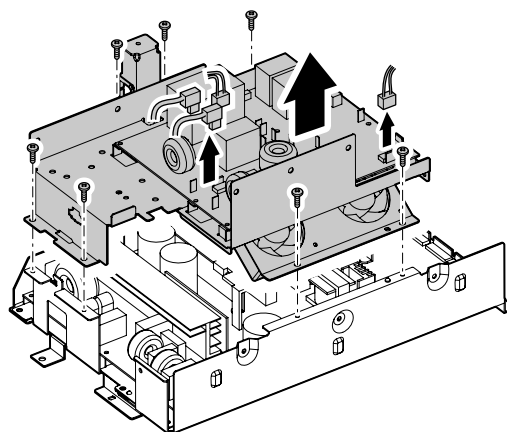
- 1) Remove the rear cabinet. (See “(1) AC power PWB”)
- 2) Remove the connector.



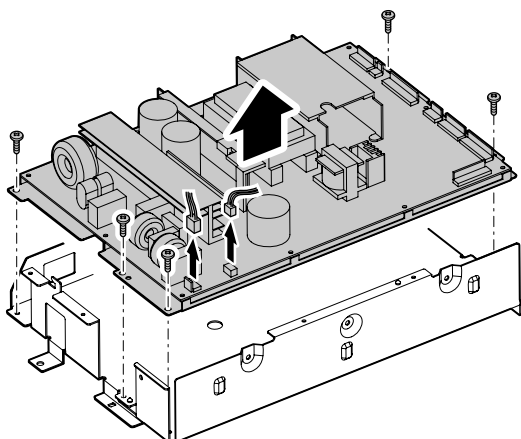
- 3) Remove the AC/DC power unit.



- 4) Remove the AC power PWB unit.



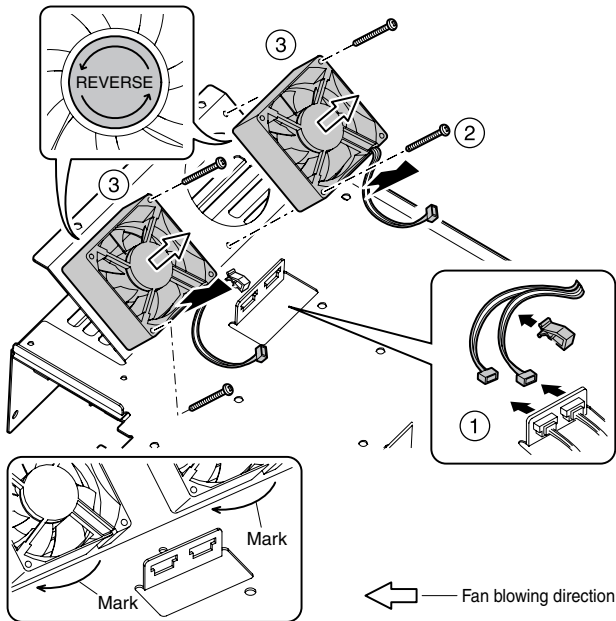
- 5) Remove the DC power PWB unit.



(3) Power cooling fan motor 1

(4) Power cooling fan motor 2

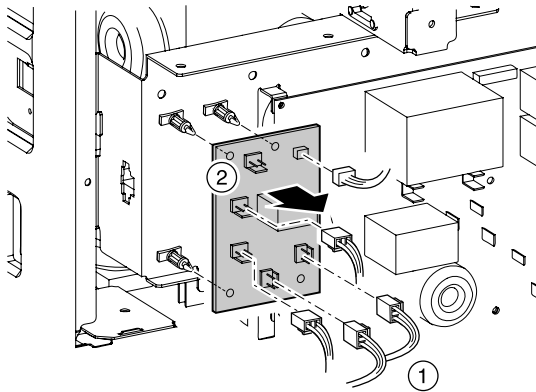
- 1) Remove the rear cabinet. (See "(1) AC power PWB")
- 2) Disconnect the connector, and remove the AC power PWB unit. (See "(2) DC main power PWB")
- 3) Disconnect the connector and remove the harness clamp. Remove the power cooling fan motors 1/2.



* When assembling, fit the mark with the fan rotating direction.
(label on the back surface)

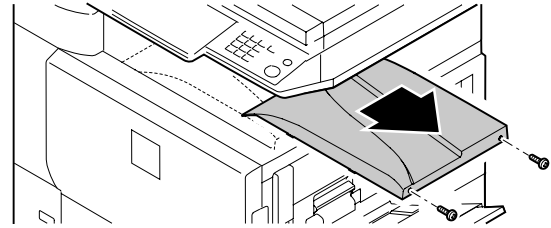
(5) Dehumidifier heater relay PWB

- 1) Remove the rear cabinet. (See "(1) AC power PWB")
- 2) Disconnect the connector and remove the supporter. Remove the dehumidifier heater relay PWB.

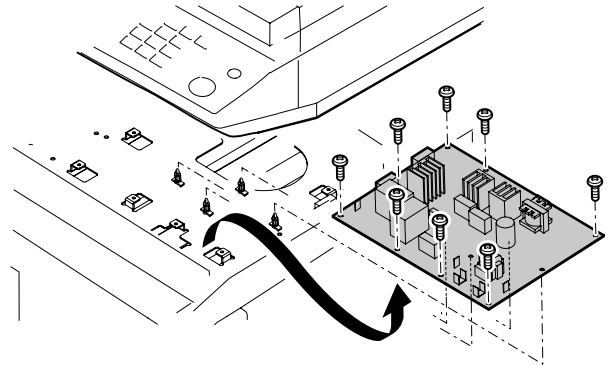


(6) DC sub power PWB

- 1) Remove the paper exit tray cabinet.

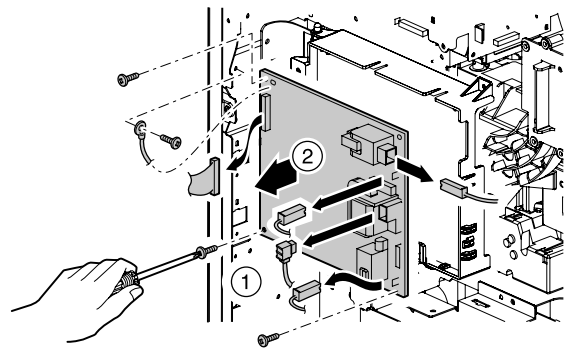


- 2) Disconnect the connector and remove the supporter. Remove the DC sub power PWB.



(7) High voltage PWB (MC/DV/TC)

- 1) Remove the rear cabinet. (See "(1) AC power PWB")
- 2) Disconnect the connector and remove the earth terminal. Remove the high voltage PWB.

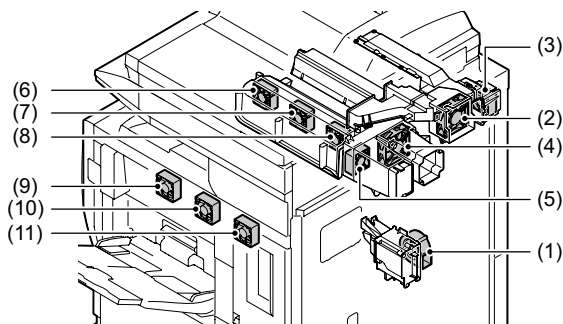


[R] FAN AND FILTER SECTION

1. Disassembly and assembly

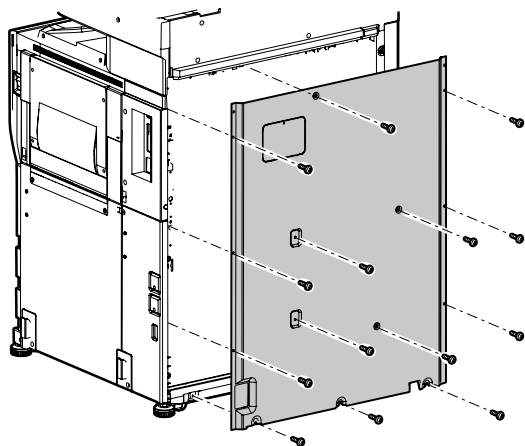
A. Fan motors

No.	Parts
(1)	Developing section cooling fan motor
(2)	Paper cooling fan motor
(3)	Fusing cooling fan motor 2
(4)	Process exhaust fan motor 5
(5)	Process exhaust fan motor 4
(6)	Process exhaust fan motor 1
(7)	Process exhaust fan motor 2
(8)	Process exhaust fan motor 3
(9)	Process cooling fan 1
(10)	Process cooling fan 2
(11)	Process cooling fan 3

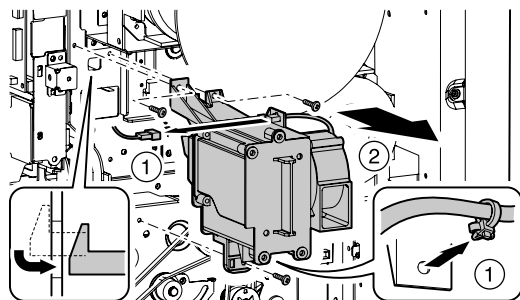


(1) Developing section cooling fan motor

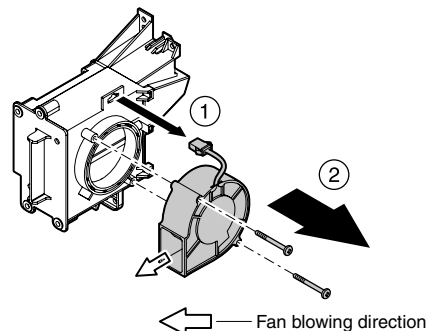
- 1) Remove the rear cabinet.



- 2) Disconnect the connector and remove the harness clamp. Remove the DV fan unit.

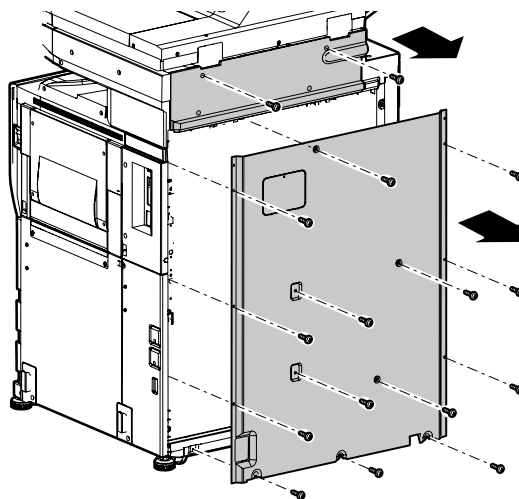


- 3) Disconnect the connector, and remove the DV fan.

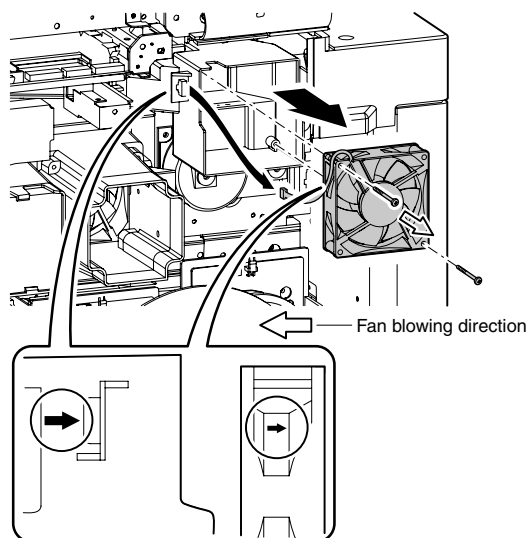


(2) Paper cooling fan motor

- 1) Remove the rear cabinet and the rear cabinet upper.



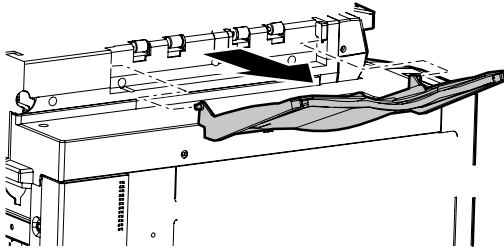
- 2) Disconnect the connector, and remove the paper cooling fan motor.



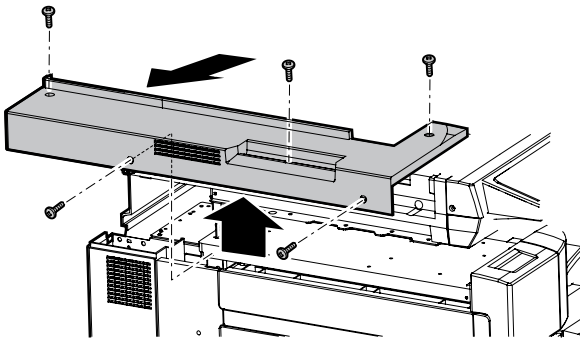
* When installing, arrange so that the arrow mark on the side of the duct faces in the same direction with the arrow mark on the side of the fan.

(3) Fusing cooling fan motor 2

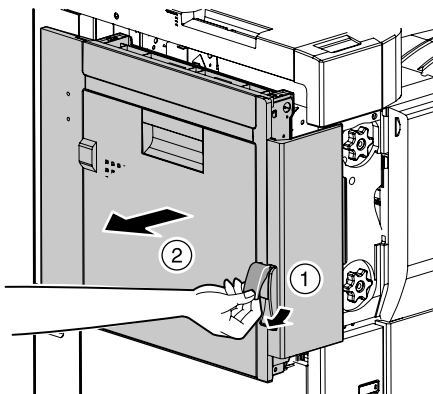
- 1) Remove the rear cabinet.
(See "(1) Developing cooling fan motor")
- 2) Remove the tray.



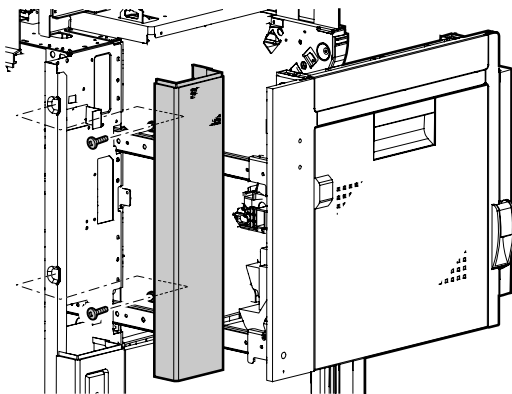
- 3) Remove the left cover cabinet.



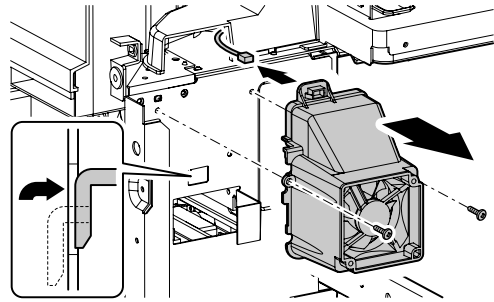
- 4) Open the left door.



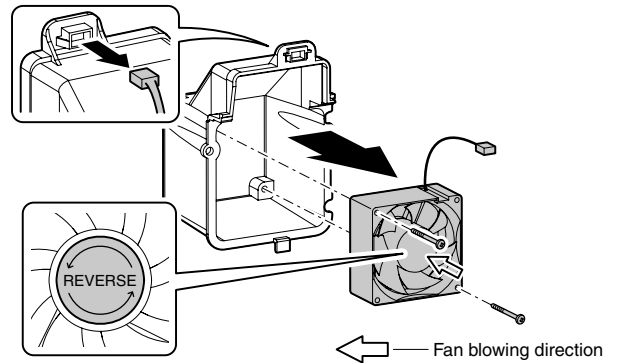
- 5) Remove the left cabinet upper.



- 6) Disconnect the connector, and remove the paper exit rear duct unit.



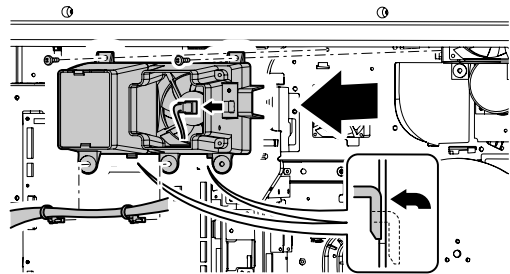
- 7) Disconnect the connector, and remove the fusing cooling fan motor.



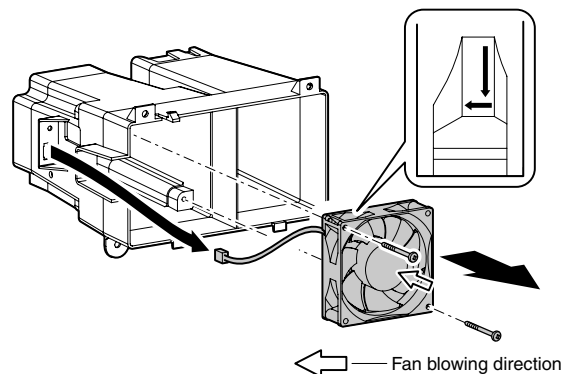
* Be careful of the direction of the fan.

(4) Process exhaust fan motor 5

- 1) Remove the rear cabinet.
(See "(1) Developing cooling fan motor")
- 2) Disconnect the connector and remove the harness clamp.
Remove the sub duct unit.



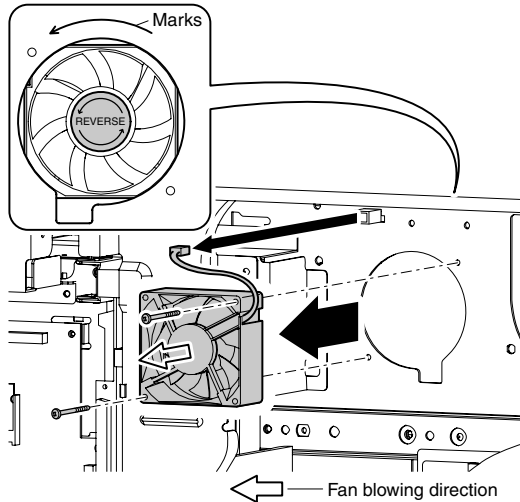
- 3) Disconnect the connector and remove the process exhaust fan motor 5.



* Be careful of the direction of the fan.

(5) Process exhaust fan motor 4

- 1) Remove the rear cabinet.
(See "(1) Developing cooling fan motor")
- 2) Remove the sub duct unit.
(See "(4) Process exhaust fan motor 5")
- 3) Disconnect the connector and remove the process exhaust fan motor 4.



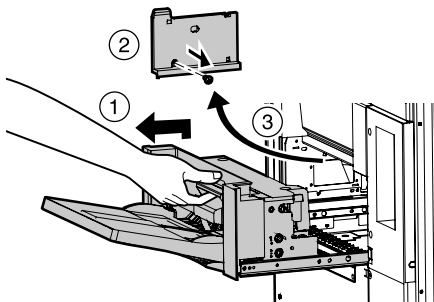
* When assembling, fit the mark with the fan rotating direction.
(label on the back surface)

(6) Process exhaust fan motor 1

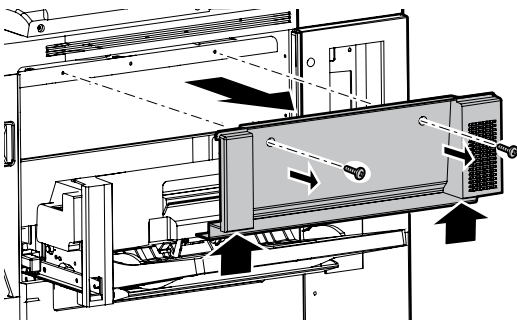
(7) Process exhaust fan motor 2

(8) Process exhaust fan motor 3

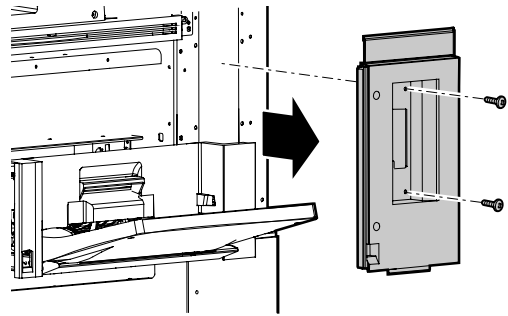
- 1) Remove the DSPF unit.
(See "A-(1) DSPF unit" in the "DSPF section")
- 2) Remove the scanner unit.
(See "(1) Scanner unit" in the "Scanner section")
- 3) Pull out the multi paper feed tray unit, and remove the manual paper feed cover F.



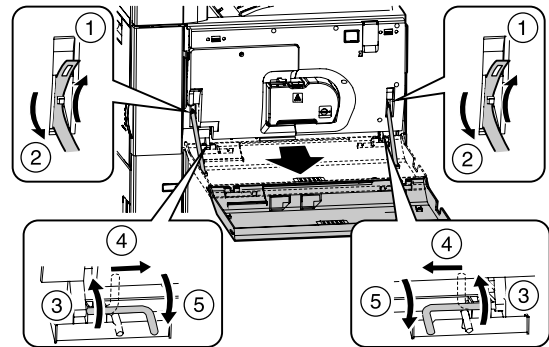
- 4) Remove the right cabinet middle.



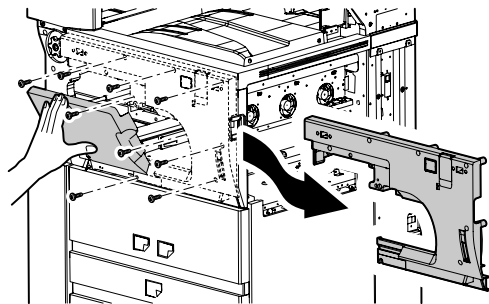
- 5) Remove the right cabinet upper.



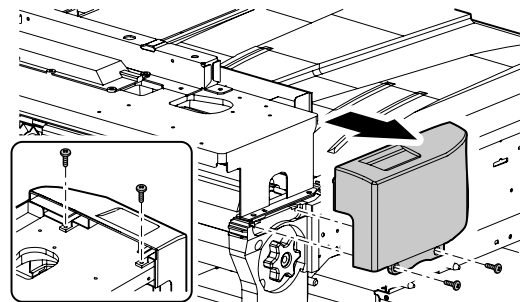
- 6) Remove the front cabinet band, and remove the front cabinet.



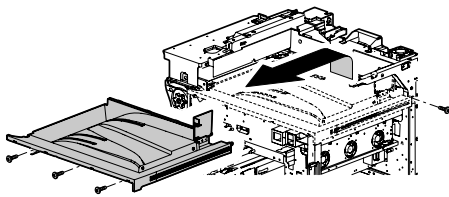
- 7) Remove the toner bottle. (See "(1) Toner bottle unit" in the "Toner hopper and toner bottle section")
- 8) Remove the toner hopper unit. (See "(2) Toner hopper unit" in the "Toner hopper and toner bottle section")
- 9) Remove the developing unit.
(See "(1) Developing unit" in the "Developer tank section")
- 10) Remove the process unit.
(See "A-(1) Process unit" in the "OPC drum section")
- 11) Raise the process DV cover diagonally, and remove the front right cover.



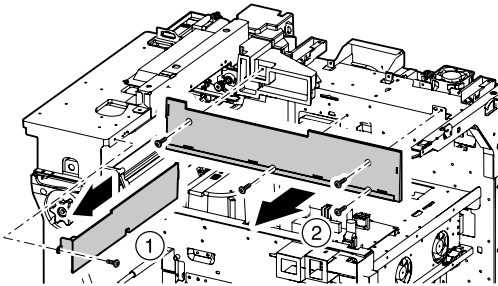
- 12) Remove the front cabinet upper.



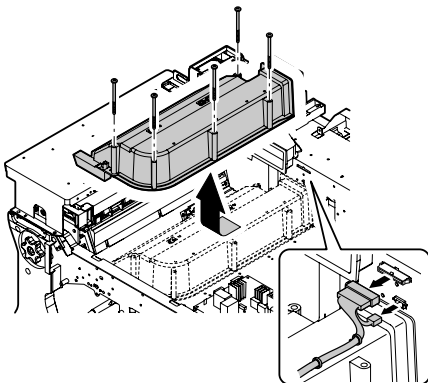
13) Remove the paper exit tray cabinet unit.



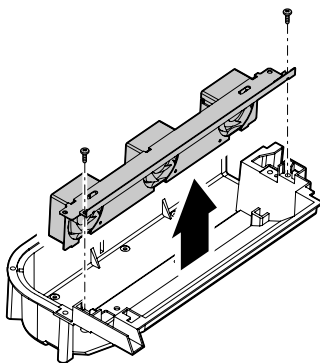
14) Remove the paper exit port cabinet, and remove the paper exit tray cabinet C.



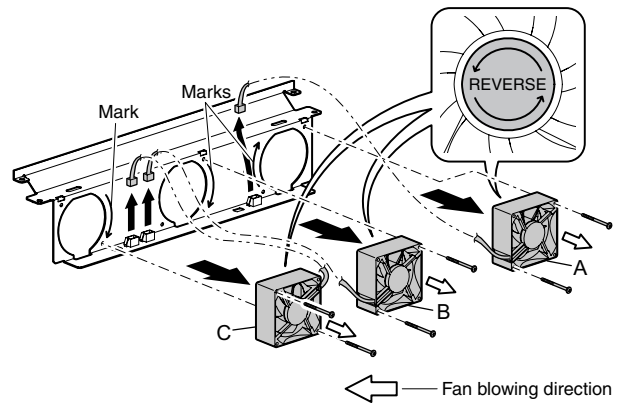
15) Disconnect the connector and remove the harness clamp. Remove the main duct unit.



16) Remove the fan unit.



17) Disconnect the connector, and remove the process cooling fan motors 1 (A), 2 (B), and 3 (C).



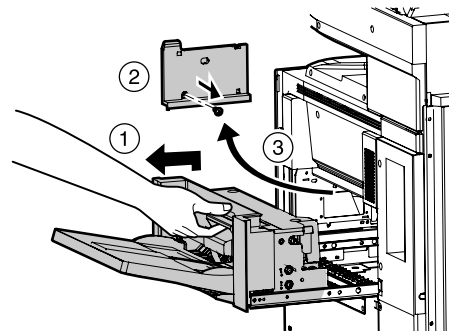
* When assembling, fit the mark with the fan rotating direction. (label on the back surface)

(9) Process cooling fan motor 1 (LSU, process section)

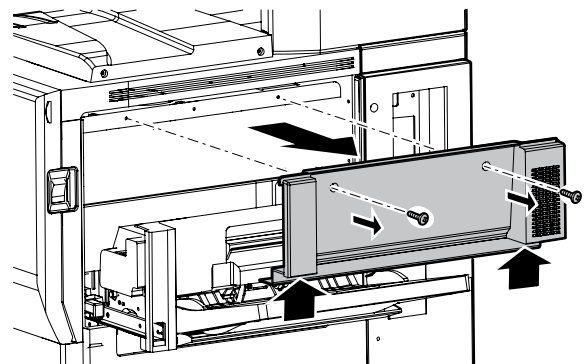
(10) Process cooling fan motor 2 (LSU, process section)

(11) Process cooling fan motor 3 (LSU, process section)

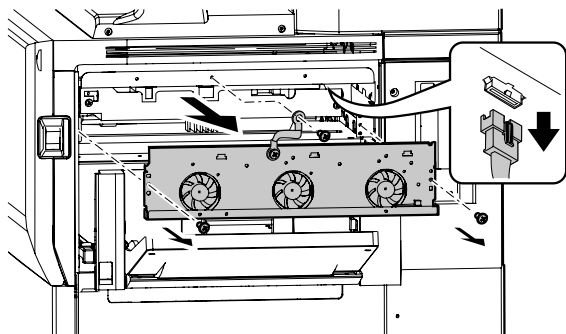
1) Pull out the multi paper feed tray, and remove the manual paper feed cover F.



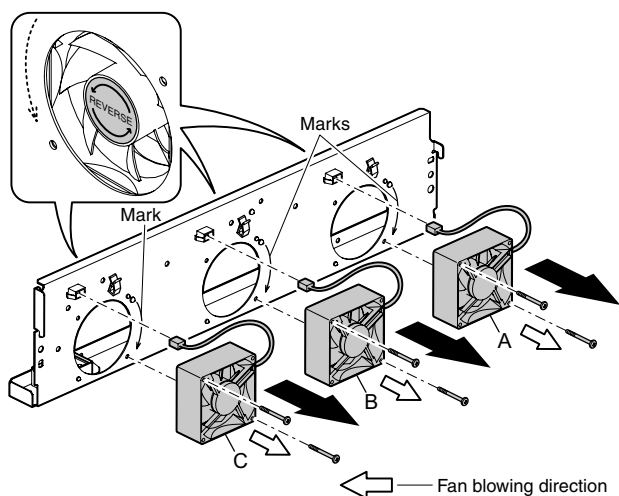
2) Pushing the lower part, remove the right cabinet center.



- 3) Disconnect the connector, and remove the process cooling fan unit.



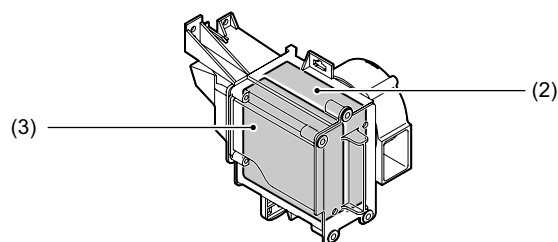
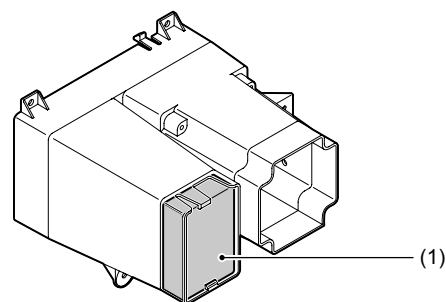
- 4) Disconnect the connector, and remove the process cooling fan motors 1 (A), 2 (B), and 3 (C).



* When assembling, fit the mark with the fan rotating direction.
(label on the back surface)

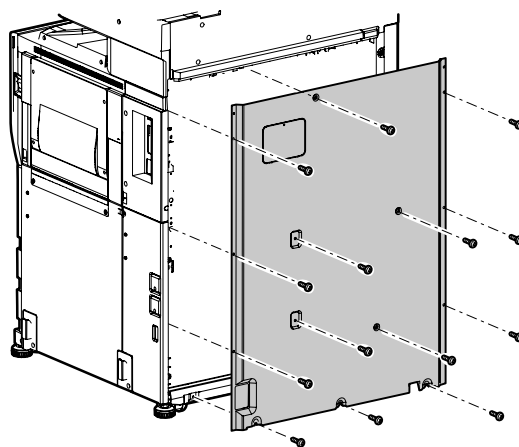
B. Filters

No.	Parts
(1)	Ozone filter
(2)	DV ozone filter
(3)	Toner filter

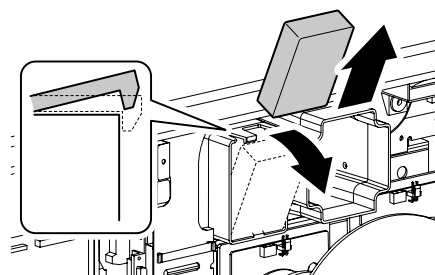


(1) Ozone filter

- 1) Remove the rear cabinet.



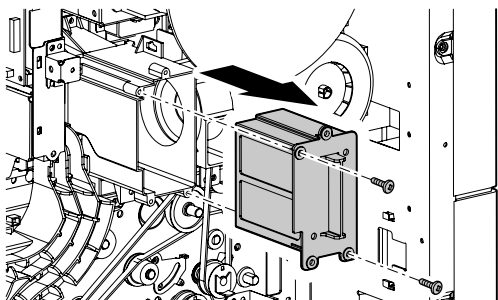
- 2) Release the pawl, and remove the ozone filter.



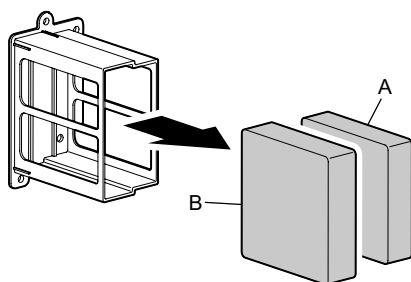
(2) DV ozone filter

(3) Toner filter

- 1) Remove the rear cabinet. (See "(1) Ozone filter")
- 2) Remove the DV filter box.



- 3) Remove the DV ozone filter (A) and the toner filter (B).

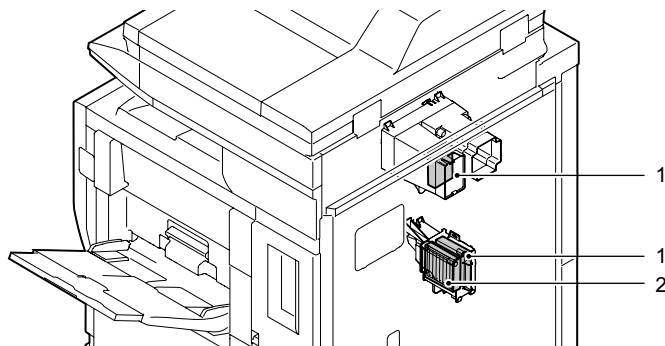


2. Maintenance

×: Check ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

(Clean, replace, or adjust according to necessity.)

		55ppm (PM: 250K)	When calling	250 K	500 K	750 K	1000 K	1250 K	1500 K	1750 K	2000 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
				300 K	600 K	900 K	1200 K	1500 K	1800 K	2100 K	2400 K	
Unit name	No.	Part name										
Filters	1	Ozone filter		▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [75]-7)
	2	Toner filter		▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [75]-8)

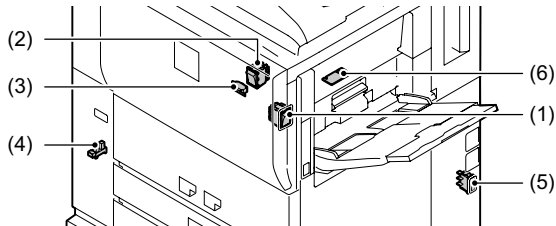


[S] SENSOR, SWITCH SECTION

1. Disassembly and assembly

A. Sensors and switches

No.	Parts
(1)	Power switch
(2)	Main power switch
(3)	Front door open/close detector
(4)	Left door open/close detector
(5)	Dry heater switch
(6)	Machine temperature sensor

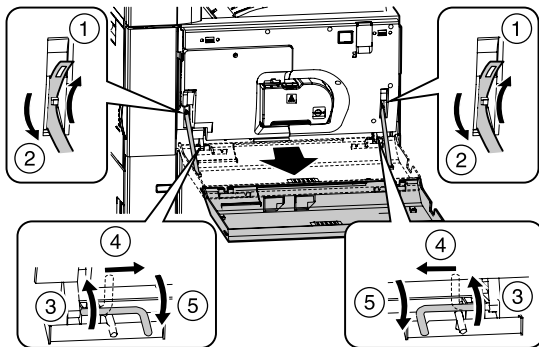


(1) Power switch

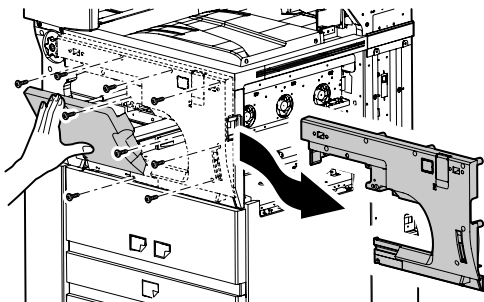
(2) Main power switch

(3) Front door open/close detector

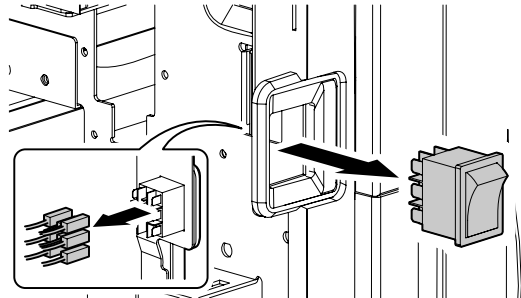
- Remove the front cabinet band, and remove the front cabinet.



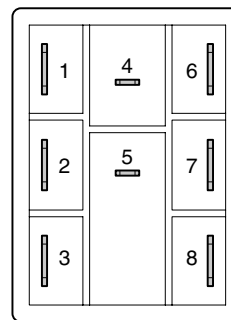
- Remove the toner bottle. (See "(1) Toner bottle unit" in "[Toner hopper and toner bottle section]")
- Remove the toner hopper unit. (See "(2) Toner hopper unit" in "[Toner hopper and toner bottle section]")
- Remove the developing unit. (See "(1) Developing unit" in the "[Developer tank section]")
- Remove the process unit. (See "A-(1) Process unit" in the "[OPC drum section]")
- Raise the process DV cover diagonally, and remove the front right cover.



- Disconnect the connector, and remove the power switch.



* When installing, be careful of the connector connecting position and the installing direction. Also be careful not to break the SW pawl.

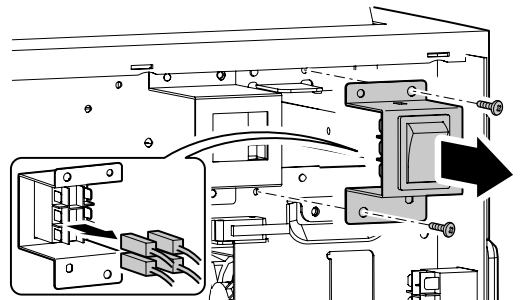


Power switch
(Connector surface)

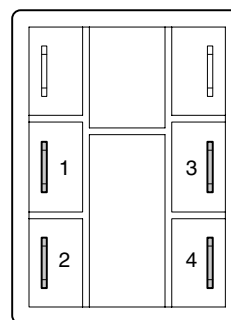
[Connector connecting position]

	Connector color	Line color
1	Yellow	Black
2	White	Black
3	Blue	Black
4	White	Red
5	White	Brown
6	Yellow	White
7	White	White
8	Blue	White

- Disconnect the connector, and remove the main power switch unit.



* When installing, be careful of the connector connecting position and the installing direction. Also be careful not to break the SW pawl.

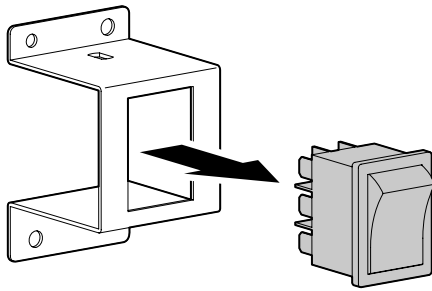


Main power switch
(Connector surface)

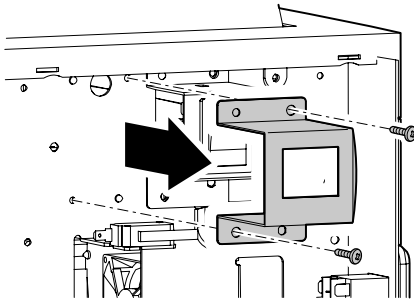
[Connector connecting position]

	Connector color	Line color
1	White	Black
2	Black	Black
3	White	White
4	Black	White

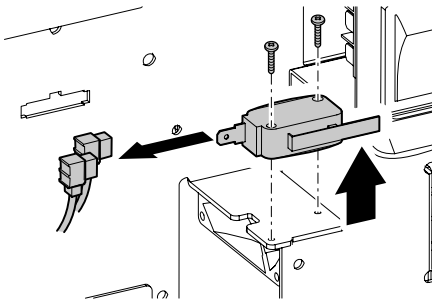
9) Remove the main power switch.



10) Remove the counter mounting plate.

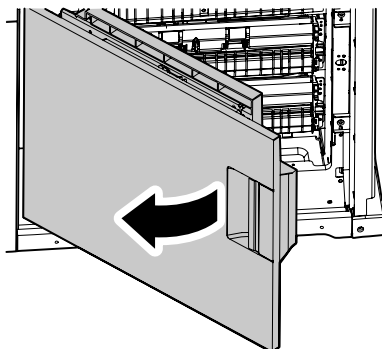


11) Disconnect the connector and remove the front door open/close switch unit.

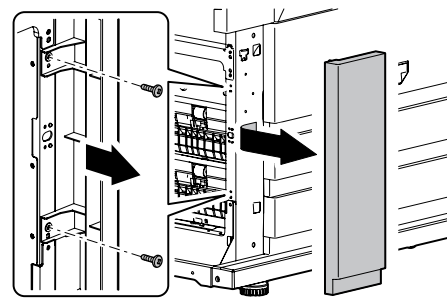


(4) Left door open/close detector

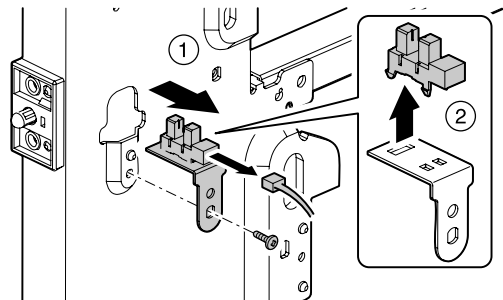
1) Open the left door.



2) Remove the left front cabinet.

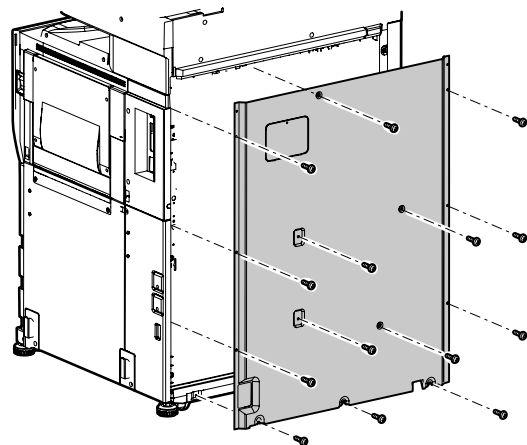


3) Disconnect the connector, and remove the left door open/close detector unit. Remove the left door open/close detector.

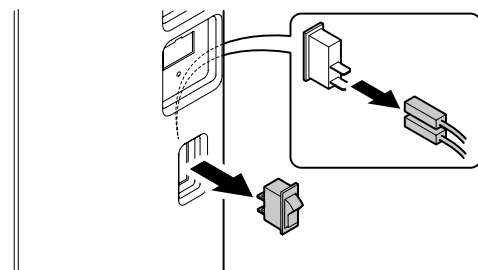


(5) Dry heater switch

1) Remove the rear cabinet.

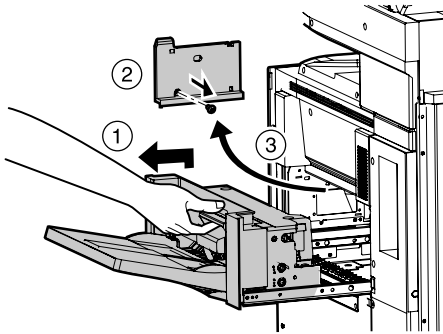


2) Disconnect the connector, and remove the dry heater switch.

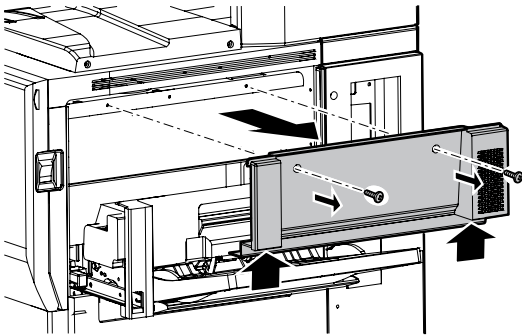


(6) Room temperature sensor

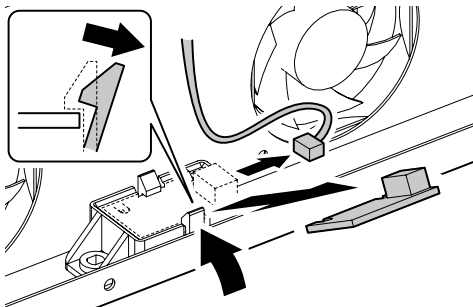
- 1) Pull out the multi paper feed tray, and remove the manual paper feed cover F.



- 2) Pushing the lower part, remove the right cabinet center.



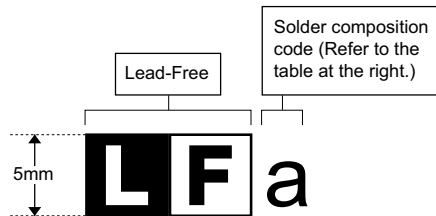
- 3) Disconnect the connector, release the pawl, and remove the machine temperature sensor.



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 inkorrektter 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 MANGANESE)
QUI DOIT ÊTRE TRAITÉE CORRECTEMENT. ENLEVEZ LA
PILE DU PRODUIT ET PRENEZ CONTACT AVEC VOTRE
AGENCE ENVIRONNEMENTALE LOCALE POUR DES
INFORMATIONS SUR LES MÉTHODES DE RECYCLAGE ET
DE TRAITEMENT.

SHARP

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